Alliance of Rouge Communities

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COMPARING ALTERNATIVE METHODS OF ASSESSING STORMWATER FEES FOR THREE EXAMPLE COMMUNITIES IN THE ROUGE RIVER WATERSHED

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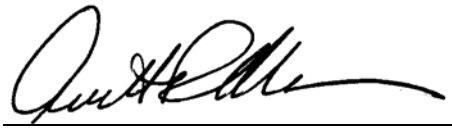	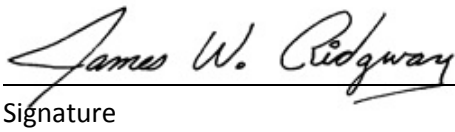
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LIST OF ACRONYMS AND ABBREVIATIONS

ARC	Alliance of Rouge Communities
ECT	Environmental Consulting & Technology, Inc.
EPA	U.S. Environmental Protection Agency
ERU	Equivalent Residential Unit
ESWU	Equivalent Stormwater Unit
GIS	Geographic Information System
MDEQ	Michigan Department of Environmental Quality
MS4	Municipal Separate Storm Sewer System
NDPES	National Pollutant Discharge Elimination System
ROW	Road Right-of-Way
SAW	Stormwater, Asset Management and Wastewater Grant Program
SEMCOG	Southeast Michigan Council of Governments
SFR	Single-Family Residential
TMDL	Total Maximum Daily Load

1.0 INTRODUCTION

The Alliance of Rouge Communities (ARC) analyzed the stormwater budget, land use and land cover data for three communities in the Rouge River Watershed to determine the required funding and allocation of stormwater fees needed to support stormwater management including municipal separate storm sewer system permitting requirements. As part of this effort, the regulations controlling the establishment of a stormwater utility are discussed. Ordinances and fees from other local communities are provided. Lastly, a public outreach strategy is provided to aid municipalities in securing community support for the establishment of a stormwater utility.

This document was written assuming no change in legislation regarding the challenges associated with enacting a stormwater fee in Michigan. Any municipality wishing to establish a stormwater utility should begin by contacting their municipal attorney. In Michigan, the Headlee Amendment determines that any new "tax" requires a vote of the people. The Bolt Decision clarified the difference between a "tax" and a "fee" under Headlee as it pertains to stormwater. Since the Bolt decision, a few communities have attempted to establish a new stormwater utility and all have failed after being challenged in court.

As part of the Bolt Decision, the Court defined the specific limitations on establishing a utility in Michigan without violating the Headlee Amendment. For a variety of reasons, communities seeking to establish a utility post-Headlee have failed to fulfill the requirements defined in this decision. These challenges have led to legislative efforts to enable the formation of stormwater utilities in Michigan. Currently, Senate Bill 0757 (2018) is being considered which was initiated by a number of communities under the leadership of Jim Nash, Oakland County Water Resources Commissioner. If this legislation were to pass, a community would be able create a stormwater utility with less concern of litigation.

1.1 BACKGROUND

This document provides Michigan-specific guidance for municipal officials considering the establishment an equitable stormwater utility under existing Michigan law. It recognizes that public utilities must manage drainage in a manner that addresses flood control, public safety, public health, and stormwater permit compliance. It provides information on how other communities have chosen to improve their stormwater management by changing the practices of their citizens through regulations, incentives, and a combination of both. This discussion provides insight in the guidance and constraints imposed by the Headlee Amendment and the Bolt Decision.

This report builds upon the earlier report, *Mechanisms for Funding Stormwater Management in the Rouge River Watershed* (Appendix A). That report: 1) summarized funding options available to local units of government, 2) described how stormwater systems have evolved from flood control systems to regulated infrastructure responsible for water quality improvements, 3) described current stormwater permitting requirements for municipal separate storm sewer systems (MS4) and the associated costs for complying with the MS4 permit, and 4) described considerations for establishing a stormwater funding mechanism through a stormwater utility or through the Michigan Drain Code.

This report expands on the earlier report by further describing the requirements articulated in the Bolt decision (Section 2.0), analyzing allocations methods to assign costs to property owners (Section 3.0) and providing an expanded public outreach framework to build support for the proposed utility (Section 4.0).

1.2 THE HISTORY OF STORMWATER UTILITIES IN MICHIGAN

Stormwater utilities in the United States began in the 1970's and have increased in number with the 1987 amendments to the Clean Water Act and subsequent promulgation of federal stormwater rules in 1990 (MS4 Permit Phase I) and 1999 (MS4 Permit Phase II). There are 1,639 stormwater utilities detailed in the latest Western Kentucky University Stormwater Utility Survey, with six states having over 100 stormwater utilities each. Most Midwest states have many stormwater utilities, as shown in Table 1.

Table 1. Number of Stormwater Utilities – Midwest States (Campbell, 2017)

STATE	STORMWATER UTILITIES
Minnesota	197
Wisconsin	126
Iowa	105
Illinois	26
Indiana	80
Ohio	106
Michigan	8

By comparison, relatively few stormwater utilities have formed in Michigan. There are two main reasons for this: a) communities have cobbled together funds for stormwater management and permit compliance using a variety of existing funds such as general funds and sewer fees; and b) the fear of litigation as a result of conflicts with the Headlee Act and Bolt decision. As a result, cities in Michigan need carefully crafted ordinances and fee structures to assure that a new stormwater utility will pass legal scrutiny.

The City of Detroit claims one of the earliest charges for stormwater in Michigan, dating back to the mid-1970s – prior to the enactment of the Headlee Amendment in 1978. Originally, it was established to capture the cost of treating stormwater entering their combined sewer collection system from large property owners – notably the Michigan Department of Transportation. The rates were increased, and the fees were assessed to all property owners beginning in 2017. The rates are the highest in the state, at almost $8,000/impervious acre/year for commercial and industrial properties (Detroit, 2018). These rates can be minimized by reducing stormwater runoff. The city has crafted their fee reduction program to encourage the use of green stormwater infrastructure (GSI) practices that can result in an 80% reduction in a site's drainage fee.

The City of Ann Arbor established their stormwater utility in 1980. Their current rates are $2,382/impervious acre/year or $154/year for a typical residential parcel (Ann Arbor, 2018). They also have a credit program that offers discounts for the implementation of GSI, management of stormwater through onsite and off-site detention ponds, participation in the Washtenaw County Water Resources Commission's RiverSafe Home Program and Community Partners for Clean Streams Program, and the implementation of public education and outreach services in compliance with the MS4 permit by private or public schools (Ann Arbor, 2007).

Recently, the City of Birmingham adopted a stormwater fee and credit program to allocate the stormwater portion of their sewage costs to the stormwater generators. The program currently has an established rate of $183 or $238/year for a typical residential parcel. This rate is based on the runoff potential of a typical residential property – equivalent stormwater unit (ESWU). They also offer a credit program for the implementation of GSI by residential and non-residential property owners (Birmingham, 2018).

Table 2 summaries the rates for each of these communities along the amount of funding raised by their programs.

Table 2. Example Michigan Communities Stormwater Fees

CITY POPULATION/SIZE	ANNUALIZED RATE (2017)	TYPICAL ANNUAL RESIDENTIAL CHARGE	ANNUAL AMOUNT RAISED	WHEN ESTABLISHED
Detroit 710,000 143 sq. miles	$7,176/impervious acre[1]	$244[1]	$150 M[1]	1970s
Ann Arbor 114,000 28 sq. miles	$2,382/impervious acre[2]	$154[2]	$6 M	2007
Birmingham 20,000 5 sq. miles	$183 or $238 per ESWU[3]	$183 or $238[3]	$2.1 M	2017

ESWU = equivalent stormwater unit

[1] Detroit, 2018

[2] Birmingham, 2018

[3] Ann Arbor, 2018

1.3 ABOUT THIS PROJECT

This project is funded by a Michigan Department of Environmental Quality (MDEQ) Stormwater, Asset Management, and Wastewater (SAW) grant issued to the Alliance of Rouge Communities (ARC). Data analysis and reporting preparation was performed by Environmental Consulting & Technology, Inc. (ECT) serving as staff the ARC.

2.0 CONSIDERATIONS FOR ESTABLISHING A STORMWATER UTILITY

The ARC recommends that communities establish a stormwater fee to equitably capture the funds needed to fulfill the requirements of the MS4 permit as well as to support required stormwater management and infrastructure improvements. To respond to the desire for local control by the ARC member community, this report focuses on the establishment of a utility operated on a community by community basis and supported by community-specific stormwater fees.

The development of a stormwater utility has proven to be an effective way to a) encourage responsible management of stormwater by residents, businesses and other private property owners; and b) fund water pollution controls necessary to address stormwater management. By establishing a variable rate stormwater utility, a city can both encourage private property owners to reduce their stormwater runoff while placing the burden of paying for stormwater on those properties that generate stormwater. This can remove the cost of stormwater management from the general fund, water and sewer rates, and road funding – all of which are already under financial pressure.

2.1 CONTROLLING REGULATIONS

Michigan communities have unique challenges when seeking funds to provide stormwater services. The Headlee tax limitation amendments to the Michigan Constitution of 1963 (Article IX Sections 24-24) requires voter approval of any increase in the tax rate. User fees are exempt from this limitation. However, the distinction between a "tax" and a "fee: has been litigated, resulting in guidance and court opinions that have caused concerns to municipal attorneys.

The tax versus fee debate was clarified by the Michigan Supreme Court's decision on *Bolt v City of Lansing* (459 Mich 152,587 NW2d 264 (1998)). Thus, any Michigan stormwater utility and corresponding fee must be consistent with both Headlee and Bolt.

In Bolt, the court articulated a new three-part test for determining whether a charge is validly characterized as a fee (Michigan Municipal League, 2017)):

1. It must serve a regulatory purpose,
2. It must be proportionate to the necessary cost of service, and
3. The user must be able to refuse or limit use of the commodity or the service for which the charge is imposed.

2.2 REGULATORY PURPOSE

With the *Bolt* decision, the court directed that a stormwater fee *MUST serve a regulatory purpose*.

The courts have agreed that stormwater management required under the MS4 permit fulfill serve a regulatory purpose. The MS4 permit regulates stormwater discharges from MS4s owned by cities, townships, villages, and county agencies to waters of the state in urbanized areas. The permittees are

required by the federal government to develop and implement a stormwater management plan (SWMP) that include the following measures:

- Public education plan to educate individuals on stormwater management techniques.
- Illicit discharge elimination plan to identify and correct non-stormwater flows from entering the MS4.
- Construction stormwater control to manage stormwater from construction sites to reduce impacts on water quality.
- Post-construction stormwater control which requires the use of best management practices (BMPs) on private and public properties to reduce storm runoff and improve runoff quality.
- Storm system maintenance including street sweeping and clean basin cleaning.
- Total maximum daily load plan which requires water quality monitoring to determine the effectiveness of BMPs in improving water quality for impaired waters.

The cost for these activities varies between municipalities and each utility must capture these costs separately to assure the rate payers (and the courts) that fees collected ONLY pay for activities that are required by regulations.

2.2.1 DETERMINE FUNDING NEEDS

Communities seeking to establish a stormwater fee is cautioned to carefully limit the costs assigned to the fee. Recent court decisions have shown that costs not directly associate with providing stormwater management services are considered "taxes" and therefore require a vote of the people under the Headlee amendment.

The funding collected by a municipal stormwater fee can only be spent on municipally owned drainage facilities. Municipalities can/should impose requirements for any drainage entering from a drain owned by another entity because the drainage network of any community is a combination of privately owned drains, publicly owned drains associated with transportation networks and county owned drains. This methodology assures that the municipality is not burdened by the poor practices of their upstream neighbors.

2.2.2 CAPITAL FUNDS

Capital requirements associated with building stormwater infrastructure, including GSI, are eligible costs that can be funded by a stormwater fee and remain compliant to the Headlee Amendment and the Bolt decision. These facilities could include:

1) Stormwater drains, ditches, swales and appurtenances;
2) Stormwater capture facilities including detention/retention ponds, retention basins, detention basins, cisterns and supporting structures; and
3) Stormwater treatment BMPs such as rain gardens, bioswales, pervious pavements, tree boxes, native vegetation, filter strips, green roofs, etc.

Installation and maintenance of trees along the road right-of-way is another cost that can be funded by a utility. Trees provide a stormwater benefit to a community through groundwater transpiration and rainfall interception. By way of example, the cost of the City of Ann Arbor's street tree program is funded through their stormwater utility. This allows maintenance of 55,000 street trees and planting of 1,000 new street trees annually. Trees on public lands are not funded by the utility unless they are part of a stormwater management design.

Because stormwater management projects often occur within larger road replacement projects, it is important to identify the components of a project that are solely associated with stormwater management and therefore eligible for payment by the utility. This can be done by examining the budget/bid tab for each project on a line by line basis. For example, curb and gutter can be considered a stormwater management feature and eligible for payment by the utility, while pavement repair/replacement could not.

Another consideration is the extent to which utility funds will support stormwater management projects on public properties that are subject to post-construction standards. In these cases, the community may wish to limit direct utility funding to design elements that go above and beyond the post-construction standards (i.e. regulatory requirements). The community general fund, department budget, park mileage, etc. could fund the remaining portion (and majority) of the project. This is a policy that the City of Ann Arbor adopted recently when their Parks Department constructed a new skate park. The parks department funded the majority of the project, but the utility funded stormwater management efforts that went above and beyond the city's post-construction design standards.

2.2.3 OPERATION AND MAINTENANCE FUNDS

The costs of physically operating and maintaining stormwater infrastructure, including GSI, are eligible costs that can be funded by a stormwater fee and remain compliant to the Headlee Amendment and the Bolt decision. Many of the routine maintenance activities are specifically listed in the NPDES stormwater permit including street/parking lot sweeping, catch basin cleaning, weeding, invasive species removal, plant/groundcover replacement and dredging/sediment bay clean-outs. Beyond routine maintenance, the repair and replacement of existing facilities is an eligible cost.

Communities are encouraged to establish an active program to address the known challenges associated with an old, underfunded collections system. The state of Michigan has provided tens of millions of dollars to communities for Asset Management under the SAW program. This allows communities to establish priorities as they inspect, record and manage their existing infrastructure. Addressing the oldest infrastructure is cost effective because the cost of emergency repair far exceeds the cost of timely repair/replacement. As these repairs/replacements are made, many communities are also choosing to incorporate sustainable practices.

2.2.4 COSTS OF MAINTAINING STORMWATER UTILITY

The administrative costs of maintaining a stormwater utility are eligible costs that can be funded by a stormwater fee and remain compliant to the Headlee Amendment and the Bolt decision. These costs include: 1) the accounting associated with capturing and assigning stormwater related construction, operating, and maintenance; 2) maintaining an equitable program of apportioning the cost of stormwater management (e.g. a GIS system for fee determination); and 3) billings/collections of stormwater fees.

2.3 ALLOCATING STORMWATER COSTS EQUITABLY

With the *Bolt* decision, the court clarified that a stormwater fee *MUST be proportionate to the necessary cost of service*. Therefore, communities must determine 1) which properties drain stormwater to their MS4 and 2) an equitable means of allocating the cost of managing stormwater to the properties that generate that stormwater.

A community cannot charge parcels that do not drain to their MS4. Examples of this are parcels that drain directly to a natural watercourse or parcels that drain to another entity's MS4. This is relevant to parcels located along state or county roads where the state or county MS4 discharges directly to a nearby watercourse. The number of these parcels will very in each community. Communities with larger networks of state and county roads and/or open watercourses may want to identify these parcels proactively to minimize the number of variance requests from the public and to have a more accurate initial allocation of costs. Other communities may choose to handle these anomalous situations reactively on a parcel by parcel basis, especially when determination of a site's drainage can't be easily completed by desktop analysis.

There are three methods to allocate costs to property owners that are used by the majority of the communities utilizing a stormwater fee. All rely on the amount of impervious area associated with a parcel as a proxy for stormwater volume delivered to the drainage system. The most prevalent method is **equivalent residential stormwater unit method** which uses the amount of impervious area for a typical single-family residential property to determine the fee. This is the approach used by the City of Ann Arbor. Another approach is the **hydraulic area method** which is based on the runoff potential from impervious and pervious surfaces. A version of this approach is used by the City of Birmingham. Another approach is the **impervious area method**. All three approaches will be discussed in Section 3.0.

2.4 ABILITY TO REDUCE THE FEE

Lastly in the *Bolt* decision, the court directed that *a user must be able to refuse or limit use of the commodity or the service for which the charge is imposed.* That is to say, if a property owner is capable of eliminating or reducing the amount of stormwater from entering a municipal stormwater collection system they must be given the opportunity to reduce *or eliminate* their stormwater fee. This necessitates that community provide an appeal process and stormwater credit program.

2.4.1 APPEALS PROCESS

An appeals process is needed for property owners to request fee modifications to rectify inequities in the fee calculations. This is often a simple matter of addressing outdated or erroneous GIS data. The community should expect that the land cover data will not be 100% accurate. For instance, despite using the most recent land cover data, conditions can change between the fly over and fee assessment which reduces (or increases) the amount of impervious area on a parcel. One example is building demolition. In other cases, the aerial imagery maybe interpreted incorrectly such as the case with bare soils or dead grass which may be interpreted as impervious area.

Another appealable situation is when a property does not drain to the community's MS4, the utility program should allow the property owner to fully opt out of the stormwater fee. This may be the situation when a parcel drains directly to a natural waterbody or to MS4 under another's jurisdiction (e.g. state or county storm drain) without the use of the community's storm drains.

To this end, DWSD has developed a drainage charge adjustment guide which may be useful to other communities (Appendix B). It describes how to request changes in ownership and impervious area and supporting documentation requirements. It also establishes a minimum adjustment area of 435 sq feet (0.01 acres) based on the accuracy of the GIS data.

2.4.2 CREDIT PROGRAM

In addition to the appeals process, a credit program is needed to allow for a fee reduction if property owners reduce the amount of stormwater draining off their property. Besides being a requirement of the *Bolt* decision, a fee reduction program incentivizes property owners to manage their stormwater on-site and reduce impacts on water quality. Ann Arbor, Birmingham and Detroit all have credit programs.

The City of Ann Arbor's credit program offers fee reductions for the implementation of GSI and detention on residential and non-residential sites (Table 3). They also offer a credit for participation in educational programs targeted at home and business owners. Residential GSI measures (rain gardens, cisterns, dry wells) are required to capture at least 50% of roof runoff to qualify for the credit. However, the residential credit is a flat rate and does not vary based on property size. Non-residential properties can obtain a credit of up to 80.53% and amount of the credit is determined on a site-specific basis.

Table 3. City of Ann Arbor Stormwater Fee Reduction Options

STORMWATER MANAGEMENT MEASURE	CREDIT ($/QUARTER)	SELECT REQUIREMENTS
Residential (single and two-family)		
RiverSafe Homes Education Program	$1.01	Online education survey
Rain Barrels	$2.38	Minimum size of 35 gallons

STORMWATER MANAGEMENT MEASURE	CREDIT ($/QUARTER)	SELECT REQUIREMENTS
Rain Gardens	$4.93	Minimum size of 135 sq. ft. Must be vegetated and drain within 24 hours
Cisterns	$4.93	Minimum size of 500 gallons. Must drain 24 – 48 hours after rain event
Dry Wells	$4.93	Minimum size of 500 gallons. Must drain within 24 hours
Detention	Site specific	Capacity: 100 yr storm. Maximum discharge rate: 0.5 cfs
Non-Residential		
Community Partners for Clean Streams Education Program	25.83%	Obtain site assessment and commit to implement items outlined in an action plan developed by the county.
Detention	28.87%	Capacity: 100 yr storm. Maximum discharge rate: 0.5 cfs
GSI	25.83%	See: *Best Management Practices for Stormwater: A Developer's Guide for Ann Arbor*

Source: Ann Arbor, 2007; Ann Arbor, 2018

The City of Birmingham also offers credits to SFR and non-SFR property owners for the implementation of GSI, foot drain disconnections and enhanced retention (Table 4). The minimum requirements for the various stormwater management measures are similar to what is specified for Ann Arbor. However, Birmingham specifies a renewal period after which the property owner must reapply for the credit. Contrary to Ann Arbor, the SFR rates vary based on parcel size.

Table 4. City of Birmingham Stormwater Fee Reduction Options

STORMWATER MANAGEMENT MEASURE	CREDIT ($/QUARTERLY)	APPLICABILITY? SFR OR NON-SFR	RENEWAL PERIOD (YEARS)
Rain Barrels	$15	Both	2
Rain Garden, Bioswale	$15-25*	Both	5
Cisterns	$25*	Both	5
Dry Wells/Infiltration Trench	$25*	Both	10
Pervious pavement	$10-30* (based on size)	Both	10
Footing drain disconnection	$40	Both	10
Other GSI	ESWU reduction	Non-SFR	N/A
Enhanced Retention	ESWU reduction	Non-SFR	N/A

*For ESWU of 1.0 or less. Larger credits are given to properties with higher ESWU.

Source: Birmingham, 2018

The City of Detroit also offers credits for the implementation of various stormwater management measures which are documented in four guide books: drainage charge credit, credits for commonly used stormwater practices and credit application and renewal process. Property owners can receive up to a 80% credit for reducing the volume of water discharging from their site by using GSI and water harvesting. The credit of 40% is given for retaining stormwater from the 2-year 24-hour storm volume. An additional 40% credit is available for peak flow management by detaining the 100-year 24-hour storm.

In addition, sites can receive a credit for disconnected impervious areas. One example of a disconnected impervious area is a walking path in the middle of a vegetated park. The amount of the credit is related to the ratio of impervious area to pervious receiving the drainage. Finally, a 25% credit is given to residential properties for disconnecting their downspouts from the combined sewer system.

2.5 CURRENT ENABLING LEGISLATION AND EXAMPLE ORDINANCE

While this report assumes that a stormwater utility can be formed within the current constraints, clarifying legislation, like that proposed by Oakland County Water Resources Commissioner Jim Nash, would both lower the barriers and encourage more communities to participate. The fact that Michigan continues to lag the nation in establishing new stormwater utilities while the number of stormwater utilities nationwide is rapidly expanding suggests that the legislative environment is inhibiting the formation of these types of utilities. Many municipalities have recognized this challenge and refrained from establishing this needed source of funding for fear of costly litigation.

2.5.1 PROPOSED LEGISLATION

The Oakland County Water Resources Commissioner, Jim Nash, and many other regional leaders have recognized the current challenges and established a group of community leaders and technical experts to draft legislation to address the challenges of creating a stormwater utility. The resulting legislation is Senate Bill No. 756 (See Appendix C). The language is carefully crafted to be consistent with the Bolt Decision by assuring that "properties will be subject to any stormwater fee for *voluntary* use of a stormwater system…" and further assuring that "The costs…will be allocated in proportion to the amount of stormwater runoff from a property conveyed by the stormwater system…"

2.5.2 EXAMPLE ORDINANCE

The City of Birmingham, Michigan passed an ordinance allowing the formation of a stormwater ordinance on December 5, 2016 (Appendix D) as a means of reducing the stormwater entering their combined sewer collection system. Birmingham utilized the well-established ordinances from Ann Arbor and Berkley as models resulting in an ordinance much closer to that of Berkley. Birmingham is using the money raised by the stormwater ordinance to offset the sewer fees for either the Evergreen-Farmington or the GW Kuhn combined sewer systems. That is to say, Birmingham has reduced the sewer fees committed to funding the operation and maintenance of combined sewer operations while replacing the lost fees with the variable stormwater volume-based fees. The total bill to the larger community is

unchanged although costs to individual property owners was reallocated. The small areas in Birmingham served by separate storm sewers are not being charged a fee.

Birmingham is different than most of the Rouge Communities who only have separate storm sewers and who would be collecting a new fee. Nonetheless, the approach utilized by Birmingham to equitably allocate stormwater fees is applicable for separate sewer areas.

3.0 CASE STUDY WITH THREE COMMUNITIES

This section applies the most common stormwater allocation methods to three ARC communities. These methods are further parsed to show the financial impact of removing municipal roads from the fee and/or removing public property from the fee. There are decent arguments for utilizing any of these methodologies so all are presented for all three communities. However, the inclusion or exclusion of the roadways and/or public lands have Bolt ramifications and the community lawyer should review the process before proceeding. Assigning stormwater fees to all property may be deemed the most equitable by the courts.

ARC communities were solicited to participate in a pilot for further analysis to serve as an example for other ARC communities. The purpose of the pilot was to: collect and analyze existing data (aerial photography, GIS data, tax parcels, impervious analysis); identify the appropriate drainage rate to cover expected costs; and determine the impact on various classes of customers (e.g. industrial, commercial, residential, government, nontaxable). The two major allocation methods were applied to all three communities.

Municipalities were surveyed for their interest. The municipality were not required to commit to pursuing a stormwater charge as part of this effort. The potential municipalities were asked to share data (land use, taxes, charges for water/wastewater/stormwater) as well as budgetary information on stormwater funding and expected stormwater needs.

From this solicitation, three communities were selected among ARC members. For purposes of this report, the communities were identified as Community A, B and C, and a general description of each is provided in Table 5.

Table 5. Statistics for Pilot Communities

COMMUNITY	POPULATION (2016)	COMMUNITY SIZE (SQ. MILES)	STORM SEWER SYSTEM SIZE (MILES)	CURRENT STORMWATER MASTER PLAN
A	81,000	33	325*	No
B	94,000	36	384	No
C	73,000	26	240**	Yes

*Does not include open ditches

**Plus 40 miles of combined sewer

3.1 STORMWATER COSTS

The most recent budget was reviewed for each community to determine their current stormwater budget needs. This review showed that communities have stormwater related costs throughout their budgets under various categories and each community's budget had different levels of detail. The stormwater costs extracted from community-specific budgets ranged from $965,000 to $6,299,000 as

shown in Table 6. The only items included in Table 6 are those that were deemed to be fundable given the Bolt decision as discussed in Section 2.2.

For comparison, an estimate of the cost using the per-capita cost from Ann Arbor is included on Table 4. This shows that the estimates are of the right order of magnitude even with the large variability. Still, in some communities, the total cost is an underestimate because stormwater costs have been internalized by the community or is a part of road and sewer projects making it difficult to discern the true of cost of maintaining a stormwater system. In all situations, the stormwater budget needs to be scrutinized to include all "Bolt-eligible" costs while assuring that extraneous (and thereby Bolt ineligible) are eliminated before a community can consider establishing a stormwater utility.

The actual cost of stormwater management must be established prior to enacting a utility. The following analyses are forwarded to show how the two primary methods can be used to allocate those costs to property owners. To remove the uncertainty of the accuracy of costs, a target budget of $1,000,000 was used for allocation. The fees assigned to a given property owner will be linearly proportional to these finding once an accurate stormwater cost is determined.

Table 6. Stormwater Costs for Pilot Communities

BUDGET CATEGORY	COMMUNITY		
	A	B	C
MS4 permit implementation (IDEP, public education workshops and materials, monitoring, ARC dues, permit fee)	X		X
Catch basin cleaning	X		
Street sweeping	X	X	X
Debris disposal (street sweeping and catch basin)	X		X
Storm sewer GIS updates	X		
Stormwater capital projects	X		X
Storm sewer system repair/replacement	X	X	X
Storm sewer system maintenance	X		X
Stormwater modeling	X		
Master plan and asset management plan updates	X		
Stormwater program staff time and expenses			X
Street reforestation	X	X	X
Electricity costs for pump stations	N/A		X
Combined sewer drainage charges	N/A	N/A	X
Stormwater consultants			X
Total from Community Budget	**$3,314,000**	**$965,000**	**$6,299,000**
Cost estimate using Ann Arbor average ($52 per person)	**$4,212,000**	**$4,888,000**	**$3,796,000**

N/A: Not applicable

3.2 STORMWATER COST APPORTIONMENT METHODOLOGY

An analysis was performed to determine the financial impact on typical fee payers and how those rates would vary given differing methodologies and assumptions. We found that while the fees shifted between property owners of differing land use types, these shifts were minimal. The fees generated by both methods analyzed were consistent with the goal of equitably distributing the costs of stormwater management.

The existence and quality of the GIS data from the individual community can be used to define and build the appropriate dataset to apportion stormwater costs. Utilizing the community specific information coupled with regional information, the following datasets were collected:

Community Generated Information:

- Parcel (polygon)
- Road Type (polyline)
- Land Use (polygon)
- Stormwater costs

SEMCOG Generated Information:

- Land Cover (polygon)

All three communities selected for this analysis had parcel data available in GIS format. The data quality was good. Across the Rouge Watershed, this type of data is generally available. When the individual community did not have easy access to the land use data, it was possible to obtain data from the relevant county department or from SEMCOG.

Using GIS, land use and land cover was assigned to each parcel and a road right-of-way (ROW) layer was created. This allowed for an impervious area footprint to be assigned to each parcel which excluded ROWs. The entire process was very time consuming and included quality assurance checks throughout. Details on how this was completed are provided in Appendix E.

3.3 FEE ALLOCATION

Assigning costs to the stormwater ratepayer must be done in an equitable manner if it is to both gain public acceptance and withstand judicial challenges. This means that the fees charged to property owners must be proportional to the amount of stormwater leaving the site. Because measuring stormwater runoff is difficult and costly, many communities across the nation have chosen to use the amount of impervious area as an appropriate method of estimating the amount of runoff from a given site.

Three fee allocation methods were used for this assessment: 1) Impervious Area, 2) Equivalent Residential Unit and 3) Hydraulic Area. Using these methods, allocations were calculated up to three different ways for each Community to determine the sensitivity of the user fees if roads and/or public lands are removed from the contributing land use tables. The first approach allocated costs to each

parcel assuming all lands are included. The second approach excluded the Road ROW from the allocation and shifted those costs to the property owners. This is the approach used by the cities of Ann Arbor and Birmingham. The third approach excluded Road ROW and community-owned properties from the allocation which shifted costs to private and non-community public properties owners. The third approach was not applied to Community C, because property owner information was unavailable.

3.3.1 IMPERVIOUS AREA APPROACH

This method assumes that the amount of stormwater runoff generated from a given site is directly proportional to the amount of impervious area of that site. This approximation of runoff is well established and has been used in stormwater utilities across the country.

Based on the portion of impervious cover for each parcel, stormwater costs were allocated to each parcel for Communities A, B and C. Using this approach, parcels are assigned a stormwater fee on an individual basis. The fee can be $0, if the parcel is entirely pervious. This approach is highly equitable, which is important in lieu of the Bolt Decision, but it is less common because of the data needs and a perception that it more complicated.

3.3.2 EQUIVALENT RESIDENTIAL UNIT APPROACH

More than 80% of stormwater utilities across the nation use the equivalent residential unit (ERU) method to apportion costs to property owners. It is less precise than the impervious area method, but it is easy to explain and administer and it can be equitable if properly designed.

For this method, parcels are assigned a cost on the basis of how much impervious area is on the "average" residential parcel – an ERU – regardless of the total area of the parcel. The ERU is assigned a value based on the impervious area associated with a typical single-family residential (SFR) home. Given the wide range of SFR lot sizes, this requires that SFR land use category be subdivided and grouped into categories by parcel size. The SFR parcel group that contains the most parcels is assigned a standard ERU of 1.0. The average impervious area of each parcel group is determined and divided by the impervious area of the most popular SFR group to determine the ERU of each SFR parcel group. The same approach is used for the non-SFR land uses, but the ERU is determined for each individual parcel rather than for a group of parcels.

Contrary to the Impervious Area Approach, a minimum fee is established for SFR parcels in the ERU Approach. This may be a problem given the guidance provided in the Bolt decision. This process also results in shifting the cost of stormwater compliance - increased fees to the lowest SFR rate payers (and no SFR parcel fee can have a fee of $0) and a decrease in fees to the largest SFR rate payers.

Commercial and industrial property owners should have little preference for which method they find appealing because for the non-SFR parcels, the two approaches result in little difference to their fees.

The SFR parcel groups were provided by Community C; therefore, this approach was applied only to this community.

3.3.3 HYDRAULIC AREA APPROACH

Applied to all three communities, the hydraulic area approach incorporates both impervious and pervious areas to determine the runoff potential for each parcel. This is based on the principle all surfaces generate runoff of some amount during precipitation events as predicted by standard runoff coefficients. Given that most of the watershed has clayey soils, the runoff coefficient for pervious surfaces was selected to be 0.15 meaning that generally 15% of runoff will drain from these surfaces. The runoff coefficient for impervious soils was selected to be 0.90. These values are based on widely accepted engineering practices for calculating runoff and should be selected based on the primary soil type in the community.

The runoff potential, measured in square feet or acres, is calculated according to the following formula:

$$Runoff\ Potential = 0.15\ x\ (Total\ Area - Impervious\ Area) + 0.9\ x\ (Impervious\ Area)$$

Once the total runoff potential is determined, stormwater costs are allocated based on the parcel's portion of the community total.

When compared to the impervious area approach, this method shifts costs to from properties that are mostly impervious (Ex: apartment, office and industrial complexes) to properties that are comprised mostly of pervious surfaces (Ex: parks).

Although not completed in this assessment, this approach can be coupled with the equivalent residential unit approach which places SFR parcels into various categories based on size. This evens out the costs between SFR parcels and creates a minimum fee for each as described in Section 3.3.2.

3.4 COMMUNITY A RESULTS

The public road ROWs coupled with the public/institutional lands make up over a third of Community A. Thus, when they are eliminated from the fee charges, those costs are shifted to other property owners. Specifically, residential owners shift from being assess 35% of the fees to nearly half (48%). This must be discussed transparently when/if a community chooses to exclude the roads for the calculations.

The distribution of the stormwater fee by land use category is provided with and without the road ROW in Figures 1 and 2, respectively.

Figure 1. Community A Distribution of Stormwater Costs based on Impervious Area Approach – All Parcels

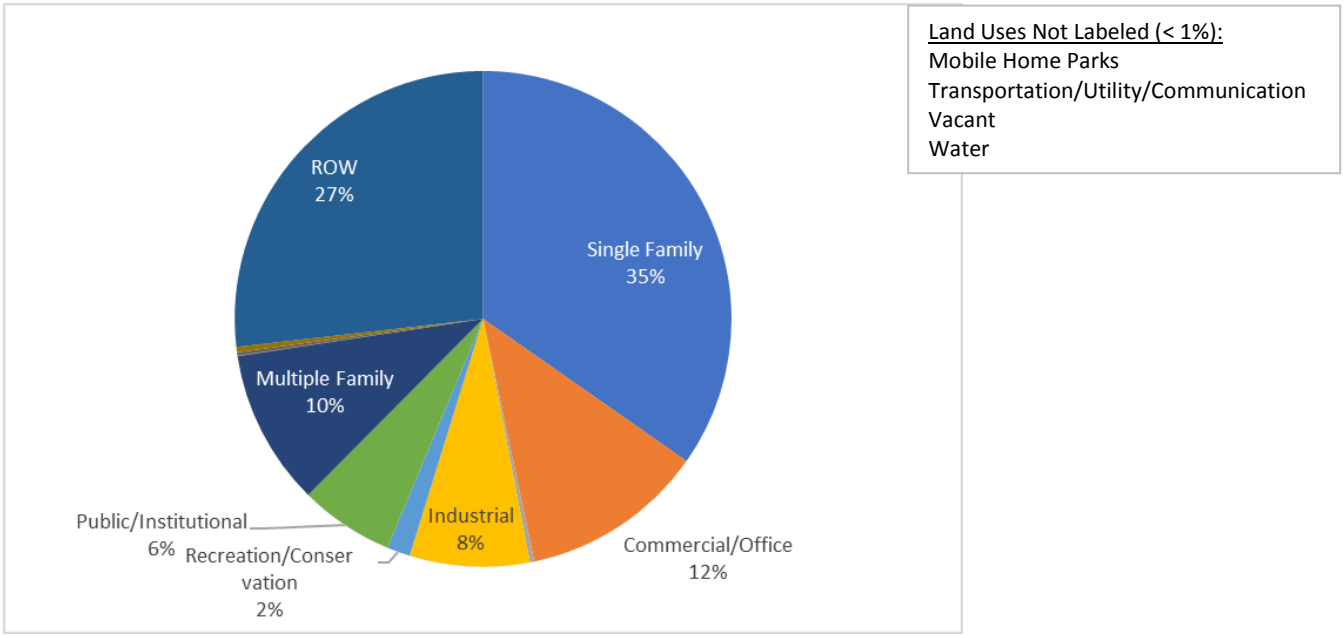
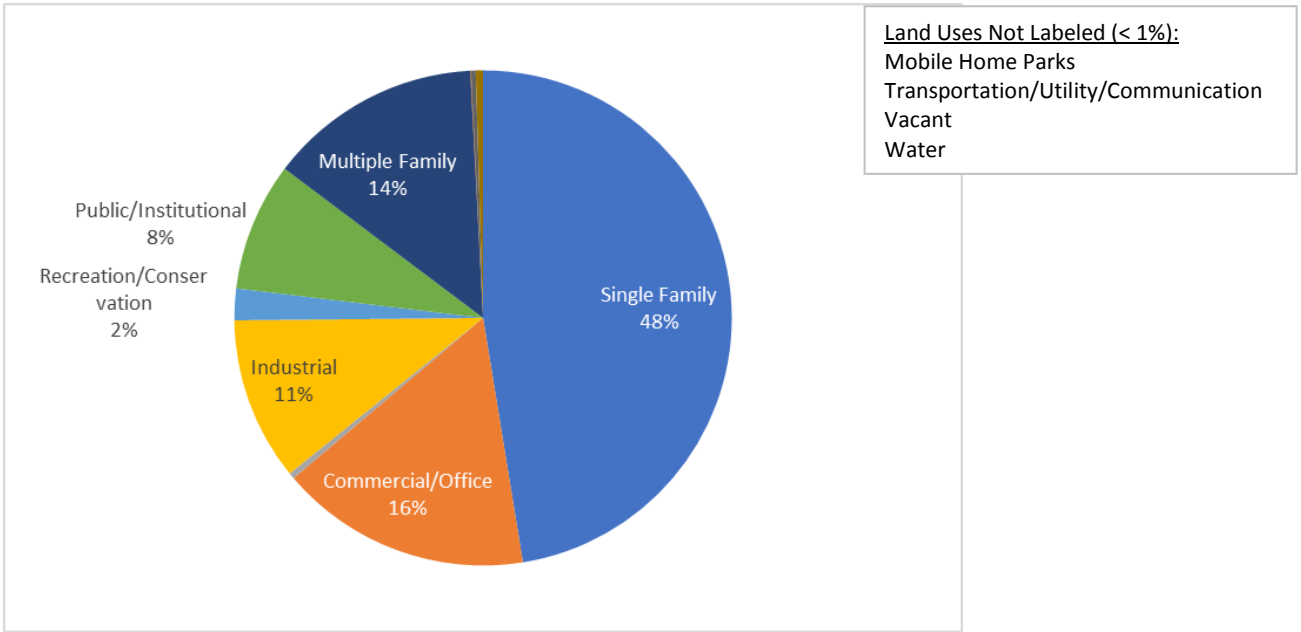


Figure 2. Community A Distribution of Stormwater Costs based on Impervious Area Approach - Excluding Roads



For this analysis, Community A has a total of 22,577 parcels with 90% classified as single family residential. The imperviousness of each land use is provided in Table 7, column D. The community is 35% impervious with the single family residential, ROW, commercial/office and multiple family residential land uses making up 84% of the impervious area (column F).

3.4.1 IMPERVIOUS AREA METHOD RESULTS

Based solely on the impervious area of a parcel, the stormwater costs of $1,000,000 was apportioned to each parcel and summarized in Table 8. If ROWs are excluded from the calculation, the total impervious area is reduced to 5,780 acres and costs are shifted to the remaining land uses as shown in Table 9. Lastly, if city-owned properties (85 impervious acres) are also excluded, the impervious area is further reduced to 5,695 acres and the resulting fees are shown in Table 10.

Depending on the scenario used, the single-family residential property owners will be assessed 35 – 48% of the total stormwater fee. However, when distributed across 20,248 parcels, the average annual fee is $25 or less.

In contrast, the non-single-family residential property owners will be assessed higher fees because their lots are larger and generally more impervious. The highest assessed non-single-family residential land use types are multiple family and public/institutional properties that could be assessed up to $11,500 or $9,600/year, respectively, depending on the apportionment scenario. It is important to note that the stormwater fee for multiple family housing units will likely be passed down by the owner to the individual tenants. This should result in a fee that is comparable to, if not lower than single-family parcels.

Table 7. Community A Impervious Area Summary

	A	B	C	D	E	F
LAND USE	NUMBER OF PARCELS	IMPERVIOUS AREA (ACRES)	TOTAL AREA (ACRES)	PERCENT IMPERVIOUS FOR EACH LAND USE	PERCENT TOTAL LAND USE	PERCENT IMPERVIOUS OF THE TOTAL
Single Family	20248	2742	9352	29%	41%	35%
Commercial/Office	643	945	1284	74%	6%	12%
Vacant	553	23	551	4%	2%	0%
Industrial	370	616	885	70%	4%	8%
Recreation/Conservation	246	120	2020	6%	9%	2%
Public/Institutional	180	485	1301	37%	6%	6%
Multiple Family	153	802	1585	51%	7%	10%
Water	144	3	1767	0.1%	8%	0.0%
Transportation/Utility/ Communication	33	18	87	20%	0.4%	0.2%
Mobile Home Park	7	27	38	71%	0.2%	0.3%

	A	B	C	D	E	F
LAND USE	NUMBER OF PARCELS	IMPERVIOUS AREA (ACRES)	TOTAL AREA (ACRES)	PERCENT IMPERVIOUS FOR EACH LAND USE	PERCENT TOTAL LAND USE	PERCENT IMPERVIOUS OF THE TOTAL
ROW		2156	3763	57%	17%	27%
TOTAL	**22577**	**7936**	**22633**	**35%**	**100%**	**100%**

Table 8. Community A Example Stormwater Fee based on Impervious Area Approach – All Parcels (7,936 impervious acres)

LAND USE	EXAMPLE ANNUAL SW FEE	AVERAGE ANNUAL COST PER PARCEL	LOWEST FEE	HIGHEST FEE
Single Family	$347,236	$17	$0	$1,386
Commercial/Office	$119,722	$186	$1	$3,521
Vacant	$2,867	$5	$0	$297
Industrial	$77,988	$211	$1	$3,626
Recreation/Conservation	$15,143	$62	$0	$1,931
Public/Institutional	$61,361	$341	$0	$6,882
Multiple Family	$101,585	$664	$8	$8,251
Water	$330	$2	$0	$59
Transportation/Utility/Communication	$2,239	$68	$0	$599
Mobile Home Park	$3,460	$494	$113	$1,469
ROW	$268,068		$0	$267,804
TOTAL	**$1,000,000**			

Table 9. Community A Example Stormwater Fee based on Impervious Area Approach – Excluding Roads (5,780 impervious acres)

LAND USE	EXAMPLE ANNUAL SW FEE	AVERAGE ANNUAL COST PER PARCEL	LOWEST FEE	HIGHEST FEE
Single Family	$474,410	$23	$0	$1,894
Commercial/Office	$163,570	$254	$1	$4,811
Vacant	$3,917	$7	$0	$405
Industrial	$106,551	$288	$1	$4,954
Recreation/Conservation	$20,689	$84	$0	$2,638
Public/Institutional	$83,835	$466	$0	$9,402
Multiple Family	$138,790	$907	$11	$11,273
Water	$451	$3	$0	$81
Transportation/Utility/Communication	$3,059	$93	$0	$819
Mobile Home Park	$4,727	$675	$154	$2,007
TOTAL	**$1,000,000**			

Table 10. Community A Example Stormwater Fee based on Impervious Area Approach – Excluding Roads & City-owned Parcels (5,695 impervious acres)

LAND USE	EXAMPLE ANNUAL SW FEE	AVERAGE ANNUAL COST PER PARCEL	LOWEST FEE	HIGHEST FEE
Single Family	$481,426	$24	$0	$1,922
Commercial/Office	$165,985	$259	$0	$4,882
Vacant	$3,910	$7	$0	$411
Industrial	$107,838	$294	$0	$5,027
Recreation/Conservation	$12,929	$58	$0	$2,004
Public/Institutional	$79,659	$477	$0	$9,542
Multiple Family	$140,843	$921	$11	$11,440
Water	$434	$3	$0	$82
Transportation/Utility/Communication	$2,179	$91	$0	$691
Mobile Home Park	$4,797	$685	$156	$2,037
TOTAL	**$1,000,000**			

3.4.2 HYDRAULIC AREA METHOD RESULTS

Using the hydraulic area approach, the stormwater costs of $1,000,000 were apportioned to each parcel and summarized in Table 11. This apportionment excluded road ROWs but included municipal properties. When compared to the impervious area approach, costs are shifted from parcels that are more impervious like commercial/office, industrial, public/institutional and mobile home parks to parcels that are more pervious such as recreation/conservation and transportation/utility/ communication lands. This is demonstrated by shifts in the average annual cost per parcel for these land use categories.

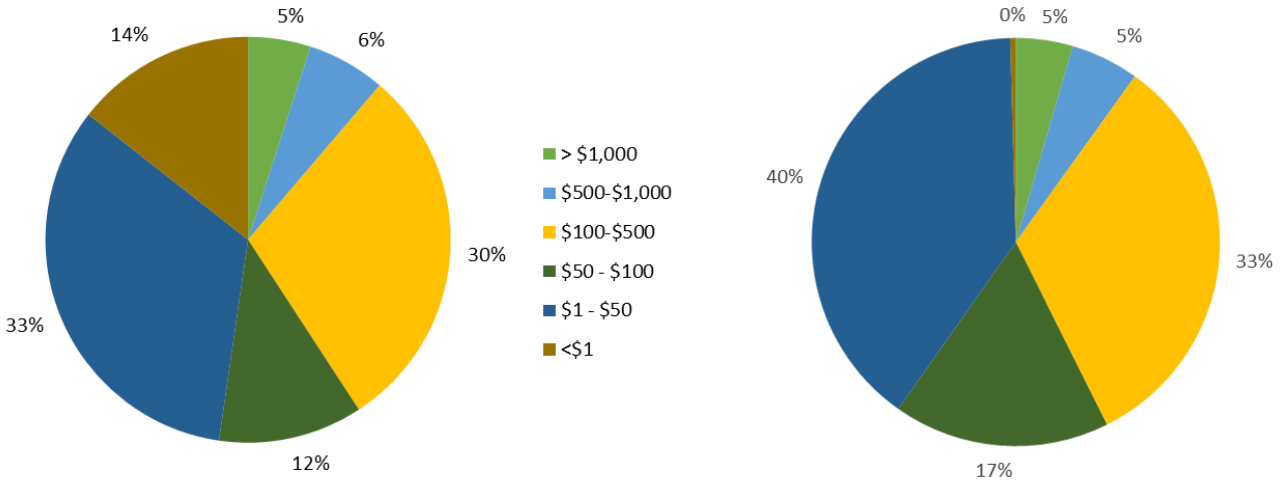
Another way to compare to the hydraulic area approach to the impervious area approach is to determine the change in the distribution of fees. This was completed for the SFR and Non-SFR parcels. The number of Non-SFR parcels being assessed less than $1 was greatly reduced using the hydraulic area method as 326 parcels were shifted to higher cost ranges. The $1 - $50 and $50 - $100 categories absorbed most (283) of those parcels (Figure 3).

For the SFR parcels, 380 parcels assessed less than $50 were shifted to higher cost ranges. Generally, the $50 - $100 and $100 - $500 cost ranges picked up these parcels. That being said, 96% of the SFR parcels would still be assessed $1 - $50 per year (Table 12).

Table 11. Community A Example Stormwater Fee based on Hydraulic Area Approach – Excluding Roads (5,780 impervious acres)

LAND USE	EXAMPLE ANNUAL SW FEE	AVERAGE ANNUAL COST PER PARCEL	LOWEST FEE	HIGHEST FEE
Single Family	$482,712	$24	$0	$1,636
Commercial/Office	$125,983	$196	$3	$3,607
Vacant	$13,901	$25	$0	$879
Industrial	$82,977	$224	$4	$4,021
Recreation/Conservation	$54,793	$223	$0	$3,535
Public/Institutional	$77,931	$433	$0	$8,848
Multiple Family	$117,119	$765	$13	$9,404
Water	$37,256	$259	$0	$3,163
Transportation/Utility/Communication	$3,667	$111	$0	$695
Mobile Home Park	$3,662	$523	$119	$1,592
TOTAL	**$1,000,000**			

Figure 3. Community A Distribution of Stormwater Fees for Non-SFR Parcels (Percent of Parcels in Each Cost Range)



Impervious Area Approach **Hydraulic Area Approach**

Table 12. Community A – Comparison of the Annual Fee for SFR Parcels using the Impervious and Hydraulic Area Methods

ANNUAL FEE	IMPERVIOUS AREA METHOD		HYDRAULIC AREA METHOD	
	NUMBER OF PARCELS	PORTION OF PARCELS	NUMBER OF PARCELS	PORTION OF PARCELS
> $1,000	4	0.02%	3	0.01%
$500 - $1,000	3	0.01%	5	0.02%
$100 - $500	31	0.2%	99	0.5%
$50 - $100	419	2%	730	4%
$1 - $50	19741	97%	19407	96%
<$1	50	0.2%	4	0.02%
Total	**20248**		**20248**	

3.5 COMMUNITY B RESULTS

Similar to the analysis of Community A, the percentage of the stormwater bill increases for all users if the public road ROW and city-owned property is removed from the fee-paying public. The distribution of the stormwater fees by land use category is provided with and without the road ROW in Figures 4 and 5, respectively.

Figure 4. Community B Distribution of Stormwater Costs based on Impervious Area Approach – All Parcels

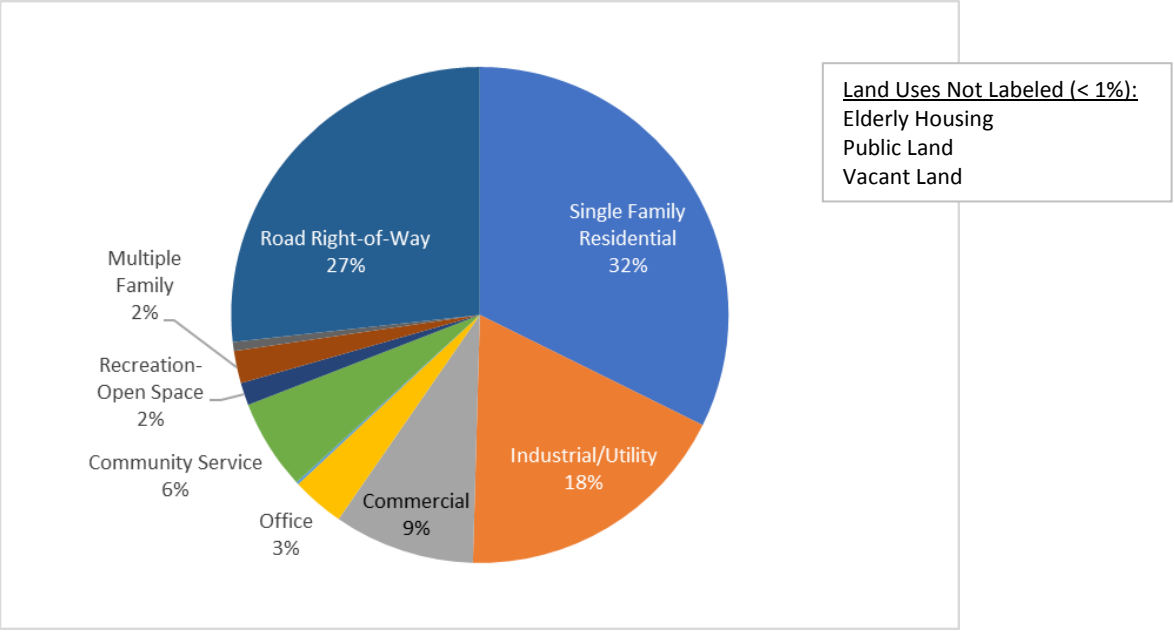
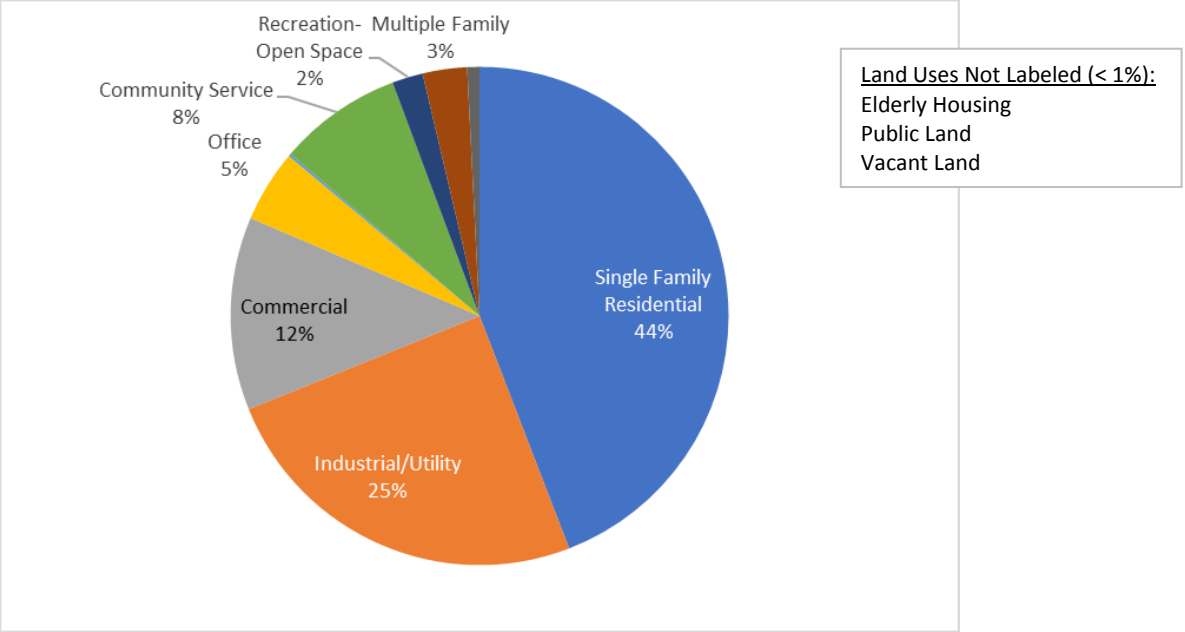


Figure 5. Community B Distribution of Stormwater Costs based on Impervious Area Approach – Excluding Roads



Community B has a total of 37,255 parcels with 93% classified as single family residential. The imperviousness of each land use is provided in Table 13, column D. The community is 47% impervious with the single family residential, ROW, industrial/utility and commercial land uses making up 86% of the impervious area (column F).

Table 13. Community B Impervious Area Summary

	A	B	C	D	E	F
LAND USE	**NUMBER OF PARCELS**	**IMPERVIOUS AREA (ACRES)**	**TOTAL AREA (ACRES)**	**AVERAGE IMPERVIOUS**	**PERCENT OF TOTAL LAND USE**	**PERCENT OF IMPERVIOUS**
Single Family Residential	34,606	3,519	9,708	36%	42%	32%
Industrial/Utility	854	1,973	2,733	72%	12%	18%
Commercial	770	999	1,309	76%	6%	9%
Office	316	373	530	70%	2%	3%
Vacant Land	237	17	183	9%	1%	0%
Community Service	198	641	1,991	32%	9%	6%
Recreation-Open Space	173	160	1,849	9%	8%	1%
Multiple Family	67	230	480	48%	2%	2%
Elderly Housing	33	63	127	49%	1%	1%
Public Land	1	0.49	2.33	21%	0%	0%
Road Right-of-Way		2,911	4,316	67%	19%	27%
Total	**37,255**	**10,886**	**23,228**	**47%**	**100%**	**100%**

3.5.1 IMPERVIOUS AREA METHOD RESULTS

Based solely on the impervious area of a parcel, the fictious stormwater costs of $1,000,000 was apportioned to each parcel and summarized in Table 14. If ROWs are excluded from the calculation, the total impervious area is reduced to 7,971 acres and costs are shifted to the remaining land uses as shown in Table 15. Lastly, if city-owned properties are also excluded (183 impervious acres), the impervious area is further reduced to 7,788 acres and the resulting fees are shown in Table 16.

Depending on the scenario used, the single-family residential property owners will be assessed 32 – 45% of the total stormwater fee. However, when distributed across 34,606 parcels, their average annual fee is $13 or less.

In contrast, the non-single-family residential property owners will be assessed higher fees because their lots are larger and generally more impervious. The highest assessed non-single-family residential land use type is industrial/utility that could be assessed up to $22,322/year depending on the apportionment scenario.

Table 14. Community B Example Stormwater Fee based on Impervious Area Approach – All Parcels (10,886 impervious acres)

LAND USE	EXAMPLE ANNUAL SW FEE	AVERAGE COST PER PARCEL	LOWEST FEE	HIGHEST FEE
Single Family Residential	$323,268	$9	$0	$646
Industrial/Utility	$181,217	$212	$0	$15,977
Commercial	$91,730	$119	$0	$2,948
Office	$34,260	$108	$4	$1,402
Vacant Land	$1,587	$7	$0	$258
Community Service	$58,903	$297	$0	$4,872
Recreation-Open Space	$14,691	$85	$0	$1,272
Multiple Family	$21,109	$315	$0	$1,233
Elderly Housing	$5,789	$175	$1	$543
Public Land	$45	$45	$45	$45
Road Right-of-Way	$267,402	/	$267,402	$267,402
Total	**$1,000,000**			

Table 15. Community B Example Stormwater Fee based on Impervious Area Approach – Excluding Roads (7,971 impervious acres)

LAND USE	EXAMPLE ANNUAL SW FEE	AVERAGE COST PER PARCEL	LOWEST FEE	HIGHEST FEE
Single Family Residential	$441,473	$13	$0	$882
Industrial/Utility	$247,481	$290	$0	$21,819
Commercial	$125,271	$163	$0	$4,025
Office	$46,788	$148	$6	$1,915
Vacant Land	$1,688	$7	$0	$352
Community Service	$80,442	$406	$0	$6,653
Recreation-Open Space	$20,063	$116	$0	$1,738
Multiple Family	$28,828	$430	$0	$1,684
Elderly Housing	$7,905	$240	$1	$741
Public Land	$61	$61	$61	$61
Total	**$1,000,000**			

Table 16. Community B Example Stormwater Fee based on Impervious Area Approach – Excluding Roads & City-owned Parcels (7,788 impervious acres)

LAND USE	EXAMPLE ANNUAL SW FEE	AVERAGE COST PER PARCEL	LOWEST FEE	HIGHEST FEE
Single Family Residential	$451,845	$13	$0	$903
Industrial/Utility	$253,295	$297	$0	$22,332
Commercial	$128,120	$167	$0	$4,120
Office	$47,887	$152	$6	$1,960
Vacant Land	$1,728	$8	$0	$360
Community Service	$77,927	$433	$0	$6,809
Recreation-Open Space	$1,603	$123	$0	$498
Multiple Family	$29,505	$440	$1	$1,723
Elderly Housing	$8,091	$245	$1	$759
Total	**$1,000,000**			

3.5.2 HYDRAULIC AREA METHOD RESULTS

Using the hydraulic area approach, the stormwater costs of $1,000,000 were apportioned to each parcel and summarized in Table 17. This apportionment excluded road ROWs but included municipal properties. When compared to the impervious area approach, costs are shifted from parcels that are more impervious like industrial/utility, commercial, office and multiple family to parcels that are more pervious such as community service, recreation-open space and public lands. This is demonstrated by shifts in the average annual cost per parcel for these land use categories.

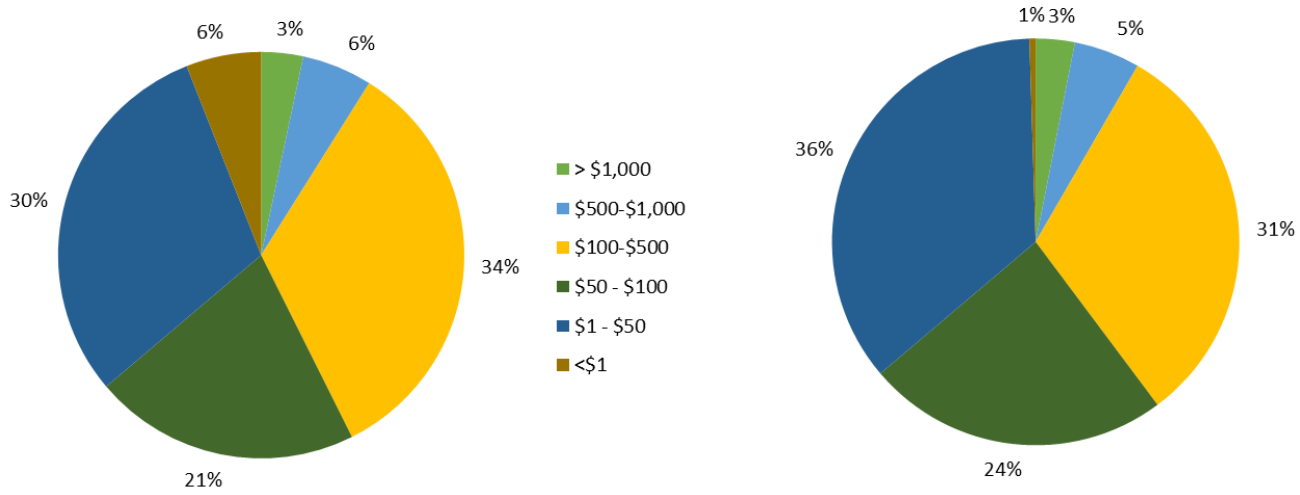
Another way to compare to the hydraulic area approach to the impervious area approach is to determine the change in the distribution of fees. The Non-SFR parcels that are assessed less than $1 was greatly reduced using the hydraulic area method, as all but 13 of these parcels were shifted to higher cost ranges (Figure 6). The $1 - $50 and $50 - $100 categories generally absorbed most of those parcels.

For the SFR parcels, the number of parcels assessed less than $1 was reduced by 151, while the $50 - $100 category increased by 126 parcels. Nonetheless, 99% of the parcels are still assessed $1 - $50 per year (Table 18).

Table 17. Community B Example Stormwater Fee based on Hydraulic Area Approach – Excluding Roads (7,971 impervious acres)

LAND USE	EXAMPLE ANNUAL SW FEE	AVERAGE COST PER PARCEL	LOWEST FEE	HIGHEST FEE
Single Family Residential	$464,604	$13	$0	$1,163
Industrial/Utility	$214,342	$251	$1	$17,903
Commercial	$107,233	$139	$0	$3,534
Office	$40,745	$129	$5	$1,678
Vacant Land	$4,258	$18	$1	$298
Community Service	$88,429	$447	$3	$6,503
Recreation-Open Space	$45,061	$260	$0	$3,711
Multiple Family	$27,716	$414	$1	$2,301
Elderly Housing	$7,531	$228	$2	$664
Public Land	$81	$81	$81	$81
Total	**$1,000,000**			

Figure 6. Community B Distribution of Stormwater Fees for Non-SFR Parcels (Percent of Parcels in Each Cost Range)



Impervious Area Approach **Hydraulic Area Approach**

Table 18. Community B - Comparison of the Annual Fee for SFR Parcels using the Impervious and Hydraulic Area Methods

ANNUAL FEE	IMPERVIOUS AREA METHOD		HYDRAULIC AREA METHOD	
	NUMBER OF PARCELS	PORTION OF PARCELS	NUMBER OF PARCELS	PORTION OF PARCELS
> $1,000	0	0.0%	1	0.0%
$500 - $1,000	1	0.0%	1	0.0%
$100 - $500	20	0.1%	21	0.1%
$50 - $100	37	0.1%	163	0.5%
$1 - $50	34384	99%	34407	99%
<$1	164	0.5%	13	0.04%
Total	**34606**		**34606**	

3.6 COMMUNITY C RESULTS

As was the case with Communities A and B, in Community C the exclusion of road ROWs shifts costs to the other land use categories. The distribution of the stormwater fee by land use category is provided with and without the road ROW in Figures 7 and 8, respectively.

Figure 7. Community C Distribution of Stormwater Costs based on Impervious Area Approach - All Parcels

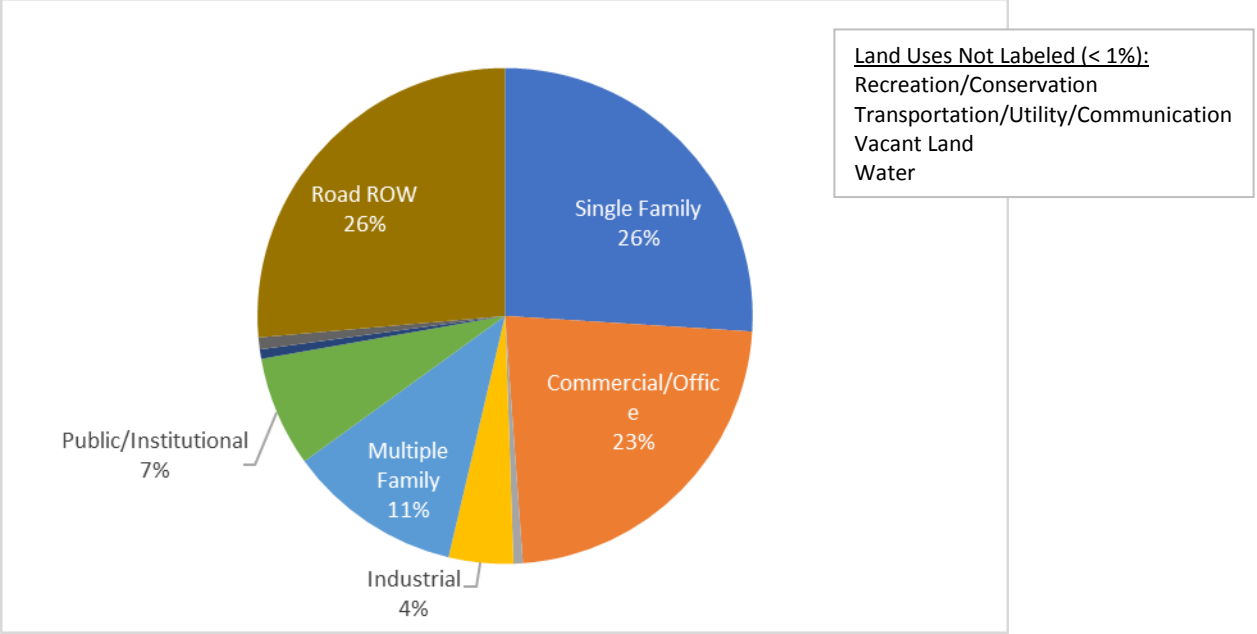
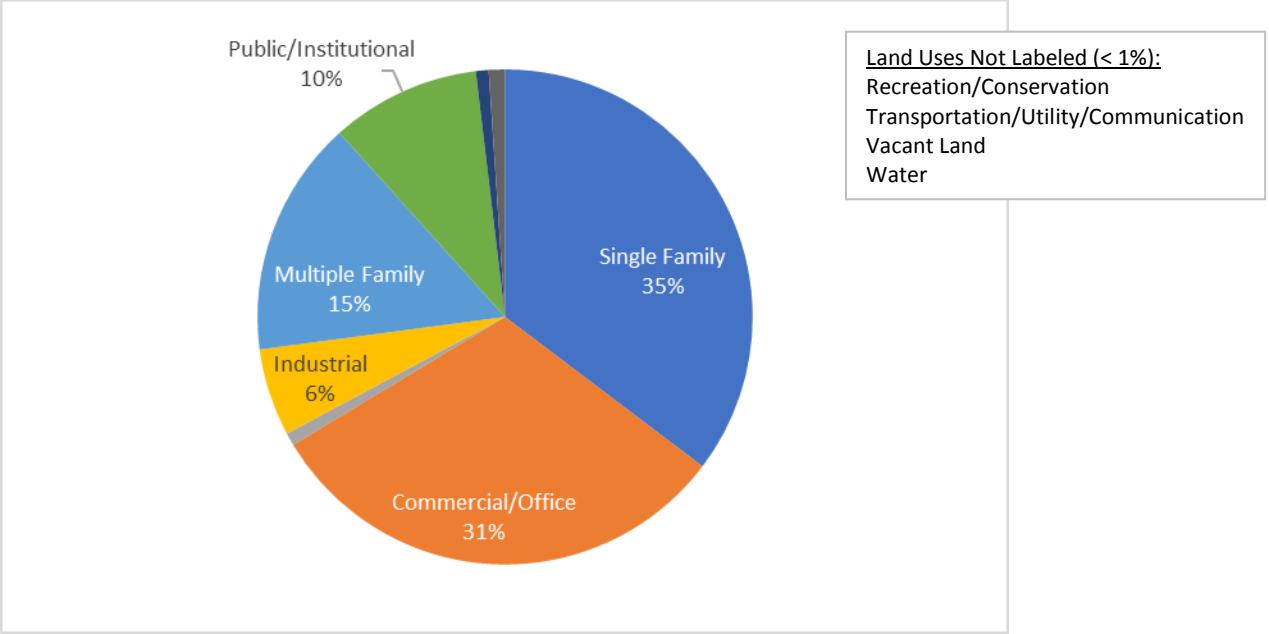


Figure 8. Community C Distribution of Stormwater Costs based on Impervious Area Approach - Excluding Roads



Community C has a total of 19,197 parcels with 88% classified as single family residential. The imperviousness of each land use is provided in Table 19, column D. The community is 41% impervious with the single family residential, ROW, commercial/office and multiple family land uses making up 86% of the impervious area (column F).

Table 19. Community C Impervious Area Summary

	A	B	C	D	E	F
LAND USE	**NUMBER OF PARCELS**	**IMPERVIOUS AREA (ACRES)**	**TOTAL AREA (ACRES)**	**AVERAGE IMPERVIOUS**	**PERCENT OF TOTAL LAND USE**	**PERCENT OF IMPERVIOUS**
Single Family	16,983	1,877	6,590	28%	38%	26%
Commercial/Office	938	1,650	2,115	78%	12%	23%
Vacant	641	44	596	7%	3%	1%
Industrial	175	304	416	73%	2%	4%
Multiple Family	166	821	1,389	59%	8%	11%
Public/Institutional	149	519	1,448	36%	8%	7%
Recreation/Conservation	59	44	717	6%	4%	1%
Water	54	0.7	922	0%	5%	0%
Transportation/Utility/ Communication	32	56	244	23%	1%	1%
Road ROW		1,905	3,005	63%	17%	26%
Total	**19,197**	**7,221**	**17,443**	**41%**	**100%**	**100%**

3.6.1 IMPERVIOUS AREA METHOD RESULTS

Based solely on the impervious area of a parcel, the stormwater costs of $1,000,000 was apportioned to each parcel and summarized in Table 20. If ROWs are excluded from the calculation, the total impervious area is reduced to 5,316 acres and costs are shifted to the remaining land uses as shown in Table 21. Note that parcel owner information was not provided for Community C, so community-owned properties could not be removed for this analysis (as was done with Communities A and B).

Depending on the scenario used, the single-family residential property owners would be assessed between 26 – 35% of the community-wide stormwater fee. However, when distributed across 16,983 parcels, the average residential property owner could expect an annual fee is $21 or less.

In contrast, the non-single-family residential property owners would be assessed a proportionally higher fee because their lots are larger and generally more impervious. The highest assessed non-single-family residential land use type is commercial/office that could be assessed up to $16,729/year if ROW costs are allocated to property owners.

Table 20. Community C Example Stormwater Fee based on Impervious Area Approach – All Parcels (7,221 impervious acres)

LAND USE	EXAMPLE ANNUAL SW FEE	AVERAGE COST PER PARCEL	LOWEST FEE	HIGHEST FEE
Single Family	$259,996	$15	$0	$317
Commercial/Office	$228,537	$244	$1	$12,315
Vacant	$6,109	$10	$0	$1,389
Industrial	$42,069	$240	$2	$3,211
Multiple Family	$113,636	$685	$26	$4,178
Public/Institutional	$71,892	$483	$2	$5,294
Recreation/Conservation	$6,150	$104	$0	$1,358
Water	$90	$2	$0	$16
Transportation/Utility/Communication	$7,709	$241	$1	$1,083
Road ROW	$263,812		$263,812	$263,812
Total	**$1,000,000**			

Table 21. Community B Example Stormwater Fee based on Impervious Area Approach – Excluding Roads (5,316 impervious acres)

LAND USE	EXAMPLE ANNUAL SW FEE	AVERAGE COST PER PARCEL	LOWEST FEE	HIGHEST FEE
Single Family	$353,165	$21	$0	$430
Commercial/Office	$310,433	$331	$1	$16,729
Vacant	$8,298	$13	$0	$1,887
Industrial	$57,144	$327	$2	$4,361

LAND USE	EXAMPLE ANNUAL SW FEE	AVERAGE COST PER PARCEL	LOWEST FEE	HIGHEST FEE
Multiple Family	$154,357	$930	$35	$5,676
Public/Institutional	$97,654	$655	$3	$7,191
Recreation/Conservation	$8,355	$142	$0	$1,845
Water	$122	$2	$0	$22
Transportation/Utility/Communication	$10,472	$327	$1	$1,471
Total	**$1,000,000**			

3.6.2 HYDRAULIC AREA METHOD RESULTS

Using the hydraulic area approach, the stormwater costs of $1,000,000 were apportioned to each parcel and summarized in Table 22. This apportionment excluded road ROWs but included municipal properties. When compared to the impervious area approach, costs are shifted from parcels that are more impervious like commercial/office, industrial and multiple family to parcels that are more pervious such as recreation/conservation and transportation/utility/communication. This is demonstrated by shifts in the average annual cost per parcel for these land use categories. There is also a marketed increase in the fees associated with the larger SFR parcels (1 to 10 acres). The total fee assessed to the 945 parcels in this group would increase from $33,800 to $59,500.

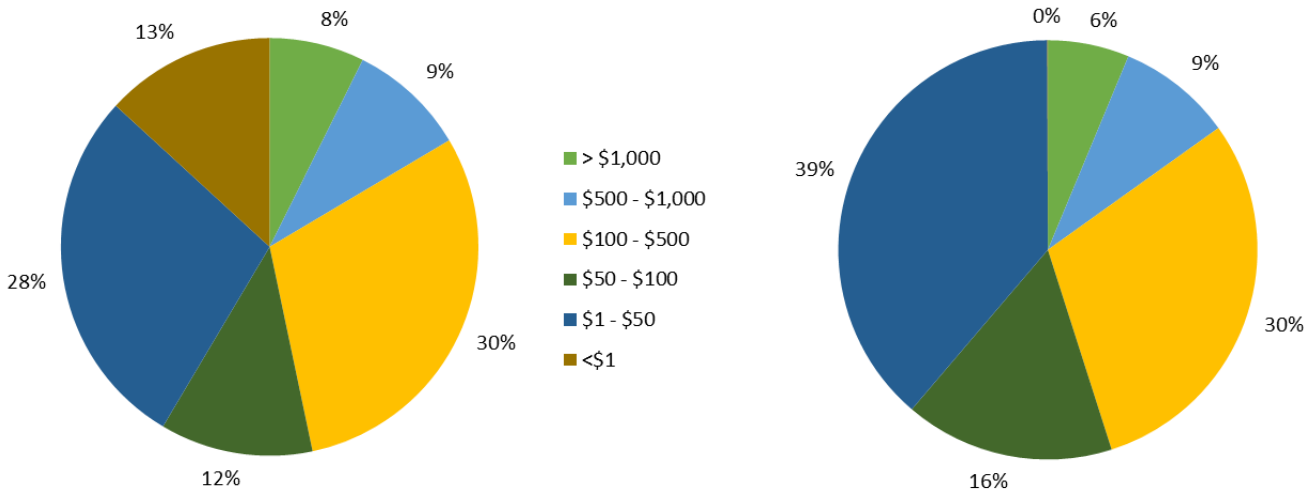
Another way to compare to the hydraulic area approach to the impervious area approach is to determine the change in the distribution of fees. The Non-SFR parcels paying less than $1 was greatly reduced using the hydraulic area method as all but 1 of these parcels were shifted to higher cost ranges (Figure 9). The $1 - $50 and $50 - $100 categories generally absorbed these parcels.

For the SFR parcels, the number of parcels paying $1 - $50 was reduced by 505, while the $50 - $100 category increased by 457 parcels. Nonetheless, 96% of the parcels still pay $1 - $50 per year (Table 23).

Table 22. Community C Example Stormwater Fee based on Hydraulic Area Approach – Excluding Roads (5,316 impervious acres)

LAND USE	EXAMPLE ANNUAL SW FEE	AVERAGE COST PER PARCEL	LOWEST FEE	HIGHEST FEE
Single Family	$389,532	$23	$0	$372
Commercial/Office	$252,738	$269	$2	$13,237
Vacant	$19,905	$31	$1	$1,501
Industrial	$47,184	$270	$22	$3,714
Multiple Family	$133,890	$807	$28	$4,970
Public/Institutional	$98,574	$662	$7	$13,699
Recreation/Conservation	$22,900	$388	$2	$4,791
Water	$22,550	$418	$5	$9,044
Transportation/Utility/Communication	$12,728	$398	$1	$2,619
Total	**$1,000,000**			

Figure 9. Community C Distribution of Stormwater Fees for Non-SFR Parcels (Percent of Parcels in Each Cost Range)



Impervious Area Approach **Hydraulic Area Approach**

Table 23. Community C - Comparison of the Annual Fee for SFR Parcels using the Impervious and Hydraulic Area Methods

ANNUAL FEE	IMPERVIOUS AREA METHOD		HYDRAULIC AREA METHOD	
	NUMBER OF PARCELS	PORTION OF PARCELS	NUMBER OF PARCELS	PORTION OF PARCELS
> $500	0	0%	0	0%
$100 - $500	11	0%	64	0%
$50 - $100	220	1%	677	4%
$1 - $50	16746	99%	16241	96%
<$1	6	0%	1	0%
Total	**16983**		**16983**	

3.6.3 EQUIVALENT STORMWATER UNIT METHOD RESULTS

The average impervious area for each group of SFR properties is provided in Table 24. With the most parcels being 8,000 to 13,999 sq. ft. in size, Group B was assigned a standard ERU of 1.0. The Group B parcels had an average impervious area of 4,316 sq. ft. The impervious area for every other SFR group was divided by 4,316 sq. ft. to determine its ERU. For the non-SFR parcels, the ERU was calculated for each property with the average values provided in Table 25.

Table 24. Community C Single Family Residential Property Group ERUs

SINGLE FAMILY RESIDENTIAL PROPERTY GROUP	NUMBER OF PARCELS	IMPERVIOUS AREA (ACRES)	AVERAGE IMPERVIOUS AREA PER PARCEL (SQ FT)	AVERAGE ERU
Group A: Less than 8,000 sq. ft.	2,337	183	3,414	0.8
Group B: 8,000 to 13,999 sq. ft.	9,044	896	4,316	1.0
Group C: 14,000 to 43,559 sq. ft.	4,652	616	5,766	1.3
Group D: 1 to 2.5 Acres	868	158	7,926	1.8
Group E: 2.5 to 5 acres	67	18	11,535	2.7
Group F: 5 to 10 acres	10	4	17,882	4.1
Group G: More than one unit per parcel	5	3	22,393	5.2
Total	**16,983**	**1,877**		

Table 25. Community C Non-Single Family Residential Property ERUs

LAND USE	NUMBER OF PARCELS	IMPERVIOUS AREA (ACRES)	AVERAGE IMPERVIOUS AREA PER PARCEL (SQ FT)	AVERAGE ERU
Commercial/Office	938	1,650	76,638	17.8
Vacant	641	44	2,998	0.7
Industrial	175	304	75,615	17.5
Multiple Family	166	821	215,326	49.9
Public/Institutional	149	519	151,769	35.2
Recreation/Conservation	59	44	32,790	7.6
Water	54	0.7	525	0.1
Transportation/Utility/Communication	32	56	75,777	17.6

To provide a meaningful comparison with the Impervious Area Method, a rate of $19/ERU was selected for this analysis. This assumed rate, when summed across all land use categories, generated a stormwater fee that totaled approximately $1,000,000 which is the budget selected for the Impervious Area Approach. This allowed for an equitable comparison between the two approaches.

The resulting example stormwater costs are summarized in Table 26 and Figure 10. The portion of fees in each land use is the same as used in the Impervious Area Approach (Figure 6). However, for SFR, the average cost per parcel is higher and the range of costs is smaller (Table 27). There is little change to the non-SFR average (or individual parcel) costs (Table 27).

Table 26. Community C Example Stormwater Cost using the ERU Approach – No Roads

LAND USE	AVERAGE ERU	ANNUAL COST	AVERAGE COST PER PARCEL	LOWEST FEE	HIGHEST FEE
Single Family	variable	$359,996	$55	$15	$99
Commercial/Office	17.8	$316,438	$337	$1	$17,053
Vacant	0.7	$8,458	$13	$0	$1,924
Industrial	17.5	$58,249	$333	$2	$4,446
Multiple Family	49.9	$157,343	$948	$36	$5,786
Public/Institutional	35.2	$99,543	$668	$3	$7,331
Recreation/Conservation	7.6	$8,516	$144	$0	$1,881
Water	0.1	$125	$2	$0	$22
Transportation/Utility/Communication	17.6	$10,674	$334	$1	$1,499
Total		**$1,019,342**			

Figure 10. Community C Distribution of Stormwater Costs based on ERU Approach – Excluding Roads

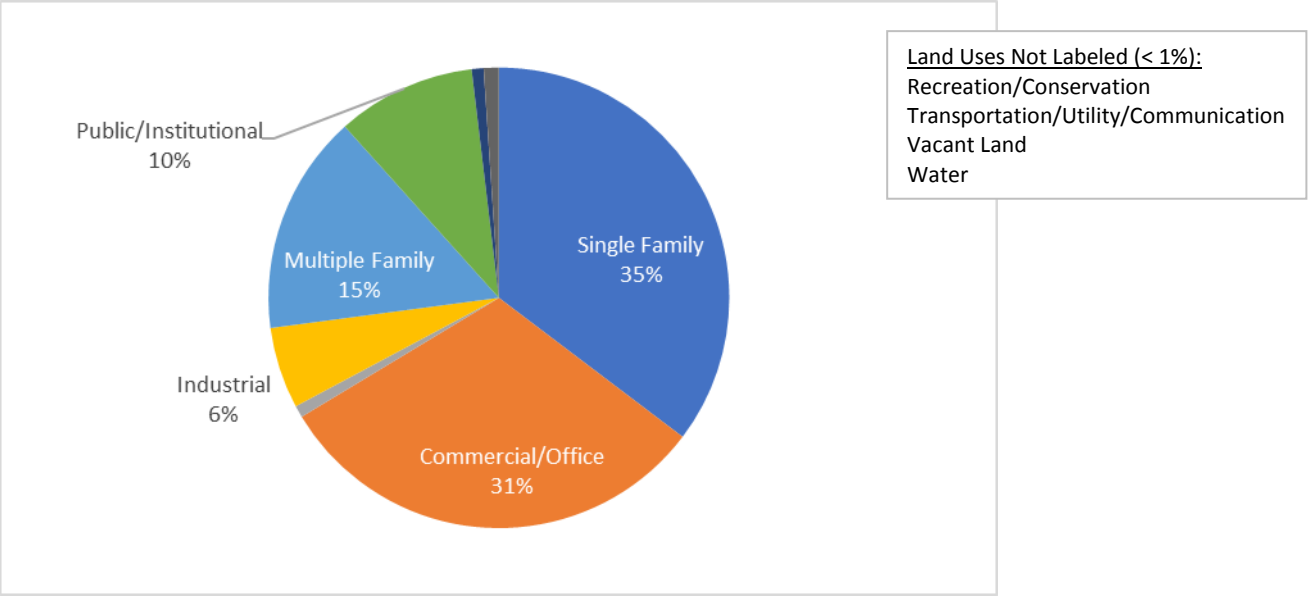


Table 27. Community C Comparison of Allocation Methods (major differences highlighted)

	IMPERVIOUS AREA APPROACH				ERU APPROACH			
LAND USE	**ANNUAL COST**	**AVERAGE COST PER PARCEL**	**LOWEST FEE**	**HIGHEST FEE**	**ANNUAL COST**	**AVERAGE COST PER PARCEL**	**LOWEST FEE**	**HIGHEST FEE**
Single Family	$353,165	$21	$0	$430	$359,996	$55	$15	$99
Commercial/Office	$310,433	$331	$1	$16,729	$316,438	$337	$1	$17,053
Vacant	$8,298	$13	$0	$1,887	$8,458	$13	$0	$1,924
Industrial	$57,144	$327	$2	$4,361	$58,249	$333	$2	$4,446
Multiple Family	$154,357	$930	$35	$5,676	$157,343	$948	$36	$5,786
Public/Institutional	$97,654	$655	$3	$7,191	$99,543	$668	$3	$7,331
Recreation/ Conservation	$8,355	$142	$0	$1,845	$8,516	$144	$0	$1,881
Water	$122	$2	$0	$22	$125	$2	$0	$22
Transportation/Utility/ Communication	$10,472	$327	$1	$1,471	$10,674	$334	$1	$1,499
Total	**$1,000,000**				**$1,019,342**			

Highlight added for emphasis.

3.7 LARGEST NON-RESIDENTIAL PROPERTY OWNERS

Regardless of the community, there are far more single family residential parcels than other land uses parcels. However, the non-SFR parcels are larger and generally more impervious than SFR parcels and thus pay a proportionally higher fee. This will result in stormwater bills that are much higher than the non-SFR lots. Therefore, the larger non-SFR rate payers have been identified. Prior to initialing a stormwater fee program, both the community leaders and the larger property owners should be the focus of additional educational efforts. The largest non- SFR property types in Community A and B are listed below (alphabetically). Note that property owner information was not provided for Community C, so their largest potential rate payers could not be identified. Nonetheless, it is suspected that Community C would be similar to the other communities.

Highest Potential Rate Payers:

- Apartment and condominium complexes
- Big box retailers
- Car dealerships
- Community buildings/complexes
- County properties
- Hospitals
- Industrial complexes
- Office complexes
- Religious institutions
- Schools (public and private)

A complete list of property owners with their example fee has been provided to Communities A, B and C. Since the property owner information for Community C was not provided, their information is only provided by parcel ID.

4.0 PUBLIC OUTREACH FRAMEWORK

4.1 INTRODUCTION

This section offers a suggested outline of actions and approaches that are recommended for informing and educating the public about a proposed stormwater utility fee program (Program). The property-owning public, and the officials elected by them, are likely to question the need and equity of any proposed fee. Thus, it is important to transparently share the cost of managing stormwater and the equitable way the community has chosen to allocate those costs.

The propose outreach structure is based on seeking the input of community members through regular communication. Utilizing several communication channels, the community is encouraged to engage members of the community, provide information about the Program, and be responsive to feedback and concerns.

The goal is to achieve broad support for the Program and offset opposition to the utility fee through intentional communications and interactions with the public and stakeholders that serve to:

- **Inform.** Increase resident awareness of Program requirements including, but not limited to: infrastructure and stormwater management issues, opportunities for public participation, benefits of stormwater management, etc.;
- **Educate.** Develop basic knowledge or understanding of the Program and potential effects of the structure among stakeholders, needs and cost of adequate stormwater management, and fee reduction options; and
- **Be Responsive.** Demonstrate awareness, consideration and responsiveness on the part of the community about stakeholders' concerns and views about the program and program objectives.

The objectives that describe how the community will go about implementing these goals include:

- **Open and transparent public participation.** Establish and sustain an open and transparent public participation process that informs, educates and gathers feedback from community members.
- **Create awareness and increase knowledge.** Create awareness of stormwater management, infrastructure and water quality issues and how the City intends to fund the Stormwater Utility. Continue to increase residents' knowledge of the City's ongoing initiatives to protect the environment, enhance water quality and improve the quality of life in the community.
- **Facilitate two-way communication.** Create opportunities for two-way communication that enable residents to provide input and ask questions on the program structure.
- **Balance expectations.** Balance residents' expectations on the utility rate, level of service, and stormwater program regulatory and other requirements.

Implementing a strong public outreach program early in the process of developing the Program is an important action the City must take to offset opposition and build the support necessary for successful implementation of the program.

4.2 KEY MESSAGES

Key messages are a useful tool for disseminating information to the public that is consistent with and supports the outreach goals. Key messages should express the program's need, purpose, and/or intent. Key messages to communicate include:

- The fees will fund the service area stormwater management needs, including complying with regulatory mandates (MS4 permits) to protect public health, reduce/manage flooding, improve water quality, and fulfill state and federal water quality laws and regulations.
- The fees will equitably fund required stormwater infrastructure and programmatic investment over the long term.

4.3 RESPONSIBLE PARTIES

Making a case for stormwater management and funding early in the process allows the City to build awareness, understanding, and support for the project as well as time to work through potential concerns. A community-specific project manager should identify and oversee the technical team responsible for outreach efforts and communication with residents and other property owners during the development of the Program. City staff can create a forum through which to educate stakeholders about the needs for improved stormwater management and adequate, consistent funding, and the benefits to the public. This should also be procedure to receive and respond to feedback from stakeholders/the public/residents. It is advantageous to partner with other departments, commissions, or groups within the City government who have expertise in facilitating public forums.

Appointing a single point-of-contact person to handle customer appeals regarding the calculation of their property's impervious surfaces will demonstrate the City's willingness to work with customers to handle their concerns.

4.4 STAKEHOLDERS

Proactively engaging stakeholders that support developing a utility as well as those that oppose it fosters deliberation and exchange of ideas among stakeholders with many points of view. Collaboration with various stakeholders can be executed at levels, depending on how involved in the planning and decision-making process those creating the utility feel would be advantageous. This should be determined early and will depend on variables such as the historical involvement of the community in planning and decisions, time and budgetary resources.

4.4.1 STAKEHOLDER IDENTIFICATION

Stakeholder identification and "knowing your audience" are the first steps to effective communication. Knowledge of stakeholders' primary concerns will provide guidance for the communication approach, including areas of focus in the context of generating support for the program. Is infrastructure the major concern? Water Quality? Flooding? Or do they not care? Is this different for different groups of customers? This information is valuable in determining how to communicate information you need to present in a context that the stakeholders will connect with. For example, communicating the financial

facts of infrastructure needs with business groups will likely resonate and have more influence than focusing on the effects of stormwater on the health of water resources.

Identify key users and groups. Important users/groups to target include owners of properties that generate a significant amount of stormwater runoff, such as malls and parking lots, and tax-exempt properties such as schools and churches. These properties, and others with large areas of impervious surface, who are likely to receive a large Stormwater Utility fee should be approached early.

Emphasis should be placed on outreach to service area residents, property owners, business owners, government officials, and non-profit groups within the community. Groups targeted for outreach include, but are not limited to:

- Owners of parcel(s) with significant impervious area;
- Community Chamber of Commerce and other business groups;
- Community Faith-Based and Non-Profit Organizations;
- Community homeowner, condominium, civic, and citizens' associations;
- Members of commissions and committees; and
- Local Government officials.

Establish an advisory committee. Select a diverse representation of the community which can include representation from universities, businesses, non-profit organizations, churches, developers, and shopping center owners. Proactively engage both stakeholders that support the establishment of the Program, and those that oppose it. While stakeholder advisory committees allow multiple perspectives of community stakeholder groups to be considered, building community support takes more than obtaining agreement amongst a small group of people. Solicit public stakeholder feedback while developing, testing, and refining the funding structure program design.

Committee topics of discussion include:

- What the Stormwater Utility should accomplish;
- Revenue amount needed to support infrastructure improvements and management;
- Who is responsible for paying the stormwater fees; and
- How the fees would be calculated in a fair and equitable way.

These are key topics that can reveal underlying concerns or disagreements to be worked through while developing the Program with broad support.

4.4.2 STAKEHOLDER CONTACT METHODS

Use multiple forms of proactive and passive outreach (written, visual, and in-person channels), such as:

- **City website:** The website should provide information about the Utility, its proposed structure, appropriate progress documents, schedule of public forum meetings and a Frequently Asked Questions page. Providing information to the public in this format is a passive but important form of outreach.

- **Pamphlets and presentations:** Prepare a brochure and an electronic presentation describing the need for the stormwater utility fee, the calculation method, and the projected rates. The stormwater utility brochure should be sent to all customers before initial billing. Include the customer's actual projected bill, if possible.
- **Bill Inserts:** Enclose informational inserts in water bill (or other utility bills) several times prior to rolling out the Stormwater Utility bill.
- **Public meetings**: Discuss the proposed program and fees and receive feedback from the public. Collect names and contact information from attendees for future communication efforts.
- **City newsletter**: Use as an outreach tool.
- **Enlist others in communication efforts**: Invite a local reporter to stakeholder advisory committee meetings. Enlist a college student to create a short informational video. Be creative!
- **Newspaper articles**
- **Direct mailers:** Postcard directing customers to program website for information.

Expect that, despite the best outreach efforts, many people won't hear about the new fees until the first stormwater utility bills are mailed out. Therefore, the community should be responsive, patient and flexible with property owners through the first few billing cycles.

4.4.3 STAKEHOLDER MEETINGS

Proactively engage with stakeholders who both support the establishment of the Program and those who oppose it.

4.4.3.1 Group Meetings

Hold public meetings with neighborhood stakeholder groups and community action groups to communicate the need for enhanced stormwater management and stable funding.

Give presentations to residents, civic and business groups, and the media.

Clearly communicate with the press the benefits of implementing a stormwater utility program; inaccurate information presented by the press can turn public opinion against the program.

Reach out to government officials; the support of the mayor and/or high-ranking officials is powerful, particularly if there is political opposition.

Meet with homeowner's associations and large commercial property owners to discuss the need for improved stormwater management and funding and discuss how the proposed program could benefit them. Listen to their concerns and be willing to work with these groups, as they are likely to be greatly affected by the potential increased fees.

4.4.3.2 Stakeholder Individual Meetings

Identify property owners that would receive bills of over $1,000/year (or some other level as determined by the community) and invite them to small group breakfast or one-on-one meetings to discuss the purpose and basis for the impending fees.

4.4.4 INFORMATION PRESENTATION SUGGESTIONS

Craft the information to engage the group of stakeholders you are addressing. The information must be factual and will be more powerful if the audience can relate. Communicating with specific groups (general residents, business owners, non-profit/religious/environmental) in different forums geared towards their interest and level of understanding can be beneficial.

Visually present inadequacies of the current stormwater management program; highlight the benefits other communities with stormwater utility fee programs are experiencing.

Clearly provide information that shows the financial and environmental benefits (e.g. improved flood control, recreation and fishing improvements, future drinking water supply enhancement (quantity and quality) through increased groundwater recharge).

Emphasize during discussions regulatory mandates to reduce pollutants to meet MS4 permit requirements; the cost associated with maintenance and management of the current stormwater system and the current state of the infrastructure, including its age and prospective repairs/upgrades/replacement timeframes. Frame the context of system needs in numbers. For example, note the number of storm sewer inlets and outlets, the number of miles of conveyance in the service area, etc. Share the status of any impaired water quality of local waterways and connect this with public use, activities, and even drinking water if applicable.

There are a number of external factors that affect the adoption of a Stormwater Utility Fee Program, and these include: the passage of state legislation authorizing local government to adopt stormwater utility ordinances and create stormwater management utilities; policy priorities and/or fiscal realities that favor separating stormwater costs into its own fund; the presence of a highly visible problem such as water quality or flooding; local economic, environmental, and community conditions; the consequences stakeholders would experience if a utility is not implemented; if there is a regional clustering of stormwater utilities, public awareness of costs or per capita stormwater costs; and if there is the presence of an active anti-tax, anti-government movement.

5.0 CONCLUSIONS

This report presents several alternatives for equitably assessing stormwater fees. All are Headlee compliant as defined under the Bolt decision. Any Rouge community would be well served to initiate a program to incorporate any of the evaluated alternatives. If a community chooses to proceed, it is recommended that they first take inventory of available GIS data (parcel boundary including ROW, property owner, land cover and storm sewer) to determine if improvements/corrections are needed before proceeding with establishing a stormwater utility. The community should work closely with their engineer and public works staff to determine the costs associated with managing stormwater within their community using the guidance provided in Section 2.2. In addition, the city's engineer should evaluate various allocation methodologies (Section 3.0) for their community and work with a municipal attorney to determine the most suitable and most defensible alternatives. Finally, the community should develop and implement a public outreach strategy (Section 4.0) to inform residents and business owners of the need for and details of the program as it develops to gain public buy-in.

6.0 REFERENCES

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APPENDIX A
MECHANISMS FOR FUNDING STORMWATER MANAGEMENT IN THE ROUGE RIVER WATERSHED

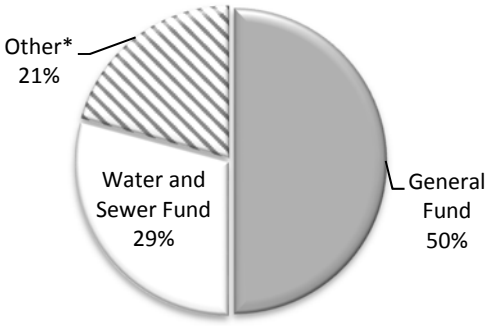
Mechanisms for Funding Stormwater Management in the Rouge River Watershed

1.0 Introduction

The Alliance of Rouge Communities (ARC) has utilized a combination of federal and local funding to address the stormwater requirements of their member communities for several years but with the imposition of the new (costlier) Michigan Stormwater Permit, communities are looking for ways of funding these new requirements. This paper reviews how the communities have funded their requirements to date utilizing the ARC as well as known constraints for accessing additional funding.

An estimated 540,000 households are located within the Rouge River watershed; of these 360,000 households are located within ARC member communities. The ARC has traditionally been funded by federal grants to Wayne County and membership dues generally on a 50/50 basis. As of May 30, 2014, federal funding from Wayne County was no longer available to support the ARC and the stormwater permit-compliance tasks they had performed.

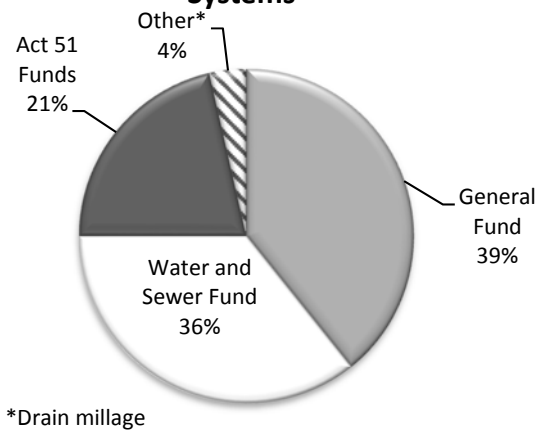
Reported Funding Sources for ARC Dues



*Act 51 Funds, Drain millage, In-kind services, Water Resources Fund, Septic system permit fees

A survey of ARC members indicated that the sources of funds to pay ARC dues are 50% from General Fund, 29% from Water and Sewer Fund, and 21% from other sources[1]. In the same survey ARC members were asked to identify funding sources for the operation and maintenance of their stormwater systems. The response indicated that 39% used their General Fund, 36% used Water and Sewer funds, and 21% used Act 51 funds[2,3]. The addition of the new stormwater permit requirements will require most communities to increase their stormwater budget which will put additional pressure on these traditional sources of funding.

Reported Funding Sources for Operation and Maintenance of Stormwater Systems



*Drain millage

The purpose of this paper is to summarize the funding options available to local units of governments to pay for the growing responsibilities they have inherited as a result of evolving

[1] 24 (60%) members responded to the survey.
[2] Some members use more than one funding mechanism.
[3] Act 51 dollars are provided by the State of Michigan to local units of government and county road commissions to repair/construction roadways and associated infrastructure.

environmental rules and regulations. Use of a stormwater utility and the Michigan Drain Code are the funding options that are discussed.

To support this purpose, this paper describes how stormwater systems have evolved from flood control projects to regulated opportunities for water quality improvements, Michigan's 2003 and 2016 stormwater permit requirements and associated level of effort, the newly added permit requirements, the communities' anticipated budget shortfall, an example community's expenditures for stormwater system operation and maintenance, and the considerations for establishment of a stormwater utility and a Drainage District though the Drain Code.

1.1 Background

Municipal stormwater management for local governments has evolved over time from an urban flood control function, to a water resource management function, to an environmental protection function brought on by regulatory requirements. All three functions now co-exist as responsibilities of local government. This evolution has forced changes in how stormwater systems are planned, designed, constructed, operated, and financed. More specifically, the stormwater function has evolved from a basic capital construction and maintenance program supported primarily by local property taxes, to a program of integrated water resource management, environmental enhancement, and permit compliance. These changes have caused community leaders to consider multi-faceted benefit-based finance system to support stormwater activities.

This white paper provides an overview of the current stormwater regulatory requirements for municipalities and provides a framework on potential strategies to shift the burden of the associated new costs. The concept is to move costs from the municipality's general, water and sewer, and Act 51 budgets to a new source of sustainable funds dedicated solely to supporting ARC activities, other stormwater permit-required activities, and construction, maintenance and operation of stormwater infrastructure, if desired.

1.2 The Evolution of Stormwater Systems in Michigan

When the sole perceived purpose of the stormwater collection system was the rapid and efficient movement of runoff from developed land to the receiving waters, a patchwork approach for responsibility and funding was adequate. However, as water quality became a priority, additional requirements and responsibilities were placed upon municipalities.

Municipal stormwater is surface water runoff from public and private lands in urban areas. Typically, stormwater is collected in municipal separate storm sewer systems (MS4s) consisting of drains, pipes, and ditches, and conveyed to nearby streams, rivers, lakes, estuaries, basins, wetlands, and oceans carrying with it a variety of urban pollutants.

Stormwater has become a part of the total water resources picture and is the third leg of the local government water service stool consisting of 1) drinking water treatment, and distribution; 2) sewage collection, treatment, and disposal; and 3) stormwater conveyance and management for quantity and

quality. Other more specific changes include recognition of stormwater as a resource; the need to restore streams and rivers; preservation of riparian areas and corridors; use of parks, playfields, and wetlands as stormwater detention areas; creation and/or restoration of wetlands to provide water quantity, quality, and environmental benefits; capturing stormwater to meet water supply needs; recognition that homes near greenbelts sell for a premium; and management of stormwater from a comprehensive watershed perspective.

Rouge River Watershed communities have managed the stormwater infrastructure as part of their normal activities for decades. Much of the activity was informally undertaken as part of other functions. Construction of local drainage facilities most often took place as part of subdivision development (funded by the private developer) or as part of a roadway construction project funded by the state or county. More rural or major urban drain projects were funded by the county drain commissioners.

Except for designated County Drains, maintenance of the drainage system most often took place as part of road maintenance activities or was sporadically performed by local community departments of public works using the general, water and sewer, and Act 51 funds. Since most drainage infrastructure had historically been part of the roadway system, the city and/or county department responsible for street maintenance became the de-facto maintenance entity for stormwater infrastructure.

The situation became more complex when newer developments were constructed within townships. Roads and streets within Michigan townships are under the jurisdiction of county road commissions. As development patterns became less rectilinear, internal drainage systems routinely were constructed both within and outside of road rights-of-way. Thus, after construction, those portions of the drainage system outside of the roadway were somewhat "orphaned" with no entity having formal ownership, maintenance and repair responsibilities.

2.0 Permit Required Stormwater Activities

In 1990, U.S. Environmental Protection Agency (EPA) began to include municipal stormwater discharges as pollutant sources under the National Pollutant Discharge Elimination System (NPDES) program. To minimize the impact of stormwater pollution from an MS4, operators are required to obtain a NPDES permit and develop a stormwater management program. In Michigan, the Michigan Department of Environmental Quality (MDEQ) issues and audits compliance with MS4 NPDES permits.

2.1 2003 Stormwater Permit Requirements and the supporting ARC Effort

Early on in Michigan's MS4 permitting program, communities were required to implement various activities. The 2003 MS4 permit, which all Rouge communities are operating under, includes the following requirements:

A. Locating and mapping stormwater outfalls,
B. Screening for and eliminating illicit discharges to waterways,
C. Development and implementation of a watershed management plan (WMP),

D. Development and implementation of stormwater pollution prevention initiatives for municipal properties and activities (SWPPIs),
E. Educating the public on stormwater management techniques,
F. Development of annual progress reports, and
G. Water quality monitoring to determine the effectiveness of permit requirements.

The Rouge communities chose to collaborate on these efforts in order to conserve resources. The ARC and its predecessor, the Assembly of Rouge Communities, were established as formal organizations to lead the planning and implementation of collaborative stormwater permitting efforts across the watershed.

The ARC has consistently assisted its members with permit compliance activities. In the past five years, the ARC has conducted the following core activities:

A. Collected outfall locations and created a GIS layer for the watershed,
B. Screened for and eliminated hundreds of illicit discharges and developed (and currently finalizing) a collaborative illicit discharge elimination plan;
C. Developed and gained MDEQ and EPA approval on a WMP to guide restoration efforts;
D. Provided templates, workshops and educational material to support SWPPIs;
E. Educated municipal staff and the general public on numerous pollution prevention techniques including proper septic system maintenance, illicit discharge detection, site-level green infrastructure methods, vegetative invasive species management, detention pond maintenance, and native landscaping;
F. Developed an online stormwater reporting system to aid in preparing permit-required progress reports;
G. Conducted and summarized ecosystem monitoring which have measured the water quality and habitat improvements over time; and
H. Implemented a green infrastructure campaign that included completion of a land cover survey to establish a baseline of impervious area coverage in the watershed, the design and installation of 30 grow zone projects covering more than 3 acres, and the sale of over 3,500 rain barrels to area residents.

Between 2006 and 2013, the core budget for the ARC to fulfill these permit requirements was approximately $530,000 annually as shown in Table 1[4]. During this time, 40 – 50% of the ARC's core budget was supplemented by federal funding awarded to Wayne County as part of the Rouge River National Wet Weather Demonstration Project (Rouge Project)[5]. This federal portion (48% in 2013) of the ARC's core budget was no longer available to the ARC beginning in January 2014.

[4] The core budget does not include special projects which are grant funded.
[5] The Rouge Project has provided communities $351 million in funding since 1992 for hundreds of projects including combined sewer overflow control, ecosystem monitoring, nonpoint source control, public education activities, illicit connection investigations, as well as providing a substantial portion of the ARC's operating costs.

In addition to the core activities, the ARC, and its member communities, have secured more than $12.3 million in private foundation, state and federal grants to implement special projects that assist with permit compliance and advance the restoration of the watershed. The ARC's special projects have included the following:

- Two dam removals to improve fish habitat in the Lower and Upper Branches;
- *E. coli* monitoring and pollutant source investigations to eliminate sewage sources in portions of the Main and Upper subwatersheds;
- Purchasing and planting of more than 3,800 trees in 21 communities and Wayne County to mitigate the impacts of emerald ash borer and reduce stormwater runoff flows across the watershed;
- Wetland restoration to reduce peak flows on the Main Branch;
- Green infrastructure installation along the Lower, Upper and Main Branches to improve upland habitat and mitigate stormwater runoff;
- Development of a work plan to investigate the contaminated sediments in the lower 3 miles of the Main Branch;
- Restoration of an oxbow on the Main Branch at The Henry Ford;
- Design and permitting for a fish passage on the Main Branch at the Henry Ford Estate; and
- Design of habitat improvements at Nankin Lake on the Middle Branch.

Table 1. The ARC's Annual Budget for Core Activities Prior to 2014*

ARC Watershed-wide Activities	Funding Source	
	ARC Dues	Federal
Public Involvement and Education Committee • Coordination/Budgeting • Green Infrastructure Campaign • Public Education Materials • Website Maintenance • Workshops • Stewardship and Reporting • Information Requests • Communication with the media	$57,000	$60,000
Technical Committee • Coordination/Budgeting	$10,000	$10,000
Illicit Discharge Elimination • Training • Investigations	$25,000	$25,000
Ecosystem Monitoring	$56,000	$76,000
Permit and ARC Reporting	$8,000	$8,000
Pursuing Grant Funding	$20,000	0
Liaison with EPA, MDEQ and Communities	$20,000	$20,000
Bookkeeping/Legal Services/Finance Committee	$32,000	$11,000

ARC Watershed-wide Activities	Funding Source	
	ARC Dues	Federal
Administration, Full ARC, Executive and Organization Committee and SWAG Meeting Support, Communications, and Contractor Oversight	$33,000	$33,000
Total	**$261,000.00**	**$243,000.00**

*Based on the ARC's 2013 Annual Budget. Does not include special projects.

Based on the ARC's funding from the Rouge Project and from state and federal grants, every $1 in ARC dues have generated $4.56 in federal and state funding between 2006 and 2017. This does not include Rouge Project funding awarded directly to the communities or counties. When Rouge Project funding is excluded, the ARC has still generated $3.94 for every $1 in dues during the same period. However, it should be noted that the majority of these grants have funded watershed restoration projects rather than permit compliance efforts.

In 2014, the ARC reduced its operating budget to reflect the loss in Rouge Project funding. This came at a time when MDEQ allowed more collaboration to meet permit requirements. While these collaborative efforts provide cost-efficient permit compliance opportunities for municipalities, they can't be continued at the current level without filling the gap left by the Rouge Project funding.

2.2 2016 Permit Requirements and Level of Effort

Michigan's current MS4 program (herein identified as the 2016 permit) has additional requirements that are more onerous for communities to comply with when compared to the 2003 permit as shown in Table 2. The new permit requirements include developing and implementing a stormwater ordinance that limits the volume and quality of stormwater discharge from newly developed and redeveloped sites. Specifically, runoff rate and volume must not exceed pre-development rate and volume for all storms up to the 2 year – 24 hour storm. Additionally, the first 1 inch of runoff (or 90% of all storms) must be treated so stormwater discharges do not exceed suspended sediment concentrations of 80 mg/L. Additional water quality limits are required at certain industrial and commercial sites including gas stations, scrap yards, and vehicle repair shops.

The 2016 permit also requires that municipalities/counties: 1) provide a mechanism for ensuring proper operation and maintenance of public and privately-owned structural stormwater best management practices (BMPs) to ensure they are functioning properly, 2) track the location and inspection frequency of BMPs, and 3) maintain and undertake enforcement measures for neglected BMPs. Depending on the current level of maintenance, municipalities/counties may need to perform additional maintenance on their MS4 including catch basin cleanings, street sweeping, and detention pond cleaning. Water quality monitoring will also need to be performed by the Rouge communities/counties because the watershed has approved total maximum daily loads (TMDLs) for *E. coli* and Biota.

Table 2. A Comparison of the 2003 and 2016 MS4 Permit Requirements

Permit Elements	2003	2016*
General		
Locate and map stormwater outfalls	Provide map	have map on hand
Develop/implement a watershed management plan (WMP)	X	
IDEP		
Screen outfalls and discharge points for and eliminate illicit discharges to waterways	X	Can prioritize. Can eliminate discharge pt. screening
Develop/implement an IDEP ordinance	content unspecified	content specified
Public Education and Public Involvement		
Obtain public input	X	X
Educate the public on pollution prevention	9 topic areas. Must cover all of them.	11 topics. Can prioritize efforts
Construction Runoff Control		
Notify developers of Part 91/Permit-by-Rule requirements		X
Notify Part 91 agencies/MDEQ of soil erosion issues		X
Post Construction Stormwater Control		
Draft/Pass/Implement a Stormwater Ordinance to control quality and quantity of runoff for new and redevelopment ≥ 1 acre.	required criteria unspecified	required criteria specified
Require long-term maintenance of BMPs including a maintenance agreement, allow for inspections, correct neglected BMPs and track BMP responsibility.		X
Optional ordinance elements: offsite mitigation and payment in lieu programs		X
Good Housekeeping/Pollution Prevention (P2)		
Map all facilities and structural controls that discharge stormwater		provide map
Develop/implement a stormwater pollution prevention initiative (SWPPI) for municipal properties and activities.	required content unspecified	
Develop/update Stormwater Pollution Prevention Plans (SWPPPs) for High Priority Facilities (this includes DPW and fleet maintenance areas)		X
Conduct Street Sweeping and Catch-Basin Cleaning based on self-determined (and approved) schedule		X
Employee training on Good housekeeping/P2 once every 5 years		X
Contractor training on P2		X
Reporting		
Submit progress reports	annually	biannually
Determine the effectiveness of permit requirements	X	X
TMDLs		
Implement BMPs to address TMDLs		X

Permit Elements	2003	2016*
Conduct Water Quality Monitoring in TMDL areas -- minimum twice per permit cycle		X

*Numerous standard operating procedures are also required with the permit application.

Rouge communities submitted their application packages for new permits by April 1, 2016. The application packages included numerous standard operating procedures and responses to 88 questions as outlined in Appendix A. After an 18-month review and negotiation period, individual permits were to be issued to the communities. However as of December 2017, the permits are not yet issued.

The level of effort to implement the 2016 permit will vary based on the amount of development/redevelopment occurring in a community and the size (area and population) of the community. Nonetheless, the level of effort for the required activities for a typical large community was estimated as shown in Table 3. It is estimated that without the collaborative (ARC) support, it will take more than one full-time equivalent staff person plus $200,000 laborer/contractual effort per large city to perform the prescribed activities. The effort for a typical township is expected to be less given that they generally operate only a small number of storm sewers. This estimate does not include the initial application process which is expected to take each community 80 - 150 hours to develop.

Utilization of a collaborative program will reduce the cost to most communities. The ARC has been prioritizing and collaborating on Public Participation, Public Education, Illicit Discharge Elimination, Monitoring, and Report efforts for many years; and the MDEQ is formally allowing this type of collaboration in the 2016 permit. These activities, highlighted in red in Table 3, will be continued by the ARC in a collective manner making permit compliance more cost effective for member communities.

Table 3. Annual Level of Effort to Implement the 2012 MS4 Permit for a Large Community without ARC Support (collaborative efforts in red)

Application Item	Permit Element	Labor Effort (hours)	Contractor Effort
General			
	Update map of stormwater outfalls (assuming existing GIS layer)	80	
1	Tracking enforcement of ordinances	*	
Public Education and Public Involvement			
2, 3	Obtain and incorporate public input into stormwater program	10	
4 - 6	Educate the public on pollution prevention	80	
IDEP			
7 - 19	Screen outfalls and discharge points for illicit discharges to waterways (based on the screening of 50 outfalls). Includes data management	125	
7 - 19	Investigate suspicious discharges and locate sources, as needed	100	
20 - 27	Enforce IDEP ordinance and Oversight	80	
	Administrative tracking and follow-up	80	

Application Item	Permit Element	Labor Effort (hours)	Contractor Effort
Construction Runoff Control			
28 - 30	Notify Part 91 agencies/MDEQ of soil erosion issues	*	
31 - 32	Notify developers of Part 91/Permit-by-Rule requirements	*	
Post Construction Stormwater Control			
33 - 43, 53	Initially adopt standards and setup tracking and inspection program [7]	100	
44 - 52	Set-up and implement a offsite mitigation or payment in lieu program (optional)		
54 - 56	Review plans for compliance with stormwater standards [1]	85	
57 - 59	Inspect BMPs [2]	240	
59	Correct failing BMPs	variable	
	Administrative tracking and follow-up	480	
Good Housekeeping/Pollution Prevention (GH/P2)			
60 - 62	Update map of structural controls that discharge stormwater	80	
63 - 64	Initially assess municipal facilities for potential impact to stormwater [3]	64	
65 - 70	Review/update/implement Facility Pollution Prevention Plans [4]	32	
71 - 81	Oversight of street sweeping, catch basin cleaning and maintenance of other controls	80	
71 - 81	Conduct street sweeping and catch basin cleaning and maintenance of other controls [5]		$200,000
82	Provide pesticide applicator training, if applicable	10	
83	Provide and coordinate employee training on GH/P2 [6]	10	
84	Ensure contractor compliance with GH/P2 BMPs	*	
TMDLs			
85 - 88	Conduct water quality monitoring and interpret results	80	
Reporting			
	Submit progress reports	40	
	Subtotal	**1,856**	
	Program oversight	**470**	
	Total	**2,326**	**$200,000**

Assumptions:

[1] Individual community: 4 hrs x 15 major plans plus 1 hr x 25 minor plans.

[2] Individual community: 6 hrs x 15 new major sites plus 2 hrs x 25 new minor sites plus 2 hrs x 50 existing sites.

[3] 75% previously completed by SEMCOG. If not, Individual community: 2 staff x 4 hrs x 8 facilities.

[4] Individual community: 4 hrs x 8 facilities.

[5] based on the 2013 budget for a 33 square mile community

[6] No charge for training video or attendance at a workshop

[7] Assume adoption of county standards

*Effort included elsewhere

Number of outfalls (not discharge points) by community:

-Southfield has 256 outfalls per Brandy Siedlaczek.

-Livonia has 725 outfalls per Don Rohraff. Average about 170 outfall inspections per year. 2012 IDEP effort = 430 hours per Paula Appel. This includes 15 days of field work, and data processing, tracking and organizing.

-Farmington Hills has 200 outfalls per Karen Mondora.

-Westland has 250 outfalls per Kevin Buford.

Based on the effort required for a large community, the amount of effort required to implement the permit was estimated for each community using weighting factors as shown in Appendix B. These weighting factors were applied to the activities for which the ARC could assist. This exercise revealed a collective savings of $303,000 if the ARC continued assisting communities with permit compliance (See Table 4).

Lastly, it should be noted that ARC members collectively pay the state $138,000 annually to administer the MS4 permit. If the membership agreed to conduct efforts under a single watershed-wide permit, and the MDEQ agreed to such an arrangement, this funding could be redirected toward permit implementation rather than permit administration.

Table 4. Comparison of Annual Level of Effort to Implement Select Permit Items with and without ARC Assistance

			Member Effort ARC-wide without ARC support	
Application Item	**Permit Elements**	**ARC Cost**	**Labor Effort (hours)**	**Labor Cost ($)****
Public Education and Public Involvement				
2, 3	Obtain and incorporate public input into stormwater program	$60,000	158	$12,640
4 - 6	Educate the public on pollution prevention		1,264	$101,120
IDEP				
7 - 19	Screen outfalls and discharge points for illicit discharges to waterways (based on the screening of 50 outfalls). Includes data management	$100,000	1,975	$158,000
7 - 19	Investigate suspicious discharges and locate sources, as needed		1,580	$126,400
83	Provide and coordinate employee training on GH/P2	$5,000	158	$12,640
TMDLs				
85 - 88	Conduct water quality monitoring and interpret results	$100,000	1,264	$101,120
Reporting				
	Submit progress reports	$22,000	632	$50,560
	Subtotal	$287,000	7,031	$570,000
	Program oversight	$130,000	1,760	$150,000
	Total	**$417,000**	**8,791**	**$720,000**
Savings to Members:				**$303,000**

**based on $80/hour

2.3 Future Permit Requirements

The EPA proposed a revision to the MS4 stormwater rules that would have triggered additional requirements for the state to include in their MS4 program. This revision was never enacted but the EPA determined that the changes could be affected through the existing stormwater permitting process. This, in turn, would impact ARC members. The Water Environment Federation (WEF) Stormwater Committee summarized the technical aspects of the EPA's Proposed Rule. These changes are expected to be implemented over the next permit renewal cycle. The list of the most relevant new

requirements for the ARC communities is provided below while WEF's complete summary is included as Appendix C.

EPA Stormwater Rule Revision Summary

1. Expansion of MS4 areas/situations and programs which would draw more communities into the MS4 program. This could expand the number of communities eligible for ARC membership.
2. Establishment of a new development and redevelopment performance standards that will support or be further reaching than Michigan's new requirements.
3. Development of stormwater retrofit plans for some urban areas to be integrated with the community's capital improvement program.
4. Development of new regulations for transportation systems verses traditional MS4s.
5. Inclusion of combined sewer areas in the MS4 program.

It is a reasonable assumption that in the future communities will face increasing levels of regulation in an environment of constrained financial resources.

3.0 Community Stormwater Expenditures

The initial construction of stormwater infrastructure often took place as part of highway, road or subdivision construction. Maintenance is often performed as an ancillary task to other work by community departments of public works. And, certain costs for dealing with stormwater within the boundaries of Michigan communities are the responsibility of the County Drain Commissioner or the County Road Commission. For these reasons there is no consistent method of accounting for all stormwater related costs incurred by cities, villages and townships. However, it is fair to say that the total cost of stormwater management is unknown, or under estimated, in many communities.

Two Rouge Watershed communities (a city and a township) provided their budget for operating and maintaining their stormwater system for fiscal year 2013 (see Tables 4 and 5). The communities are of comparable size, but their budgets varied. The annual city budget was $1.95 million, while the township's budget was $560,000. The fact that Act 51 (State Motor Fuel Tax) funding is not passed down to townships explains much of the differences seen in these budgets. It is likely that some of the same expenses were seen by the county road commission within the township.

These tables provide an idea of the amount of money spent on stormwater collection systems that could potentially be supported by a dedicated funding source.

Table 4. An Example City Stormwater Operations Budget for FY 2013

Community Size: 33 sq. miles Population: 80,400	
Act 51 Funding Items	**All Roads**
Street Sweeping and Culvert Flushing Labor, Equipment and Contractual	$231,000*
Drain Structures Labor, Equipment, Materials and Contractual	$491,000*
Ditching Labor, Equipment and Materials	$372,000

Total Act 51 Funds	**$1,094,000**
Capital Improvements (General Fund) Items	
Culvert Replacements	$560,000
Misc. Drainage Projects	$55,000
Open Channel Maintenance	$100,000
IDEP	$30,000*
SWPPI	$50,000*
Master Planning GIS	$25,000
ARC Dues	$25,226*
MDEQ MS4 Annual Permit Fee	$6,000*
Total General Fund	**$851,226**
Total Budget for Stormwater	**$1,945,226**

*Items partially or fully associated with permit compliance.

Table 5. An Example Township Stormwater Operations Budget for FY 2013

Community Size: 36 sq. miles	Population: 84,000	
Description	**Budget**	**Includes**
Wages & Fringe Benefits	$272,127*	1 supervisor, 2 operators (sweeper, Vactor)
Miscellaneous Operating Supplies	$4,800	
Fleet Maintenance Expenses	$78,912	1 sweeper, 1 Vactor, 1 pick-up
Pond & Drain Infrastructure Maintenance	$93,500*	Drain assessments
Printing & Publishing Public Ed Materials	$1,400*	
Stormwater Permit Fees	$26,500*	ARC dues and State permit fee
Total O&M Budget	**$477,239**	
Total Capital Improvement Budget	**$85,000**	Basin inventory, pond retrofits, log jam removals
Total Budget for Stormwater	**$562,239**	

*Items partially or entirely associated with permit compliance.

Notes:

1) Stormwater Supervisor also handles solid waste, mowing and other miscellaneous services

2) No overhead is allocated to stormwater operations

3) Additional expenses for Inspectors to inspect Township-owned facilities (not included above)

4) On large projects staff are borrowed from Water or Sewer Sections to supplement crews as required

4.0 Funding Options

Funding options for municipal stormwater programs in Michigan have been disputed for many years and some have resulted in multiple lawsuits and legal challenges. Thus, the available funding options within the Rouge River Watershed will most likely include the use of the Michigan Drain Code or the creation of stormwater utilities. These options are described below.

Beyond stormwater utilities and the Drain Code a number of other options may be available to communities. Many of these are most often applied to capital costs rather than ongoing operations and maintenance – and permit compliance—costs. These include:

- Continued use of General Fund Appropriations
- Use of Highway or Road Maintenance Funds
- Special User Fees
- Bonding for Capital Improvements
- In-lieu of Construction Fees
- Capitalization Recovery Fees
- Impact Fees
- Developer Extension/Latecomer Fees

Public Works professionals typically have avoided the controversy (and potential litigation) that can be generated by seeking funding for stormwater management. However, the construction, operation and maintenance of a municipal separate storm sewer system can involve significant expense, especially when NPDES requirements, flooding concerns, water quality issues (including TMDLs) and population growth are factored in. As stormwater maintenance cost continue to rise and compete for general fund dollars with other critical municipal services, the members of the ARC are revisiting these funding options.

The scope of these funding options can range from traditional ARC-led activities such as public education and participation, ecosystem monitoring, illicit discharge investigations, and stormwater permit reporting, to the design/construction and maintenance of various stormwater projects. In order to improve the likelihood of implementing a funding mechanism, the ARC suggests that the scope be limited to stormwater management activities (with or without ARC involvement).

With either the Drain Code or stormwater utility, a significant public education and information effort needs to be undertaken. Citizens expect to receive “free” stormwater services and thus must be educated and convinced that the new efforts are needed. Municipal leaders, councils, and citizens are typically unaware of the cost of stormwater management and the fact that the cost is increasing. A well-funded stormwater program can help reduce flooding, improve drought conditions, create better fishing and recreational opportunities, and improve water quality.

To improve the likelihood of successfully implementing a stormwater fee, the following education and outreach activities are strongly suggested. It is further suggested that they begin well before introducing the concept of a new stormwater funding mechanism and be carried on throughout implementation:

- Identifying key users and groups that will likely have increased stormwater costs. Two key groups to target include (1) universities schools, churches and shopping malls that generate a significant amount of runoff; and (2) tax-exempt properties, such as universities, schools and churches, that do not contribute property taxes into the general fund, which traditionally has funded stormwater management;

- Establishing a community-based advisory committee. Include a cross-section of the community including representation from the university, business, nonprofits, churches, developers and shopping center owners;
- Transparently share information by creating a stormwater program website. The website should post appropriate progress documents and develop a frequently asked questions page;
- Preparing pamphlets and presentations. A brochure describing the need for the stormwater program, funding method, and projected costs should be prepared as well as an electronic presentation for use at public meetings; and
- Meeting with key user groups and the media. Presentations to civic groups and the media should be given. One-on-one meetings with customers projected to receive the highest bills should occur.

4.1 Michigan Drain Code

The ARC is not recommending the use of the Drain Code for community driven stormwater management. However, it is discussed below because it remains a powerful and valuable tool for funding stormwater management projects should the communities chose to utilize it.

The State of Michigan is fortunate to have in place the Drain Code of 1956. Because it was established before the various constraints on levying taxes and fees, it remains a powerful tool for generating needed funding. Because drain commissioners (or water resources commissioners as they are called in Oakland and Washtenaw Counties) are (with the exception of Wayne County) elected officials, they typically rely on broad based approval before utilizing the Drain Code as a means of assessing fees on property owners. Still, the Drain Code puts a great deal of authority in the hands of the drain commissioner.

The Drain Code provides the legal authority to create a public corporation to address stormwater management as well as wastewater collection and treatment, sanitary sewer overflows, flood control, and river and stream management. It also provides the mechanism to study, plan and address water quality and water use issues. The Drain Code also can be used to contract with private and public agencies or corporations to address, administer and fund all of the foregoing.

Thus, the Drain Code can provide the mechanism to address the present and future stormwater mandates of the Clean Water Act. Under the Drain Code, funds for stormwater management can be generated through a special assessment to each parcel within the drainage district. This option relinquishes typical municipal authority/control to the county. Handing over control of local infrastructure to a county agency is often a difficult decision for a community to make. To address this issue communities have maintained a level of involvement and control over drain board actions through the establishment of an Act 471 agreement between the community(ies) and the drain board. The agreement can set strict limitations on the actions of the drainage district and may require input from the communities before specific actions are undertaken. An Act 471 agreement was established between the local communities and the Drain Board associated with the construction/operation of the George W Kuhn Basin in Oakland County. A copy of this agreement is provided in Appendix D as a successful example Act 471 Agreement.

There are currently numerous county drains established under the Drain Code in Oakland and Wayne counties. These drainage districts could potentially be consolidated if the Drain Code is to be used for stormwater compliance activities.

County drains could be established to deal with the issues outlined above on a community by community basis, on a county by county basis or on a watershed basis.

The procedures for establishing a "drain" under the Michigan Drain Codes are summarized in Appendix E.

4.2 Stormwater Utilities

After reviewing the various methods of capturing funding for stormwater management, the establishment of a stormwater utility with a commensurate fee was determined to be the most appropriate for ARC members. Stormwater utility revenue can provide a dedicated funding source to provide for stormwater management and leave the other municipal funding sources available for their appropriate services. However, to implement a stormwater fee in Michigan, the courts have determined that: *1) a user fee must serve a regulatory purpose rather than a revenue-raising purpose; 2) a user fee must be proportionate to the necessary costs of the service; and 3) a user fee must be voluntary—property owners must be able to refuse or limit their use of the commodity or service.*

Throughout the country numerous stormwater utilities have been created. Their implementation has proven controversial. Many residents were unhappy about having to "pay" for a service that previously had been provided at no charge. Between 1984 and 1997, ten Michigan communities instituted stormwater utilities. They are Ann Arbor, Harper Woods, Adrian, St Clair Shores, Berkley, Marquette, Lansing (since rescinded), Chelsea, New Baltimore and Brighton (which has been on hold since 2004). Litigation has caused certain complications to stormwater utility implementation in Michigan. The City of Lansing instituted a stormwater utility in 1995. A property owner (Bolt) challenged Lansing's newly imposed stormwater utility fee, arguing that the fee was a tax levied without voter approval in violation of the Headlee Amendment to the Michigan Constitution (Part 9, Sections 25 and 31). Lansing had imposed the stormwater fee on virtually all properties in the city to pay for the city's stormwater and sanitary sewer separation project costs as permitted under state statute. At issue was whether municipalities could fund certain costs as a fee imposed as a regulation or as a tax requiring voter approval under the Headlee Amendment.

The Michigan Supreme Court ruled that the stormwater service charge imposed by Lansing was unconstitutional and void on the basis that it was a tax for which voter approval was required and not a valid use fee. It is noteworthy, however, that the court was split. Ten judges heard precisely the same case.

However, the Bolt Opinion did not say that stormwater utilities are "illegal" in that it agreed with the following:

- "This is not to say that a city can never implement a stormwater or sewer charge."

- "Where the charge for either storm or sanitary sewers reflects the actual cost of use…sewerage may be properly viewed as a utility service for which usage-based charges are permissible…"

The Court established three criteria for distinguishing between a fee and a tax: 1) a user fee must serve a regulatory purpose rather than a revenue-raising purpose; 2) a user fee must be proportionate to the necessary costs of the service; and 3) a user fee must be voluntary—property owners must be able to refuse or limit their use of the commodity or service.

Lansing rescinded its stormwater utility based on the decision. No new Michigan stormwater utilities were created after 1997 until April 2011 when the City of Jackson implemented a stormwater utility to pay for services including street sweeping, catch basin cleaning, leaf pickup, and leaf mulching. In December 2011 a lawsuit was filed – by Jackson County and private business owners -- against the City over the utility. On August 2, 2013, the Michigan Court of Appeals ruled that City's stormwater utility ordinance violated the Headlee Amendment. Some of the rationale for their decision was as follows: 1) the fee would be used more for general revenue raising than for regulatory requirements, 2) the benefits to property owners could not be differentiated from the benefits to the general public, 3) an adequate level of precision was not used in determining the fee for residential parcel under 2 acres, and 4) the fee was considered compulsory because no property owner could opt out of paying 100% of it. The Court of Appeals ruling is attached as Appendix F.

The MDEQ defines a stormwater utility as a "source of funding for the construction and maintenance of stormwater management facilities. User fees are typically charged based on the amount of runoff that may be anticipated from a property." Like any public utility, it is an organization that maintains the infrastructure for a public service. Water supply and wastewater infrastructure and operations have historically been operated as utilities. However, municipal stormwater management has often been paid for through a community's general, water and sewer or Act 51 funds as previously described. It should be noted that general fund revenues are based on property values not on the quantity of runoff a parcel generates. And certain large contributors of runoff – such as hospitals, schools and state/county roadways – are exempt from property tax.

The procedures for implementing a Stormwater Utility are summarized in Appendix G.

4.3 Drain Code and Stormwater Utility Comparison

There are advantages and disadvantages to establishing either funding mechanism. The importance of these pros and cons will vary from community to community. Some communities may find it easier to use the well-established Drain Code process, while other communities may prefer a stormwater utility to retain total control. A side by side comparison of the Drain Code and stormwater utility funding options is provided in Table 6.

Table 6. Comparison of Drain Code vs. Stormwater Utility

Parameter	County Drain	Stormwater Utility
Ordinance	Not required	Required
Controlled by	County Drain Commissioner, but could be advised by municipalities through establishment of an Act 471 Agreement	Municipality or Authority depending on how it is set up
Funded through	Apportionments to the communities, road commission, etc. or assessments to individual property owners.	Stormwater fees to property owners
Fee Structure	Based on taxable drainage areas, but some properties are exempt	Needs to be established. Based on impervious area. Will include all properties
Billing	Via Drain/Water Resources Office directly to the property owners or to the community. If to community, then the community would tap the general fund, water and sewer fund or assess property owners.	Likely add to water and sewer bill
Service Area	Variable: watershed-wide, county-wide or smaller	Entire municipality, but could be a larger geographic area
Scope of fundable activities	Could include any agreed upon activities, but all entities would need to agree on the scope. Therefore, only collaborative permit efforts would likely be funded rather than individual community projects.	Should be regulatory-required stormwater activities, but must allow users to limit their use of the service per the Bolt Decision.
Data collection needs	Minimal - Moderate	Considerable to justify fee structure and potential credits
Administration effort	Minimal - Moderate	High
Outreach effort	High amount of outreach to obtain public and political buy-in.	
Subject to litigation	Less likely	Possibly

5.0 Conclusion

With the increasing stormwater regulations and the anticipated loss of Rouge Project funding, it is clear that the past mechanisms for funding permit compliance (general fund, water and sewer fund and Act 51 dollars) are no longer sufficient. No matter if a community chooses to establish a designated county drain, a stormwater utility, or some other sustainable funding source, it will take some effort to convince elected officials that they need to support a service whose expenses have not been historically separately defined from other municipal services. The general public must also be convinced that stormwater management is as necessary as maintaining drinking water systems and sanitary sewer systems and as such must be financed.

The ARC continues to provide its members the most efficient way to comply with several components of the permit including Public Education and Participation, Illicit Discharge Detection, Monitoring and Reporting. However, the growing regulatory requirements coupled with a reduction in federal funding demands that communities identify a continuing funding source. While the ARC seeks out grant funding to fill this gap, grants rarely provide sustainable funding for an organization. The ARC recommends that

members consider a dedicated revenue source to provide permit compliance services in a cost-effective manner. This revenue source should also be used to fund the long-term operation and maintenance of stormwater collection systems.

Appendix A. Outline of the 2016 MS4 Permit Application

Appendix A. Outline of the 2016 MS4 Permit Application

Enforcement Response Procedure (Item 1)

- Provide an ERP that includes responses to violations of ordinances/regulatory mechanisms included in the SWMP. Include a method for tracking instances of non-compliance.

PPP Section (Items 2 & 3)

Provide a measurable goal and assessment method for each BMP and a schedule for implementation, interim milestones and frequency for each BMP, as appropriate.

- Provide a procedure for
    - Making the SWMP available for public inspection and comment, and
    - Encouraging public involvement and participation in implementation and review of the SWMP.

PEP Section (Items 4 – 6)

Provide a measurable goal and assessment method for each BMP and a schedule for implementation, interim milestones and frequency for each BMP, as appropriate. These items will be included in the Collaborative PEP.

- Provide the procedure for
    - Assessing high priority PEP minimum measures, and
    - Evaluating the effectiveness of the overall PEP.

- Identify the target audience, key message, delivery mechanism, year/frequency of BMP, and responsible party for each applicable minimum measure (provide in a table, refer to approved PEP or explain why not applicable):
    A. Public responsibility and stewardship (Promote).
    B. Connection between storm sewers and waterbodies (Inform and Educate).
    C. Illicit discharges and promote reporting (Educate).
    D. Preferred cleaning materials and procedures for car, pavement and power washing (Promote).
    E. Proper application and disposal of pesticides, herbicides and fertilizers (Inform and Educate).
    F. Disposal for grass clippings, leaf litter and animal wastes (Promote).
    G. Availability, location, and requirement of facilities for the collection and disposal of household hazardous wastes, travel trailer wastes, chemicals, yard wastes and motor vehicle fluids (Identify and Promote).
    H. Septic system care, maintenance and how to recognize system failures (Inform and Educate).
    I. Benefits and use of GI and LID techniques (Educate and Promote)*.
    J. Methods for managing riparian lands (Promote).

K. Commercial, industrial and institutions entities likely to contribute stormwater pollutants (Identify and Educate)*.

*New items

IDEP Section (Items 7 – 26)

Provide a measurable goal and assessment method for each BMP and a schedule for implementation, interim milestones and frequency for each BMP, as appropriate.

IDEP Application Requirement	Application Item	Comments
Provide the location where a storm map can be found	7	Submission not required
Field Efforts		
Provide procedures for i. Selecting priority areas to detect IDEP issues or perform field efforts across entire MS4. [3] ii. Performing field observations at outfalls and discharge points [1] iii. Performing field screening if flow is present and an illicit discharge is suspected iv. Performing source investigations v. Responding to pollution complaints/spills vi. Responding to suspected illicit discharge (ID) outside of priority areas vii. Reporting the release of polluting materials to MDEQ viii. Follow-up/Enforcement for identified ID sources	 8 10 11 12 13 14 15 17	An alternative approach can be provided for items 8-14 (application item 16)
Identify the location of the prioritized areas and those covered in the permit cycle [3]	9	
Training		
Provide procedure for training staff to identify, report and respond to a suspected ID [3]	18	
Evaluation		
Provide procedure to determining the effectiveness of the IDEP program [3]	19	
Ordinance [2]		
Provide an ordinance that i. Prohibits non-stormwater discharges. ii. Allows flows from firefighting activities unless they are significant pollution source to waters* iii. Allow flows from various activities unless they are significant pollution source to a MS4* iv. Regulates the contribution of pollutants. v. Prohibits IDs and direct dumping to the MS4. vi. Establishes authority to inspect, investigate, and monitor suspected IDs to the MS4.	 20 21 22 23 24 25 26	*Previously, these activities were not covered by the permit.

IDEP Application Requirement	Application Item	Comments
vii. Requires the elimination of ID and provide the MS4 the authority for enforcement.		

[1] This procedure can include an agreement with neighboring MS4s describing how they will communicate and follow-up if a discharge is traced back to an upstream MS4. This would eliminate the discharge point screening requirement.
[2] These items are due to the MDEQ with the application or by October 1, 2013 for FY 2014 applicants
[3] Should be covered in the Collaborative IDEP.

Construction Runoff Control Section (Items 27-31)

Provide a measurable goal and assessment method for each BMP and a schedule for implementation, interim milestones and frequency for each BMP, as appropriate.

Construction Runoff Application Requirement	Application Item
Identify if permittee is a Part 91 agency	27
Provide a procedure for	
i. Notifying the Part 91 Agency when soil or sediment is discharged to the MS4 – observed by staff or complaint from the public	28
ii. Notifying the MDEQ when soil, sediment, or pollutants are discharged to the MS4	29
iii. Ensuring that Part 91 projects obtain a Part 91 permit	30
iv. Advising landowners of Michigan's Permit by Rule	31

Post Construction Stormwater Runoff Program (Items 32 – 58)

Provide a measurable goal and assessment method for each BMP and a schedule for implementation, interim milestones and frequency for each BMP, as appropriate. If the requested items are not available, then indicate the date that they will be available (Note: FY14 applicants must provide by Oct 1, 2013 – Perhaps the Rouge/Clinton will get 6 months, as well?).

Post Construction Application Requirement	Application Item
Stormwater Ordinance	
Is a stormwater ordinance in place for new and redevelopment? Does the ordinance:	
i. Address preventing or minimizing water quality impacts	32
ii. Apply to projects that disturb 1 or more acres.	33
Does the ordinance: <u>Water Quality Standards</u>	
i. Cover treatment of runoff from the first 1 inch or from 90% of storms (list source of rainfall data) or some alternate?	36, 37

Post Construction Application Requirement	Application Item
ii. Require BMPs be designed on a site-specific basis to reduce TSS by 80% or to under 80 mg/L or alternate)?	38
Channel Protection Standards	
iii. Require that runoff rate and volume do not exceed pre-development rate and volume for all storms up to the 2-yr 24-hr storm or alternate?	39
iv. Exclude certain large water bodies (as listed in the application)?	40
Site Specific Requirements	
v. Provide a procedure for reviewing infiltration BMPs in areas with soil or groundwater contamination?	41 42
vi. Require BMPs to address pollutants in potential hot spots (ex: gas stations, commercial vehicle maintenance/repair shops, auto recyclers, recycling centers and scrap yards)?	
Site Plan Review	53
vii. Require the submittal of a site plan for review and approval of post-construction stormwater BMPs?	54, 55
viii. Provide the procedure for site plan review and approval. Include the process for determining how meets the performance standards and ensures long-term O&M of the BMPs.	
Long-Term O&M	56
ix. Require long-term maintenance of the BMPs?	
x. Require a maintenance agreement between the Applicant and the owner/operators of the BMPs?	57 58
xi. Allow the Applicant inspect BMPs?	58
xii. Perform the necessary maintenance/corrective actions on neglected BMPs?	58
xiii. Track the transfer of O&M responsibility for BMPs?	59
xiv. Provide a procedure for tracking compliance	
Describe any exceptions to the performance standards, besides offsite mitigation and payment in lieu programs.	52
Requirements for Federal facilities	34, 35

Offsite Mitigation and Payment in lieu Programs (OPTIONAL PROGRAMS)	Application Item	Comments
Does the ordinance:		
i. Allow for offsite mitigation for redevelopment projects that can't meet the performance standards after maximizing detention?	43 44	If NO for both questions, skip this entire section (46-52).

ii. Allow for payment in lieu for projects that can't meet the performance standards after maximizing detention?		
Does the ordinance: i. Establish criteria for determining the conditions where offsite mitigation or payment in lieu can be used? It can't be based solely on cost to implement. ii. Establish a minimum amount of stormwater to be managed onsite as a first-tier for offsite mitigation or payment in lieu? iii. Require an offset ratio of 1:1.5 for the amount of stormwater, above the first-tier value, required to be mitigated at another site? iv. Require an offset ratio of 1:2 for cases where the first-tier volume cannot be managed onsite? v. Require a schedule for completing offsite mitigation and in lieu of projects? MDEQ recommends 24 months. vi. Require that offsets and in lieu of projects be preserved and maintained in perpetuity?	45 46 47 48 49 50	
Describe the system for tracking offsite mitigation and in lieu of projects.	51	

P2 and Good Housekeeping (Items 60 – 84)

Provide a measurable goal and assessment method for each BMP and a schedule for implementation, interim milestones and frequency for each BMP, as appropriate.

P2 and Good Housekeeping Application Requirement	Application Item	Comments
Facility and Stormwater Control Inventory		
Identify all Applicant-owned/operated facilities and structural controls [1] that discharge to surface waters of the state.	60	
Provide the location of a map depicting the facilities and controls.	61	Locations may be included on the storm sewer map. (Item 7)
Provide the procedure for updating the map. MDEQ suggests 30 days after adding/removal a facility/stormwater control.	62	
Facility-specific Stormwater Management		
Provide the procedure for assessing each facility for its potential (low, medium or high) to discharge pollutants to surface waters of the state. Fleet maintenance and storage yards are considered High Priority. Include a process for updating the assessment.	63, 64	
Provide a list of prioritized facilities.	64	

P2 and Good Housekeeping Application Requirement	Application Item	Comments
For High-Priority facilities, have on-hand a SOP for the implementation and maintenance of structural and non-structural controls.	65	The SOP may be requested by DEQ during the application process
For each SOP, provide: i. A list of significant materials stored onsite that could impact stormwater, a description of handling and storage requirements, and the potential to discharge the material. ii. The good housekeeping practices implemented at the facility. iii. A description and schedule for conducting routine maintenance and inspections of the facility and stormwater controls to ensure they are clean and orderly so that stormwater is not impacted. DEQ recommends biweekly. iv. A description and schedule for a comprehensive site inspection of structural and non-structural stormwater controls at least every 6 months.	66 67 68 69 70	
Structural Stormwater Control O&M Activities		
Provide the procedure for i. Prioritizing each catch basin for routine inspection, maintenance, and cleaning to prevent/reduce polluted runoff. Assign a priority level to each catch basin and describe locations. ii. Inspecting, cleaning and maintaining catch basins. iii. Dewatering and disposal of catch basin debris. iv. Inspecting and maintaining other structural controls. v. Requiring new applicant-owned/operated facilities or structural controls for water quantity be designed and implemented in accordance with the stormwater performance standards and long-term O&M requirements.	71, 72 73 74 75 76	NA, if you don't own catch basins (71-74). NA, if you don't own other structural controls (75).
Municipal Operation and Maintenance Activities		
Provide the procedure for i. Assessing the applicants O&M activities for the potential to discharge pollutants to surface waters of the state. [2] ii. Prioritizing applicant-owned/operated streets, parking lots and other impervious infrastructure for sweeping based on the potential to discharge pollutants to surface waters of the state. Assign a priority level and cleaning frequency/timing for each and describe the locations.	77 78, 79	NA, if you don't perform these O&M activities (77). NA, if you don't own impervious surfaces (78 - 81).

P2 and Good Housekeeping Application Requirement	Application Item	Comments
iii. Identifying sweeping methods based on the equipment used to sweep. iv. Dewatering and disposal of street sweeping debris.	80 81	
Managing Vegetative Properties		
Provide the procedure for i. Requiring that the applicant's pesticide applicator be certified by the State in the appropriate category.	82	NA, if you use ready to use products from the original container.
Contractor Requirements and Oversight		
Provide the procedure for i. Requiring contractors to comply with P2 and good housekeeping BMPs	83	
Employee Training		
Train employees on P2 and good housekeeping BMPs at least once during permit cycle and within the 1st year of hire	84	

[1] Structural controls include: catch basins, detention basins, oil/water separators, pump stations, swales, BMPs, etc.

[2] At minimum, the following O&M activities are to be assessed: road, parking lot, sidewalk, bridge, right-of-way, and unpaved road maintenance, colder weather operations (plowing, sanding, application of deicing agents, and snow pile disposal), and vehicle washing and maintenance.

TMDL Section (Items 85-88)

Provide a measurable goal and assessment method for each BMP and a schedule for implementation, interim milestones and frequency for each BMP, as appropriate.

- List EPA-approved TMDLs.
- Provide a procedure for
    - Identifying and prioritizing BMPs that are being or will be implemented to address the TMDL.
- Provide a list of prioritized BMPs that are being or will be implemented to address the TMDL.
- Provide a monitoring plan for assessing the effectiveness of the BMPs. Monitoring may include outfall or in-stream monitoring or modeling and shall be conducted at least twice in the permit cycle or at a frequency sufficient to determine BMP effectiveness.

Appendix B. Weighing Factors used to Estimate the Level of Effort to Implement the Permit ARC-wide

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Community/County	Member Dues (% of Total)**	County Watershed Area (acres)	Weighting Factor***	Community Level of Effort (without ARC support)	
				Community Staff Hours	Street Sweeping/ Catch Basin Contractor
Canton Twp.	9.2%		1	2,400	$200,000
Dearborn	8.2%		1	2,400	$200,000
Dearborn Heights*	3.0%		0.5	1,200	$100,000
Garden City	2.3%		0.25	600	$50,000
Livonia	9.9%		1	2,400	$200,000
Melvindale*	0.9%		0.25	600	$50,000
Northville	0.6%		0.25	600	$50,000
Northville Twp.*	3.2%		0.5	1,200	$100,000
Plymouth	0.8%		0.25	600	$50,000
Plymouth Twp.	3.5%		0.5	1,200	$100,000
Redford Twp.	4.1%		0.5	1,200	$100,000
Romulus*	0.7%		0.25	600	$50,000
Van Buren Twp.*	2.2%		0.25	600	$50,000
Wayne*	1.8%		0.25	600	$50,000
Westland*	6.9%		1	2,400	$200,000
Wayne County		176,099	1.5	3,600	$300,000
Auburn Hills*	0.1%		0.1	240	$20,000
Beverly Hills*	1.0%		0.25	600	$50,000
Bingham Farms	0.2%		0.1	240	$20,000
Birmingham*	1.0%		0.25	600	$50,000
Bloomfield Hills	0.9%		0.25	600	$50,000
Bloomfield Twp.*	5.4%		0.5	1,200	$100,000
Commerce Twp.*	0.2%		0.1	240	$20,000
Farmington	0.9%		0.25	600	$50,000
Farmington Hills	8.6%		1	2,400	$200,000
Franklin	0.5%		0.1	240	$20,000
Lathrup Village	0.4%		0.1	240	$20,000
Novi*	5.3%		0.5	1,200	$100,000
Pontiac*	0.2%		0.1	240	$20,000
Rochester Hills*	0.6%		0.25	600	$50,000
Southfield*	6.4%		1	2,400	$200,000
Troy*	1.5%		0.25	600	$50,000
Walled Lake*	0.3%		0.1	240	$20,000
Wixom*	0.2%		0.1	240	$20,000
Oakland County		100,052	1	2,400	$200,000
Washtenaw County		22,275	0.25	600	$50,000
Total Hours				**37,920**	
Total Effort (at $80/hr staff time)				**$3,033,600**	**$3,160,000**

**Based on current ARC dues allocation

***Weighting Factor Rationale:

Weighting Factor	Portion of Member Dues to Total
1	6-10%
0.5	3-5%
0.25	1-2%
0.1	<1%

Weighting Factor	County
1.5	Wayne Co.
1	Oakland Co.
0.25	Washtenaw Co.

Appendix C. EPA's Proposed Stormwater Rule Changes (as summarized by the Water Environment Federation)

Appendix C. EPA's Proposed Stormwater Rule Changes (as summarized by the Water Environment Federation)

The Water Environment Federation (WEF) Stormwater Committee has summarized the likely technical aspects of the EPA's Proposed Rule. EPA has identified seven areas of the stormwater program to be updated. These areas are discussed below along with a brief overview on each topic.

1. Expansion of MS4 areas/situations and programs: Several options have been discussed, including expansions of area using standard watershed boundaries or expansions to include entire (instead of portions of) jurisdictions. Due to continued growth in the ex-urban areas (i.e., areas beyond suburban areas), there is an option to target "urban cluster" areas outside of regulated boundaries, which will depend upon population density and site. The intent of targeting these urban cluster areas is to capture those significant development activities that have occurred beyond the regulatory reach of past programmatic boundaries that, however, have significant impacts on water quality of receiving waters.

There has been discussions about expanding the requirements in MS4 programs, with a special focus on monitoring requirements and long-term goals to reduce impacts of development within, and downstream of, a regulated area.

2. Establishment of a new development performance standard: Past and current federal stormwater programs have relied on technology-based standards; however, the new program will likely have a requirement to capture and retain a volume based upon percentile exceedence (i.e., the 90% percentile storm). In many parts of the country, this translates to a change in stormwater management paradigm from capture, detain and release to capture and retain through infiltration or rainwater harvesting. Also, this new standard will establish a treatment volume that exceeds current standards for a number of states.

It should be noted that this new standard could be applicable to all development sites across the country, whether the site is located inside or outside of an MS4 area, that cross a certain size threshold (1-5 acres, most likely). There are outstanding questions for these situations, such as, who will overview the regulatory efforts for these areas outside of MS4 boundaries? One option suggested by EPA is that these sites might be tied to the Construction General Permit, which is similar in structure, as it applies to all sites above a certain size threshold. For these situations, states generally administer these programs, so it might be reasonable to transfer these sites to a similar post-construction program after the Notice of Termination is granted for each site, including the project/permit number used for tracking purposes.

3. Establishment of a redevelopment performance standard: The proposed rule will also include a new national standard for redevelopment activities. It is expected that this standard will be similar to the new development standard in framework, but less stringent, to provide more flexibility for urban infill, redevelopment and revitalization. For example, if the new development standard is on-site retention of the 90th-percentile storm, it is expected that the

redevelopment standard would be to capture the 85th-percentile storm. To further incent redevelopment, EPA will propose that credits on stormwater will be given to redevelopment projects that incorporate smart growth, LEED, or other development frameworks that place a strong emphasis on high-density, walkable, livable communities that are tied to public transportation systems.

4. Retrofit requirements for some areas: Many urban areas developed stormwater programs several decades ago under a different stormwater treatment paradigm. To address this, EPA will likely require some urban areas to develop retrofit plans that describe their current stormwater management systems and program and detail how they plan to upgrade this dated infrastructure. A variety of options have been proposed by EPA for these plans, including the establishment of long-term goals underpinned by specifics as laid out in their NPDES permit in 5-year cycles. This mix of long- and short-term frameworks is aimed to provide a clear overall direction for stormwater programs, yet include adaptive management aspects of the program to allow flexibility on how the overall goals are reached, with the understanding that technologies, practices and approaches will change over time.

It should be noted that EPA has been clear that this provision is likely to not be highly prescriptive (percentage removal of impervious cover, for instance), and has also pointed out that approximately one-third of Phase I communities already have a retrofit program of some kind. It is envisioned that retrofits would be integrated into other capital improvement programs that municipalities are already engaged in, such as roadway improvements or public park enhancements. Also, EPA has noted that this requirement would be for large communities that discharge to impaired waters – but it should also be noted that close to 90 percent of large municipalities discharge to impaired waters, most of which impaired to due urban stormwater impacts. This is important to point out, because MS4 permits require that the permittee include TMDL-specific actions, so this urban retrofit requirement may be redundant, and therefore, may not be included in the proposed rulemaking.

5. Regulations guiding transportation systems: Currently, state departments of transportation and municipalities that control roadways hold NPDES permits that regulate stormwater flows off of transportation systems in the same manner as all other types of project sites. Roadways may cross multiple jurisdictions as well as differing watersheds with changing characteristics. Also, the impacts from linear systems on the public differ from traditional development projects, as these projects often impact a variety of stakeholders in multiples municipalities and areas. It is expected that EPA will recognize the unique nature of transportation systems in the stormwater program by establishing “TS4” regulatory categories (Transportation Separate Storm Sewer Systems) that will likely have the same, or similar, performance standards, but may have different minimum control standards for public involvement among others.

6. Special provisions for critical water bodies: Chesapeake Bay, located in the Mid-Atlantic region of the East Coast, has become significantly degraded due to stormwater flows. This Bay is the largest estuary in the U.S. and has the largest land-to-water ratio (14:1) of any coastal water body in the world, which makes it highly susceptible to pollutants that are tied to the

landscape, such as stormwater runoff. It is likely that EPA will include provisions that increased standards or regulatory requirements will be included in the stormwater rulemaking for the Chesapeake Bay watershed. It is unlikely that other sensitive water bodies will be included in the rulemaking.

7. Inclusion of combined sewer systems: Currently, the stormwater program addresses separate sewer systems; however, in many communities where combined sewer systems comprise a portion of their overall sewer network, the entire jurisdiction, regardless of combined or separate, is included in the stormwater program. The belief is that this has been done out of a need for uniformity and simplicity in enforcing codes and standards related to stormwater. With this in mind, EPA may likely request feedback on the inclusion of combined systems into stormwater programs.

8. Other issues: EPA is still working to finalize several other aspects of the rule, including the implementation timeframe of the rule, equivalency of existing programs, and how other programs, such as TMDLs, will be tied into the new requirement. Also, there has been consideration of removing the Phase I/Phase II titles associate with the stormwater program in order to provide more flexibility on how programs for large communities (>100,000) are structured compared to small to mid-sized communities (<100,000).

Appendix D. Act 471 Agreement for the GWK Basin

 EXHIBIT A

CHAPTER 20
SECTION 471 AGREEMENT

This Agreement dated the 5th day of May, 1999 by and between the the Drainage Board for the George W. Kuhn Drain ("Drainage Board"), the Village of Beverly Hills, the City of Birmingham, the City of Berkley, the City of Clawson, the City of Ferndale, the City of Hazel Park, the City of Huntington Woods, the City of Madison Heights, the City of Oak Park, the City of Pleasant Ridge, the City of Royal Oak, the City of Southfield, the City of Troy and the Charter Township of Royal Oak (the "Public Corporations").

WHEREAS, the Public Corporations and the County of Oakland are permittees under a current NPDES Permit ("Permit") concerning the Twelve Towns Retention Treatment Facility ("RTF"); and

WHEREAS, the present circumstances present a unique opportunity for Drainage Board and the Public Corporations to work cooperatively to achieve compliance with the requirements of the current NPDES Permit No. MI0026115, as is more detailed in the Petition ("Project"); and

WHEREAS, this Agreement is entered into pursuant to the authority extended in MCL 280.471 of Chapter 20 of the Drain Code ("Section 471 Agreement"); and

WHEREAS, the Drainage Board and Public Corporations acknowledge that the underlying purpose of this Section 471 Agreement is to enhance communication by and among the Drainage Board, the Oakland County Drain Commissioner and the Public Corporations; and to cooperatively work toward discharging the financial responsibility by maintaining necessary and reasonable costs during the construction of the project; and to carry out the fiduciary responsibility to the taxpayers in this County that construction costs will be kept at necessary and reasonable levels; and

WHEREAS, the Drainage Board and Public Corporations recognize that the success of the commitments set forth in this Section 471 Agreement are dependent upon a complete, timely and open disclosure of information by and among the Drainage Board, the Oakland County Drain Commissioner, and the Public Corporations; and

WHEREAS, the goals that are enunciated herein can best be achieved by a cooperative working relationship between the Drainage Board, the Oakland County Drain Commissioner and the Public Corporations during the entire project with an appreciation of the views and goals of the Public Corporations in keeping all costs necessary and reasonable; and

WHEREAS, the parties recognize that by working together they can implement a cost effective approach and a more efficient means of achieving compliance with the existing NPDES Permit.

NOW, THEREFORE, THE PARTIES MUTUALLY AGREE AS FOLLOWS:

1. There shall be an Advisory Committee ("Committee") consisting of one member appointed by each Public Corporation. The Committee shall be initially co-chaired by James E. Porter, Oakland County Chief Deputy Drain Commissioner (Drain Commissioner co-chair) and Jon Austin, Madison Heights City Manager (Public Corporations co-chair). Successor co-chairs shall be appointed by the Drain Commissioner and the Public Corporations, respectively.

2. The meetings of the Committee shall precede each meeting of the Drainage Board by at least one week so that any issues that arise can be presented to the Drainage Board in sufficient time to apprise its members of the facts and circumstances regarding those matters. Meetings may be called by either co-chair, pursuant to the Open Meetings Act, MCL 15.261 et. seq.

3. Recommendations shall be made by the Public Corporations co-chair or his designee to the Drainage Board. Recommendations shall be made by consensus, which shall mean a vote on any issue by the holders of at least seventy two percent (72 %) of the weighted vote, as set forth in the attached Exhibit 1, which may be modified based upon the final order of apportionment. In the event that consensus cannot be reached on any issue and/or if the Oakland County Drain Commissioner disagrees with the recommendation from the Committee, the issue shall be presented for resolution to the Drainage Board. Recommendations from the Committee shall not be a prerequisite to resolving an emergency situation, as determined by the Drainage Board, in which event the Public Corporations Co-Chair, or his designee, shall be notified of the emergency situation and time of the related Drainage Board meeting. The Committee, or any member, may request that an item not set forth on the proposed agenda for the next meeting of the Drainage Board, shall be added to that agenda and any member of the Committee may appear at the Drainage Board meeting to express his or her views on the issue raised.

4. The Committee, after receipt of timely and complete information from the Oakland County Drain Commissioner, may review and make recommendations on the aspects of the Project, consisting of the following:

A. The development of bid documents for any aspect of the Project.

B. The breakdown of the estimated and actual cost of the Project, including the Chapter 20 Drain Construction Work in Progress Report.

C. The procurement process for all aspects of the Project including but not limited to: engineers, financial consultants, legal counsel, construction contractors and other professional services.

D. The financing for the Project.

E. Any change orders and assessment of responsibility to third parties for change orders for the Project.

F. The determination of the nature and extent of insurance coverage for the Project.

5. Project contracts for construction work shall be competitively bid and awarded to the lowest, responsible, responsive bidder. Project contracts for professional services shall be awarded based on a review of qualifications and price.

6. The Drainage Board shall maintain appropriate insurance coverage for the Project, after consideration of the recommendations of the Committee, in accordance with the provisions of 4(F). The insurance premiums for policies secured by the Drain Board for the Project shall become a Project cost.

7. In the event the amount of any judgment, arbitration award or settlement, including litigation costs, are payable by the Drain Board which exceed any insurance proceeds paid, such amount shall be a Project cost.

DRAINAGE BOARD for the

George W. Kuhn Drain

By: George W. Kuhn

Its: Chairman

By: Sue Ann Douglas

Its: Member

THE VILLAGE OF BEVERLY HILLS

By: [signature]

Its: Council President

By: Ellen E. Marshall

Its: Village Clerk

THE CITY OF BIRMINGHAM

By: [signature]

Its: Mayor

By: Patricia Porterza

Its: City Clerk

THE CITY OF BERKLEY

By: John Mooney

Its: Mayor

By: Leona M. Garrett

Its: City Clerk

THE CITY OF CLAWSON

By: Barbara L. [signature]

Its: Mayor

By: Carol Kamisic

Its: CITY CLERK

THE CITY OF FERNDALE

By: Charles G. Goedert

Its: Mayor

By: LeeAnn O'Connor

Its: City Clerk

THE CITY OF HAZEL PARK

By: Ben Colley

Its: Mayor

By: Mary Ellen Graves

Its: City Clerk

THE CITY OF HUNTINGTON WOODS

By: Ronald F. Gillham

Its: Mayor

By: Kathleen A. Keene

Its: City Clerk

THE CITY OF MADISON HEIGHTS

By: Gary R. McGillivray

Its: MAYOR

By: Geraldine A. Flack

Its: City Clerk

THE CITY OF ROYAL OAK

By: Dennis Cowan

Its: MAYOR

By: Mary C Haverty

Its: CITY CLERK

THE CITY OF OAK PARK

By: [signature]

Its: Mayor

By: Sandra R Gadd

Its: City Clerk

THE CITY OF SOUTHFIELD

By: Brenda L Lawrence

Its: MAYOR PRO TEM

By: [signature]

Its: CITY CLERK

THE CITY OF PLEASANT RIDGE

By: [signature]

Its: Mayor

Attest:

By: Sherry D. Ball

Its: City Clerk

Approved As to Substance

By: Sherry D. Ball

Its: City Manager

Approved as to Form:

By: [signature]

Its: City Attorney

THE CITY OF TROY

By: Jeanne M. Stine

Its: MAYOR

By: Tamara A. Renshaw

Its: City Clerk.

CHARTER TOWNSHIP OF ROYAL OAK

By: [signature]

Its: SUPERVISOR

By: Gwendolyn M. Turner

Its: Clerk

EXHIBIT 1- WEIGHTED VOTE

Municipality	1961 App.	1970 App.	1991 SOCSDS	vote wt.
City of Berkley	6.35%	7.13%	6.05%	7 votes
Village of Beverly Hills	0.75%	0.68%	0.56%	1 vote
City of Birmingham	4.13%	4.42%	4.36%	5 votes
City of Clawson	5.08%	6.10%	5.69%	6 votes
City of Ferndale	8.69%	10.55%	10.05%	11 votes
City of Hazel Park	2.54%	2.49%	2.31%	3 votes
City of Huntington Woods	2.79%	3.04%	2.68%	3 votes
City of Madison Heights	5.33%	7.06%	10.29%	11 votes
City of Oak Park	10.98%	13.32%	12.20%	13 votes
City of Pleasant Ridge	0.80%	1.35%	1.37%	2 votes
City of Royal Oak	28.44%	31.82%	28.70%	29 votes
Charter Twp of Royal Oak	0.81%	1.83%	2.15%	3 votes
City of Southfield	8.29%	7.74%	7.28%	8 votes
City of Troy	2.70%	2.47%	2.00%	2 votes

Appendix E. Procedure for Implementing the Drain Code

Appendix E. Procedure for Implementing the Drain Code

Outlined below are the steps needed for communities to request the drain commissioner to establish a Chapter 20 Drain. Chapter 21 Drains, which cross county lines, have a slightly different process.

Pre-Petition Procedures: When a municipality (or group of municipalities) determines that it wishes to levy special assessments to properties benefited by the proposed drain project, it must:

- Send the county drain commissioner a notice of intent to file a petition and request that the drain commissioner delineate a proposed drainage district;
- Prepare a proposed plan for financing the project; and
- Send each property owner within the proposed drainage district a notice which contains a general description of the proposed drain project, an explanation of the expected benefits of the proposed drain project, notification that the project is to be paid for by special assessment to the property owners in the proposed district, a statement that alternative plans of financing the project will be on the meeting agenda, and a notice for a meeting to hear objections to the proposed project or special assessment.

After the public hearing is held, the municipality may (a) proceed with the proposed drain project and levy a special assessment; (b) determine to proceed with the project but not levy special assessments and pay for the municipality's portion of the assessment with general fund monies; or (c) withdraw from the proposed project. Any property owner in the proposed district may appeal the decision within 45 days after the determination.

Filing of Petition: A petition may be filed with the drain commissioner signed by two or more public corporations which will be subject to assessments to pay the cost of the drain improvements. The petition shall state that it is filed pursuant to Chapter 20 of the Drain Code, shall describe the location and route of the proposed drain sufficiently to determine with reasonable certainty the areas to be serviced by the drain, and shall include a certified copy of the resolution from the municipality authorizing the petition. An example of a petition for a County Drain is included in Attachment 1.

Notification of Petition: The drain commissioner shall notify each public corporation which may be subject to an assessment or in which is located any of the areas to be drained that a petition was filed within 20 days.

First Meeting of Drainage Board: At the first meeting of the Drainage Board (Board) after the filing of the petition, the Board shall make a tentative determination as to the *sufficiency of the petition* and a tentative determination of the *public corporations to be assessed*. An Advisory Committee, set up under the Act 471 Agreement, can make recommendations to the drainage board as to the public corporations to be assessed for the project.

Second Meeting of the Drainage Board: After notice is provided under the statute and a hearing is held, the Board will determine: (a) the sufficiency of the petition; (b) the practicability of the project and; (c) the public corporations to be assessed. These determinations will be entered into the Final Order of

Determination. Again, the Act 471 Advisory Committee would have the opportunity to make any recommendations as to these issues to the Drainage Board.

Preparation of Plans and Determination of Apportionments to Public Corporations: After the Final Order of Determination is issued, plans and specifications for the drain project can be prepared. The Board can then tentatively set the apportionments to the several municipalities in the Drainage District. The apportionment is based on the benefits to accrue to each municipality and the extent to which each municipality contributes to the conditions which make the project necessary. Entities assessed include all municipalities served by the drain, the county for benefit of county roads and Michigan Department of Transportation for benefit to state highways. The Act 471 Advisory Committee will have the ability to make recommendations as to the work to be performed.

Hearing as to Apportionments to Public Corporations: After hearing any testimony, the Board may confirm the apportionment or readjust the apportionment. If the apportionment is readjusted, any entity whose assessment is increased must consent to the increase by resolution or another hearing must be held. After the apportionment is confirmed, the Board will issue a Final Order of Apportionment.

Preparation of Special Assessment Roll: After the Final Order of Apportionment is issued, and an estimate of cost has been prepared, the Drain Commissioner will prepare a special assessment roll against the public corporations in accordance with the confirmed apportionment.

PETITION FOR CLEANING OUT, RELOCATING, WIDENING, DEEPENING, STRAIGHTENING, TILING, EXTENDING, OR RELOCATING ALONG A HIGHWAY FOR A COUNTY DRAIN

TO THE COUNTY DRAIN COMMISSIONER OF THE COUNTY OF WAYNE

Petitioners hereby petition for cleaning out, relocating, widening, deepening, straightening, tiling, extending or relocating along a highway and or adding one or more branches of the drain as a result of

_____

_____and as may be determined necessary, of the drain known and designated as the _____Drain, located and established in the Municipality or Township of _____, in the County of Wayne, State of Michigan.

Petitioners further show that they constitute at least five freeholders of land in the _____Drainage District who are owners of land liable for an assessment for benefits for such proposed work.

Your petitioner further show that the said drain needs* _____

_____

_____

_____

and the above improvements of the drain are necessary and conducive to the public health, convenience or welfare of _____ (Municipality or Township).

Dated: _____, 20_____

Signatures of Freeholders	Address Township	Tax Code Number

*Insert as the facts may require “cleaning out”, “relocating”, “widening”, “deepening, “straightening”, “tiling”, “extending”, or “relocating along a highway” or “adding one or more branches”.

AFFIDAVIT OF CIRCULATOR OF PETITION

I Hereby Certify that I did personally circulate this petition and the signatures to same were made in my presence and are the genuine signatures of those whose names are affixed.

_____
Name of Circulator

Dated:_____, 20_____.

STATE OF MICHIGAN)
)ss.
COUNTY OF _____)

On _____ _____, 20_____, before me, a Notary Public in and for said County, personally appeared _____ to me known to be the person _____ described in and who circulated the foregoing petition dated _____ _____, 20_____.

_____,
Notary Public
_____, County, Michigan

My commission expires,_____

GUIDE TO FILLING OUT A DRAIN PETITION

PETITION FOR CLEANING OUT, RELOCATING, WIDENING, DEEPENING, STRAIGHTENING, TILING, EXTENDING, OR RELOCATING ALONG A HIGHWAY FOR A COUNTY DRAIN

TO THE COUNTY DRAIN COMMISSIONER OF THE COUNTY OF WAYNE_

Petitioners hereby petition for cleaning out, relocating, widening, deepening, straightening, tiling, extending or relocating along a highway and or adding one or more branches of the drain as a result of :**(Insert in this section, what the problems are with the drain causing you to petition for improvements. I.e. flooding, failed infrastructure, erosion, standing water, heavy vegetation)** _____and as may be determined necessary, of the drain known and designated as the _____Drain, located and established in the Municipality or Township of _____, in the County of Wayne, State of Michigan.

Petitioners further show that they constitute <u>at least five</u> freeholders of land in the (Insert name of drainage district here)_____Drainage District who are owners of land liable for an assessment for benefits for such proposed work.

Your petitioner further show that the said drain needs* (See * below and insert all that apply)

_____
_____
_____
_____

and the above improvements of the drain are necessary and conducive to the public health, convenience or welfare of _____ (Municipality or Township).

Dated: _____, 20_____

Signatures of Freeholders	Address Township	Tax Code Number

*Insert as the facts may require “cleaning out”, “relocating”, “widening”, “deepening, “straightening”, “tiling”, “extending”, or “relocating along a highway” or “adding one or more branches”.

COUNTY DRAIN PETITION

(Drain Code of 1956, as amended MCL 280.191)

At a meeting of the Board of Trustees of the Charter Township of South Haven, Van Buren County, Michigan, held in said Township Hall on January 12, 2011 at 7:30 PM.

PRESENT: Dopp, Stein, Bertorelli, Fisher, Pioch and Jessup

ABSENT: DeGrandchamp

The following resolution was offered by Bertorelli and seconded by Fisher.

BE IT RESOLVED, that the Charter Township of South Haven, County of Van Buren make and cause to be filed a petition in form substantially as follows:

EXTENDING THE SOUTH BRANCH OF THE NORTH PHOENIX COUNTY DRAIN

To the County Drain Commissioner of Van Buren County: Your petitioners make petition, and hereby respectfully ask you to clean out, relocate, widen, deepen, straighten, tile, extend or relocate along a highway, install structures or mechanical devices to properly purify or improve the flow of the North Phoenix Drain which will properly drain the lands in said district, under the provision of the Michigan Drain Code, P.A. 40 of 1956 as amended, MCL 280.191, Chapter 8. Furthermore, the adding of lands to the drainage district may be necessary in conjunction with this petition.

Your petitioners further respectfully declare that the cleaning out, relocating, widening, deepening, straightening, tiling, extending or relocating along a highway, installing structures or mechanical devices to properly purify or improve the flow of the North Phoenix Drain will be necessary and conducive to the public health, convenience and welfare of said Township.

The Spur of the South Branch of the North Phoenix Drain is generally described as follows: Beginning at the South Branch of the North Phoenix County Drain at a location north of Green Street and east of Prospect Street; thence southerly to Green Street; thence easterly along Green Street to the end of the Green Street right-of-way; thence southeasterly to Cherry

Street; thence easterly to Blue Star Highway; thence continuing easterly under Blue Star Highway to the upstream terminus.

Your petitioners further respectfully request that the following specific improvements be made within the Charter Township of South Haven: cleaning and regrading of the open drainage course between Blue Star Highway and Cherry Street.

BE IT FURTHER RESOLVED, That the Township Supervisor and Township Clerk are hereby authorized and directed to execute said Petition for and on behalf of this Township and to file the same with the Drain Commissioner.

BE IT FURTHER RESOLVED that this Township hereby consents to the foregoing described drain project and to an assessment at-large on the basis of public health benefit for a percentage of the total amount assessed for the cost of the proposed work.

ADOPTED: YEAS: Jessup, Pioch, Stein, Bertorelli, Dopp, Fisher

NAYS: none

The Resolution was declared adopted.

Charter Township of South Haven

C. Jessup

Township Supervisor

Brenda Bertorelli

Township Clerk

Appendix F. Court of Appeals Ruling against the City of Jackson's Stormwater Utility

STATE OF MICHIGAN

COURT OF APPEALS

COUNTY OF JACKSON, Plaintiff,	FOR PUBLICATION August 1, 2013 9:05 a.m.
v	No. 307685
CITY OF JACKSON, Defendant.	

JACKSON COFFEE COMPANY and KLEIN BROTHERS, LLC, Plaintiffs,	
v	No. 307843
CITY OF JACKSON, Defendant.	

Before: MURPHY, C.J., and HOEKSTRA and OWENS, JJ.

PER CURIAM.

Plaintiffs commence these consolidated original actions under Const 1963, art 9, § § 25-34, popularly known as the Headlee Amendment. The Jackson City Council adopted Ordinance 2011.02, pursuant to which the city created a storm water utility and imposed a storm water management charge on all property owners within the city to generate revenue to pay for the services provided by the utility, which include, amongst others, street sweeping, catch basin cleaning and leaf pickup and mulching. The question posed by these actions is whether the city, by shifting the method of funding certain preexisting government activities from tax revenues to a utility charge, ran afoul of § 31 of the Headlee Amendment[1], as construed and applied in *Bolt v*

[1] Although plaintiffs allege a violation of § 25, their enforcement actions implicate only § 31. See e.g., *Bolt v City of Lansing*, 459 Mich 152; 587 NW2d 264 (1998). Section 25 of the

Lansing, 459 Mich 152; 587 NW2d 264 (1998). We answer this question in the affirmative and hold that the city's storm water management charge is a tax, the imposition of which violates the Headlee Amendment because the city did not submit Ordinance 2011.02 to a vote of the qualified electors of the city. The charge is null and void.

I

The city maintains and operates separate storm water and waste water management systems. Various state permits authorize the city to discharge storm water through its separate storm water drainage system to the Grand River, as well as other waters of the state. Historically, the city has funded the operation and maintenance of its storm water management system with money from the city's general and street funds. The revenue in these funds is generated through the collection of ad valorem property taxes, gasoline taxes and vehicle registration fees. With revenue from these taxes and fees in decline, the city retained an engineering and consulting firm to study the feasibility of establishing a storm water utility for the purpose of funding storm water management through dedicated "user fees." As acknowledged by the City in its Stormwater Management Manual,

> [w]hen subdivisions, roads and commercial developments are built or improved in the City of Jackson the City must pay for managing the resulting storm runoff. The City must install catch basins to capture storm water and storm sewers to convey the storm water to streams or rivers, ensuring it does not drain into the sanitary wastewater system and create sewer overflows. Furthermore the City must maintain the entire storm water collection system. In the past the City performed this work without a dedicated revenue source. The City used money from the general fund or the road budget, thus taking funds away from other critical programs. The storm water system is an expensive piece of the City's municipal infrastructure. The City's water and sanitary wastewater systems each have their own dedicated revenue sources derived from water and sanitary wastewater user fees. Water and sanitary wastewater users pay user fees that are partially calculated based on water consumption. However, this has not been the case with storm water management, which has had no user fees attached to it. Municipalities across the country are changing this. They now view their storm water systems as utilities similar to their water and sanitary wastewater systems. They are developing storm water user fee structures to pay for storm water planning, administration, construction and operation and maintenance.

Headlee Amendment summarizes the "fairly complex system of revenue and tax limits" imposed by the amendment, *Durant v Michigan*, 456 Mich 175, 182; 566 NW2d 272 (1997), and is implemented through the other sections of the Amendment, Const 1963, art 9, § 25. Additionally, we decline to address plaintiffs' claims that the imposition of the management charge violates Const 1963, art 4, § 32 and Const 1963, art 9, § 6 because these claims are outside the scope of our original jurisdiction conferred by § 32 of the Headlee Amendment, Const 1963, art 9, § 32.

Following the completion of the feasibility study, the city's Department of Public Works requested that the city create a storm water utility "to fund the activities currently included in the General Fund Drains at Large, Leaf Pickup, Mulching, Street Cleaning and Catch Basin Maintenance in the Major and Local Street accounts." The Jackson City Council adopted Ordinance 2011.02, known as the Storm Water Utility Ordinance, at its January 11, 2011 meeting.

Ordinance 2011.02 establishes a storm water utility to operate and maintain the city's storm water management program. The ordinance funds this program through an annual storm water system management charge imposed on each parcel of real property, including undeveloped parcels, located within the city. All revenues generated by the storm water management charge are deposited in a storm water enterprise fund and "[n]o part of the funds . . . may be transferred to the general operating fund or used for any purpose other than undertaking the storm water management program, and operating and maintaining a storm water system." More specifically, the money in the enterprise fund may be used only to pay the "costs to acquire, construct, finance, operate and maintain a storm water system."

The management charge is computed using a formula developed by the engineering consultant that roughly estimates the amount of storm water runoff of each parcel. Anticipated storm water runoff is computed in terms of equivalent hydraulic area (EHA). This method of computation involves an estimation of the amount of storm water leaving each parcel of property based on the impervious and pervious surface areas of each parcel. The Ordinance defines the phrase "impervious area or surface" as "a surface area which is compacted or covered with material that is resistant to or impedes permeation by water, including but not limited to, most conventionally surfaced streets, roofs, sidewalks, patios, driveways, parking lots and any other oiled, graveled, graded, or compacted surfaces." "[P]ervious area or surface" is "all land area that is not impervious."

The EHA base unit used to compute the amount of a management charge is the square footage for the average single family residential parcel. One EHA base unit is 2,125 sq. ft. The pervious and impervious areas of residential parcels with two acres or less of surface area are not measured individually. Instead, such parcels are assigned one EHA unit and charged a flat rate established by resolution of the city council, which is billed quarterly. For all other parcels, the management charge is based on the actual measurements of the pervious and impervious areas of each individual parcel. The number of EHA units for these latter parcels is calculated by multiplying a parcel's impervious area in square feet by a runoff factor[2] of 0.95 and the pervious area in square feet by a runoff factor or 0.15, adding these two areas and then dividing that total

[2] The runoff factors are defined as the approximate fraction of rainfall that runs off the property to the storm drainage system.

by 2,125 sq. ft. The number of EHA units is then multiplied by $2.70[3] to arrive at the monthly management charge.

The Ordinance allows property owners to receive credits against the management charge for actions taken to reduce storm water runoff from their respective properties. At the time plaintiffs commenced these original actions, the Ordinance allowed a residential property owner to receive a 50 percent credit against the charge by implementing city-approved "storm water best management practices" to capture and filter or store storm water. Such best practices include the creation of rain gardens or vegetated filter strips or the use of rain barrels or a cistern. The Ordinance also allowed an owner of a non-residential property to receive a credit against the service charge of between 37.5 and 75 percent for implementing best management practices designed to control storm water peak flows through the construction and use of detention or retention ponds. Schools could receive a 25 percent "education credit" for providing students with a regular and continuing program of education concentrating on the stewardship of the state's water resources. Finally, an owner of a parcel of real property, which is contiguous to the Grand River, could receive a credit of up to 75 percent for directly discharging storm water into the river. Subsequent to the filing of these actions, and through amendments to the Ordinance adopted by the city, the city increased the amount of credit allowed for certain property owners who engage in best management practices identified by the city.

Ordinance 2011.02 creates a right of administrative appeal, but limits the scope of that appeal to "the grounds that the impervious and/or pervious area of the property is less than estimated by the Administrator or that the credit allowable to the property is greater than that estimated by the Administrator." Additionally, the Ordinance authorizes the administrator of the utility to enforce payment of the management charge by discontinuing water service to the property of a delinquent property owner, by instituting a civil action to collect any unpaid management charges, and by placing a lien against property for the unpaid charges and enforcing the lien "in the same manner as provided for the collection of taxes assessed upon such roll and the enforcement of the lien for the taxes."

The city began billing property owners for the management charge in May, 2011. Plaintiffs, who are property owners within the city, received invoices from the city for the management charges assessed against their respective properties, with their respective invoices for water service to their properties.

On December 16, 2011, the County commenced the instant Headlee Amendment enforcement action. Plaintiffs Jackson Coffee and Klein Brothers commenced their enforcement action on December 28, 2011. Plaintiffs' claims for declaratory, injunctive and monetary relief are predicated on the belief that the storm water management charge constitutes a disguised tax and, therefore, the imposition of the charge by the city violates § 31 of the Headlee Amendment because the city imposed the tax without a vote of the city's electorate.

---

[3] The city has reduced this figure to $2.50 since the filing of these suits. The city also has reduced the flat rate charged to the owners of residential property of two acres or less from $8 to $7.50.

II

Plaintiffs bear the burden of establishing the unconstitutionality of the city's storm water management charge. *Adair v State of Michigan*, 470 Mich 105, 111; 680 NW2d 386 (2004); *Kenefick v City of Battle Creek*, 284 Mich App 653, 655; 774 NW2d 925 (2009).

Plaintiffs' enforcement actions implicate § 31 of the Headlee Amendment, 1963 Const, art 9, § 31. An application of § 31 is triggered by the levying of a tax. *Bolt*, 459 Mich at 158-159. "Section 31 prohibits units of local government from levying any new tax or increasing any existing tax above authorized rates without the approval of the unit's electorate." *Durant v State of Michigan*, 456 Mich 175, 183; 566 NW2d 272 (1997). Thus, a tax imposed without voter approval "unquestionably violates" § 31. *Bolt*, 459 Mich at 158. However, a charge that is a user fee "is not affected by the Headlee Amendment." *Id*., at 159. "There is no bright-line test for distinguishing between a valid user fee and a tax that violates the Headlee Amendment." *Id*., at 160. "Generally, a fee is exchanged for a service rendered or a benefit conferred, and some reasonable relationship exists between the amount of the fee and the value of the service or benefit. A tax, conversely, is designed to raise revenue." *Id*., at 161 (internal quotation marks and citations omitted).

The seminal – and only – case addressing the distinction between a fee and a tax, in the context of storm water management, is our Supreme Court's decision in *Bolt*. In *Bolt*, the City of Lansing sought to limit the polluting of local rivers that resulted when heavy precipitation caused the city's combined storm water and sanitary sewer systems to overflow and discharge into those rivers combined storm water and untreated or partially treated sewage. *Bolt*, 459 Mich at 154-155. To this end, the city decided to separate the remaining combined storm and sanitary sewer system, at a cost of $176 million. *Id*., at 155. As a means to fund the costs of the sewer system separation:

> [t]he Lansing City Council adopted Ordinance 925, which provides for the creation of a storm water enterprise fund "to help defray the costs of the administration, operation, maintenance, and construction of the stormwater system . . . ." The ordinance provides that costs for the storm water share of the CSO [combined sewer overflow] program (fifty percent of the total CSO costs, including administration, construction, and engineering costs) will be financed through an annual storm water service charge. This charge is imposed on each parcel of real property located in the city using a formula that attempts to roughly estimate each parcel's storm water runoff.
>
> Estimated storm water runoff is calculated in terms of equivalent hydraulic area (EHA). As defined by the ordinance, EHA is "based upon the amount of pervious and impervious areas within the parcel multiplied by the runoff factors applicable to each." Impervious land area, which impedes water adsorption, thus increasing storm water runoff, is defined as
>
> > [t]he surface area within a parcel that is covered by any material which retards or prevents the entry of water into the soil. Impervious land area includes, but is not limited to, surface areas

> covered by buildings, porches, patios, parking lots, driveways, walkways and other structures. Generally, all non-vegetative land areas shall be considered impervious.
>
> Residential parcels measuring two acres or less are not assessed charges on the basis of individual measurements, but, rather, are charged pursuant to flat rates set forth in the ordinance. These rates are based on a predetermined number of EHA units per one thousand square feet. For residential parcels over two acres, commercial parcels, and industrial parcels, the EHA for an individual parcel is calculated by multiplying the parcel's impervious area by a runoff factor of 0.95 and pervious area by a runoff factor of 0.15 and adding the two areas.
>
> Charges not paid by the deadline are considered delinquent and subject to delayed payment charges, rebilling charges, property liens (if the charge remains unpaid for six months or more), and attorney fees if a civil suit is filed to collect delinquent charges. The ordinance further provides for a system of administrative appeals by property owners contending that their properties have been unfairly assessed. . . . [*Id*., at 155-157 (footnotes omitted).]

A taxpayer within the City of Lansing brought suit against the city on the ground that the storm water service charge constituted a tax disguised as a user fee that violated § § 25 and 31 of the Headlee Amendment because the tax had not been submitted to or approved by a vote of the people. *Bolt*, 459 Mich at 154, 158. Our Supreme Court agreed, concluding that the storm water service charge was not a valid user fee, but, instead, was "a tax, for which approval is required by a vote of the people." *Id*., at 154. The Court reached this conclusion after considering a multiplicity of factors pertaining to the characteristics of fees and taxes, including the three primary criteria of a fee, which are: (1) a fee serves a regulatory purpose, (2) a fee is proportionate to the necessary costs of that service, and (3) a fee is voluntary. *Id*., at 161-162.

With regard to the first two criteria, the Court concluded that the storm water service charge neither served a regulatory purpose nor was proportionate to the necessary costs of the service. Rather, the Court concluded that the service charge served a revenue-raising purpose. *Id*., at 163-167. According to the Court, "the 'fee' is not structured to simply defray the costs of a 'regulatory' activity, but rather to fund a public improvement designed to provide a long-term benefit to the city and all its citizens." *Id*., at 164, quoting *Bolt v City of Lansing*, 221 Mich App 79, 91; 561 NW2d 423 (1997) (Markman, dissenting). The Court reached this conclusion, in part, because,

> [i]n instituting the storm water service charge, the city of Lansing has sought to fund fifty percent of the $176 million dollar cost of implementing the CSO control program over the next thirty years. A major portion of this cost (approximately sixty-three percent) constitutes capital expenditures. This constitutes an investment in infrastructure as opposed to a fee designed to simply defray the costs of a regulatory activity. [*Id*., at 163.]

For this same reason, the Court concluded that the "revenue to be derived from the charge is clearly in excess of the direct and indirect costs of actually using the storm water system over the

next thirty years and, being thus disproportionate to the cost of the services provided and the benefits rendered, constitutes a tax." *Id.*, at 164, quoting 221 Mich App at 91 (Markman, dissenting).

The Court further concluded that the storm water service charge neither served a regulatory purpose nor was proportionate to the necessary costs of the service based on the following two related failings of the ordinance:

> . . . First, the charges imposed do not correspond to the benefits conferred. Approximately seventy-five percent of the property owners in the city are already served by a separated storm and sanitary sewer system. In fact, many of them have paid for such separation through special assessments. Under the ordinance, these property owners are charged the same amount for storm water service as the twenty-five percent of the property owners who will enjoy the full benefits of the new construction. Moreover, the charge applies to all property owners, rather than only to those who actually benefit. A true "fee," however, is not designed to confer benefits to the general public, but rather to benefit the particular person on whom it is imposed. *Bray*[*v Dep't of State*, 418 Mich 149, 162; 341 NW2d 92 (1983); *Nat'l Cable Television Ass'n v United States & Federal Communications Comm*, 415 US 336, 340-342; 94 S Ct 1146; 30 L Ed 2d 370 (1974).]
>
> > The distinction between a fee and a tax is one that is not always observed with nicety in judicial decisions, but according to some authorities, any payment exacted by the state or its municipal subdivisions as a contribution toward the cost of maintaining governmental functions, where the special benefits derived from their performance is merged in the general benefit, is a tax. [71 Am Jur 2d, State and Local Taxation, § 15, p 352.]
>
> In this case, the lack of correspondence between the charges and the benefits conferred demonstrates that the city has failed to differentiate any particularized benefits to property owners from the general benefits conferred on the public.
>
> This conclusion is buttressed by the fact that the acknowledged goal of the ordinance is to address environmental concerns regarding water quality. Improved water quality in the Grand and Red Cedar Rivers and the avoidance of federal penalties for discharge violations are goals that benefit everyone in the City, not only property owners. As stated by the Court of Appeals dissent,
>
> > The extent of any particularized benefit to property owners is considerably outweighed by the general benefit to the citizenry of Lansing as a whole in the form of enhanced environmental quality. . . . When virtually every person in a community is a "user" of a public improvement, a municipal government's tactic of augmenting its budget by purporting to charge a "fee" for the "service" rendered should be seen for what it is: a subterfuge to

> evade constitutional limitations on its power to raise taxes. [221 Mich App 96.]
>
> The second failing that supports the conclusion that the ordinance fails to satisfy the first two criteria is the lack of a significant element of regulation. See *Bray*, *supra*, at 161-162; *Vernor*[*v Secretary of State*, 179 Mich 157, 167-169; 146 NW 338 (1914)]. The ordinance only regulates the amount of rainfall shed from a parcel of property as surface runoff; it does not consider the presence of pollutants on each parcel that contaminate such runoff and contribute to the need for treatment before discharge into navigable waters. Additionally, the ordinance fails to distinguish between those responsible for greater and lesser levels of runoff and excludes street rights of way from properties covered by the ordinance. Moreover, there is no end-of-pipe treatment for the storm water runoff. Rather, the storm water is discharged into the river untreated. [*Bolt*, 459 Mich at 165-167.]

Next, the Court found that the charge lacked any element of voluntariness, which the Court found to be further evidence that the charge was a tax and not a user fee. The Court opined:

> . . . One of the distinguishing factors of a tax is that it is compulsory by law, "whereas payments of user fees are only compulsory for those who use the service, have the ability to choose how much of the service to use, and whether to use it at all." Headlee Blue Ribbon Commission Report, *supra*, § 5, p 29. The charge in the present case is effectively compulsory. The property owner has no choice whether to use the service and is unable to control the extent to which the service is used. The dissent suggests that property owners can control the amount of the fee they pay by building less on their property. However, we do not find that this is a legitimate method for controlling the amount of the fee because it is tantamount to requiring property owners to relinquish their rights of ownership to their property by declining to build on the property. [*Bolt*, 459 Mich at 167-168 (footnote omitted).]

Finally, the Court found that the following factors also supported the conclusion that the storm water charge was a tax: (1) the revenue generated by the charge was to be used on that portion of the project that had been previously funded by general fund revenue; (2) the indebtedness generated by the levying of the charge could be secured by a lien on property; and (3) the charge was billed through the city assessor's office and may be sent with the December property tax statements. *Bolt*, 459 Mich at 168-169.

The Court closed its opinion with the following admonition:

> We conclude that the storm water service charge imposed by Ordinance 925 is a tax and not a valid user fee. To conclude otherwise would permit municipalities to supplement existing revenues by redefining various government activities as "services" and enacting a myriad of "fees" for those services. To permit such a course of action would effectively abrogate the constitutional

> limitations on taxation and public spending imposed by the Headlee Amendment, a constitutional provision ratified by the people of this state. In fact, the imposition of mandatory "user fees" by local units of government has been characterized as one of the most frequent abridgments "of the spirit, if not the letter," of the amendment.
>
> > The danger to the taxpayer of this burgeoning phenomenon [the imposition of mandatory user fees] is as clear as are its attractions to local units of government. The "mandatory user fee" has all the compulsory attributes of a tax, in that it must be paid by law without regard to the usage of a service, and becomes a tax lien of the property. However, it escapes the constitutional protections afforded voters for taxes. It can be increased any time, without limit. This is precisely the sort of abuse from which the Headlee Amendment was intended to protect taxpayers. [Headlee Blue Ribbon Commission Report, *supra*, § 5, pp 26-27.] [*Bolt*, 459 Mich at 169.]

In the present cases, the documents provided this Court reveal that the management charge serves a dual purpose. The charge furthers a regulatory purpose by financing a portion of the means by which the city protects local waterways, including the Grand River, from solid pollutants carried in storm and surface water runoff discharged from properties within the city, as required by state and federal regulations. The charge also serves a general revenue-raising purpose by shifting the funding of certain pre-existing government activities from the city's declining general and street fund revenues to a charge-based method of revenue generation. This latter method of revenue generation raises revenue for general public purposes by augmenting the city's general and street funds in an amount equal to the revenue previously used to fund the activities once provided by the city's Engineering and Public Work Departments and now bundled together and delegated to the storm water utility. Because the Ordinance and the management charge serve competing purposes, the question becomes which purpose outweighs the other. *Bolt*, 459 Mich at 165-167, 169. We conclude that the minimal regulatory purpose served by the ordinance and the related management charge is convincingly outweighed by the revenue raising purpose of the ordinance.

Ordinance 2011.02 suffers from the same lack of a significant element of regulation as the Lansing ordinance did. Although the Ordinance confers the power of regulation on the utility's administrator, the Ordinance contains few provisions of regulation and no provisions that truly regulate the discharge of storm and surface water runoff, with the exception of the provision that allows for credits against the management charge for the use of city-approved storm water best management practices. Moreover, as was the case in *Bolt*, the Ordinance fails to require either the city or the property owner to identify, monitor and treat contaminated storm and surface water runoff and allows untreated storm water to be discharged into the Grand River. *Bolt*, 459 Mich at 164-167. In these regards, the city's Ordinance suffers from the same regulatory weaknesses as did the Lansing ordinance struck down as unconstitutional in *Bolt*.

Further, the documents generated by and on behalf of the city and provided this Court clearly show that the desire to protect the city's general and street funds from the costs of

operating and maintaining the existing storm water management system constituted the most significant motivation for adopting the Ordinance and management fee. As previously noted, before the adoption of the Ordinance, the city paid the costs of operating and maintaining the storm water system, including the costs of street and catch basin cleaning and leaf pickup and mulching, with revenue from the city's general and street funds. In the documents supplied this Court, the city readily admits that the costs associated with maintaining the storm water system resulted in money from these funds being directed away from "other critical programs" and that budgetary pressures, including declining general fund revenue, necessitated the tapping of new sources of funding for the maintenance of the storm water system. Similarly, the storm water utility feasibility study commissioned by the city reflects that the primary purposes of study were to devise a method of calculating a storm water management charge of sufficient amount to fund the pre-existing services the city desired to delegate to the utility and to convince the city council that the imposition of the recommended management charge would not violate *Bolt* and the Headlee Amendment. The fact that the impetus for creating the storm water utility and for imposing the charge was the need to generate new revenue to alleviate the budgetary pressures associated with the city's declining general fund and street fund revenues, and the fact that the city's activities were previously paid for by these other funds are factors that support a conclusion that the management charge has an overriding revenue-generating purpose that outweighs the minimal regulatory purpose of the charge and, therefore, that the charge is a tax, not a utility user fee. The Headlee Amendment bars municipalities from supplementing their existing revenue streams by redefining various government activities as services and then enacting "user fees" for those services. *Bolt*, 459 Mich at 169.

Likewise, the lack of correspondence between the charge imposed and any particularized benefit conferred by the charge supports a conclusion that the charge is a tax and not a utility user fee. A true fee confers a benefit upon the particular person on whom it is imposed, whereas a tax confers a benefit on the general public. *Bolt*, 459 Mich at 165. Although a regulatory fee may confer a benefit on both the general public and the particular individuals who pay the fee and still maintain its regulatory character, a charge is not a regulatory fee in the first instance unless it is designed to confer a particularized benefit on the property owners who must pay the fee. *Id*., at 165-166; *USA Cash #1, Inc v City of Saginaw*, 285 Mich App 262, 281; 776 NW2d 346 (2009). In the present cases, we cannot readily identify any particularized benefit the charge confers on the property owners that is not also conferred upon the general public. The city indicated in its original response to plaintiffs' complaints that the charge "assur[es] cleanliness and safety of the State's waters and watercourses." The city also indicated that the management charge enables the city to protect the public health and safety, to reduce the likelihood of flooding caused by excessive storm water runoff, to reduce the potential for land erosion, which can damage roads, bridges and other infrastructure and thereby endanger the public, and to prevent sewer overflows by providing a mechanism to collect and divert rain water runoff from the sanitary sewer system. We do not doubt that a well-maintained storm water management system provides such benefits. Nevertheless, these concerns addressed by the city's ordinance, like the environmental concerns addressed by Lansing's ordinance in *Bolt*, benefit not only the property owners subject to the management charge, but also everyone in the city in roughly equal measure, as well as everyone who operates a motor vehicle on a Jackson city street or roadway or across a city bridge, everyone who uses the Grand River for recreational purposes downriver from the city and everyone in the Grand River watershed. This lack of correspondence between

the management charge and a particularized benefit conferred to the parcels supports our conclusion that the management charge is a tax. *Bolt*, 459 Mich at 166.

Our conclusion regarding the proportionality of the charge further buttresses the conclusion that the management fee is a tax.

"Fees charged by a municipality must be reasonably proportionate to the direct and indirect costs of providing the service for which the fee is charged." *Kircher v City of Ypsilanti*, 269 Mich App 224, 231-232; 712 NW2d 738 (2005). The fact that the fee only needs to be "reasonable proportionate" suggests that mathematic precision is not necessary in calculating the fee. *Graham v Kochville Twp*, 236 Mich App 141, 154-155; 599 NW2d 793 (1999). Thus, the fee need not generate an amount equal to that required to support the services the ordinance regulates in order to survive scrutiny; however, where the revenue generated by a regulatory "fee" exceeds the cost of regulation, the "fee" is actually a tax in disguise. *Westlake Transportation, Inc v Public Service Comm*, 255 Mich App 589, 614-615; 662 NW2d 784 (2003). This Court must presume the amount of the fee to be reasonable, "unless the contrary appears on the face of the law itself or is established by proper evidence . . . ." *Graham*, *supra*, quoting *Vernor v Secretary of State*, 179 Mich 157, 168; 146 NW 338 (1914); see also *Wheeler v Shelby Charter Twp*, 265 Mich App 657, 665-666; 697 NW2d 180 (2005).

A permissible utility service charge is one that "reflects the actual costs of use, metered with relative precision in accordance with available technology, including some capital investment component . . . ." *Bolt*, 459 Mich at 164, quoting 221 Mich App at 92. In the present cases, the management charge is predicated on the assumption that properties contribute to runoff, and, hence, storm sewer use, as a direct function of the size of a parcel's imperious and pervious areas. Despite this assumption, residential parcels measuring two acres or less are charged a flat rate based on the average EHA of all single family parcels, and not on the individual measurements of each parcel's impervious and pervious areas. Single family residential parcels account for 12,209 or 83 percent of the 14,743 the parcels within the city. According to the city, it is cost-prohibitive to calculate the EHA units for each single family residential parcel based on actual measurements of impervious and pervious areas of each parcel. In contrast, residential parcels measuring over two acres and commercial, industrial and institutional parcels of all sizes are assessed a management charge based on the individual measurements of each parcel's impervious and pervious areas. This method of apportioning the management charges amongst all urban properties emphasizes administrative convenience and ease of measurement and, thereby, suggests an absence of a close proportional relationship between the amount of runoff attributable to a particular parcel and the management charge, as does the fact that the method of calculating the charge fails to consider property characteristics relevant to runoff generation, such as a parcel's location in reference to storm gutters and drains and soil grade. This lack of proportionality is further demonstrated by the fact that the charge generates sufficient revenue to allow the city to maintain a working capital reserve of 25 to 30 percent of the storm water utility's total expenses. Although maintaining a capital reserve is a common practice amongst rate-based public utilities that provides a degree of fiscal stability to utilities, see 73B CJS, Public Utilities, § 64; 64 Am Jur 2d, Public Utilities, § 107, those reserves are funded by true user fees closely calibrated to the actual use of the service or a price paid for a commodity. The management charge at issue in these cases in not such a fee. For these reasons, the actual use of the storm water sewer system by each parcel is not accounted for with the

requisite level of precision necessary to support a conclusion that the charge is proportionate to the costs of the services provided.

Finally, our conclusion that the city's management charge is a tax is bolstered by the fact that Ordinance 2011.02, like Lansing Ordinance 925, is effectively compulsory. Although Ordinance 2011.02 allows property owners to receive credits against the management charge for actions taken to reduce runoff from their respective properties, it does not guarantee all property owners will receive a 100 percent credit. Indeed, if the Ordinance realistically allowed for all property owners to receive a 100 percent credit, the credit system would undermine the central purpose of the Ordinance, which is to generate dedicated funding to maintain and operate the current storm water management system. The city would be left with a storm water sewer system to operate and maintain and no dedicated revenue source to fund street sweeping, catch-basin cleaning and leaf pickup, amongst other activities necessary to the city's stewardship of the system. More importantly, however, this system of credits effectively mandates that property owners pay the charge assessed or spend their own funds on improvements to their respective properties, as specified by the Ordinance and the city, in order to receive the benefit of any credits. In other words, property owners have no means by which to escape the financial demands of the Ordinance. Additionally, the Ordinance authorizes the administrator of the storm water utility to discontinue water service to any property owner delinquent in the payment of the fee, as well as to engage in various civil remedies, including the imposition of a lien and the filing of civil action, to collect payment of past due charges. All of these circumstances demonstrate an absence of volition. This lack of volition lends further support for our conclusion that the management charge is a tax. *Bolt*, 459 Mich at 168.

III

We enter a declaratory judgment in favor of plaintiffs. The city's storm water system management charge is a tax imposed in violation of § 31 of the Headlee Amendment. The city shall cease collecting the charge and shall reimburse only plaintiffs for any charges paid to date. *Bolt v Lansing (On Remand)*, 238 Mich App 37, 51-60; 604 NW2d 745 (1999). Plaintiffs may tax their costs, including a reasonable attorney fee. Const 1963, art 9, § 32; *Adair v Michigan*, 486 Mich 468, 494; 785 NW2d 119 (2010).

/s/ William B. Murphy
/s/ Joel P. Hoekstra
/s/ Donald S. Owens

Appendix G. Process for Implementing a Stormwater Utility

Appendix G – Process for Implementing a Stormwater Utility

Define/Establish Structure: The first step to establishing a stormwater utility is to develop a feasibility study that provides the community with sufficient information to proceed. The feasibility study will typically address preliminary revenue requirements (usually from current stormwater budgets), an assessment of the amount of stormwater generated tied to individual properties, the service fee method to use and credits to provide, the preliminary rate charge for a given amount of stormwater (or an equivalent residential units (ERU)), and the responsible party for billing. The feasibility study is then presented by municipal staff and the elected and appointed officials to decide whether to proceed with development of the utility.

The feasibility study should include at minimum the following components:

- Stormwater budgets
    - Capital Costs
    - Operations and Maintenance
    - Administrative
- Revenue requirements
    - Current expenditures
    - Anticipated cost of new regulations
- Organizational structure
- Data availability and database requirements

Data Compilation: Implementation of a stormwater utility requires data to be compiled describing each parcel within the community and establishing its ownership and the expected amount of stormwater runoff generated (typically tied to impervious cover). Often a Geographical Information System (GIS) is in place within the community upon which the utility database can be constructed. If no local GIS is available, county data may be able to be obtained and used.

Because stormwater runoff volume is strongly correlated to impervious surface (with easy to measure), stormwater fees are often tied to impervious surfaces. Identifying impervious area is most often done through interpretation of aerial photography or satellite images. Usually an average percent impervious is established for single family residential areas that make up most of the community area. Commercial, institutional and industrial parcels are most often individually evaluated to determine percent impervious and identify any mitigating stormwater controls that may be in place.

Beyond what can be established from GIS, aerial photography, and satellite images, the effort will likely require a considerable amount of field reconnaissance to obtain and/or verify parcel data.

This spatial data must then be integrated with the available/selected billing system to assure that parcels are linked to the appropriate billing accounts. Parcel ownership and owners address must be verified, especially in cased where utility billings are sent to tenant renters.

Rate Structure & Analysis: There are three basic methods that stormwater utilities use to calculate service fees. These are sometimes modified slightly to meet unique billing requirements. Impervious area is the most important factor influencing stormwater runoff and is therefore a major element in each method.

- Equivalent Residential Unit (ERU) (Also known as the Equivalent Service Unit (ESU) method): More than 80% of all stormwater utilities use the ERU method. Parcels are billed on the basis of how much impervious area is on the parcel, regardless of the total area of the parcel. This method is based on the impact of a typical single family residential (SFR) home's impervious area footprint. A representative sample of SFR parcels is reviewed to determine the impervious area of a typical SFR parcel. This amount is called one ERU. In most cases, all SFRs up to a defined maximum total area are billed a flat rate for one ERU.

- Intensity of Development (ID): This stormwater cost allocation system is based on the percentage of impervious area relative to an entire parcel's size. All parcels (including vacant/undeveloped) are charged a fee on the basis of their intensity of development, which is defined as the percentage of impervious area of the parcel. Rates are calculated for several ID categories. An example is shown below.

Category (impervious percentage range)	Rate per month per 1,000 square feet of total served area
Vacant/Undeveloped (0%)	$0.08
Light development (1% to 20%)	$0.12
Moderate development (21% to 40%)	$0.16
Heavy development (41% to 70%)	$0.24
Very heavy development (71% to 100%)	$0.32

- Equivalent Hydraulic Area (EHA): Parcels are billed on the basis of the combined impact of their impervious and pervious areas in generating stormwater runoff. The impervious area is charged at a much higher rate than the previous area.

Billing & Database Systems: The three most common stormwater billing systems are (1) a stormwater user fee with an existing water/sewer user fee bill, (2) non-ad valorem assessments and (3) a stand-alone stormwater bill. Approximately 80% of stormwater utilities use the first approach mainly because it is cost-effective due to the fact that an existing water and sewer billing system is already in place.

The utility administration must be established to manage and maintain the billing system as well as the property database upon which the utility is structured. Staff and resources need be in place to update the property GIS database on a regular basis, and respond to customer requests for adjustment in rate due to property improvements.

In developing the billing system the following issues need to be addressed:

- What frequency will bills be sent out?
- Billing database source?
- Who should receive the bill – owner or tenant?
- How will the database be managed in the long term?
- How will delinquencies be addressed?
- What is the process for appeal?

Ordinance Adoption & Utility Implementation: An ordinance will provide legal authority for establishment of the utility. The ordinance must be drafted to fit within the existing regulatory framework of the municipality. It must specifically codify the details of the rate structure developed for all classifications of property. Staff will usually require significant technical and legal assistance in development of the final ordinance. The City of Ann Arbors' stormwater utility ordinance is provided as an example in Attachment 1.

Credits or exemptions are often built into the ordinance, and can be used to provide incentives for certain practices or relief from utility fees to certain types of land uses. Credits should be clearly described and can include installation of approved retention/detention best management practices (BMPs), installation of approved BMPs such as rainspout disconnections or porous pavers, and educational programs for employees. Exemptions are often granted for undeveloped (100 percent pervious) parcels.

Once adopted, staff will need to implement a formal customer service process to deal with the questions, concerns and challenges forthcoming from community residents. The first bill is the most important—many customers do not focus on the new stormwater fee until they actually receive their first bill. Customers should be notified several months in advance of the date of billing initiation and their estimated fee. A telephone hot line, e-mail service and website should be created to address questions and concerns. In addition, the municipality should be prepared to address legal challenges to its stormwater fee. The municipality should also be prepared to maintain the master account file, including developing a process for updating the billing unit data for an existing customer and for entering the data for a new customer.

Appendix G, Attachment 1. City of Ann Arbor's Stormwater Utility Ordinance

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Chapter 33 - STORMWATER SYSTEM[1]

Footnotes:

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Editor's note— Ord. No. 62-92, § 1, adopted Jan. 19, 1993, amended Ch. 33, in its entirety, to read as herein set out. Former Ch. 33 pertained to similar subject matter. Subsequently, Ord. No. 17-07, § 1, adopted July 2, 2007, effective July 18, 2007, repealed Ch. 33, §§ 2:200—2:214. Section 2 of said Ord. No. 17-07 enacted provisions designated as a new Ch. 33, §§ 2:200—2:222, to read as herein set out. See also the Code Comparative Table.

Cross reference— Soil erosion and sedimentation control, Ch. 63.

2:200. - Title.

This chapter shall be known as the "Stormwater System Ordinance" of the City of Ann Arbor.

(Ord. No. 17-07, § 2, 7-2-07)

2:201. - Purpose.

This chapter establishes a stormwater utility for the purpose of conducting the city's stormwater management program to protect public health, safety, and welfare; provides for the proportional allocation to property owners of the necessary costs of the stormwater utility; permits the establishment and collection of just and equitable rates and charges to fund the stormwater utility; provides for credits, adjustments, exemptions and appeals; establishes regulations for the use of the stormwater system, and prescribes the powers and duties of certain municipal agencies, departments and officials.

(Ord. No. 17-07, § 2, 7-2-07)

2:202. - Findings.

The City Council finds all of the following:

(1) The constitution and laws of the State of Michigan authorize local units of government to provide stormwater management services and systems that will contribute to the protection and preservation of the public health, safety and welfare, and to the protection of the state's natural resources.

(2) Property owners influence the quantity, character and quality of stormwater from their property in relation to the nature of the alterations made to property.

(3) Stormwater contributes to the diminution of water quality, adversely impacting the public health, safety and welfare, and endangering natural resources.

(4) Control of the quantity and quality of stormwater from developed and undeveloped property is essential to protect and improve the quality of surface waters and groundwaters, thereby protecting natural resources and public health, safety and welfare.

(5) The Federal Clean Water Act and rules and regulations promulgated thereunder place increased mandates on the city to develop, implement, conduct and make available to its citizens and property owners stormwater management services which address water quality, velocity, and volume impacts of stormwater.

(6) Water quality is improved by stormwater management measures that control the quantity or quality, or both, of stormwater discharging directly or indirectly to receiving waters, that reduce the velocity of stormwater, or that divert stormwater from sanitary sewer systems.

(7) The city, having a responsibility to protect the public health, safety, and welfare, has a major role in ensuring appropriate water quality related to stormwater flow.

(8) Improper management of stormwater runoff causes erosion of lands, threatens businesses and residences and other facilities with water damage from flooding, adversely impact public health, safety, and welfare, and creates environmental damage to rivers, streams and other bodies of water in Michigan, including the Great Lakes.

(9) The public health, safety, and welfare is adversely affected by poor ambient water quality and flooding that results from inadequate management of both the quality and quantity of stormwater.

(10) It is appropriate for the city to establish user charges, fees, or rates to offset entirely or in part the cost of its stormwater management program.

(11) It is in the interest of protecting both the waters of the state from pollution and the public health, safety, and welfare for the city to fund stormwater management with a charge that allocates the costs of these services to property owners within the city based upon the extent to which each parcel of real property contributes to the need for stormwater management.

(Ord. No. 17-07, § 2, 7-2-07)

2:203. - Definitions.

For the purposes of this chapter, the following words and phrases shall have the meanings described in this section:

(1) [*Reserved.*]

(2) *Administrator* is the public services area administrator or such other person as the City Administrator may designate.

(3) *Customer charge* shall mean a monthly or quarterly base charge that recovers costs for billing, collection, customer service, and public involvement and public education activities.

(4) *Discharge permit* is as set forth in section 2:216 of this chapter.

(5) *Footing drain* is a pipe or conduit which is placed around the perimeter of a building foundation for the purpose of admitting ground water.

(6) *Impervious area* means a surface area which is compacted or covered with material that is resistant to or impedes permeation by water, including but not limited to, most conventionally surfaced streets, roofs, sidewalks, patios, driveways, parking lots, and any other oiled, graveled, graded, or compacted surfaces.

(7) *Industrial sites* are those sites that contain industrial activities which require NPDES stormwater permits as set forth in regulations promulgated by U.S. EPA and Michigan Department of Environmental Quality.

(8) *Non-stormwater* is all flows to the stormwater system not defined as stormwater in paragraph 2:203(16) of this chapter or as determined by the administrator. This includes, but is not limited to, cooling water, process water, ground water from a purge well and non-residential swimming pool discharge.

(9) *NPDES* means National Pollutant Discharge Elimination System, a program to issue permits for discharges to receiving waters, established under the Federal Clean Water Act, and administered by the Michigan Department of Environmental Quality.

(10) *Non-stormwater use charge* is the charge applicable to any non-stormwater use of the stormwater system, as defined by the administrator.

(11) *Operation and maintenance* includes any component of a stormwater system expenditure for materials, labor, utilities and other items for the management and uninterrupted operation of the stormwater system in a manner for which the stormwater system was designed and constructed.

(12) *Operation and maintenance costs* include all costs, direct and indirect, of operation and maintenance of a stormwater system.

(13) *Pervious area* is all land area that is not impervious.

(14) *Pretreated non-stormwater* is non-stormwater that requires, under an NPDES permit or the permit provided by this chapter, pre-treatment (mechanical, physical or chemical) prior to being discharged into the stormwater system.

(15) *Property* means any land within the boundary of the City of Ann Arbor, both publicly and privately owned, including public and private rights of way, but excluding the Huron River.

(16) *Stormwater* means stormwater runoff, snowmelt runoff, footing drain discharges, surface runoff and drainage, and other discharges allowed by administrative regulations.

(17) *Stormwater discharge rate* means the portion of the stormwater utility charge proportionate to the quantity and representative of the quality of stormwater being discharged from a property, calculated based upon the impervious area of the property.

(18) *Stormwater utility charge* means a charge to property pursuant to this chapter and Chapter 29, intended to offset all or part of the cost incurred by city of preparing and conducting a stormwater management program, and operating and maintaining a stormwater system.

(19) *Stormwater management* means 1 or more of the following:

(a) The quantitative control achieved by the stormwater system of the increased volume and rate of surface runoff caused by alterations to the land;

(b) The qualitative control achieved by the stormwater system, pollution prevention activities, and ordinances to reduce, eliminate or treat pollutants that might otherwise be carried by stormwater; and

(c) Public education, information, and outreach programs designed to educate and inform the public on the potential impacts of stormwater.

(20) *Stormwater management program* means 1 or more aspects of stormwater management undertaken for the purpose of complying with applicable federal, state and local law and regulation or the protection of the public health, safety, and welfare related to stormwater runoff.

(21) *Stormwater system* means roads, streets, catch basins, curbs, gutters, ditches, storm sewers and appurtenant features, lakes, ponds, channels, swales, storm drains, canals, creeks, catch basins, streams, gulches, gullies, flumes, culverts, siphons, retention or detention basins, dams, floodwalls, levees, pumping stations, and other like facilities, and natural watercourses and features located within the geographic limits of the city which are designed or used for collecting, storing, treating or conveying stormwater or through which stormwater is collected, stored, treated or conveyed, or any other physical means by which stormwater management is achieved.

(22) *User* is a firm, person or property that directly or indirectly contributes stormwater or non-stormwater to the stormwater system.

(Ord. No. 17-07, § 2, 7-2-07)

2:204. - Establishment of a stormwater utility.

A stormwater utility is hereby established under the direction of the administrator to conduct the stormwater management program of the city. The stormwater management program shall include those activities necessary to protect public health, safety, and welfare from stormwater and fulfill the requirements of the City of Ann Arbor's stormwater NPDES permit, and all successor permits, including but not limited to the following activities:

(1) Planning, engineering, acquisition, construction, operation, maintenance, installation and debt service costs to acquire, construct, finance, operate and maintain a stormwater system.

(2) Administering the stormwater management program.

(3) Acquiring, constructing, improving, enlarging, repairing, enhancing, replacing, financing, operating and maintaining the stormwater system, together with such indirect and overhead costs which are fairly chargeable to such activities pursuant to accepted accounting principles and practices applicable to the local unit government, including practices required under the Uniform Budgeting and Accounting Act, 1968 PA 2, as amended, MCL 141.421 through 141.440a, and rules and regulations promulgated thereunder.

(4) Developing a stormwater management plan, as identified in section 2:205 of this chapter.

(5) Undertaking activities required in order to comply with federal and state law and regulations related to stormwater and permits issued thereunder.

(6) Paying drain assessments which are the obligation of the city.

(7) Providing public education, or information, or outreach related to the stormwater management program or required by federal or state regulations, or required by permits issued to the local unit of government by federal or state regulatory bodies.

(Ord. No. 17-07, § 2, 7-2-07)

2:205. - Stormwater management plan.

The administrator may adopt, amend, or extend a stormwater management plan from time to time. Any such adoption, amendment, or extension shall be approved by resolution of the Council.

(Ord. No. 17-07, § 2, 7-2-07)

2:206. - Stormwater utility charges, general.

(1) Subject to the provisions of this chapter, all owners of property in the City of Ann Arbor shall be charged stormwater utility charges for their use of the stormwater system. The stormwater utility charges shall be proportionate to the necessary cost of the stormwater management services provided to each property in the city. The basis for stormwater utility charges shall be computed by the administrator.

(2) The stormwater utility charges shall be a quarterly or a regular interval service charge, shall be determined by the provisions of this chapter, and may be changed from time to time by Council.

(3) Revenue from the stormwater utility charge shall be used solely to defray the city's cost of conducting the stormwater management program defined in section 2.204 and described in the stormwater management plan prepared according to criteria in section 2:205.

(4) Stormwater utility charges are in addition to any special assessment, single lot assessment or public improvement charge that might be or become due for capital improvements to the stormwater system. Special assessments, single lot assessments and public improvement charges for improvements to the stormwater system that are financed in whole or in part by special assessments, single lot assessments or public improvement charges will be calculated and imposed as provided in Chapters 12 and 13.

(Ord. No. 17-07, § 2, 7-2-07)

2:207. - Customer charge.

Each property shall be charged a customer charge proportionate to the city's costs of administering the stormwater utility billing system, providing necessary public engagement services, and conducting other necessary services that are provided equitably to each customer, as defined by the stormwater management plan.

(Ord. No. 17-07, § 2, 7-2-07)

2:208. - Stormwater discharge rate.

(1) Each property discharging stormwater into the city's stormwater system, either directly or indirectly, shall be charged an amount proportionate to the representative quantity of stormwater generated by that property. The principal stormwater generating characteristic of each property is its representative impervious area, which shall be used as the basis for the stormwater discharge rate. The stormwater discharge rate shall be used to fund those elements of the stormwater management program whose cost is directly related to the amount of stormwater managed.

(2) The representative impervious area of a property shall be the measured impervious area of the property except for single-family and 2-family residential properties or properties considered residential for storm and sanitary, which may be grouped into 1 or more representative impervious area rate categories based upon a statistical evaluation of the measured impervious area of a sample of all properties. Each property within a category shall be billed the same stormwater utility charge if such statistical similarity is demonstrated.

(3) The administrator may periodically change the representative impervious area of a property based upon information available to the city and/or provided by a property owner.

(Ord. No. 17-07, § 2, 7-2-07)

2:209. - Charges for non-stormwater discharges.

The administrator may impose fees for the use of the stormwater system for non-stormwater discharges permitted by the city under section 2.216 of this chapter. Charges shall be proportionate to the capacity of the stormwater system that is used by the non-stormwater flow that would otherwise be available for stormwater, and any additional charges related to preparing, monitoring, and enforcing any permits related to non-stormwater discharges.

(Ord. No. 17-07, § 2, 7-2-07)

2:210. - Other charges.

Charges for other services provided by the city shall be on a time and materials basis, including direct and indirect costs, as established by the administrator. The administrator may also set charges for the fair share recovery of the cost, including direct and indirect costs, from users for the implementation and operation of any of the following:

(a) Monitoring, inspection and surveillance procedures;

(b) Reviewing accidental discharge procedures and construction;

(c) Discharge permit applications for stormwater and non-stormwater;

(d) Annual charges for multi-year permits, and

(e) Other charges as the administrator may deem necessary to carry out the requirements of this chapter.

(Ord. No. 17-07, § 2, 7-2-07)

2:211. - Credits.

(1) The purpose of this section is to provide for each property owner's control over contributions of storm flows to the stormwater utility system and the related stormwater utility charges and to advance protection of the public health, safety, and welfare.

(2) The city shall offer credits that will enable any property owner, through voluntary action, to reduce the stormwater utility charges calculated for that property owner's property and will provide a meaningful reduction in the cost of service to the stormwater system, or that shall be reasonably related to a benefit to the stormwater system:

(a) Credits will only be applied if requirements outlined in this Code are met, including, but not limited to: completion of on-going maintenance, guaranteed right-of-entry for inspections, and submittal of annual self-certification reports.

(b) Credits will be defined as either set charge reduction or percent (%) reductions applied as a credit adjustment to the charge calculation equation.

(c) Credits are additive for each credit category.

(d) As long as the stormwater facilities or management practices are functioning as approved, the credit reduction will be applied to the charge. If the approved practice is not functioning as approved or is terminated, the credit reduction will be cancelled and the charge will return to the baseline calculation. Once the credit reduction has been cancelled, a customer may not reapply for credit for a period of 12 months and only then if the deficiency has been corrected, as determined by city inspection.

(e) Credits will be applied to the next complete billing cycle after the application has been approved.

(3) The administrator shall define a method for applying and granting credits, as well as criteria for determining the credits a property owner may receive. The administrator may by regulation establish credits for 1 or more of the following property owner actions:

(a) Installation and maintenance of a stormwater control facility meeting the design standards referenced in Chapter 63;

(b) Installation and maintenance of rain barrels, rain gardens, cisterns, dry wells, bioswales, and other water quality controls in addition to those required of the property owner under Chapter 63;

(c) Property owners that satisfy the requirements of the RiverSafe Homes or the Partners for Clean Streams programs administered by the Washtenaw County Drain Commissioner;

(d) Providing a school-based education or information program which has obtained MDEQ approval related to stormwater management and its impacts; and

(e) Other actions of the property owner that, in the judgment of the administrator, result in a measurable reduction in stormwater runoff or pollutant loadings.

(4) The administrator shall define criteria for determining additional credits that lands dedicated for public use may receive. Such credits are appropriate because most of the city's drainage system lies within public rights of way, sharing that property with public roads and other public and private utility systems. Public roads and other impervious surfaces within these rights of way discharge stormwater to the stormwater system and are subject to stormwater utility charges like every other property within the city. Lands dedicated for public use are eligible for credits if they provide 1 or more of the following services to the stormwater utility:

(a) Use of the roadway for conveyance and storage of stormwater during major storm events that exceed the capacity of the underground storm drainage system.

(b) Use of right-of-way for retrofit of stormwater quality control systems required under NPDES permits issued to the city.

(c) Access to the stormwater system for operation and maintenance activities, often restricting traffic on the roadway.

(d) Reduced pavement life when stormwater system repairs require open cut excavation of the roadway.

(e) Education provided by storm inlet labeling, stream crossing signage, and other educational signs placed within the right-of-way.

(Ord. No. 17-07, § 2, 7-2-07)

2:212. - Exemptions.

Except as provided in this section, no public or private property located in a stormwater district shall be exempt from stormwater utility charges.

(1) Properties that do not utilize the public stormwater system shall be exempt from the portion of the charge for stormwater discharge if the property owner follows the procedure detailed by the administrator to qualify for such an exemption.

(Ord. No. 17-07, § 2, 7-2-07)

2:213. - Billing.

The city shall bill property owners and authorized tenants for stormwater systems on a periodic basis under procedures defined in Chapter 29 and by regulations promulgated by the administrator.

(Ord. No. 17-07, § 2, 7-2-07)

2:214. - Stormwater enterprise fund.

(1) All revenues raised from stormwater utility rates, fees, and charges shall be placed in a stormwater enterprise fund together with such other revenues from any source or combinations of sources of revenues otherwise legally available which have been designated to be used for the stormwater management program.

(2) No part of the funds held in the stormwater enterprise fund may be transferred to the general operating fund or used for any purpose other than undertaking the stormwater management program, and operating and maintaining a stormwater system.

(Ord. No. 17-07, § 2, 7-2-07)

2:215. - Use of stormwater system.

(1) The primary use of the stormwater collection system shall be the collection and transportation of stormwater. Non-stormwater use shall be considered a secondary use of the stormwater system.

(2) The discharge of non-stormwater to the stormwater system is prohibited except as allowed under this section. No person shall place or cause to be placed any substance into the stormwater system other than stormwater (except for placement of recreational equipment in the Huron River or its impoundments), except when authorized by a permit granted by the administrator. The administrator may refuse to permit the discharge of non-stormwater into the stormwater system for any reason or combination of reasons that is reasonable.

(3) The following non-stormwater discharges are exempt from discharge prohibitions established in paragraph 2:215(2): water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising groundwater (permitted after demonstration of acceptability), groundwater infiltration to storm drains, uncontaminated pumped groundwater, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, residual street washing waters, springs, non-commercial washing of vehicles, natural riparian habitat or wetland flows, non-residential swimming pools (if de-chlorinated/typically less than 1 PPM chlorine), fire fighting activities, and any other water source not containing pollutants.

(4) Except for natural runoff water or pursuant to agreement approved by the City Council, the city shall not furnish use of the stormwater system to users outside city limits.

(5) Generally, no person, property, or firm shall cause or permit the introduction of any substance into the stormwater system, whether solid, liquid or gaseous, that will cause:

(a) Chemical reaction, either directly or indirectly with the materials of construction used in the stormwater system or that will impair the strength or durability of sewers or structures;

(b) Mechanical action that will destroy or damage sewers or structures;

(c) Restriction of the normal maintenance and inspection of sewers;

(d) Danger to public health and safety or to the environment;

(e) Conditions that create a public nuisance;

(f) An oil sheen or unusual color;

(g) Abnormal demand on the stormwater system capacity; or

(h) The stormwater system to violate its NPDES permit or applicable receiving water standards and all other federal, state, and local regulations.

(6) No person shall discharge into the stormwater system any treated non-stormwater that is subject to a discharge prohibition unless the discharge is authorized under permits issued by MDEQ and the city.

(7) No person shall use the storm water system for discharge from any environmental cleanup that is regulated under the Natural Resources and Environmental Protection Act, Chapter 7, Part 201 of Act 451, P.A. 1994, unless approved by City Council. Approval by City Council must be conditioned upon the discharge meeting all criteria for discharge under this chapter. Approval conditions may provide for measures appropriate to preventing harm due to possible exfiltration into the ground adjacent to the system or failure of any pretreatment system for the discharge.

(Ord. No. 17-07, § 2, 7-2-07)

2:216. - Discharge permits.

(1) A permit is required from the administrator to discharge treated non-stormwater otherwise subject to a discharge prohibition under this chapter into the stormwater system. The administrator may require each person or firm that applies for use or uses of the stormwater system for non-stormwater purposes to obtain a discharge permit on the form prescribed by the administrator, to be subject to all provisions of this chapter. A permit may be issued for a period not to exceed 5 years. The permit shall be subject to modification or revocation for failure to comply or provide safe access or provide accurate reports of the discharge constituents and characteristics. Permits are issued to specific persons or firms for specific operations and are not assignable to another person or firm without the prior written approval of the administrator. Permits are not transferable to another location. Anyone seeking a permit to discharge treated non-stormwater otherwise subject to a discharge prohibition into the stormwater system must do the following:

(a) File a written statement with the administrator setting forth the nature of the enterprise, the amount of water to be discharged with its present or expected bacterial, physical, chemical, radioactive or other pertinent characteristics;

(b) Provide a plan map of the building, works or complex with each outfall to the surface waters, sanitary system, storm sewer, natural watercourse or ground waters noted, described and the discharge stream identified; and

(c) Sample, test and file reports with the administrator and the appropriate federal, state, and county agencies on appropriate characteristics of discharges on a schedule, at locations, and according to methods approved by the administrator.

(2) Every permit to discharge into the stormwater system shall be conditioned upon the permittee providing insurance, security and/or indemnification satisfactory to the administrator protecting the city, city property and persons in the city from loss or damages associated with the permit or permit activities.

(3) The administrator or other authorized employees are authorized to obtain information concerning industrial processes which have a direct bearing on the kind and source of the discharge to the stormwater system. The industrial user may withhold or restrict information if it can establish to the satisfaction of the administrator that release of the information would reveal trade secrets or would otherwise provide an advantage to competitors, except discharge constituents will not be recognized as confidential information.

(4) At the permittee's expense, the administrator shall carry out independent surveillance and field monitoring, in addition to the self-monitoring required of certain users to ascertain whether the purpose of this chapter is being met and all requirements are being satisfied.

(5) The method of determining flow of discharge to the stormwater system shall be approved by the administrator.

(6) The user shall acquire and be in full compliance with applicable federal (NPDES), state and county permits for discharge prior to being granted a permit from the administrator.

(Ord. No. 17-07, § 2, 7-2-07)

2:217. - Regulations.

(1) The administrator may adopt regulations implementing this chapter. These regulations may include, but not be limited to, the following topics:

(a) The design, operation, management, and maintenance of the stormwater system and for connections to that system.

(b) Control of the quality and quantity of stormwater from industrial sites by establishing management practices, design and operating criteria.

(c) Criteria used to determine whether the stormwater utility charge will be billed to the property owner or the occupant(s) of a property, including criteria that will be used to determine how to allocate the stormwater utility charge to multiple occupants of a single property.

(d) Procedures for updating billing data based upon changes in property boundaries, ownership, and stormwater runoff characteristics.

(e) Billing and payment procedures of the stormwater utility that define the billing period, and billing methodology.

(f) Policies establishing the type and manner of service delivery that will be provided by the utility.

(g) Regulations governing the resolution of stormwater management issues among several property owners within the district.

(h) Procedures for establishing, evaluating, and refining any credits granted according to criteria in section 2:211, and appeals as defined according to criteria in section 2:219.

(i) Enforcement policies and procedures.

(2) These regulations shall take effect 30 days after being filed with the City Clerk unless modified or disapproved by the City Council. Regulations which are modified by City Council take effect 30 days after the modification.

(Ord. No. 17-07, § 2, 7-2-07)

2:218. - Stormwater taps.

(1) Except for public services area employees, only City of Ann Arbor registered plumbers, licensed sewer installers and bona fide homeowners, after first obtaining all necessary permits including but not limited to a plumbing permit, street cut permit and sewer tap permit, are authorized to uncover the stormwater system so that existing tees or deep sewer risers installed during public stormwater system construction may be utilized. The connection shall be made only by the public services area employees only upon payment of the required connection fee which shall be fixed by the public services area and shall not be less than the cost of materials, installation and overhead attributable to the installation.

(2) All costs and expense incidental to the installation, connection, and maintenance of the stormwater tap and lead shall be borne by the owner(s).

(3) The public services area will furnish and install stormwater system taps of the size and at the location the applicant requests in writing, provided:

(a) The requests are reasonable;

(b) An adequate stormwater system fronts the premises;

(c) An adequate tee or deep stormwater system riser does not exist for required usage;

(d) A good and safe excavation is provided by the owner(s) or owner's agent for public services area tapping personnel;

(e) The maximum sized direct tapped connection shall not be larger than ½ the nominal diameter of the stormwater main (e.g., a 6-inch maximum tap into a 12-inch stormwater main). Connections greater than ½ the nominal diameter of the stormwater main shall be made in a minimum 3-foot diameter storm sewer structure or with a manufactured tee fitting.

(f) Existing tees and deep risers shall be utilized along with stormwater leads constructed (stubbed) to the property line at the time the stormwater system was constructed.

(Ord. No. 17-07, § 2, 7-2-07)

2:219. - Right of appeal.

The administrator shall establish a procedure for the submission of appeals and the adjustment of the customer's stormwater utility charges. This procedure shall provide the following:

(1) A property owner or occupant liable for a stormwater utility fee shall be provided the right to appeal the stormwater utility charge. Appeals shall be considered on the grounds that the stormwater generated by the property and discharged into the stormwater system is less than estimated by the administrator. No appeal may be brought with respect to a stormwater utility charge more than 1 year after the rendering of the bill for which an appeal is sought.

(2) For an appeal to be successful, the property owner or occupant shall demonstrate that the stormwater generated by the property is less than the amount used by the administrator in the calculation of that property's stormwater utility charge. Factors that will be considered by the administrator include the impervious area of the property, the activities of the property owner or features of the property that are available for credits, the amount of direct discharge to the stormwater system, or other factors defined by the administrator.

(3) A property owner or occupant must comply with all rules and procedures adopted by the administrator when submitting a request for appeal or adjustment of the stormwater utility charge and must provide all information necessary to make a determination.

(4) Upon a finding that the stormwater generated by a property is less than the amount used by the administrator in the calculation of that property's stormwater utility charge, the sole remedy to the property owner shall be re-calculation of the stormwater utility charge based on the corrected level of stormwater.

(5) A finding that the stormwater generated by a property is not less than the amount used by the administrator in the calculation of that property's stormwater utility charge shall be conclusive with respect to that property and shall remain effective for 7 years, unless the property owner changes the impervious area or the stormwater management practices of the property. The property owner shall remain eligible for credits and exemptions under this chapter.

(Ord. No. 17-07, § 2, 7-2-07)

2:220. - Landlord-tenant.

The property owner may request, subject to the approval of the administrator, that the stormwater utility charge be billed to the owner's designated tenant. The administrator may direct billing to the tenants of a property if the tenants are currently billed for water or sanitary sewer service. The property owner shall be liable for payment even if the stormwater utility charges are billed to the tenant of the property.

(Ord. No. 17-07, § 2, 7-2-07)

2:221. - Enforcement.

(1) No person shall construct or maintain any property, residence or business not in compliance with the standards of this chapter.

(2) The administrator and other authorized employees of the city bearing proper credentials and identification shall be permitted to enter upon all properties for the purposes of inspection, observation, measurement, sampling and testing in accordance with the provisions of this chapter.

(3) No person shall fail to provide any report or other information or perform any duty required by this chapter.

(4) The City Attorney is authorized to take appropriate legal action to require compliance with this chapter.

(5) If, after reasonable notice, a person fails to comply with this chapter, the city may cause the work to be done to obtain compliance and shall charge the cost of that work to the person responsible.

(6) If any person fails to pay any fees or charges required by this chapter, the amount may be assessed against the property involved in accordance with section 1:292 of Chapter 13 of this Code.

(7) In addition to any other remedy, the administrator, after 5 calendar days notice posted on the affected property, is authorized to disconnect water service, sanitary sewer and stormwater sewer services to any property in violation of this chapter. The notice shall state that persons affected may, within 5 calendar days, provide the administrator with any information or reasons as to why services should not be disconnected.

(8) The administrator is authorized to take all steps necessary to immediately halt any discharge of pollutants which reasonably appears to present an imminent danger to the health or welfare of persons or to the environment.

(9) In case of an emergency involving private stormwater facilities, the administrator may direct that immediate action be taken to correct or abate the condition causing the emergency. City personnel may perform the required work and charge the appropriate owner(s) all such related and provable costs. Such costs (if remaining unpaid for 30 days following a bill being sent for their reimbursement) shall constitute a lien on the real property.

(9) Persons aggrieved by any determination of the Administrator in enforcing this chapter may appeal that determination pursuant to section 1:16 of Chapter 1 of this Code. Prosecution shall be stayed pending such an appeal.

(10) A person who violates any provision of this chapter shall be responsible for a civil infraction for which the court may impose a civil fine of not more than $10,000.00 per day of violation plus all costs, direct or indirect, which the city has incurred in connection with the violation, including but not limited to fines paid by the city. Each day a violation occurs is a separate violation.

(Ord. No. 17-07, § 2, 7-2-07)

2:222. - Conflict.

In the event of a conflict between a provision of this chapter and any other portion of the City Code, the provisions of this chapter shall prevail.

(Ord. No. 17-07, § 2, 7-2-07)

APPENDIX B
DETROIT DRAINAGE CHARGE ADJUSTMENT GUIDE

A Guide to the Drainage Charge Bill Adjustment

This guide describes how customers can either: (a) simplify their bill; or (b) request modifications to the data that the Detroit Water & Sewerage Department (DWSD) uses in computing their charge. DWSD tries to use the best data available to ensure that properties are accurately charged for drainage. However, DWSD recognizes that changes to a parcel can happen at anytime. For customers whose bills are inaccurate because of outdated or incorrect data, DWSD has a process for customers to seek an adjustment of the billing data.

This guide describes the options available to make adjustments to information about your property that is used by DWSD to generate your drainage charge bill.

Contents

Adjustments

DWSD will update drainage charge billing information when data is proven to be outdated or incorrect. All customers may apply for applicable adjustments to correct data used in billing. The account must be in the customer's name. A customer may file an application for one or more reasons regarding incorrect parcel information outlined in the following section. Please refer to the section on Adjustment Application Procedures for information on application procedures and for the necessary forms and back-up documentation requirements.

Ownership Adjustments

- If a customer is billed for a parcel that they do not own, the incorrect parcel information is typically due to: 1) an incorrect mailing address; 2) the account is not associated with the correct parcel; or 3) the property has been sold (and the deed has not yet been properly recorded at the Assessor's Office), or the most recent assessor data has not been merged into the DWSD billing system.
- Parcel size or parcel configuration inaccuracies may be due to recent parcel splits, purchase or sale of a portion of a parcel, or consolidations, or otherwise inaccurate parcel boundary delineations. Since adjustments of this nature may affect the legal description of the property, the customer will be referred to the Assessor's office.

Geographic Information System Polygon Orientation Correction

The geographic information system (GIS) is the data management system that contains the parcel shape and is used to determine the impervious acreage of a parcel. A customer may apply for an adjustment if the GIS parcel polygon is not aligned correctly with the physical parcel and this discrepancy results in a change in the impervious area calculation for the site.

A property survey provided by the owner and confirmed by DWSD can result in a more precise calculation of the impervious area.

Did You Know?

435 square feet is approximately equal to a two-car garage

NOTE: Impervious area adjustments **435 square feet** or less will not be made to a parcel because the calculations used in determining impervious areas already provides an allowance of this amount of area. Impervious area measures are truncated to 0.01 of an acre in the data management system.

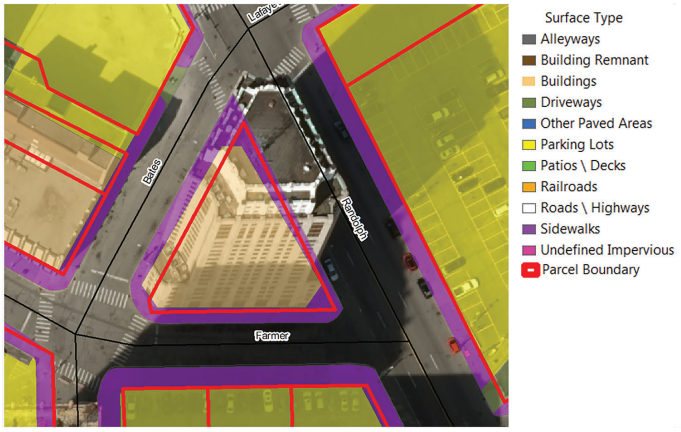


Figure 1: Parcel Boundary and Aerial Image

Impervious Cover Modification

The following sections are for applications related to outdated or incorrect impervious cover information.

Impervious Area Adjustments

A customer may apply for an adjustment if the parcel's total impervious area is outdated or incorrect. Impervious area adjustments may result from development or redevelopment projects. For example, the addition or removal of a building or structure.

The impervious area adjustment also applies to modifications made by the customer to their property to reduce the impervious area. An example of this situation is the removal of impervious surfaces such as parking lots replaced with landscaped/planted areas (pervious areas).

Impervious Classification

A customer may apply for an impervious area adjustment if the parcel or a portion of the parcel which is pervious, appears as an impervious area in the aerial photography. The customer needs to provide site photographs to confirm that areas classified as impervious meet the definition of pervious in order to reclassify the area as a pervious surface. DWSD may perform a site inspection to verify the property data.

NOTE: Customers may not apply for an adjustment to the drainage charge for any routinely driven on surface (e.g., gravel, dirt, and grass areas). Such surfaces impede the infiltration of water and are therefore deemed impervious.

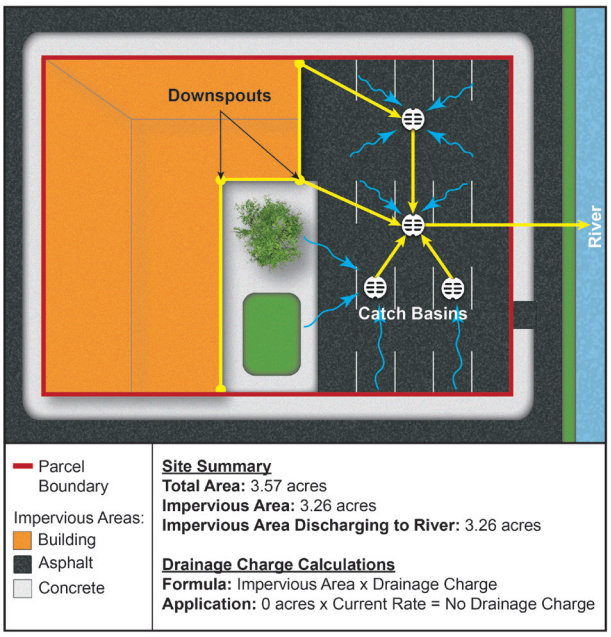


Figure 2: 100% Stormwater Discharge to Surface Water

Stormwater Discharged to Surface Waters

For some customers, a portion or all of their property discharges stormwater directly to receiving waters (i.e., the Detroit and Rouge Rivers). If the criteria outlined below are met, the standard drainage charge calculation will be applied only to those portions of the property that drain to DWSD's sewer system. If all of the property discharges to a receiving water, there will be no drainage charge.

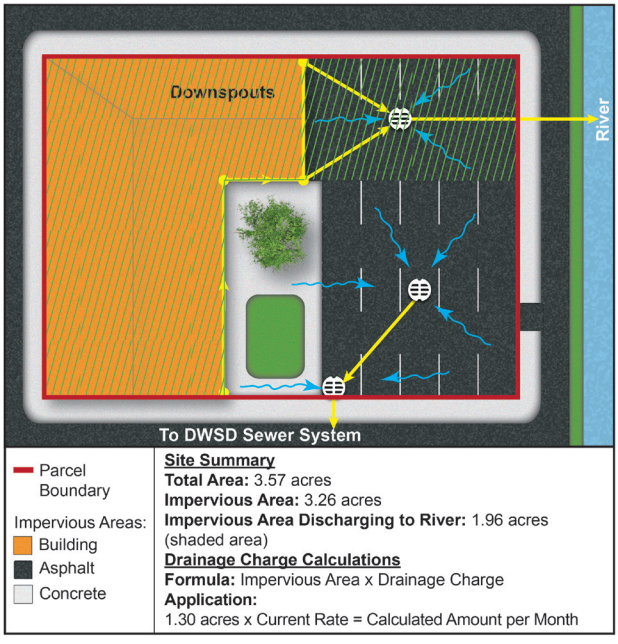


Figure 3: Partial Stormwater Discharge to Surface Water

The following criteria must be met to be classified as a direct discharge:

1. The stormwater discharge must flow through a privately owned and operated storm drainage system (rather than a DWSD storm sewer or outfall). This applies to the entire drainage conveyance system from the point stormwater leaves the site to the point where it reaches and discharges to the receiving waters.

2. The property must be protected from the 100-year flood event (i.e., if a 100-year river elevation occurs, the site will not flood).

Property owners wishing to receive an adjustment for a property or portion of a property can apply for an adjustment using the Drainage Charge Adjustment Form. Forms are available on-line at: www.detroitmi.gov/drainage.

Adjustment Application Procedures

The purpose of the adjustment application process is to enable customers to seek adjustments for inaccurate parcel boundaries or sizes, incorrect parcel identification, or for errors in the calculation of a parcel's impervious area as outlined in the previous sections.

To view information related to your property, please see the link to the Parcel Viewer at [www.detroitmi.gov/drainage] or [http://arcg.is/29KWCpY]. This site includes information for each parcel in DWSD's service area, including pervious, impervious, and total acreage.

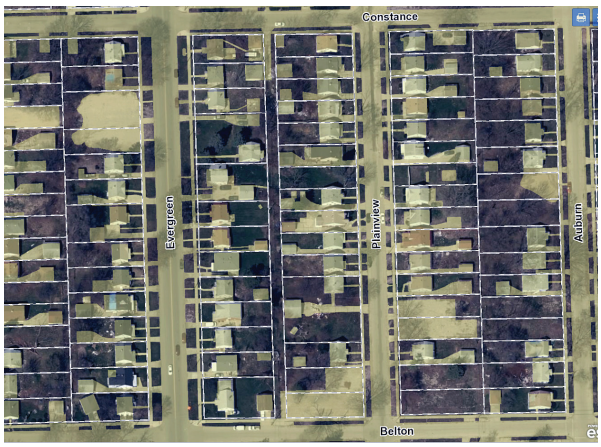


Figure 4: Screen Shot of the Parcel Viewer

Adjustment Application

A property owner, owner's authorized representative, or account holder may initiate a Drainage Charge Adjustment Application (Figure 5). The customer may question multiple issues in a single adjustment application.

Supporting Documentation

For all applications, the customer should provide a brief written description of the reason for the drainage charge adjustment request. Additionally, the following documentation must be provided along with the Drainage Charge Adjustment Application:

For Ownership Adjustments

Supporting documentation recommended for this type of adjustment will depend on the reason for the inaccuracy.

- Incorrect mailing address: current owner and mailing address for parcel, if known
- Property sale: copy of a deed documenting the property transfer
- Water account associated with incorrect parcel: copy of water bill

GIS Polygon or Impervious Area or Impervious Classification Adjustments

For applications related to incorrect impervious area information, customers must provide adequate evidence supporting the requested impervious area square footage by providing the following:

- Drainage Charge Adjustment Application Form
- Site plan
- Site photographs
- Marked-up image showing correct parcel boundary and/or impervious coverage (this image could be taken from the Parcel Viewer)
- Other information

If DWSD is unable to make a determination based on the information submitted, then DWSD may request additional information.

DWSD Drainage Program
6425 Huber
Detroit, MI 48211
313.267.8000 (option 6)
drainage@detroitmi.gov

Drainage Charge Adjustment Application
(Please fill out one form per parcel)

Contact Information ***(Please print or type)***

1. **Property Owner:** _____
2. **Mailing Address:** _____
   Street Address City Zip
3. **Phone:** _____ **4. Email:** _____

Must match owner name in Assessor's parcel database. If different than owner, must provide Power of Attorney or proof of tenant.

5. **Authorized Representative (name, address, email)**

_____

Service Location Information (Please print or type; use back if necessary)

6. **Service Address:** _____
7. **Parcel ID:** _____
8. **DWSD Account No:** _____
9. **Property Classification:**
   - ☐ Industrial
   - ☐ Commercial
   - ☐ Residential
   - ☐ Tax Exempt
   - ☐ Faith Based

10. Reason for Adjustment Request:

Feel free to provide a brief description of the adjustment(s) you are requesting in the space below. Refer to the following page for common appeal types and required back-up documentation.

_____
_____
_____
_____

Send completed application and supporting documentation to:

DWSD Drainage Program
6425 Huber
Detroit, MI 48211

Alternatively, applications can be faxed to: 313.842.6495 or emailed to: drainage@detroitmi.gov
Additional questions call 313.267.8000 (option 6) or email: drainage@detroitmi.gov

Figure 5: Drainage Charge Adjustment Application

Stormwater Discharge Directly to Surface Waters

For applications related to discharges directly to surface waters (the Detroit or Rouge Rivers) or retention of stormwater on-site:

- Drawings and/or site plans with calculations. The drawings/site plans and calculations need to be stamped by a registered Professional Engineer (P.E.) or Landscape Architect to show the storm sewer system, the topography, and the portion of the property that drains to surface waters.
- Site photographs
- The Michigan Department of Environmental Quality (MDEQ) stormwater permit (if a non-residential customer).
- Any other documentation requested by DWSD.

Note: There may be a one-time fee to review the drawings/site plans.

If DWSD is unable to make a determination based on the information submitted, then DWSD may request additional information.

Application Forms

The Drainage Charge Adjustment Application is available online at: www.detroitmi.gov/drainage.

New accounts will be required to fill out the DWSD Water and Sewer Application for Service Form.

Application Submission

The completed application and the supporting documentation must be submitted to:

DWSD Drainage Program
6425 Huber
Detroit, MI 48211

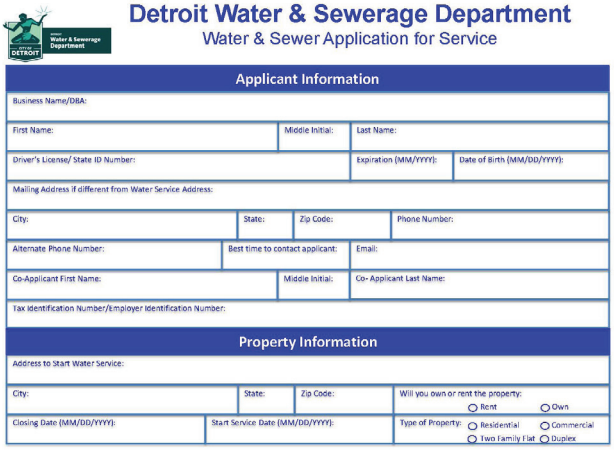
Alternatively, applications can be faxed to 313.842.6495 or emailed to: drainage@detroitmi.gov.

Customers with additional questions should call: 313.267.8000, option 6.

Adjustments to the legal description of a property must be made in person at the Assessor's office located in the Coleman A. Young Building, 2 Woodward Avenue, Detroit, MI 48226. Questions regarding adjustments to a parcel or a property's legal description should call: 313.224.3011.

Adjustment Application Denials

If the customer disagrees with DWSD's adjustment decision, he or she may request that the application be re-evaluated. Customers wishing to have their adjustment decision re-evaluated should contact the DWSD Drainage Program at drainage@detroitmi.gov or 313.267.8000, option 6 to initiate a formal appeal process.



Detroit Water & Sewerage Department
Water & Sewer Application for Service

Applicant Information			
Business Name/DBA:			
First Name:	Middle Initial:	Last Name:	
Driver's License/ State ID Number:	Expiration (MM/YYYY):	Date of Birth (MM/DD/YYYY):	
Mailing Address if different from Water Service Address:			
City:	State:	Zip Code:	Phone Number:
Alternate Phone Number:	Best time to contact applicant:	Email:	
Co-Applicant First Name:	Middle Initial:	Co- Applicant Last Name:	
Tax Identification Number/Employer Identification Number:			

Property Information			
Address to Start Water Service:			
City:	State:	Zip Code:	Will you own or rent the property: ○ Rent ○ Own
Closing Date (MM/DD/YYYY):	Start Service Date (MM/DD/YYYY):	Type of Property: ○ Residential ○ Commercial ○ Two Family Flat ○ Duplex	

Figure 6: Water and Sewer Application for Service for New Accounts Receiving Water and Sewerage Services

Policies

Property Owner Responsibilities

DWSD customers are responsible to provide data that demonstrates that the drainage charge is not accurate. Customers are responsible for the cost incurred in the preparation of any necessary supporting data or required documentation.

Customers are advised to continue paying in full, regardless of the submittal/pending status of an adjustment application. If DWSD approves an application then the account will be credited from the date the application was submitted and deemed administratively complete (i.e., all forms and requirement documentation provided).

If the customer is notified that an application is incomplete, they will have 30 days to provide the required information or to contact DWSD to request additional time to provide the missing information. If the application is not administratively complete or if DWSD has not been contacted by the customer, 30 days after notification, a second letter will be sent out indicating application will

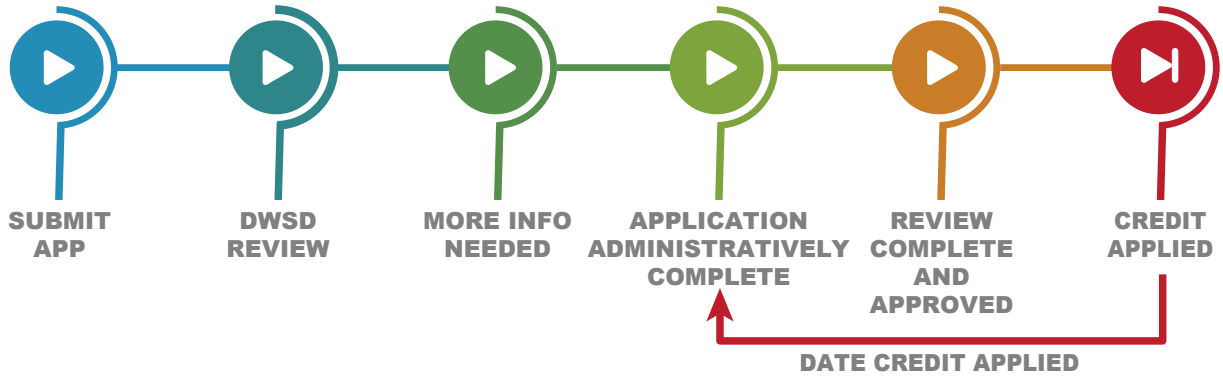
be closed in 10 days. After the 10 days, the application will be closed, however the customer may resubmit an application when they have the requested information.

DWSD Responsibilities

It is DWSD's responsibility to review completed applications and notify the customer in a timely fashion of any missing information necessary to process the application and make a decision. DWSD will notify the customer in writing upon completing the technical review of the application.

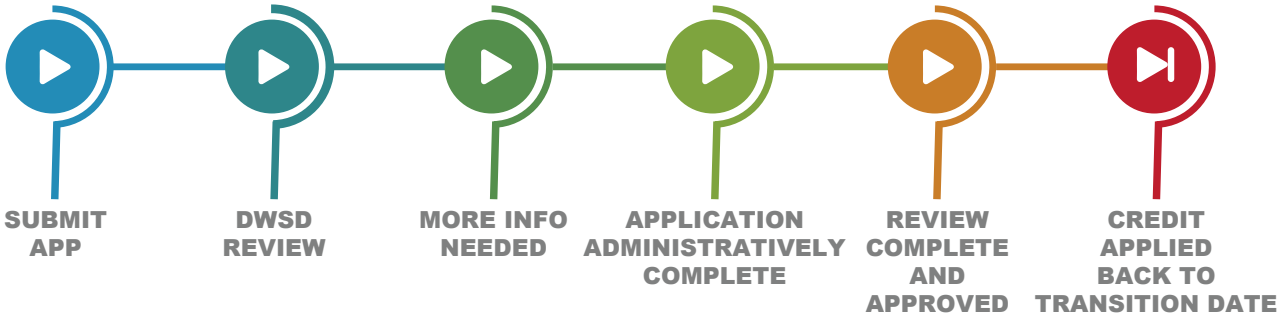
Adjustment Credit Date for Modifications to Impervious Area

Once approved, the effective date of the bill adjustment for parcel application will be the date the application was submitted to DWSD and administratively complete. DWSD processing time of application will not impact the effective date of the adjustment.



Adjustment Credit Date for Impervious Area Corrections

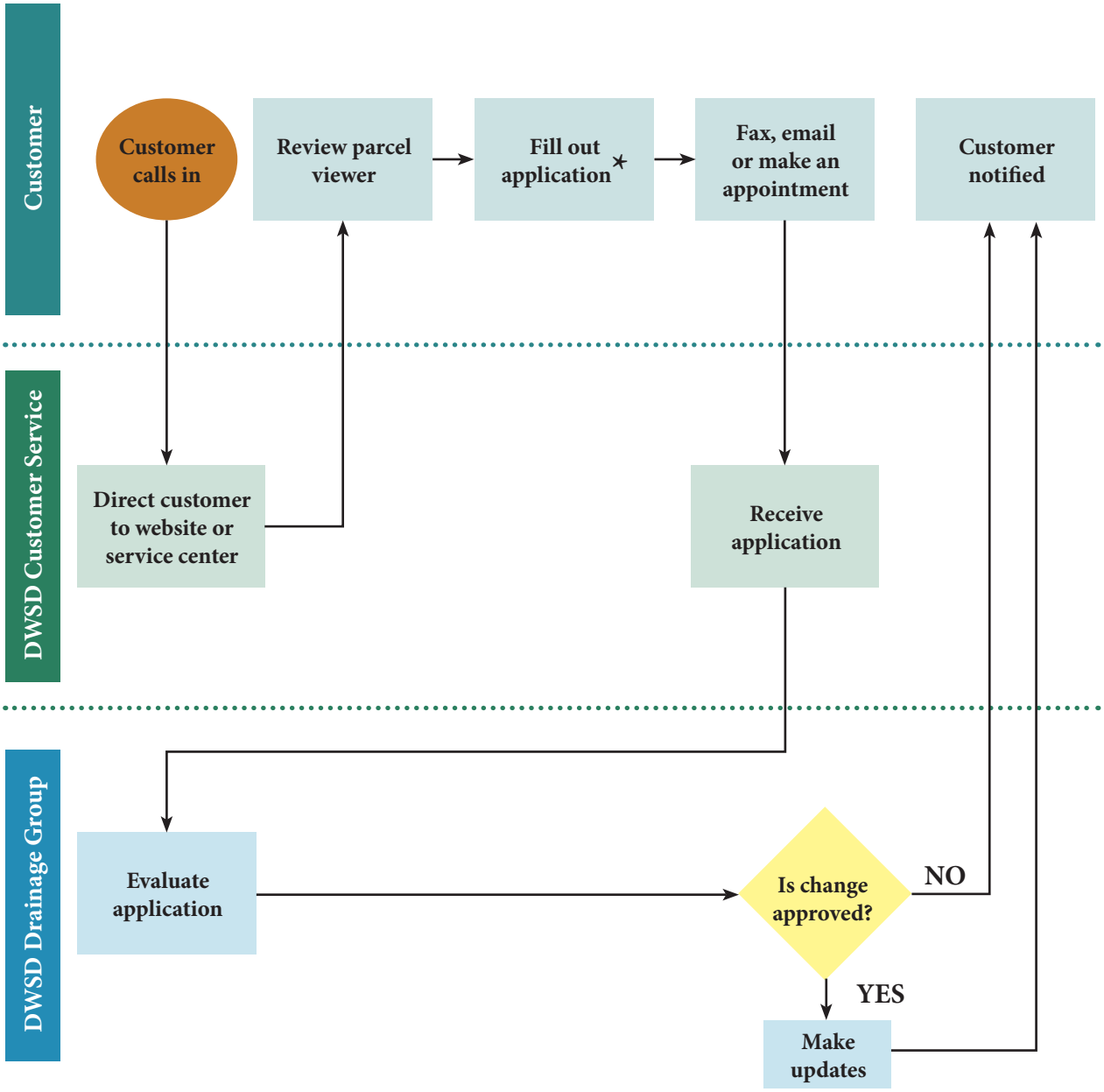
The effective date for impervious area corrections will be the transition data from the new drainage billing methodology.



Data Validation

Following the submission of an application form, DWSD may need to inspect the subject parcel to verify the accuracy of the information provided in the application form. DWSD will provide sufficient written notice to the customer of their intentions to inspect the property and request access to the parcel. Inspections will be conducted within normal business hours and without unreasonable disruption to business operations. Failure of an applicant to make appointments upon request will result in rejection of the adjustment application.

Drainage charge adjustments will be based on the information provided and may result in a drainage charge increase. DWSD may revoke the adjustment if they later determine that the information provided in the application is inaccurate.



*Customer must file within 28 days of receipt of monthly bill.

Figure 7: Customer Adjustment Process

APPENDIX C
PROPOSED ENABLING LEGISLATION – SENATE BILL 756

SENATE BILL No. 756

January 18, 2018, Introduced by Senators KNOLLENBERG and PAVLOV and referred to the Committee on Local Government.

A bill to regulate the creation of stormwater management utilities by local units of government; to regulate the adoption and content of stormwater utility ordinances; to provide for the allocation of the costs of planning, constructing, operating, maintaining, financing, and administering a stormwater system to real property served by the system; to provide for the establishment and collection of stormwater utility fees; to provide for the reduction or elimination of fees; to provide for appeals; and to prescribe the powers and duties of certain local governmental officers and entities.

THE PEOPLE OF THE STATE OF MICHIGAN ENACT:

Sec. 1. This act shall be known and may be cited as the

SENATE BILL No. 756

"stormwater utility act".

Sec. 2. As used in this act:

(a) "Fund" means a stormwater fund established pursuant to section 8.

(b) "Impervious area" means a surface area that is resistant to permeation by surface water.

(c) "Local unit of government" or "local unit" means a city, village, township, or county.

(d) "Operation and maintenance costs" means all costs, direct and indirect, of materials, labor, professional services, utilities, and other items for the management and uninterrupted operation of a stormwater system in a manner for which the stormwater system was designed and constructed.

(e) "Property" means real property or a parcel of real property, as indicated by the context.

(f) "Stormwater" means that term as defined in 40 CFR 122.26(b)(l3).

(g) "Stormwater management" means 1 or more of the following:

(*i*) The quantitative regulation through the stormwater system of the volume and rate of stormwater runoff from property. Quantitative regulation includes, but is not limited to, flood control.

(*ii*) The qualitative regulation of stormwater runoff into the stormwater system or of stormwater discharged from the stormwater system. Qualitative regulation includes, but is not limited to, stormwater treatment, pollution prevention activities, and administration and enforcement of ordinances to reduce, eliminate,

or treat pollutants carried from property into the stormwater system by stormwater.

(*iii*) Notifying property owners about the stormwater management program, including, but not limited to, how to obtain a reduction or elimination of fees for use of the stormwater system.

(h) "Stormwater management plan" or "plan" means a plan described in and adopted pursuant to section 4.

(i) "Stormwater management program" means aspects of stormwater management undertaken by a local unit of government.

(j) "Stormwater system" means those features that are located or partially located within the geographic limits of a local unit of government and that are designed or actively managed by the local unit for collecting, storing, treating, or conveying stormwater, which may include roads, streets, highways, catch basins, curbs, gutters, ditches, storm and combined sewers and appurtenant features, pipes, interceptors, conduits, lakes, ponds, channels, swales, storm drains, county drains, canals, creeks, streams, gulches, gullies, flumes, culverts, bridges, siphons, retention or detention basins, treatment, screening, or disinfection facilities, dams, floodwalls, levees, pumping stations, and other similar facilities, and natural watercourses.

(k) "Stormwater utility fee" or "fee" means a fee provided for under section 5.

(*l*) "Stormwater utility ordinance" means an ordinance described in and adopted pursuant to section 3.

Sec. 3. (1) A stormwater management utility shall accomplish 1 or more of the following regulatory purposes:

(a) Protect against economic loss, property damage, threats to public health and safety, and damage to the environment and natural resources from water pollution or from flooding or other instances of high volumes or rates of stormwater runoff.

(b) Enable property owners to fulfill legal obligations pertaining to increases in the quantity or reduction in the quality of stormwater runoff resulting from voluntary choices made in the manner of development of the property, including, but not limited to, obligations under section 3109 of the natural resources and environmental protection act, 1994 PA 451, MCL 324.3109, the natural flow doctrine, and the law of trespass and nuisance.

(c) Provide property owners paying stormwater utility fees with proportionate benefits described in subdivision (a). These benefits include reciprocal benefits to a property owner when other property owners pay fees to support the stormwater system and thereby fulfill their legal obligations to that property owner described in subdivision (b).

(2) To create a stormwater management utility, the legislative body of a local unit of government shall do both of the following:

(a) Adopt a stormwater management plan by resolution.

(b) Adopt a stormwater utility ordinance that is consistent with the adopted stormwater management plan.

Sec. 4. (1) A stormwater management plan shall include all of the following:

(a) The time period covered by the plan.

(b) The service area of the stormwater management utility. The service area may consist of all of the territory of the local unit

of government, a portion of the territory of the local unit, or all or a portion of the territory of 2 or more local units that jointly develop the plan.

(c) The type and level of stormwater management services to be provided by the stormwater management utility, including system reliability, level of flood protection, pollution control, and structural condition of system components.

(d) Projected direct and indirect costs to provide services as described in the plan pursuant to subdivision (c) for the stormwater management utility, including cost of planning, capital, operations, maintenance, permit compliance, and asset replacement.

(e) Recommendations for efficiencies to minimize costs.

(f) Current and projected impervious area and, if applicable under section 7(2), an inventory of impervious surfaces and parcel areas for properties within the stormwater management utility's service area.

(g) A determination of which properties will be subject to any stormwater utility fee for voluntary use of a stormwater system owned and operated by the local unit of government, as required under section 10(1), and the process and method that was used to make that determination.

(h) The method of calculating any stormwater utility fees proportionate to the cost of providing the locally determined level of service of stormwater management.

(i) Provisions to ensure that the cost of those elements of the stormwater management program directly or indirectly related to the amount of stormwater managed will be allocated in proportion to

the amount of stormwater runoff from a property conveyed by the stormwater system, employing methods that are relatively accurate considering available technology.

(j) A description of the components of the stormwater system owned and operated by the local unit of government.

(k) A description of how a stormwater utility fee may be reduced or eliminated as provided under section 9.

(2) Before preparing a stormwater management plan, a local unit of government must give notice that it intends to prepare a stormwater management plan. The notice shall be given by all of the following means:

(a) If the local unit has a website that is accessible to the public free of charge, by posting on the website.

(b) By publication in a newspaper of general circulation within the local unit. If there is no newspaper of general circulation within the local unit, notice shall be given by first-class mail to all persons to whom real property taxes are assessed and to the occupants of all structures within the local unit.

(c) By first-class mail to the county drain commissioner or water resources commissioner and to each local unit located adjacent to or located, in whole or in part, within the local unit preparing the plan. The notice under this subdivision shall request the recipient's cooperation in and comment on the preparation of the plan, including comment on jointly managing stormwater.

(3) Before adopting a stormwater management plan, a local unit of government must hold at least 1 public hearing on the proposed plan. The local unit shall give notice specifying the time, place,

and purpose of the hearing and the place where a copy of the proposed plan is available for public inspection. The notice shall be given by all of the following means:

(a) If the local unit has a website that is accessible to the public free of charge, by posting the notice on the website at least 14 days before the hearing and maintaining the posting until the time of the hearing. The posting shall include a copy of the proposed plan.

(b) By publication in a newspaper of general circulation within the local unit. If there is no such newspaper, notice shall be given by first-class mail to all persons to whom real property taxes are assessed and to the occupants of all structures within the local unit. If the local unit has a website that is accessible to the public free of charge, the notice under this subdivision shall include the website address at which a copy of the proposed plan is posted under subdivision (a). The notice under this subdivision shall be published or deposited in the United States mail at least 14 days before the date of the hearing.

(c) By first-class mail to the county drain commissioner or water resources commissioner and to each local unit located adjacent to or located, in whole or in part, within the local unit preparing the stormwater management plan. If the local unit has a website that is accessible to the public free of charge, the notice under this subdivision shall include the website address at which a copy of the proposed plan is posted under subdivision (a). The notice under this subdivision shall be deposited in the United States mail at least 14 days before the date of the hearing.

(4) A stormwater management plan may be extended or otherwise amended by resolution subject to the same procedure set forth in this section for the adoption of the original plan.

Sec. 5. (1) A stormwater utility ordinance shall identify the regulatory purposes under section 3(1) served by the ordinance.

(2) A stormwater utility ordinance may provide for a stormwater utility fee on property serviced by a stormwater system to pay the proportionate costs of the stormwater management program. A stormwater utility fee shall not include components other than as described in this section and sections 6 and 7.

(3) A stormwater utility ordinance shall describe the method or methods used to determine any stormwater utility fee.

(4) A local unit of government may develop a corresponding stormwater utility fee, calculation method, or both for each stormwater management utility described in the stormwater management plan.

(5) A stormwater utility fee shall be proportionate to the direct and indirect cost to the local unit of government of providing stormwater management to each property in a stormwater management utility that uses the stormwater system that is not financed by revenue received by the local unit of government from any other source.

(6) A stormwater utility ordinance may define rate categories for classes of properties for which the proportionate cost of providing service is similar.

Sec. 6. (1) A stormwater management utility may assess a 1-time stormwater utility fee for connection to the stormwater system

of newly developed or modified property benefited by the stormwater system. The purpose of the fee is to finance the capital costs to the local unit of government of elements of the public stormwater system needed to serve that property and not otherwise financed by the property developer or by revenue received by the local unit of government from any other source.

(2) A stormwater utility fee under subsection (1) shall be computed based on the newly developed or modified property's proportionate share of the local unit of government's cost to expand the stormwater system to manage the additional stormwater from that property, including, if appropriate, the newly developed or modified property's proportionate share of the local unit of government's existing capital investment in the stormwater system. This proportionate share shall be calculated consistent with the method used by the local unit of government under section 7 considering the available data at the time of the property's development or modification.

Sec. 7. (1) A stormwater management utility may assess a stormwater utility fee for the use of a stormwater system.

(2) The method for determining a stormwater utility fee under subsection (1) shall be based on the quantity or quality, or both, of stormwater runoff from each property or category of property.

(3) A stormwater utility fee or portion thereof charged to a property for those elements of the stormwater management program whose cost is attributable to the quantity of stormwater runoff from each individual property or category of properties shall be calculated, consistent with stormwater management plan provisions

under section 4(1)(i), using 1 or more methods generally accepted by licensed professional engineers or regional or national professional groups associated with stormwater experts, including, but not limited to, the following methods:

(a) Impervious area, based solely on the impervious area of the property.

(b) Equivalent residential unit or equivalent service unit, based on the impervious area of the property in comparison to the typical impervious area associated with single-family residential properties within the service area of the stormwater management utility.

(c) Intensity of development, based on the total area of the property multiplied by a rate category. A rate category shall apply to properties with statistically similar stormwater-runoff-generating characteristics. The stormwater utility fee shall be proportionate to the percentage of the property's impervious area to its total area.

(d) Equivalent hydraulic area, calculated as follows:

(*i*) Multiply the impervious area of the property by a stormwater runoff factor.

(*ii*) Multiply the pervious area of the property by a stormwater runoff factor.

(*iii*) Add the products under subparagraphs (*i*) and (*ii*).

(e) Other billing methodologies that can be demonstrated to provide an equitable distribution of costs in proportion to the property's use of the stormwater system.

(4) A stormwater utility fee or portion thereof charged to a

property for those elements of the stormwater management program whose cost is attributable to the quality of stormwater managed and is not covered by other revenue shall be proportionate to the cost of those elements of the stormwater management program.

Sec. 8. (1) A stormwater utility ordinance that establishes a stormwater utility fee shall establish a stormwater fund. All stormwater utility fees collected by the local unit of government shall be deposited into the fund. The treasurer of the local unit of government may receive money or other assets from any other source for deposit into the fund. Money in the fund shall be invested pursuant to 1943 PA 20, MCL 129.91 to 129.97a. The treasurer shall credit to the fund interest and earnings from fund investments. Money in the fund at the close of the fiscal year shall remain in the fund and shall not lapse to the general fund of the local unit.

(2) The treasurer of the local unit of government shall expend money from the fund, upon appropriation, only for the regulatory purpose of defraying any of the following stormwater management program costs:

(a) Operation, maintenance, planning, engineering, acquisition, construction, installation, improvement, or enlargement of a stormwater system, including financing and debt service costs and indirect and overhead costs that are fairly chargeable to such activities under applicable generally accepted accounting principles and the uniform budgeting and accounting act, 1968 PA 2, MCL 141.421 to 141.440a.

(b) Administration of the stormwater management program.

(c) Development of a stormwater management plan.

(d) Providing user education related to the stormwater management plan or required by federal or state regulations or required by permits issued to the local unit of government by federal or state regulatory bodies.

(3) If the local unit of government has a website that is accessible to the public free of charge, the local unit shall post on its website the most recent audit report for the fund under the uniform budgeting and accounting act, 1968 PA 2, MCL 141.421 to 141.440a.

Sec. 9. (1) Subject to subsection (2), a stormwater utility ordinance that imposes a stormwater utility fee shall provide for the reduction or elimination of the stormwater utility fee for a property if a modification or improvement made to that property or to that and 1 or more other properties reduces the rate or volume of or eliminates runoff of or pollutant loadings in excess of natural levels of stormwater entering the stormwater system. Each property owner has the burden of demonstrating that the stormwater utility fee reduction or elimination is justified for that property, using methods that are reasonably accurate considering available technology.

(2) A reduction in or elimination of the stormwater utility fee under subsection (1) shall be proportionate to the reduction of the cost of service of the stormwater system to the property or properties.

Sec. 10. (1) To ensure that stormwater utility fees are voluntary, property is not subject to a fee unless the local unit

of government demonstrates both of the following:

(a) That the property utilizes the stormwater system.

(b) That such utilization imposes a net cost to the stormwater system when offset by any activities or conditions that reduce the cost of service to the stormwater system or are reasonably related to a benefit to the stormwater system provided by that property or its owner, including, but not limited to, modifications or improvements described in section 9(1).

(2) The local unit of government shall provide the owner of property initially determined to be subject to a stormwater utility fee under subsection (1) with the opportunity to demonstrate that the property either does not utilize the stormwater system or does not utilize the stormwater system to the extent calculated by the local unit of government in establishing the stormwater utility fee and is therefore entitled to the elimination of or a reduction in the fee. The stormwater utility ordinance shall set forth procedures to implement this subsection.

(3) A stormwater utility ordinance that establishes a stormwater utility fee shall provide that, when additional property begins to utilize the stormwater system, a stormwater utility fee, as determined by the local unit of government, accrues.

Sec. 11. A stormwater utility ordinance shall designate an entity within the local unit of government to administer the stormwater management utility and shall establish the administrative duties. A stormwater utility ordinance shall establish administrative policies and procedures or authorize the administrator to establish the administrative policies and

procedures. The administrative policies and procedures shall include at least the following topics, as applicable:

(a) Criteria used to determine whether a stormwater utility fee will be billed to the property owner.

(b) Procedures for updating billing data based upon changes in property boundaries, ownership, and stormwater runoff characteristics, and stormwater runoff calculation methods.

(c) Billing and payment procedures of the stormwater management utility including the billing period, billing methodology, credit application procedures, and penalties.

(d) Policies establishing the type and manner of service that will be provided by the stormwater management utility.

(e) Regulations governing the resolution of stormwater management disputes that arise between property owners within the stormwater management utility.

(f) Procedures for granting and modifying the reduction or elimination of a fee, as authorized pursuant to section 9.

(g) Procedures for appeals as described in section 13.

(h) Enforcement policies and procedures.

(i) A process by which fees, formulas for calculating fees, and formulas for calculating fee reductions will be reviewed and updated at least every 3 years.

Sec. 12. (1) A stormwater utility ordinance shall establish remedies for any unpaid stormwater utility fees as described in this section.

(2) A local unit of government may collect a stormwater utility fee by any method authorized by law.

(3) A partial payment of delinquent stormwater utility fees shall be applied to the oldest delinquent fees, and remaining fees may continue to accrue interest and penalties.

Sec. 13. (1) A stormwater utility ordinance or the administrative policies and procedures adopted under the ordinance shall provide a procedure for appeals, the establishment of an appeals board, and the reduction or elimination of any stormwater utility fee. The procedure shall include at least all of the following:

(a) Any property owner liable for a stormwater utility fee may appeal the determination that the property utilizes the stormwater system or the amount of a stormwater utility fee, including a determination on a reduction in or the elimination of the fee under section 9. An appeal may be based on the quantity or quality of stormwater runoff generated, the reductions established, the reductions allocated, or any other matter relating to the determination of the stormwater utility fee.

(b) An appeal under subdivision (a) shall be heard by a stormwater utility appeals board appointed by the local unit of government. The appeals board shall consist of 3 members, 2 of whom shall be licensed professional engineers not employed by the local unit of government.

(c) An appeal of a stormwater utility fee shall not be brought more than 1 year after the fee was billed.

(d) To prevail in an appeal of a stormwater utility fee, the appellant must demonstrate in accordance with the requirements of the stormwater management plan that the property does not use the

system to the extent determined by the local unit of government in the calculation of that property's stormwater utility fee or that there was a mathematical error in the calculation.

(e) The sole remedy for a property owner who prevails in an appeal of a stormwater utility fee is a prospective correct recalculation of the stormwater utility fee.

(f) If in an appeal of a stormwater utility fee a local unit of government finds that the requirements of subdivision (d) have not been met, that finding is conclusive until the property is modified to either increase or decrease the utilization of the system. The property owner remains eligible for a reduction in or elimination of fees under the stormwater utility ordinance.

(g) A property owner making an appeal shall provide the appeals board with information necessary to make a determination.

(2) A person aggrieved by a decision of the appeals board on an appeal under this section may appeal to the circuit court in which the property is located.

Sec. 14. (1) This act does not expand existing authority of local units of government.

(2) This act does not limit existing authority of local units of government to cooperate with respect to or jointly create and operate stormwater management utilities, subject to section 3(1).

Enacting section 1. This act takes effect 90 days after the date it is enacted into law.

APPENDIX D
STORMWATER UTILITY ORDINANCE FROM THE CITY OF BIRMINGHAM

City of Birmingham Stormwater Utility Ordinance

https://library.municode.com/mi/birmingham/codes/code_of_ordinances?nodeId=PTIICICO_CH114UT_ARTVISTWAUTFE. Downloaded 5/17/2018.

ARTICLE VI. - STORM WATER UTILITY FEE

Sec. 114-400. - Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Combined sewer system: Public sewers, drains, ditches, roads and retention ponds used for collecting and transporting storm water and non-storm water in the city.

Director: The city engineer or such other person as the city manager may designate.

Equivalent storm water unit (ESWU): A subunit of measurement which relates the volume of storm water discharged from a lot based on the amount of total and impervious lot area, compared to the standard unit. The formula for an equivalent storm water unit (ESWU) is as follows:

1 ESWU = (0.15 (TAs - IAs) + (0.90 (IAs))

where,

TAs = total area of standard unit;

IAs = impervious area of standard unit;

0.15 = runoff coefficient for pervious area;

0.90 = runoff coefficient for impervious area.

One ESWU in the city is equal to the average runoff potential of the standard unit.

Impervious lot area: Impervious area means a surface area that is resistant to permeation by surface water.

Industrial sites Those sites that contain industrial activities which require wastewater discharge permits as set forth in section 114-202 of this Code.

Nonstorm water: All flows to the combined sewer system not defined as storm water in section 114-199, or as determined by the director.

Pervious lot area: All land area that is not impervious. Pervious lot area equals the total lot area, minus the impervious lot area. Pervious lot area has a runoff coefficient equal to 0.15.

Runoff potential: The runoff potential from a property is based on hydrologic principles for calculating runoff that use both the impervious surface area and the pervious surface area. Runoff potential is measured in square feet using the following formula:

Runoff Potential = 0.15x [Total Area - Impervious Area] + 0.9 x [Impervious Area]

Separated storm water sewer system: Public sewers, drains, channels, ditches, roads and retention ponds used for collecting and transporting storm water in the city.

Standard unit: Single-family residential parcel in the city within a lot size between 1.126 and 0.250 acres.

Storm water: Storm water runoff, snow melt runoff and surface runoff and drainage.

Storm water utility fee: The fee imposed for the use of that portion of the combined system that transports storm water, based on the number of ESWU's for a lot or parcel of land determined as provided in section 114-402.

Storm water sewer system: That portion of the combined sewer system and separated storm water sewer system that is attributable to the transportation and treatment of storm water.

User: An owner of property which directly or indirectly contributes to the combined sewer system.

(Ord. No. 2204, 12-5-16)

Sec. 114-401. - Storm water utility fees.

(a) All users shall pay a storm water utility fee proportional to the volume of storm water which is projected to discharge into the combined sewer system and storm water sewer system from their property.

(b) The city commission shall, by resolution, set storm water utility fees at a rate which will recover from each user its share of the costs of the storm water sewer system attributable to the discharge of storm water from the users' property to the storm water system. The city shall use the revenues of the storm water utility fees to pay the costs of the water treatment operation and maintenance of the storm water sewer system, and for necessary improvements and additions to the storm water sewer system.

(c) The city may also collect from users fees imposed to pay the implementation and operation of any of the following:

(1) Monitoring, inspection and surveillance procedures;

(2) Reviewing discharge procedures and construction;

(3) Discharge permit applications; or

(4) Other fees as the city may deem necessary to operate the storm water sewer system.

(Ord. No. 2204, 12-5-16)

Sec. 114-402. - Calculation of fees and appeals.

(a) Single-family residential ESWU. All single-family residential properties in each of the lot-size categories are assigned the same ESWU for that category. The ESWU values for the single-family residential categories are summarized in the fee schedule.

Property Type	SFR Class
Single-Family Residential, 0.125 acres or less	Class A
Single-Family Residential, 0.126 acres to 0.250 acres	Class B
Single-Family Residential, 0.251 acres to 0.500 acres	Class C
Single-Family Residential, 0.501 acres to 0.750 acres	Class D

Single-Family Residential, 0.751 acres to 1.000 acres	Class E
Single Family Residential, 1.001 acres or larger	Class F

(b) Non-single family ESWU. The storm water utility fee for non-single family lots shall equal the number of ESWU's for a given lot, multiplied by the annual rate established by the city commission per ESWU per year. The formula for determining the number of ESWU's per non-single family lot shall be calculated from the amount of pervious and impervious lot area as follows:

$$\text{Number of ESWU's} = \frac{0.15\ (TA - IA) + 0.90\ (IA)}{\text{Average runoff potential of the standard unit/ESWU}}$$

where,

TA = total area of each lot (reported in square feet);

IA = impervious area of each lot (reported in square feet).

(c) Any non-single-family residential property owner liable for a storm water utility fee may appeal the determination that the property utilizes the storm water system or the amount of a storm water utility fee, including a determination on a reduction in or the elimination of the fee under subsections (a) and (b). An appeal may be based on the quantity of storm water runoff generated, the reductions established, the reductions allocated, or any other matter relating to the determination of the storm water utility fee.

(d) A single-family residential property owner may appeal the determination that the property utilizes the storm water system, however, such an appeal shall be limited to the following reasons:

(1) The size of the lot has been miscalculated, or

(2) All or part of the storm water runoff drains to an open drainage course, such as a river, lake or creek, which affects the quantity of the storm water runoff generated that gets into the storm water sewer system.

(e) An appeal under subsection (c) shall be heard by a storm water utility appeals board appointed by the local unit of government. The appeals board shall consist of three members, two of whom shall be licensed professional engineers not employed by the local unit of government.

(f) An appeal of a storm water utility fee shall not be brought more than one year after the fee was billed.

(g) To prevail in an appeal of a storm water utility fee, the appellant shall demonstrate in accordance with the requirements of the plan for a non-single-family residential property that the use of the system by the property is less than the amount used by the local unit of government in the calculation of that property's storm water utility fee, or for all properties the classification of the property type is in error, or there was a mathematical error in the calculation of the fee.

(h) The sole remedy for a property owner who prevails in an appeal of a storm water utility fee is a prospective correct recalculation of the storm water utility fee.

(i) If in an appeal of a storm water utility fee the appeals board finds that the requirements of subsection (g) have not been met, that finding is conclusive until the property is modified to either increase or decrease the utilization of the system. The property owner remains eligible for reduction or elimination of fees under the storm water utility ordinance.

(j) A property owner making an appeal shall provide the appeals board with information necessary to make a determination.

(k) A person aggrieved by a decision of the appeals board on an appeal under this section may appeal to the circuit court in which the property is located. An appeal to the circuit court must be filed within 30 days of the appeals board's decision.

(Ord. No. 2204, 12-5-16; Ord. No. 2248, 9-11-17)

Sec. 114-403. - Credits.

(a) The purpose of this section is to provide for each property owner's control over contributions of storm flows to the storm water utility system and the related storm water utility fees and to advance protection of the public health, safety, and welfare.

(b) The city shall offer credits on an annual basis that will enable any property owner, through voluntary action, to reduce the storm water utility fees calculated for that property owner's property and will provide a meaningful reduction in the cost of service to the storm water system, or that shall be reasonably related to a benefit to the storm water system.

(1) Credits will only be applied if requirements outlined in this chapter and other applicable sections of the City Code are met, including, but not limited to: completion of ongoing maintenance, guaranteed right-of-entry for inspections, and submittal of annual self-certification reports.

(2) Credits will be defined as either set fee reduction or percent (%) reductions applied as a credit adjustment to the fee calculation equation.

(3) Credits are additive to each credit category.

(4) As long as the storm water facilities or management practices are functioning as approved, 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 cancelled and the fee will return to the baseline calculation. Once the credit reduction has been cancelled, a customer may not reapply for credit for a period of 12 months and only then if the deficiency has been corrected, as determined by city inspection.

(5) Credits will be applied to the next complete billing cycle after the application has been approved.

(c) The director shall define a method for applying and granting credits on an annual basis, as well as criteria for determining the credits a property owner may receive. The director may, by regulation, establish credits for one or more of the following:

(1) Installation and maintenance of rain barrels, rain gardens, bioswales, cisterns, dry wells, infiltration trenches, porous pavement or pavers, or disconnecting footing drains;

(2) Installation and maintenance of a storm water control facility, or other water quantity controls; and

(3) Other actions of the property owner that, in the judgment of the director, result in a measurable reduction in storm water runoff.

(Ord. No. 2204, 12-5-16)

Sec. 114-404. - Billing.

The billing for the storm water utility may be combined with the billing for other utility services. Final determinations on measurements per ESWU will be determined by the director.

(Ord. No. 2204, 12-5-16)

Sec. 114-405. - Collection.

Unpaid storm water utility fees shall constitute a lien against the property affected. Fees which have remained unpaid for a period of six months prior to April 30 may be certified to the city treasurer who shall place the fees on the next tax roll of the city. In the alternative, the city commission may direct the city attorney to take appropriate legal action to collect unpaid fees.

(Ord. No. 2204, 12-5-16)

APPENDIX E
GIS DATA ANALYSIS PROCEDURE

ARC Stormwater Financing
GIS Data Analysis Procedure

A. Introduction

The intent of this procedure is to give a detailed explanation of the process used to analyze available Geographic Information System (GIS) data to determine the per unit cost allocation for a potential storm water utility. Data utilized in this process is readily available through the local communities and Southeast Michigan Council of Governments (SEMCOG). The datasets are updated on different schedules. The communities update the parcels on an annual basis, when possible, while the Roads and Land Use data may change (and be updated) less frequently. SEMCOG developed the Land Cover data based on 2010 Leaf Off aerial imagery. The schedule for the update of this data is not currently published.

B. GIS Data Review & Collection Phase

During the data collection phase, each community was interviewed, and the existence and quality of available GIS data was assessed and collected. Below is a list of the collected datasets and the entity from which it was obtained.

Community

- Parcel (polygon)
- Road Type (polyline)
- Land Use (polygon)

SEMCOG

- Land Cover (polygon)

C. Data Processing Phase

During the data processing phase, the goal is to calculate the impervious surface area of each Parcel and Road Right-of-Way (ROW). Summaries are calculated based on Land Use Type (i.e. Residential, Commercial, Industrial, etc.) and Road Type (i.e. Local, County, State and Private). The steps below were taken for the three example communities.

1. <u>Parcel data processing steps:</u>

   The first step is to process the Parcel data with the Land Use and Land Cover datasets. This result creates a feature class that combines Parcel, Land Use and Land Cover data into one. This is a necessary step for impervious calculations, potential updates and linking back to community system.

   a. Clip the Land Cover data to the area of the community

   This feature class is from SEMCOG and is of the entire Southeast Michigan area. By only utilizing the area of interest the processing and cleanup time is greatly reduced.

   b. Remove any unpopulated fragments

As part of the processing there may be fragment polygons left behind. These should be clean up and removed from the dataset

c. *Create new feature set after joining the Land Use and Parcel features by Parcel Identification Number (PIN)*

Both the Parcel and Land Use features from the communities have a matching PIN in the attribute table. By joining the Land Use into the Parcel layer on this attribute you create one working feature.

d. *Sort Table to remove and repair any records that do not match the Parcel dataset*

After the join is completed there may be situations where the there are no matches. Situations where a parcel split or combine occurred and not reflected in the Land Use feature. A round of QA/QC is required to ensure there are no extra or missing records in existence. Manual edits may be necessary.

e. *Create a Union dataset with the Land Cover clipped area and the new Parcel Land Use feature*

Once the Community Land Cover and New Parcel features are created a Union process will be conducted. This presses the two features together and carries the attributes from both into one final feature while modifying the geometry to include the Land Cover Types.

f. *Sort and remove any records that have a Land Use of "Right-of-Way"*

The Road ROW will be handled in a separate process. At this point we will remove any record that has the Land Use of Road Right-of-Way.

g. *Remove any duplicate fields from attribute table*

During the process of creating this final feature class many duplicate fields were created. Go through the table and remove any fields that are redundant (i.e. Area, PIN, Land Use, etc.).

h. *Export parcels with a land cover attribute of impervious surface*

Once the union dataset of land use and landcover is created, use the select by attribute function to select all the records with a land cover attribute of "impervious surface". Export this data into a separate layer to facilitate further processing.

i. *Concatenate (link) the Parcel ID and Land Use fields*

In the new impervious surface layer, add a field to the attribute table. Use the field calculator to concatenate the Parcel ID field and land use field in the new field. The code below can be used to concatenate the fields.

[Fieldname]&"" &[Fieldname]

j. *Create a Summary table of the results*

Use the summarize function to create a summary table. In the summarize window select the newly added field to summarize and opt for Sum in the shape area statistics. This will

condense identical parcel numbers into one record and create a table containing the following: PIN, total impervious area, land use type, and landcover type.

k. Join the summary table with the original parcel data using the Parcel ID

Use join to add the impervious area of each parcel with the original parcel table. The resulting table will have total acreage and impervious acreage for each parcel in the community. Redundant fields may be deleted.

l. Export the table to Excel

Save as a text file but change the file extension to .csv. Format the table and re-label fields for clarity.

2. Road Right-of-Way processing:

Before proceeding with the creation of a Road ROW feature, it is important to assess the information provided by the existing features. The Parcel feature will not contain ROW polygons and the Road Type feature is typically a polyline. To properly calculate the impervious area of the ROW by Road Type, a polygon ROW feature is created. The following steps were taken for the example communities.

a. Create a ROW polygon using the community border

Create a new polygon shapefile in ArcCatalog and assign the appropriate coordinate system. Add the new shapefile to the working mxd map in ArcMap. Utilizing the Editor toolbar, create a base for the ROW layer by drawing a polygon following the border of the community's parcels.

b. *Use the Union function to combine the newly created ROW feature with the Parcel feature*

Use the Union function to create a new feature that includes the geometry for the ROW and Parcel features.

c. Delete any polygon that is a parcel

To obtain a polygon feature that is only the Road ROW, open the attribute table of the new feature, sort by Parcel ID, and delete any record that is a parcel.

d. Edit ROW polygon

The newly created feature will be one polygon. Manual editing is required to break the polygon at intersections. It is also helpful to have the polyline road type layer visible during this editing process, so that polygon boundaries can be made to align. This will prep the feature for the next step.

e. Using the Road Type polyline feature populate the ROW polygon feature with road types

Use the function Spatial Join to populate the ROW polygon layer with attribute data that depicts the road type. This will append the attribute fields from the road type polyline layer to the ROW polygon layer based on location. This step will generate a new output shapefile. Repeat or unnecessary fields may be deleted.

f. Manually edit missing data

Once the geoprocessing tasks are complete a thorough QA/QC process must be conducted. There will be some records that are unpopulated and some that are populated incorrectly due to errors made during the manual editing of the ROW polygon layer. Based on the Road Type feature, manually populate the road type attribute. Once completed, remove any random ROW record that may have been created during the process. There can be approximately 1-2% of the total records that are expected to be removed.

g. Combine the ROW polygons with Land Cover

Clip the land cover layer with the ROW polygon layer to create a new feature of only land cover types within the ROW. Next, use union to combine the ROW polygon layer and the newly generated ROW land cover layer to produce a layer with both ROW and land cover spatial geometry. Open the attribute table and review any records without land cover data, compare these with an aerial base map and update the land cover field as appropriate.

h. Calculate geometry

Upon completion of all spatial geometry editing, use calculate geometry to recalculate the area of the ROW Land cover polygons. This can be performed in the same area field or a new field, such as “Acres” can be created.

i. Add an impervious field and populate

Add an “impervious” field to the attribute table of the ROW polygons layer and populate using the field calculator. The code below is an example of how to populate the impervious surface field with “yes” or “no” based on land cover types.

replace(replace(replace(replace(replace([Landcover], "Open Space", "no"), "Trees", "no"), "Urban: Bare", "no"), "Water", "no"), "Impervious Surface", "yes")

*Note: If preferred, this step can be skipped and Road Type and Land Cover can be concatenated directly in the following step.

j. Concatenate the Road Type and Impervious fields

Add another field to the attribute table of the ROW polygons layer. Use the field calculator to concatenate the road type field and impervious field in the new field. The code below can be used to concatenate the fields.

[Fieldname]&”” &[Fieldname]

k. Create a Summary table of the results

Use the summarize function to create a summary table. In the summarize window select the newly added field to summarize and opt for Sum in the shape area statistics. This will create a table containing the following: 1) a newly created field with road type and “yes”

or “no” impervious and 2) the sum for each type of ROW. Redundant fields may be deleted.

l. Export the table to Excel

Save as a text file but change the file extension to .csv. Format the table and re-label fields for clarity.

D. Update Process

The process of updating the GIS dataset should be conducted in the most efficient manner. This may be by updating each parcel on an as needed basis. As changes are identified and modifications to the original base dataset are performed, the dataset will take on a form that will be more accurate than the initial geo-processed product. By this, the dataset will not be able to be geo-processed again with updated SEMCOG Land Cover data without the loss of any incremental individual parcel changes. It is suggested that once the initial product is created a decision should be made on how to handle updates. If the community decides to update on a parcel by parcel basis as changes or reviews develop, they should maintain that dataset and not incorporate any new data from SEMCOG as that may delete smaller more accurate changes made by the community. If the community decides to update the data as SEMCOG delivers a newer Land Cover dataset, then they should not conduct individual parcel updates.

Time allotment for the update of an individual parcel may very but one hour is a good starting point. Time variation can be a result of source data for the modification. Adjustments can be made based on desktop analysis of aerial imagery or may necessitate a field visit to assess and measure site impervious conditions. Of course, parcel size could play a factor in both desktop and field analysis. In the case of a community wide reprocessing of new SEMCOG Land Cover data, it would take approximately one to two days of effort. Again, if incremental modifications are conducted it is highly suggested to not update the community as a whole with new SEMCOG data.

The process for conducting each of these updates is provided below.

1. <u>Continuous Parcel by Parcel Updates</u>

a. Select the parcel requiring editing

Use “Select by Attribute” and choose the final Parcel layer (i.e. (combination of parcel, land cover, and land use data that was created in Step 1 above) from the drop down list. The following example of SQL language can be used to select the correct parcel (replace field name and parcel number as appropriate).

"FIELDNAME" = '001010028000'

b. Zoom to the selected parcel

c. Edit the parcel manually

Use the Editor toolbar, select the feature to edit, and proceed with editing. New features can be produced by selecting “Create Features”, choosing the appropriate feature, and manually sketching. Note: To help with digitizing, layers can be toggled on and off in the Table of Contents or their transparency can be adjusted: right-click

on the layer, select “Properties”, select the “Display” tab, and increase the “Transparent” percentage. Make sure the working mxd has an aerial image as a base map.

d. Save edits continually

Once edits are complete, make sure to select “Save Edits” in the Editor toolbar.

e. Exit the editing session

Repeat the above process until all edits are complete. When finished, click the editor tool bar and select “Stop Editing”.

f. Return to Section C, Part to process the data

Follow the parcel data processing steps outlined above to incorporate the new edits and produce a new excel spreadsheet.

2. SEMCOG Driven Updates

a. Acquire new SEMCOG data

Download updated SEMCOG Land Cover data from the source below:
http://maps-semcog.opendata.arcgis.com/

b. Acquire updated Parcel, Road Type, or Land Use data from community

c. Return to Section C to process the data

Follow the parcel data processing steps outlined above to incorporate the new edits and produce a new excel spreadsheet.