RAFTELIS

Village of Wilmette

Stormwater Funding Methods Study Report

June 7, 2019

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EXECUTIVE SUMMARY

Since 1992, the Village has funded more than $89 million in sewer system improvements to reduce flooding throughout the community. In order to provide an added level of flood relief, the Village is embarking on a capital program of Neighborhood Storage Improvements that is expected to cost $68.2 million to construct. To fund these planned projects, the Village engaged Raftelis to evaluate the feasibility of increased sewer fee funding versus new stormwater fee funding. Working closely with Village staff, Raftelis assessed current and expected program needs and the planned capital investments to inform future priorities and costs. To meet the increased program requirements, Raftelis determined that the overall revenue requirement will be approximately $4.2 to $4.4 million per year from FY 2022 and on.

To meet this new revenue requirement, Raftelis evaluated the rate implications of funding the improvements with an increased sewer fee or a new stormwater utility fee. Raftelis also evaluated each funding alternative's feasibility based on the Village's legal, institutional, organizational, and technical requirements for the future stormwater program. Following this assessment, Raftelis found that both the increased sewer fee and new stormwater fee are feasible options, and this report discusses both funding alternatives and their impacts on the community in detail.

If the Board decides to pursue the stormwater fee funding recommendation, the next steps include finalizing the rate structure, preparing the impervious area data for residential and nonresidential customers, linking the stormwater billing data with the sewer billing system, and refining the financial plan based on the final rate structure and units of service. Completing this process will allow the Village to plan for and fund the growing stormwater program. These steps are further defined below, and Raftelis expects that they can be completed within six months of the decision to proceed.

PROJECT OVERVIEW

The Village of Wilmette has historically funded stormwater improvements through a sewer fee tied to water consumption and is seeking to assess a sustainable project funding method. In 2017, the Village's engineering consultants completed its evaluation of project options for providing flood protection to its residents, and in April 2018, the Wilmette Board of Trustees voted to move forward with the Neighborhood Storage Improvements. In February 2019, the Village Board chose to optimize the project to provide flood protection to additional homes for a total estimated project cost of $68.2 million. To provide stable, dedicated funding for future projects, the Village engaged Raftelis to evaluate alternative funding sources, including the creation of a stormwater utility.

In August 2018, the Village contracted with Raftelis to complete a stormwater funding feasibility study. As part of the study, Raftelis reviewed and assessed the Village's stormwater services and needs over the next few years, focusing on the Neighborhood Storage Improvements costs. The Raftelis team evaluated two funding options that could provide the necessary revenue: 1) an increased sewer user fee or 2) a stormwater utility fee.

Raftelis' Feasibility Study scope included the following nine tasks:

- Task 1: Project Kickoff and Funding Alternatives Development
- Task 2: Develop Customer Base and Rates for Funding Alternative
- Task 3: Evaluate Feasibility of Flood Protection Rate
- Task 4: Funding Alternatives Revenue Analysis
- Task 5: Potential Credit Mechanisms
- Task 6: Policies for Funding Alternatives
- Task 7: Billing and Data Maintenance
- Task 8: Implementation Options
- Task 9: Reporting and Decision Support

Village staff and the Raftelis team, including our partners from Crawford, Murphy, and Tilly, held a project kick-off meeting on September 6, 2018, to discuss the desired funding alternatives and gather data. Raftelis collected key data from the Village relating to the stormwater program operation and finances, as well as potential ratepayers. Specifically, Raftelis reviewed the Village's CAFR, budget documents, aerial imagery, utility customer information, and tax parcel and ownership information (for consideration of a stormwater fee) that informed the funding and financing alternatives analysis by providing information about the properties and customers within the service area.

Raftelis developed the units of service estimates for the sewer user fee and stormwater fee funding alternative, and calculated preliminary rates and estimated impacts for residential and non-residential customers in the Village. The Raftelis team evaluated potential credit mechanisms and discussed rate structure elements and high-level policies for each of the funding alternatives with Village staff. Raftelis presented project progress and preliminary results at two Village staff meetings on December 17, 2018 and January 30, 2019.

In Section 6, Raftelis presents detailed recommendations on stormwater funding, program policies, implementation timing, and an optimized implementation process if the Village Board decides to proceed with stormwater utility fee funding.

1. STORMWATER IMPROVEMENT PROJECT FUNDING ALTERNATIVES

In 2017, after five years of study, the Village's engineering consultant completed its evaluation of project options for providing flood protection to address the rise of significant storms that are causing basement and overland flooding. In February 2019, the Village Board reached consensus to optimize the Neighborhood Storage Improvements to provide flood relief to additional households. The total estimated cost of the optimized project is $68.2 million. The Village is currently in the engineering design and costs analysis phase of the Neighborhood Storage Improvements Project, which is anticipated to begin construction in late 2019 or 2020. The Village plans to finish all phases of the project by 2023, and will need new revenues over the five years to complete the project on schedule.

Reasonable rate increases will not support project costs through PAYGO, and the Village is planning to debt fund the Neighborhood Storage Improvements Project. The Village has budgeted for the following project expenditures and projected debt service for the years FY 2019 to FY 2022 shown in Table 1 below.

	FY 2019	FY 2020	FY 2021	FY 2022
Capital Expenditure	$6,400,000	$20,300,000	$14,200,000	$27,300,000
Projected Debt Service		$1,607,000	$855,000	$1,643,000

Table 1. Neighborhood Storage Improvements Project Expenditures and Projected Debt Service

The Village has also budgeted for the following operations and maintenance (O&M) for the years FY 2020 and on for pumping activities and sewer maintenance for the project as shown in Table 2 below. The O&M costs are preliminary and are subject to change as the project design is finalized.

	FY 2020	FY 2021	FY 2022	FY 2023
Operations and Maintenance			$50,000	$100,000

Table 2. Neighborhood Storage Improvements Project Operations and Maintenance

Currently, all Village stormwater management activities are paid for from the Village's Sewer Fund. Spending for construction of the Neighborhood Storage Improvements begins in FY 2019, and the debt service for the project increases to about $4.1 million per year from FY 2022 and on. The Raftelis team evaluated the revenue requirement under the assumption that the Village will debt fund the project, and will issue 30-year bonds each year starting in FY 2020, with an issuance cost of 0.5% and 4.0% interest. The debt service requirement for the Neighborhood Storage Improvements are shown in Table 3.

	FY 2020	FY 2021	FY 2022	FY 2023 & Beyond
Proposed Bond Proceeds	$26,700,000	$14,200,000	$27,300,000	
Debt Service Requirements	$1,607,000	$2,856,000	$4,105,000	$4,105,000

Table 3. Debt Service Requirement for Neighborhood Storage Improvements Project Funding

Raftelis evaluated two alternatives that could meet this revenue requirement: 1) a sewer user fee increase or 2) a new stormwater utility fee.

If the Village enacts a new stormwater utility fee, the fee would be charged to properties based on the demand they place on the stormwater system. The industry standard for a stormwater rate structure is impervious surface area. Impervious surfaces prevent runoff from being absorbed into the ground, and the runoff picks up pollutants and sediment as it flows into drains and local waterbodies. The majority of stormwater utilities in the United States charge ratepayers within a defined service area based on impervious surface area.[1]

[1] Black & Veatch, "2018 Stormwater Utility Survey," https://www.bv.com/sites/default/files/18%20Stormwater%20Utility%20Survey%20Report%20WEB.pdf.

SEWER FEE FUNDING VS. STORMWATER FEE FUNDING

As a part of the study, the Raftelis team analyzed two options for funding the Village's Neighborhood Storage Improvement Project: additional sewer user fees and a new stormwater fee. We identified advantages and disadvantages of each approach, which are summarized below.

Sewer User Fee

The Village could continue to fund stormwater improvements with a sewer fee tied to water consumption. The sewer rate is currently set at $4.24 per 100 cubic feet per quarter, and is assessed based on customers' water usage.[2] There is a quarterly minimum fee of $33.92 per quarter per account.

Advantages

An increased sewer user fee can be efficiently used to collect the additional revenues required to repay the debt service associated with the Neighborhood Storage Improvements Project. The new revenue requirement can be allocated to existing sewer accounts to fund the project. The sewer fee relies on an existing and well understood mechanism; the processes are in place to measure water consumption and bill for sewer fees and distribute funds accordingly. Sewer user funding is easy to explain and administer, and the Village has historically funded sewer improvements through the sewer fee. The sewer fee is simpler than a new fee and may be viewed as more acceptable by the community.

Disadvantages

The sewer fee is tied to water consumption, which does not relate well to stormwater system demand or impact. Water consumption is weather dependent, and if customer usage does not meet projections, further rate increases will be needed to cover the debt service. Also, sewer funding for stormwater projects is not always particularly equitable. For example, warehouses, retail stores, and parking lots may have large expanses of property and hard surfaces that prevent or impede infiltration, but have low water consumption. The impervious surface on these properties places a significant demand on the Village's drainage system since all or most of the rain that falls on these properties needs to enter the drainage system, causing infrastructure wear and tear, and the potential for flooding, infrastructure damage, and pollution. Conversely, properties with dense, small footprints may have small quantities of impervious area but have comparatively high water usage. Under a sewer user fee, properties with higher water consumption will pay more toward stormwater management regardless of the actual demand they place on the Village.

Stormwater Utility Fee

For many public water and wastewater utilities, costs associated with capital projects are paid from an enterprise fund, which is funded by revenue from fees for that service. Similarly, stormwater management programs can fund their programs with fees for service and maintain a separate public enterprise fund. Our understanding is that this fund and the associated task of establishing a fee schedule has been authorized by the State of Illinois as an acceptable way to raise money for stormwater management. Our understanding is that as a Home Rule community, the Village has the authority to assess a fee directly.

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[2] Village of Wilmette, "Utility Billing," https://www.wilmette.com/finance/water-sewer-billing/.

The Village would charge a user fee to each property (a user of the Village's stormwater service) based on the characteristic(s) of the property that drive(s) stormwater management costs – most commonly this would be impervious area. The Village could charge for a standardized unit of impervious area to simplify billing, resulting in a flat rate (or a series of flat rates) for residential customers and a per-unit charge for non-residential customers.

Figure 1 below shows a single family residential property, along with the measured impervious area derived from recent aerial imagery. The Village would likely bill the stormwater fee on the existing sewer bill, creating new customers as needed. The typical approach would be to perform a comprehensive rate study and set rates at a level that fully funds the desired stormwater services.

Figure 1. Digitized Impervious Area for a Single Family Residential Property

Advantages

In contrast to sewer funding, a stormwater utility fee is dedicated to stormwater needs, which provides the ratepayer assurance that revenues generated by the fee only will be used for the stormwater program. A stormwater utility fee can also ensure a dedicated amount of program revenue each year to cover all of the needed funding, and provide a more steady revenue stream. This mechanism is considered the most fair since it is the most closely related to cost drivers unlike the sewer fee, which is based on water consumption that can fluctuate from year to year due to weather, which has no impact on the capital costs associated with the Neighborhood Storage Improvements. The Village may also consider a credit or incentive program to encourage property owners to take steps to reduce the impact of stormwater runoff from their property in ways other than reducing impervious area (e.g., building green infrastructure or retention).

Disadvantages

Though it will rely on the existing sewer billing system structure, a stormwater utility is more administratively intensive than an increased sewer fee. The stormwater fee includes additional costs to the community that a sewer fee does not, mainly in the form of an estimated $180,000 to manage the program (see page 22 and 23 for more details). Because some Village properties that would be charged a stormwater fee are not sewer customers, new accounts would have to be added to the utility billing system so that these customers can be billed. Additional data development is also necessary to bill for stormwater, and the billing data will need to be maintained over time as part of the administrative cost. The administrative burden associated with a stormwater fee would be further increased should the final program include a credit or incentive program that will need to be managed on an ongoing basis. Aside from stormwater administration, it will require some effort to explain the concept of impervious area to ratepayers.

Compared to the sewer fee, the stormwater utility fee will also significantly shift the burden of project financing to large governmental, institutional, and commercial properties. The financial impact of such a shift would be substantial for some customers. Under a stormwater utility fee, institutional and commercial properties may be more heavily impacted for parking lots that were required to be built according to the Village's zoning ordinance. This burden shift can be problematic for tax capped entities like the School Districts, Park District, and the Public Library. Also, there are two commuter parking lots in the Village that, if charged a stormwater fee, may require a corresponding increase in the daily parking rate to cover the new fee.

2. CUSTOMER BASE AND RATES FOR FUNDING ALTERNATIVES

To analyze the sewer user fee and stormwater fee funding alternatives for the Village, Raftelis developed the customer base for each alternative. To estimate the units of service for the sewer user fee, Raftelis received an extract of active sewer accounts, monthly consumption, and billed amounts from Village staff. The team reviewed the sewer data extracts, summarized twelve months' worth of consumption data for all residential and nonresidential sewer accounts in the service area, and checked it against current consumption data. The annual sewer usage summary for residential and nonresidential accounts is presented below in Table 4.

Annual Sewer Usage Summary	ccf	Percent of Total
Total Residential Sewer Usage	879,100	76%
Total Nonresidential Sewer Usage	275,200	24%

Table 4. Annual Sewer Usage Summary for Residential and Nonresidential Usage

To develop the stormwater units of service, Raftelis used the following GIS data from the Village:

- Village of Wilmette parcel polygons with Cook County Assessor data for each property;
- Impervious surface layers for the whole Village; and
- Aerial imagery data.

The most common stormwater rate structure industry-wide is an impervious area rate structure, with the units of charge being the typical residential impervious area unit, or equivalent residential units (ERUs). Raftelis categorized the properties into single family residential properties and non-single family residential properties based on the land use code, and reviewed the GIS data to estimate the ERU and units of service.

The Raftelis team measured impervious area for a statistically significant sample of single family residential parcels in Wilmette, making sure the parcels were sampled from different areas of the Village. Figure 2 below shows the frequency distribution for the 400 properties in the sample. The median impervious area for the single family residential parcels sampled was 3,590 square feet of impervious area, and that value was used as the ERU for the rate base and rate estimates that follow.

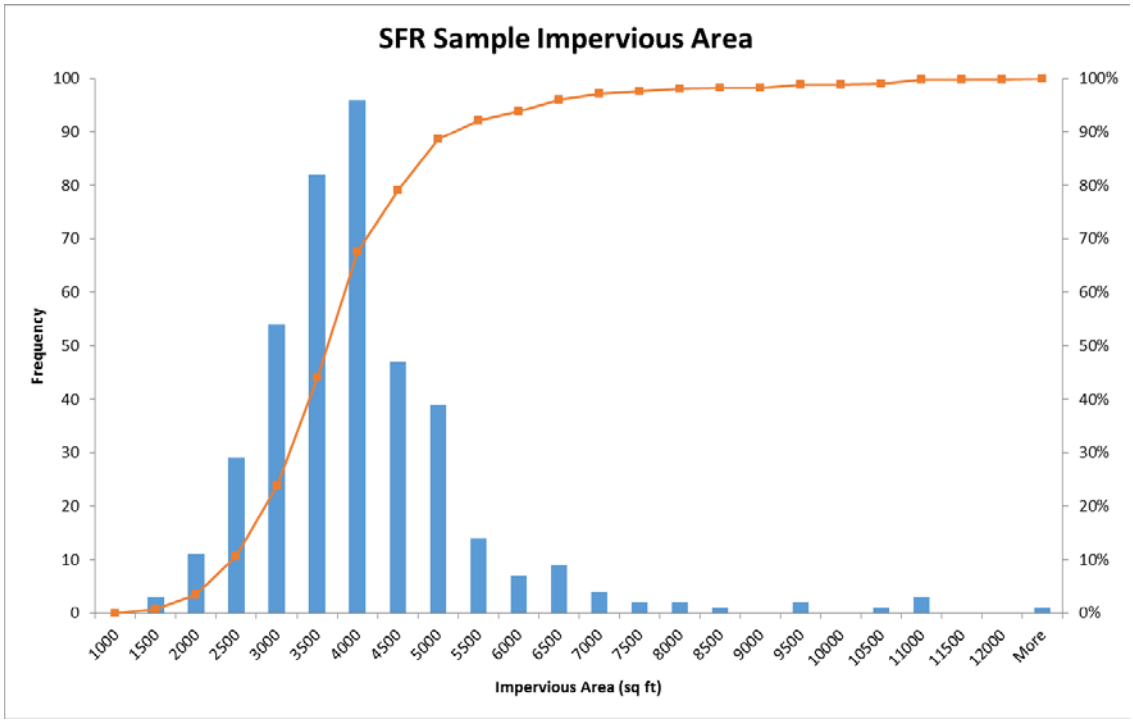

Figure 2. Distribution of Measured Impervious Area on Sample SFR Properties

There are approximately 8,500 single family residential parcels in the Village. Using 3,590 square feet as the typical impervious area, total single family residential impervious area can be estimated at 30.5 million square feet or about 70% of the total impervious area in the Village. Figure 3 shows an example of the digitized impervious area for a single family residential property.

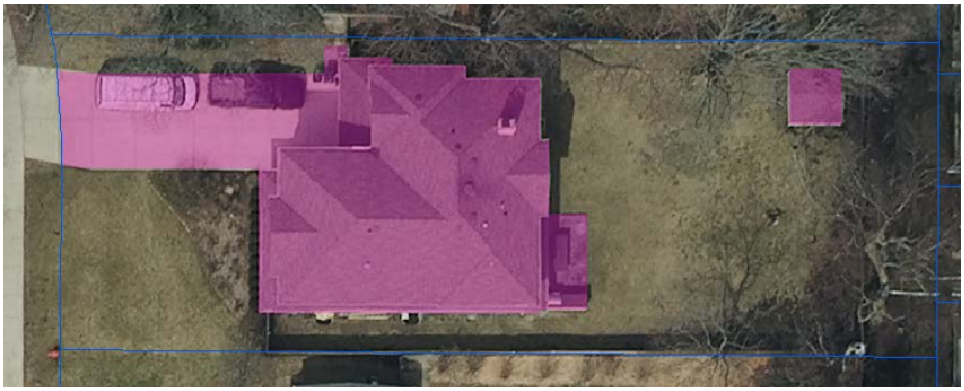

Figure 3. Digitized Impervious Area for a Single Family Residential Property

To estimate non-single family residential impervious area, Raftelis technicians processed the available impervious area for all properties not categorized as single family residential. The Raftelis team received impervious surface data from the Village's GIS data vendor, which included building footprints, paved driveways, paved parking areas, and paved sidewalks and paths in the Village service area. The Raftelis team merged together these data, and estimated the amount of impervious area for each non-single family residential property in the Village based on the vendor-provided data. An example of the vendor-provided impervious surface data is provided below in Figure 4. This planimetric data is not specifically created for stormwater billing purposes, and often requires data development to accurately determine stormwater units of service. The team recommends that the impervious data be developed should the Village pursue stormwater fee implementation.

Figure 4. Impervious Area for a Non-Single Family Residential Property

There are about 820 non-single family residential family properties, and the impervious area for these properties is estimated to represent about 3,600 ERUs (12.9 million square feet) or about 30% of the total impervious area in the Village. A summary of the residential and nonresidential ERUs are presented below in Table 5.

Estimated Stormwater Units of Service	ERUs	Percent of Total
Single Family Residential	8,500	70%
Non-Single Family Residential	3,600	30%

Table 5. Estimated Stormwater Units of Service

STORMWATER RATE STRUCTURE CONSIDERATIONS

Raftelis and Village staff discussed several rate structure elements for the stormwater funding option that would be most suited for its cost structure, data availability, redevelopment patterns, and program goals. Several alternatives – including a tiered residential rate and additional rate structure components – were presented for consideration along with Raftelis' preliminary recommendation.

Flat vs. Tiered Single Family Residential Rates

Many utilities implement a simplified charge or set of charges for all single family residential (SFR) customers. Single family residential land parcels are often homogenous in their development patterns, lending themselves to a simplified rate structure. They make up most of the customer base and it is efficient, from an administrative viewpoint, to treat them all the same. Since it is both equitable and efficient, many utilities adopt a single flat rate or a series of tiered rates for this property class.

Under a flat residential rate, customers are charged the same amount regardless of size and amount of impervious area on an individual property. Typically, under this structure each SFR property is charged for 1 equivalent residential unit (ERU), the amount of impervious area on a typical SFR parcel. Within the Village, the typical amount of impervious area on an SFR property is 3,590 square feet. Therefore, 1 ERU equals 3,590 square feet.

An alternative to a flat residential stormwater rate is to set several flat rates or tiers for single family residential customers. The tiers provide for some differentiation among properties, increasing the equity of the structure compared with a single flat fee while maintaining some efficiency of administration. Utility administrative costs are somewhat higher under tiered rates than a flat rate since more data development and maintenance are required – this includes the need to either measure or estimate impervious area on every existing and new SFR property. Customer service requests would increase, such as from customers looking to challenge or confirm their tier placement. Under either approach, the rate structure can be designed such that as a class, SFR properties generate the same amount of revenue under tiered or single flat rate.

As shown in Figure 2 on page 7, the frequency distribution of measured impervious area for the SFR sample exhibits variability for single family residential properties. Considering that the Village already has impervious surface data for the other single family residential properties not in the sample, tiering is a feasible option for all SFR properties.

Other Rate Structure Components

Gross Area Component

Gross area, or lot size, is a basis for a stormwater fee used by some utilities. However, in most cases, gross area is more appropriately considered as one component of a multi-component rate structure. For example, some utilities may have a rate structure that has an impervious area component as well as a gross area component with stormwater costs allocated to each component based on the cost driver. Gross area has the advantage of being easier to calculate and easier to maintain than impervious area since that information is already maintained for taxation purposes. Compared to impervious area, gross area land area contributes proportionately more to water quality concerns and pollutants and less to sheer volume of runoff to be managed. As a result, gross area is sometimes used as a rate structure component in more rural areas where water quality concerns are the primary driver behind the creation of the stormwater utility. As a standalone rate structure, gross area is not used as often as impervious area and is not as legally defensible since the nexus between gross area and stormwater costs is relatively weak for many cost drivers compared with impervious area.

Because the Village of Wilmette is a built-out environment, and impervious surface has a direct impact on performance of the stormwater system, the measured area of impervious surface on a parcel is recommended to be the foundation of the rate structure if the Village proceeds with a stormwater fee.

Fixed Fee Component

Some annual stormwater costs associated with utility administration have less to do with specific characteristics of the land than they do a public service to which each property owner (or account holder) has equal access. In addition, some stormwater costs are related to the number of customers served, rather than each customer's impervious area. These costs include costs for billing and collections, data maintenance, programming, and customer support. This cost of service can be distributed evenly to each account holder by being allocable to a fixed charge per account. Additionally, the fixed fee could be assessed and added to other stormwater fee structure components that are based on impervious area.

The Village's improvement costs are reasonably allocated to this fixed fee component. While employing a fixed fee per parcel would shift the rate burden from larger NSFR parcels to smaller NSFR and SFR parcels, many customers in Wilmette are residential customers who will benefit from the projects. Raftelis recommends adding a fixed fee component allocable to all residential and nonresidential accounts in the Village.

RECOMMENDED RATE STRUCTURE COMPONENTS

There are several different types of single family residential properties in the Village, ranging from detached homes with detached garages on smaller lots to detached homes with garages, larger driveways, and paved surfaces on larger lots. Raftelis recommends tiered rates for SFR properties to account for the range in single family residential property characteristics, and has developed a three-tiered residential rate structure, with the middle tier properties representing the 'typical' SFRs being charged for 1 ERU of impervious area.

To increase equity within the residential customer class, residential properties with significantly less impervious area than the median property can be charged a lesser fee, while those with significantly more impervious area than the median property can be charged a greater fee. Breakpoints between the tiers were determined by setting the distribution of properties so that 25% of the residential properties fall in the first tier, 50% are in the second tier, and 25% are in the third tier. The breakpoints were selected to minimize the customer service burden, meaning fewer properties are close to the breakpoints, and are potentially less likely to be assigned to the wrong tier.

The charge for each of the three tiers was established by calculating the ratio of medians for each tier, where the middle tier maintains the overall median of 1 ERU. Each residential property will fall into one of the three tiers based on the impervious area on the property, and will be charged the flat rate for that tier. Table 6 shows the recommended tier breakpoints for the three tiers, and the ERUs assigned to a property in each tier.

Stormwater Residential Tiers	Impervious Area	Tier ERUs	% of SFR Properties in Tier
Tier 1	Less than 3,000 sq. ft.	0.75	24%
Tier 2	3,000 to 4,300 sq. ft.	1	52%
Tier 3	More than 4,300 sq. ft.	1.4	24%

Table 6. Recommended Single Family Residential Tiers

For NSFR properties, we recommend that the fee be calculated per ERU or part thereof. Since an ERU is equal to 3,590 square feet, a property with 35,900 square feet of impervious area, or ten times the impervious area of a typical single family residential property, would be charged for 10 ERUs. A property with 37,000 square feet of impervious area would be charged for 11 ERUs rather than 10.58 ERUs.

Raftelis also recommends a fixed fee component for both the stormwater fee and the sewer user fee alternatives that covers 25% of revenue requirements. The fixed fee recognizes that there are some costs associated with the stormwater fee that do not vary by property, regardless of their impervious area, such as the cost of determining impervious area, billing, and collection. The fixed fee also recognizes that some of the benefit of the improvements will accrue to all properties in the Village regardless of their impervious area, such as reduction in street flooding. The sewer user fee currently does not have a fixed fee component, and Raftelis recommends that the Village consider a fixed fee if the Board decides to implement increased sewer user fees.

3. FEASIBILITY OF FLOOD PROTECTION RATE

Raftelis evaluated the feasibility of differentiating rates based on flood protection benefits, and does not recommend variable rates by watershed or elevation. Although some watersheds may have higher needs, not all properties within a watershed may need the same amount of protection. Watershed-based rate differentiation may not be equitable for properties in the watershed, and does not present a fairer option when compared to charging properties across the service area.

Similarly, while properties at low elevations may demand greater flood protection service, their own impervious area is not usually the cause for the demand, and uneven public infrastructure investment and development trends cannot be controlled by the ratepayers. For example, property owners who bought low elevation property years ago may not have had flooding issues at the time they purchased the property, and the flooding that the property experiences now could be through no action of the owners.

The demand relationship is not that simple. A watershed with high capital needs for drainage projects may require the improvements to protect public infrastructure like roads, and in turn to protect the traveling public, such that the demand for service is not simply placed on the Village by properties within the watershed (who do generate the runoff), but also by users of the infrastructure.

The Village currently does not differentiate rates for water or sewer services, and should not for storm drainage services. Although demand for stormwater service might vary by watershed or by other factors, such as the elevation or proximity of a ratepayer to infrastructure that may need improvements,

this variation in demand is not generally based on the willful behavior of the ratepayer, and it is not recommended that ratepayers be charged varying rates for service. It is commonly accepted practice for water, sewer, and stormwater utilities throughout the United States that all properties pay on a 'postage stamp' approach where customers are grouped together even though they may not be entirely homogeneous, much like a postage stamp can be used to mail a letter across a village or across the country even though those are not similar services.

4. FUNDING ALTERNATIVES REVENUE ANALYSIS

Using the results of the units of service estimates and the recommended rate structure described in Section 2, Raftelis evaluated the two stormwater funding options: sewer user fee funding and stormwater utility fee funding. The team estimated the increase or new fees needed to fund program needs for each option. For the purpose of this feasibility study, fees were estimated such that they would gradually increase over the three-year debt issuance period from FY 2020 to FY 2022.

INCREASED SEWER USER FEE FUNDING

To bond fund the Neighborhood Storage Improvements and maintain the project, Raftelis estimates that the Village will need additional stormwater revenue starting in FY 2020 that will increase to $4.2 million each year from FY 2022 and on. This revenue covers the debt service requirement needed to fund the project starting in FY 2020 and also operations and maintenance activities starting in FY 2022 as shown below in Table 7. Operations and maintenance costs are inflated by 3% each year from FY 2024 and on. The Sewer Fund currently has the level of reserves to cover the additional revenue requirements, and no additional reserves will need to be funded by the increased sewer fee at this time.

	FY 2020	FY 2021	FY 2022	FY 2023
Operations and Maintenance			$50,000	$100,000
Debt Service Requirements	$1,607,000	$2,856,000	$4,105,000	$4,105,000
Additional Reserves				
Total Revenue Requirement for Sewer Fee Increase	**$1,607,000**	**$2,856,000**	**$4,155,000**	**$4,205,000**

Table 7. Total Revenue Requirement for Sewer Fee Increase

If these new costs were covered through a sewer user fee increase, in FY 2022 it would require an increase of approximately $3.35 per ccf in addition to a new fixed fee of about $122 per account. For a typical residential customer with the median quarterly use of 21 ccf or annual use of 84 ccf, this amounts to an increase of about $403 per year that would go towards funding the stormwater projects. With the existing typical customer's quarterly bill of $89 or annual bill of $356 based on the current sewer rate of $4.24 per ccf per quarter and no fixed fee, in FY 2022 the typical customer would pay about $759 per year total under the sewer user fee funding option. The projected increases in the sewer fee in the following years in FY 2020 and FY 2021 are presented below in Table 8.

Annual Sewer Fee Increase	FY 2020	FY 2021	FY 2022
Fixed Fee per Account	$48.00	$82.00	$122.00
Fee per ccf	$1.28	$2.27	$3.35
Median residential usage (ccf)	84	84	84
Median residential sewer fee increase	$107.52	$190.68	$281.40
Total median residential sewer fee increase	$155.52	$272.68	$403.40
Typical residential customer bill	$356.00	$356.00	$356.00
Total median residential sewer fee with increase	$511.52	$628.68	$759.40

Table 8. Estimated Quarterly Sewer Fee Increase from FY 2020 to FY 2022 and Typical Residential Customer Sewer Bill

STORMWATER UTILITY FEE FUNDING

To bond fund the Neighborhood Storage Improvements through a stormwater utility fee, Raftelis estimates that the Village will need additional stormwater revenue starting in FY 2020 that will increase to $4.4 million each year from FY 2022 and on, as shown in Table 9. The stormwater revenue requirement includes the annual debt service requirement, building up to 20% reserves of the revenue requirement by FY 2022, project operations and maintenance starting in FY 2022, and additional stormwater utility administrative costs of about $180,000 per year that include costs for billing and technology, customer service, data maintenance, and credits program administration. Utility administrative costs and operations and maintenance costs are inflated by 3% each year.

	FY 2020	FY 2021	FY 2022	FY 2023
Stormwater Utility Costs	$180,000	$185,400	$190,962	$196,691
Operations and Maintenance			$50,000	$100,000
Debt Service Requirements	$1,607,000	$2,856,000	$4,105,000	$4,105,000
Reserves for Enterprise Fund	$440,000			
Total Revenue Requirement for Stormwater Fee	**$2,227,000**	**$3,041,400**	**$4,345,962**	**$4,401,691**

Table 9. Total Revenue Requirement for Stormwater Fee

Raftelis also included a 10% reduction in non-residential units of service or ERUs should the Village develop a credit or incentive program. Taking into account the reduced units of service, in FY 2022 the preliminary annual rate is $300 per ERU with an annual fixed fee of $128 per account. This rate per ERU applies to single family residential tiers with their respective ERU factors, and also to non-single family residential properties. The preliminary rates for the residential tiers for FY 2020 to FY 2022 are presented below in Table 10. Most residential customers are in Tier 2, and would have a preliminary stormwater fee of $428 per year.

Annual Stormwater Fee	FY 2020	FY 2021	FY 2022
Fixed Fee per Account	$68	$88	$128
Fee per ERU	$160	$220	$300
Single Family Residential Tier 1	$188	$253	$353
Single Family Residential Tier 2	$228	$308	$428
Single Family Residential Tier 3	$292	$396	$548

Table 10. Estimated Quarterly Stormwater Fee from FY 2020 to FY 2022 and Residential Customer Bills

FUNDING ALTERNATIVE PRELIMINARY IMPACTS

Using the estimated units of service, Raftelis was able to compare the funding alternative impacts of the preliminary sewer user fee and stormwater fee rates for many sewer customers whose accounts have been matched to parcels in the Village. By summarizing the consumption data and the parcel impervious area for the matched accounts, Raftelis estimated the charges under each alternative for residential and non-residential customers based on the draft data.

Figure 5 shows the preliminary residential tier distribution for all SFR properties in the village, with Tier 1 properties highlighted in green, Tier 2 properties in yellow, and Tier 3 properties in orange.

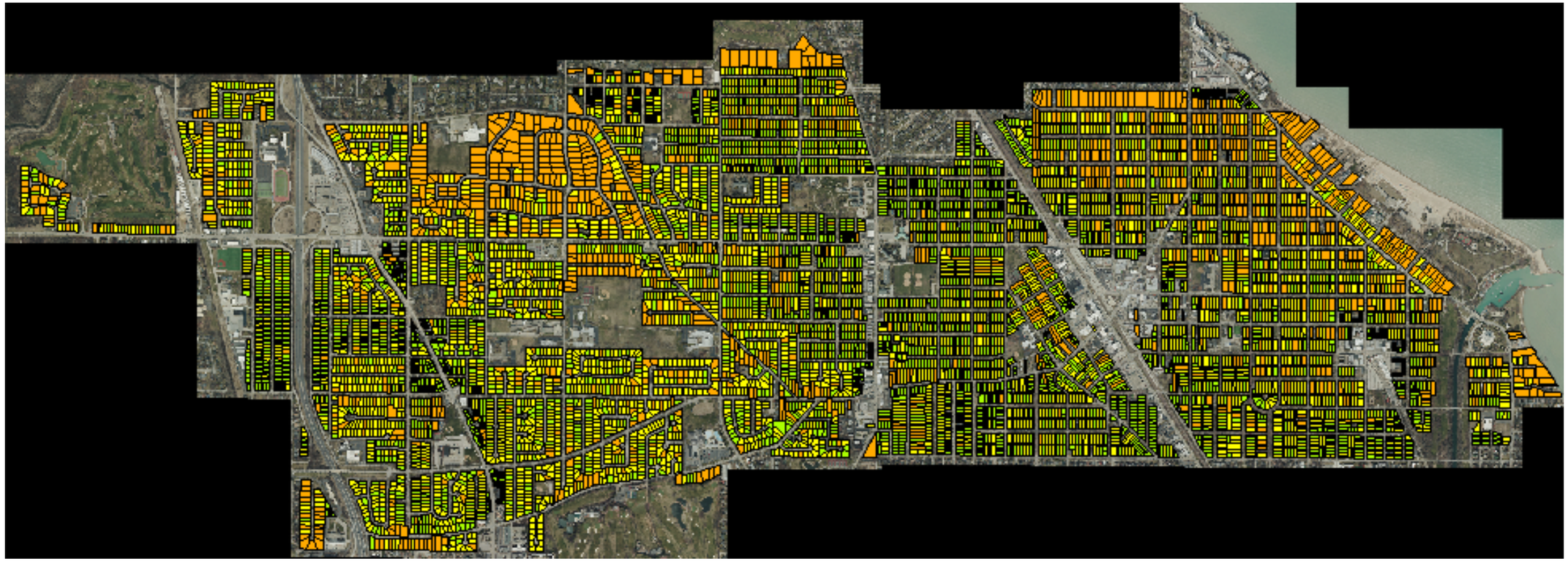

Figure 5. Single family residential tier distribution of all residential properties in the Village

After analyzing the sewer billing data provided by the Village, Raftelis found that 98% of residential sewer accounts (or 8,347 accounts out of 8,553 total residential accounts) were matched to residential properties. For these properties, Raftelis developed a potential impact analysis for a stormwater fee. First, Raftelis categorized sewer usage as low, medium, or high depending on customers' average quarterly usage as shown in Table 11.

Sewer Usage per Quarter	
Low	Less than 15 ccf
Medium	15 to 33 ccf
High	More than 33 ccf

Table 11. Sewer Usage Category Breakpoints for Low, Medium, and High Users

Then, Raftelis calculated the stormwater tier for each property based on the amount of impervious area shown in Table 12. Each property has then, a combination of usage and potential stormwater tier, and Raftelis applied the potential rates under each scenario to each property.

Stormwater Residential Tiers	Impervious Area
Tier 1	Less than 3,000 sq. ft.
Tier 2	3,000 to 4,300 sq. ft.
Tier 3	More than 4,300 sq. ft.

Table 12. Recommended Single Family Residential Tiers

Table 13 shows the FY 2022 annual fees that result for customers in each category of usage and impervious area tier. It also shows the number of matched sewer accounts in each category. For example, there are 425 accounts with high usage in Stormwater Residential Tier 1, shown in the top left cell of Table 13. The sewer usage fee is highlighted in gray, while the stormwater fee is highlighted in blue.

		Fee	Accounts				
Sewer Consumption	High	$ 828.59		$ 745.51		$ 921.21	
		$ 353.00	425	$ 428.00	966	$ 548.00	569
	Medium	$ 420.44		$ 433.48		$ 436.32	
		$ 353.00	1,715	$ 428.00	2,175	$ 548.00	477
	Low	$ 255.23		$ 259.60		$ 249.46	
		$ 353.00	976	$ 428.00	859	$ 548.00	185
		Tier 1		Tier 2		Tier 3	
		Stormwater Residential Tier					

Table 13. FY 2022 Estimated Annual Fees and Accounts in Usage and Stormwater Tier Categories for Residential Properties with Matched Sewer Accounts (98% matched)

Finally, the funding alternative impacts for these residential properties for a stormwater fee versus a sewer fee increase based on preliminary FY 2022 rates are presented in Table 14. As Table 14 shows, the largest category of accounts (residential customers with Medium usage in Residential Tier 2) will be billed $5.48 less annually under a stormwater fee versus a sewer fee increase. On average, more customers are expected to pay less than pay more for their bills under the stormwater fee scenario (5,850 customers paying less versus 2,497 paying more). Most of the customers paying less are Medium usage customers in Residential Tiers 1 and 2. The Medium usage Tier 1 customers will pay an average of $67.44 less annually, while the Tier 2 customers will pay an average of $5.48 less annually.

		Annual Impacts		
Sewer Consumption	High	-$ 475.59	-$ 317.51	-$ 373.21
	Medium	-$ 67.44	-$ 5.48	$ 111.68
	Low	$ 97.77	$ 168.40	$ 298.54
		Tier 1	Tier 2	Tier 3
		Stormwater Residential Tier		

Table 14. FY 2022 Estimated Quarterly Fee Impacts in Usage and Tier Categories for Residential Properties with Matched Sewer Accounts (98% matched)

The individual annual impacts for residential properties with matched sewer accounts are displayed geographically in Figure 6. Residential properties with matched accounts that are expected to pay less under the stormwater fee funding option in FY 2022 are highlighted in dark green, while properties that are expected to pay more under the stormwater fee funding option are highlighted in dark red. Properties with stormwater fees that are about their same as their expected sewer user fee increase are highlighted in yellow and orange (with the impact color spectrum going from green to yellow to orange to red). As stated above, most customers will pay less under the stormwater fee versus the sewer fee increase in FY 2022.

Similarly, the individual annual impacts for nonresidential properties with matched sewer accounts are displayed geographically in Figure 7. Nonresidential properties with matched sewer accounts that are expected to pay less under the stormwater fee funding option in FY 2022 are highlighted in dark green, while properties that are expected to pay more under the stormwater fee funding option are highlighted in red. Properties with expected stormwater fees that are about their same as their sewer user fees are highlighted in yellow.

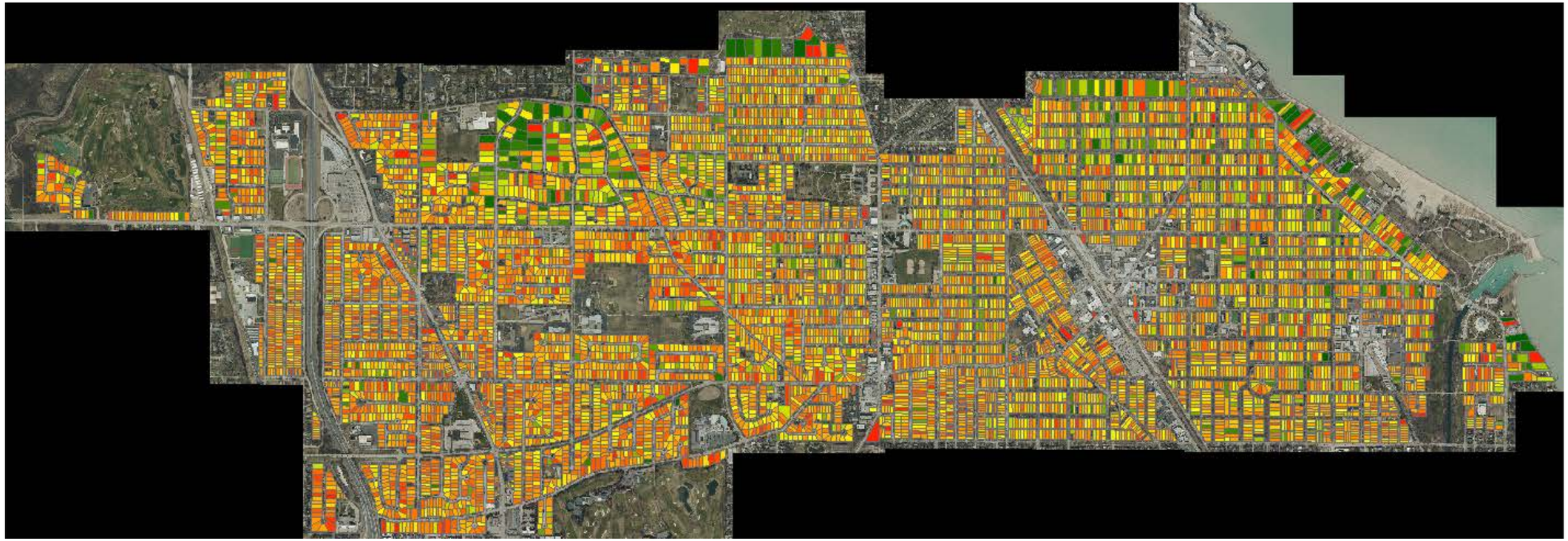

Figure 6. Estimated Stormwater Fee vs. Sewer Fee Funding Alternative Impacts for Residential Properties with Matched Sewer Accounts

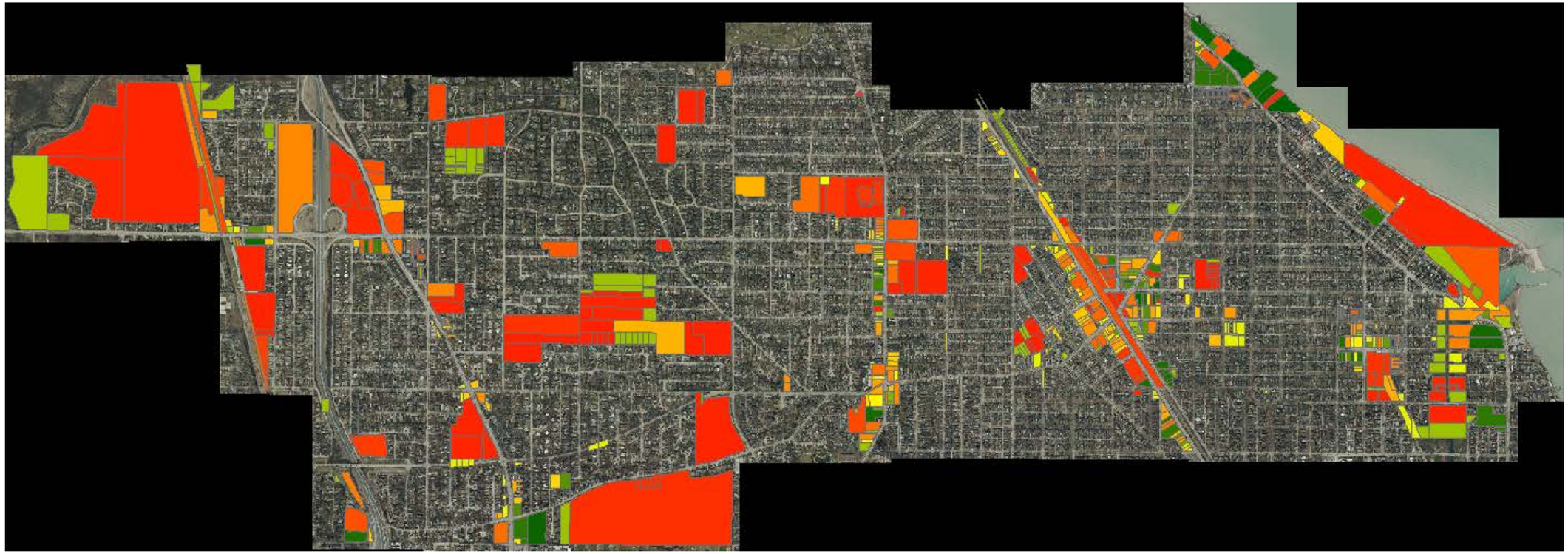

Figure 7. Sewer Fee vs. Stormwater Fee Funding Alternative Impacts for Nonresidential Properties with Matched Sewer Accounts

5. STORMWATER FEE FUNDING POLICIES

POTENTIAL CREDIT MECHANISMS

Some stormwater utilities have a stormwater credit policy to incentivize decentralized stormwater management control measures that reduce a ratepayer's demand for stormwater service, reduce utility costs, or assist the utility in meeting its regulatory obligations or public service objectives. For utilities with a credit program, credit is commonly given for stormwater control measures (SCMs) that reduce the peak volume or total volume of runoff from development. Such devices commonly include infiltration systems, retention ponds, and detention basins, among others. SCMs must be in good functioning condition in order to have a positive impact on runoff volume or quantity.

The Raftelis team evaluated potential credit mechanisms to incentivize and reward property owners who take actions to reduce their demand for stormwater service from the Village. Due to the substantial costs to the Village of the stormwater improvement project and the fact that residential property improvements have a negligible impact on the performance of the storm sewer system, residential credits are not recommended at this time. Raftelis recommends that the Village may consider offering onetime residential incentives in lieu of credits.

Alternatively, the Village may consider providing a nonresidential credits program to promote flood protection and green infrastructure. Due to the significant impact of a stormwater fee on larger nonresidential properties, and because larger parcels may have more opportunities to take concrete actions to lessen the burden on the storm sewer system, the Village may wish to consider a credits program for such properties. It is important to note that any credits for nonresidential properties will necessarily increase the rate paid by residential properties due to the reduction in billable units of service. To recognize the challenges associated with a stormwater fee for tax capped units of government, the Village could develop credits where the basis may be a low impervious area to lot area ratio, for specific maintenance agreements, or for special stormwater education programs. While the cost to administer a nonresidential credits program would drive up revenue requirements under stormwater fee funding and increase the rate per ERU, nonresidential customers are able to reduce their demand on the stormwater system and should be incentivized accordingly. Any nonresidential credits would generally be for improvements greater than the minimum requirements of the Village or Metropolitan Water Reclamation District.

It is important to keep in mind that regardless of whether the Village ultimately implements a formal stormwater fee credit policy, non-single family residential property ratepayers that install green roofs or pervious pavement will have the opportunity to receive a fee reduction equal to the surface area of the SCM. If traditional impervious area is replaced by either of these SCMs, and the SCM is functioning properly, doing so would effectively reduce the amount of impervious surface area on a property, which is the basis for stormwater fee calculation and billing.

FEE EXEMPTIONS

No properties within the Village receiving sewer service from the Village – or water, gas, electric, or other utility services from other providers – are exempt from utility fees, and Raftelis recommends that the stormwater fee be set up in the same way with no exemptions. All parcels with impervious area will

be charged a fee based on the impervious area they contain. The preliminary rate of $300 per ERU per year was calculated without any exemptions. If the Village were to consider exemptions for tax capped government entities, that would increase the preliminary rate to $317 per ERU. The preliminary annual stormwater and sewer fee increase impacts for the tax capped entities are presented below in Table 15.

Tax Capped Government Entity	Estimated Stormwater Fee	Estimated Sewer Fee Increase	Stormwater vs. Sewer Increase Impact
Board of Education	$70,356.00	$21,746.00	$48,610.00
Avoca School District 37	$19,284.00	$4,532.00	$14,752.00
Wilmette Park District	$114,108.00	$65,679.05	$48,428.95
Wilmette Public Library	$4,156.00	$2,410.05	$1,745.95
Total	**$207,904.00**	**$94,367.10**	**$113,536.90**

Table 15. Estimated Fee Impacts for Tax Capped Government Entities

BILLING AND DATA MAINTENANCE

If a new stormwater fee is implemented, the Village will have additional administrative tasks for billing and technology, customer service, data maintenance, and credits program administration.

Billing and Technology

While the stormwater fee would have a monthly fee schedule, it is currently envisioned that the stormwater fee would be incorporated into the sewer bill that is billed quarterly. The Village currently uses Tyler Technologies' Munis Utility Billing CIS for sewer billing. Raftelis recommends that the stormwater fee would be a parcel-based fee, and the appropriate stormwater fee associated with the parcel must be associated with the sewer account located on that property. There are some parcels that do not receive sewer service or have an existing sewer account to bill for stormwater. For these "stormwater only" accounts, new accounts will have to be loaded into the billing system and account characteristics such as ownership and mailing address will have to be developed and maintained.

Customer Service

With the implementation of a stormwater fee, customers will have questions about the fee, such as how their fee was calculated and how it can be reduced. Customers will also inquire about issues with their fee and will communicate to the Village about changes to their property that may affect their fee. Customer service staff will need to be able to address these issues with customers, and may need to communicate with data maintenance staff on appropriate edits to the billing data. The number of stormwater fee related inquiries is expected be high during the first few billing cycles after the fee goes live, and should level off to a lower level of customer inquiries afterwards.

Data Maintenance

There are several additional data maintenance related activities associated with conveying an accurate and up-to-date stormwater fee. Geographic information system (GIS) data is a key component in maintaining the impervious area data used to charge a stormwater fee. Updates that must be kept up in the data include changes to impervious area, parcel address and ownership information, aggregation of parcels, credits, and customer account related changes. Having processes for maintaining this data and

tracking any changes to the data is essential to ensure accuracy and customer confidence in stormwater billing.

To ensure accurate data for charging a stormwater fee, the Village will need access to new aerial imagery on a regular schedule, and should arrange for this as a member of the Cook County GIS Consortium. After the initial development of the impervious area layer using planimetric data from MGP, updates to the impervious area layer can be targeted rather than development of a completely new layer with each new imagery dataset.

Raftelis recommends that a "data maintenance" FTE be responsible for implementing bulk data updates when new parcel data or imagery becomes available. This person will also update data when new construction or tear downs occur, and assist customer service staff with responding to customer inquiries.

Credits Program Administration

If the Village implements a credit program with the stormwater fee, staff will have additional administrative tasks depending on the structure of the credits program. The Village will need to keep track of customer applications, credits and incentives rewarded, and develop a credits inspections and renewal process to ensure that private SCMs are properly maintained. Credits program data will need to be maintained and tied to accounts in the billing system, and impervious area data may need to be edited for customers who install green roofs or pervious pavement and reduce their impervious footprint.

Raftelis estimates total administrative costs for billing and technology, customer service, data maintenance, and credits program administration to be approximately $180,000 a year.

6. IMPLEMENTATION OPTIONS, RECOMMENDATIONS, AND NEXT STEPS

After evaluating the rate implications of funding the improvements with an increased sewer fee or a new stormwater utility fee, Raftelis found that both funding methods are feasible options based on the Village's legal, institutional, organizational, and technical requirements for the future stormwater program.

If the Village decides to pursue a stormwater fee, the next steps include finalizing the rate structure details, further data development of impervious area, linking the stormwater billing data with the sewer billing system, and refining the financial plan based on the final rate structure and rate base. Completing this process will allow the Village to fund a growing stormwater program. These steps are further defined below, and Raftelis expects that they can be completed within six months of the decision to proceed. If these steps were to proceed immediately, this means stormwater billing could begin in as soon as six months. The level of effort involved in the steps below will be highly dependent on the expected amount of public involvement, nuances of the rate structure, and ease of connectivity with the billing system.

Determining rate structure details

This feasibility assessment relied on a basic impervious-area based rate structure with no exemptions or special considerations. There are additional rate structure details to be decided before final fees can be calculated. Specifically, decisions still need to be made on:

- Whether a credit program will be implemented, and if so, how it will be structured
- How multi-family and multi-metered properties will be billed
- How tax capped units of government will be billed

Developing impervious area data

While a statistically significant sample of residential properties were digitized (measured) to estimate the rate base and conduct impacts analysis, the impervious area for the remainder of the service area needs to be accurately measured before final rates can be determined.

Linking up stormwater billing data with the sewer billing system

The Village bills for sewer service, and it is anticipated that stormwater service would be billed using the same system. As part of the feasibility assessment, Raftelis discussed the ability to accommodate another fee in that system with Village staff, but the details of how the data would be loaded and maintained remain to be determined. Adequate maintenance is required to support accurate billing, collections, and customer service.

Refining the financial plan based on the final rate structure and rate base

Based on determined rate structure details and measured impervious area for all properties, the program plan will be refined into a more robust financial plan. This financial plan will be a key input into the final rate study. The financial plan model would include, as needed, different collection factors or payment patterns by customer group, credit reductions, and fund balance projections for the new stormwater enterprise fund.

Establish enterprise and rate ordinance(s)

As part of the budgeting process for FY 2020, the Village should establish a separate stormwater enterprise fund and adopt a rate ordinance to set rates for one or more fiscal years. This will be one of the last steps before stormwater billing can begin.

For illustrative purposes only, the timeline in Figure 8 demonstrates how implementation of a new stormwater fee would occur if the Board made a decision to proceed in June 2019.

MONTHS						
0	1	2	3	4	5	6
First Board Briefing: Vote to Proceed to Phase II	Phase II – Data Development & Rate Study		Second Board Briefing: Present Finalized Rates, Revenue Requirement, Billing Policies			Vote to Implement Fee; Codify Rates and Ordinance

MONTHS						
7	8	9	10	11	12	13
Fee Funding in Place			First Bills Sent Out			

Figure 8. Timeline for Fee Funding Implementation

PUBLIC INVOLVEMENT AND OUTREACH STRATEGY

The Village has been conducting outreach since the inception of the Neighborhood Storage Improvements Project, and has been taking into account feedback from citizens about project costs and the Village's funding options moving forward. If the Board decides to move forward with a stormwater fee, Raftelis believes that a continued, robust outreach program for the Village will be worthwhile after the rate base estimate has been refined and additional program details become available.

Should the Village proceed with the stormwater fee, Raftelis recommends general outreach in the three months following to inform the public of the Village's stormwater fee implementation plan, and create a space where public ideas or concerns can be heard. Raftelis is keenly aware that in any public outreach meeting, attendees' primary interest is in finding out the potential fee impact on their property. Until the data development and rate study are completed at the end of the three months, the fee estimate will be relatively wide since the rate base is not known to a level of accuracy sufficient to put forth a single estimated fee amount. The Village would only be able to provide limited information on the likely impacts for customer, and outreach meetings would be primarily about the Village's obligations and stormwater program cost drivers.

In the first quarter, Raftelis also recommends that the Village reach out to key stakeholders to discuss the needs of the stormwater program and the advantages of the fee. It is notable that the Village has experienced significant flooding issues, so the needs of the stormwater program are more noticeable by the average citizen compared to other locales, and outreach emphasis can be placed on flood protection.

After the rate study is completed, rates can be finalized in the second quarter and impacts of the fee on individual ratepayers can be communicated in the months leading up to the go-live of the fee. The Village can then confirm bills to be sent out in the third quarter, and customers will receive their first stormwater bills from the fourth quarter.