



July 21, 2020 | Presentation to the Village Board

STORMWATER UTILITY FEASIBILITY AND RATE STUDY PHASE I RESULTS

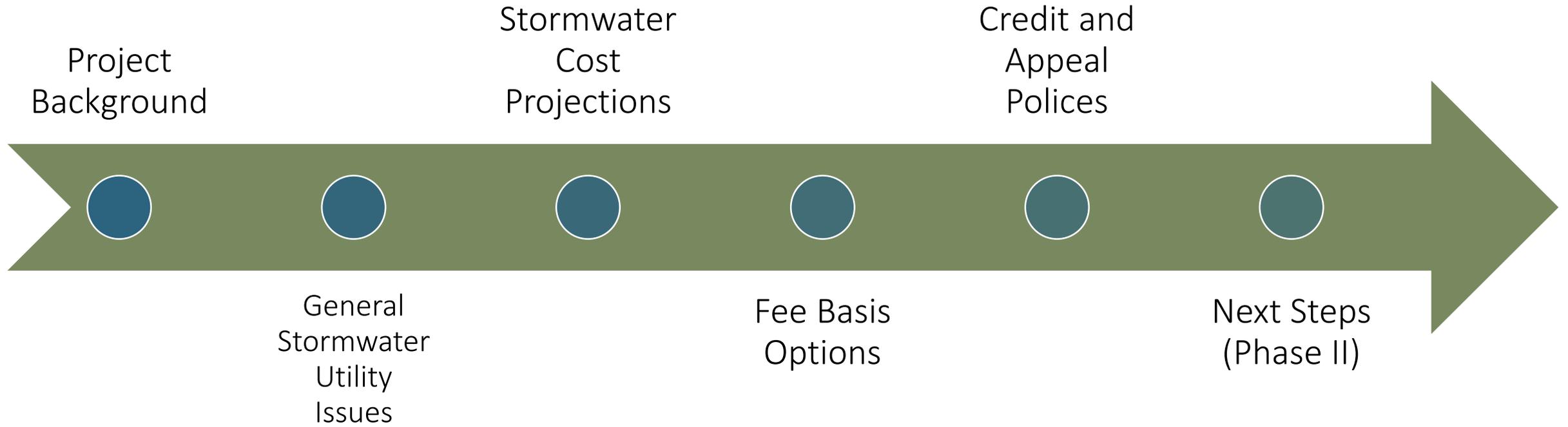


NewGen
Strategies & Solutions

in association with



PRESENTATION AGENDA



STORMWATER UTILITY DEFINITIONS

- Stormwater Best Management Practice (BMP) – Structural, vegetative, or managerial practices used to treat, prevent or reduce water pollution resulting from rainwater runoff.
- Parcel – An area of land within the corporate limits of the Village that has been established by a plat or other legal means and has been assigned a Property Index Number (PIN).
- Residential Parcel – A parcel which has been identified as being developed as a Single-Family or Multi-Family residence
- Non-Residential Parcel – Any parcel that has been developed for use as anything other than Single-Family or Multi-Family
- Impervious Area (IA) – Any surface within a parcel that prevents or significantly impedes the infiltration of stormwater into the soil. Impervious areas shall include, but are not limited to buildings, roofed structures, paved areas, walkways, driveways, parking lots, patios, decks, swimming pools, and similar non-porous areas.
- Pervious Area – A surface that allows the percolation of stormwater into the underlying soil.
- Level of Protection (LOP) – The Level-of-Protection is the frequency with which a storm resulting in structural damage may occur.
- National Pollutant Discharge Elimination System (NPDES) Permit – A permit given by Illinois EPA that defines limits on pollutant discharge levels, monitoring and reporting requirements, and other provisions for each permittee.

PROJECT BACKGROUND

- Master Stormwater Management Plan (MSMP) completed by Christopher B. Burke Engineering, Ltd. in February 2019

Flood Study Area	Engineer's Estimate of Cost (2018 Dollars)	Proposed Level of Protection
Burdick and Ames*	\$7,600,000	50-Year+
Rockland Road	\$7,300,000	100-Year
Winchester/Interlaken/Stonegate	\$12,100,000	100-Year
Copeland Manor	\$6,500,000	100-Year
Ellis Avenue	\$5,200,000	100-Year
Appley Avenue	\$800,000	100-Year
Liberty Bell Lane and 4th Avenue	\$4,400,000	100-Year
Harding and Willow	\$15,000	100-Year
Carriage Hill	\$915,000	100-Year
Lange and Cook	\$706,000	100-Year
Total Estimated Cost (2018 Dollars)	\$45,500,000	

* It is recommended during final engineering design that this project be optimized to provide the most cost-effective level of protection between the 50-year and 100-year frequency events.

- NewGen and Donohue engaged to complete a Stormwater Utility Feasibility and Rate Study
 - Phase I – Feasibility and User Fee Study
 - Phase II – Public Outreach and Implementation

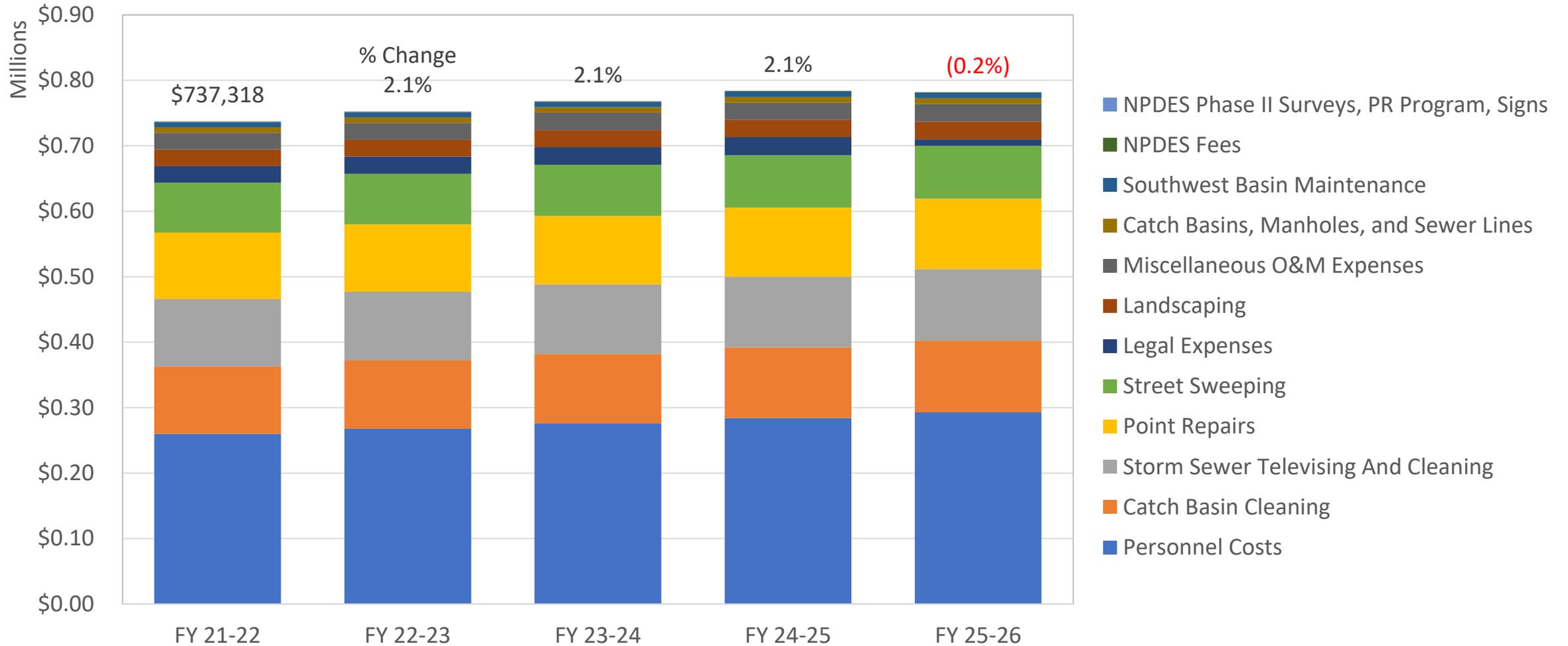


GENERAL STORMWATER UTILITY ISSUES

- Legal Authority
 - Taxes vs. Fees, Reasonable Basis for Fee Calculation
 - Green v. Village of Winnetka, 2019 IL App (1st) 182153
 - Church of Peace v. City of Rock Island, 828 N.E.2d 1282, 1284 (Ill. App. Ct. 2005)
 - Non-Home Rule
 - Village of Morton, City of East Moline, Village of Villa Park, and Village of Richton Park
- Level of Protection
 - What level of flooding protection is going to be provided?
- Fee Structure
 - How will costs be allocated to the Village's customers?
- Credits / Appeals
 - What credits / incentives are going to be offered?
 - On what basis should appeals to any fee be considered?

Information contained herein is not intended to be nor should be taken as legal advice. NewGen is not a law firm. The Village should retain proper legal council to answer any legal questions regarding the establishment of a Stormwater Utility.

OPERATING COSTS OF THE STORMWATER UTILITY



The slight decrease in FY 25-26 is due to a reduction in Legal Expenses.

STORMWATER CAPITAL IMPROVEMENT PLAN

Project	Cost	Year	Project	Cost	Year
Miscellaneous Capital	\$390,000	FY 20-21	Ellis Avenue – Construction	\$4,642,462	FY 30-31
Rockland Road – Engineering	\$147,500	FY 20-21	Liberty Bell and 4th – Engineering	\$684,549	FY 30-31
Rockland Road – Upsizing	\$1,068,371	FY 20-21	Liberty Bell and 4th – Construction	\$3,941,093	FY 31-32
Burdick & Ames – Engineering A	\$235,000	FY 20-21	Appley Avenue – Engineering	\$125,332	FY 32-33
C. Brown Reservoir	\$804,049	FY 20-21	Appley Avenue – Construction	\$719,761	FY 33-34
Burdick & Ames – Engineering	\$668,325	FY 21-22	Harding and Willow – Engineering	\$5,335	FY 33-34
Rockland Road – Construction	\$5,278,260	FY 21-22	Harding and Willow – Construction	\$10,819	FY 33-34
Burdick & Ames – Construction A	\$6,257,306	FY 22-23	Carriage Hill – Engineering	\$146,091	FY 34-35
Burdick & Ames – Construction B	\$6,288,592	FY 23-24	Carriage Hill – Construction	\$834,808	FY 34-35
Copeland Manor – Engineering	\$981,374	FY 23-24	Lange and Cook – Engineering	\$113,252	FY 35-36
Copeland Manor – Construction	\$5,678,230	FY 25-26	Lange and Cook – Construction	\$647,157	FY 35-36
Winchester/Interlaken/Stonegate – Engineering	\$1,857,448	FY 25-26	Subtotal FY 30-31 through FY 35-36	\$11,870,659	
Winchester/Interlaken/Stonegate – Construction	\$7,111,373	FY 26-27			
Winchester/Interlaken/Stonegate – Construction	\$3,582,376	FY 28-29			
Ellis Avenue - Engineering	\$802,361	FY 28-29			
Subtotal FY 20-21 through FY 28-29	\$41,1150,565				

Total Sixteen-Year CIP = \$53,021,224

Based on estimated FY 20-21 costs, inflated to future dollars.

Totals may not add due to rounding.

DEBT SERVICE PROJECTIONS

Project	Bond Amount	Issue Year
Rockland Road	\$5,357,434	FY 21-22
Burdick & Ames - Construction A	\$6,351,165	FY 22-23
Burdick & Ames - Construction B	\$7,379,016	FY 23-24
Copeland Manor	\$7,648,713	FY 25-26
Winchester/Interlaken/Stonegate - Construction	\$7,218,043	FY 26-27
Winchester/Interlaken/Stonegate - Construction	\$4,450,508	FY 28-29
Ellis Avenue - Construction	\$5,406,916	FY 30-31
Liberty Bell and 4th - Construction	\$4,000,210	FY 31-32
Total Bond Funded Projects	\$47,812,005	

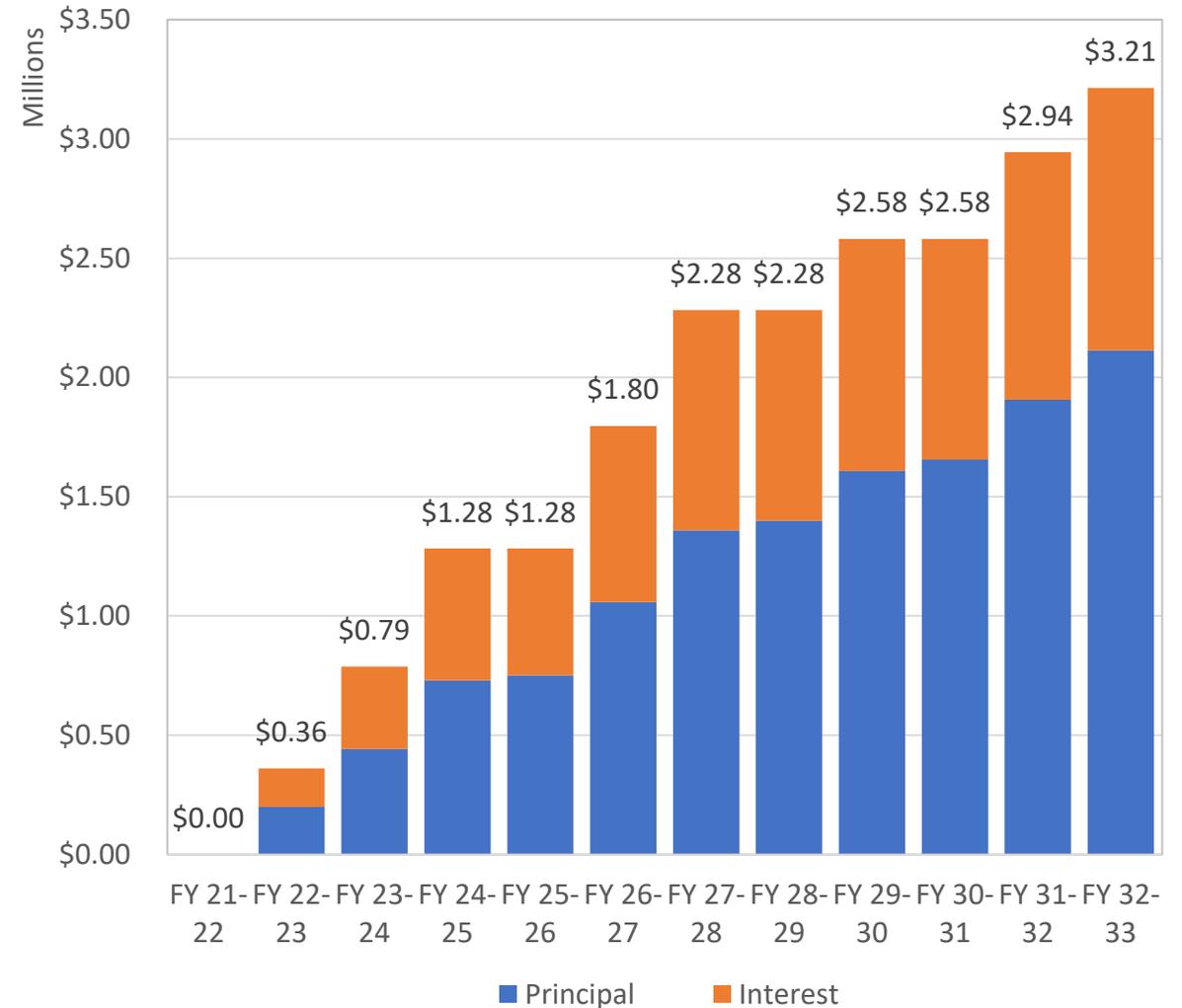
Financing Assumptions:

Bond Term: 20 Years

Cost of Issuance: 1.5% of principal

Interest Rate: 3.0%

Total is less than CIP due to cash funding of some projects



Totals may not add due to rounding.

MISCELLANEOUS REVENUES AND RESERVES

- Miscellaneous (Non-Fee) Revenues

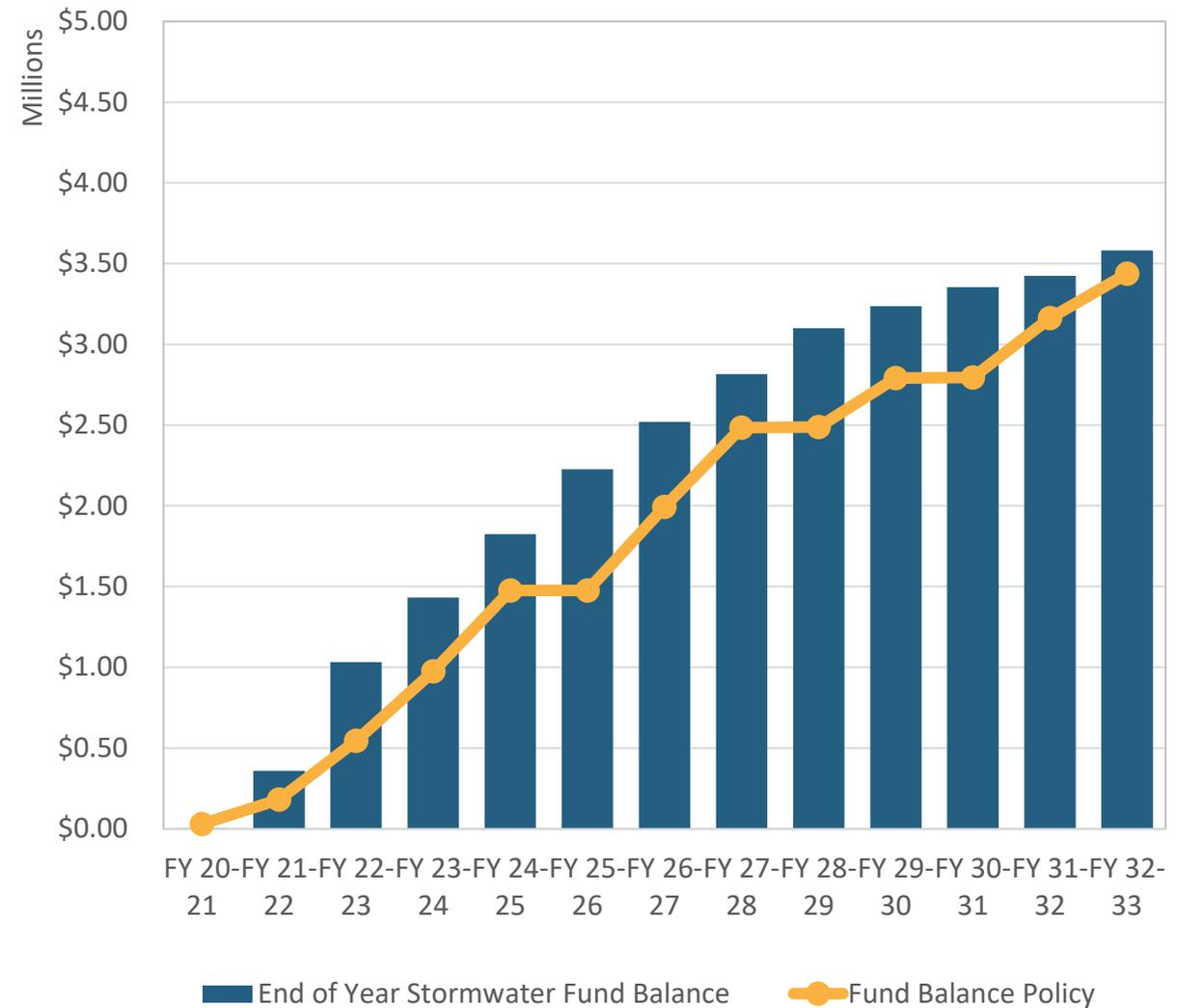
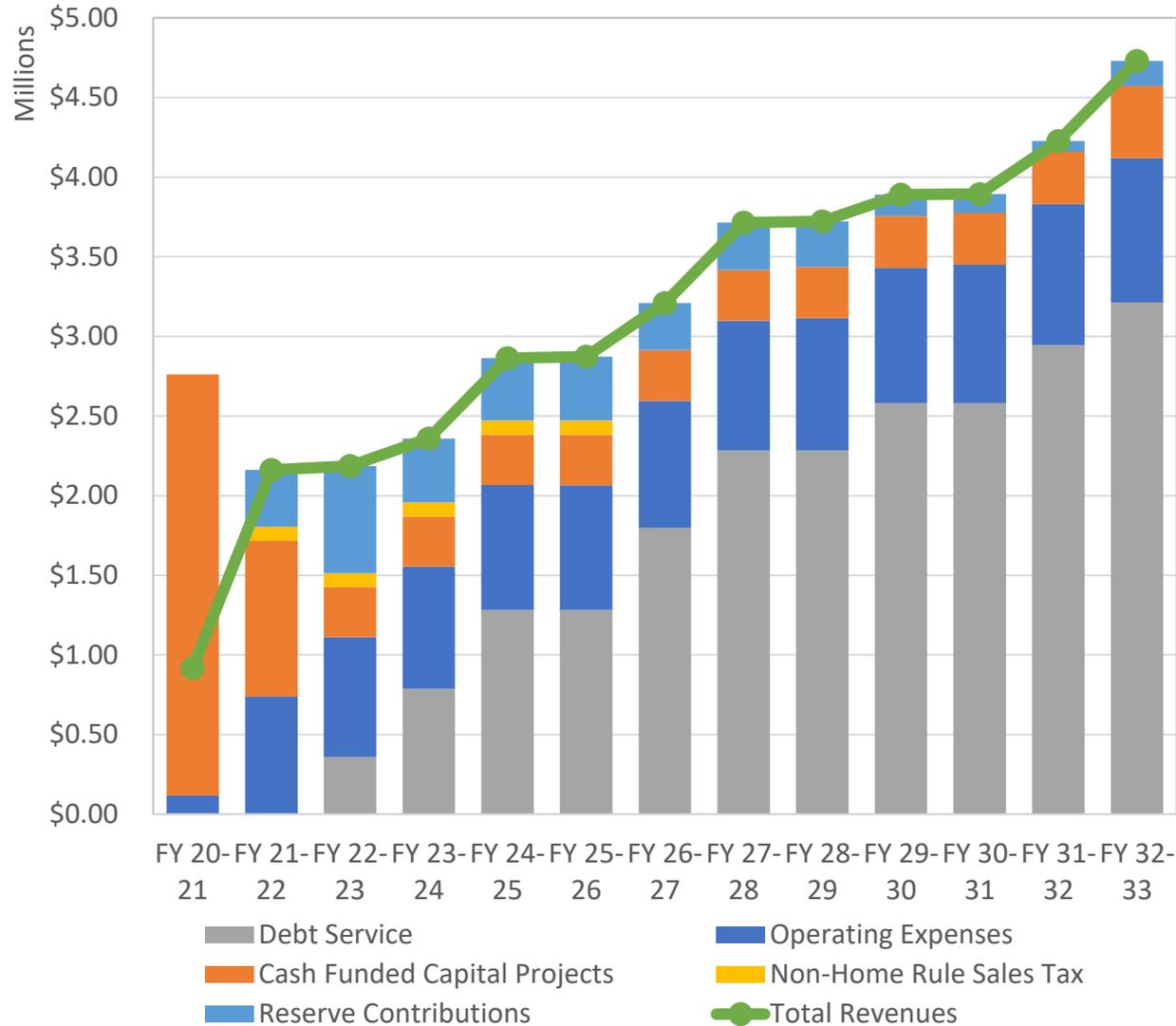
	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Transfer from General Fund	\$500,000	\$ -	\$0	\$0	\$0	\$0
Non-Home Rule Sales Tax	\$416,685	\$ -	\$0	\$0	\$0	\$0
Late Fees/Penalties	\$ -	\$ -	\$21,609	\$21,609	\$23,271	\$28,258
Interest Income	\$ -	\$37	\$3,595	\$10,318	\$14,330	\$18,250
Total Non-Fee Revenues	\$916,685	\$37	\$25,203	\$31,927	\$37,601	\$46,507

- Operating Reserve - The minimum operating reserve balance shall be sufficient for 90 days of Operating and Maintenance (O&M) expenses; and
- Debt Service Reserve – The minimum debt service reserve balance shall equal to the system’s annual debt service.

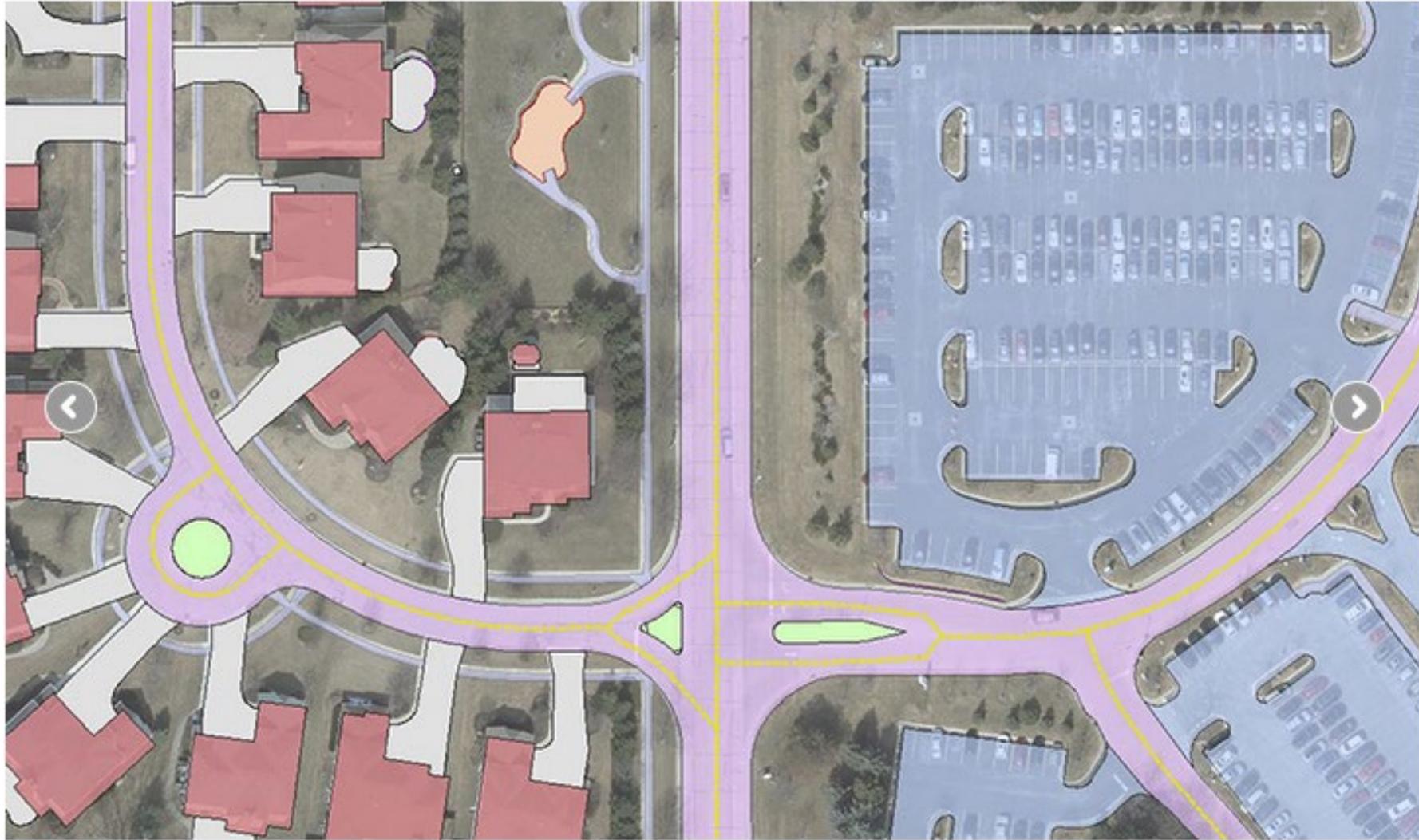
	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Operating Reserve	\$28,856	\$181,804	\$185,563	\$189,412	\$193,354	\$192,884
Debt Service Reserve	\$ -	\$ -	\$360,104	\$787,002	\$1,282,988	\$1,282,988
Total Fund Balance Policy	\$28,856	\$181,804	\$545,667	\$976,414	\$1,476,342	\$1,475,871

Totals may not add due to rounding.

PROJECTED CASH FLOW AND CASH BALANCE



IMPERVIOUS AREA ANALYSIS

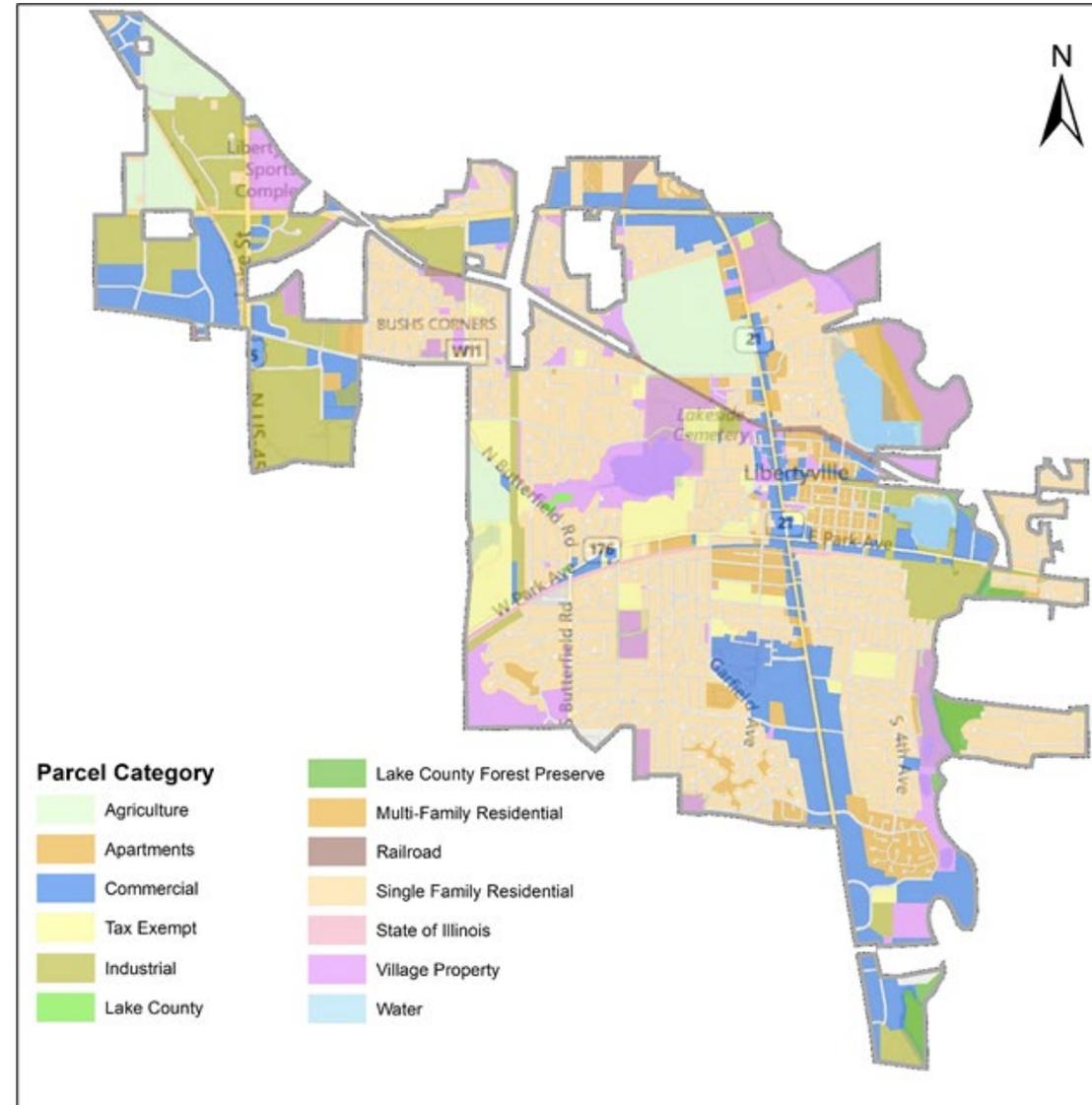


VILLAGE PARCEL DATA

Classification	Parcels	Total Area (ft ²)	Pervious Area (ft ²)	Impervious Area (ft ²)
Single-Family Residential	5,433	84,542,850	61,434,842	23,108,008
Multi-Family Residential	1,859	12,648,476	8,343,938	4,304,539
Commercial	782	32,788,750	14,883,498	17,905,252
Industrial	177	26,788,737	13,484,550	13,304,188
Village Property	173	31,476,869	28,982,343	2,494,526
Tax Exempt	100	10,303,879	7,782,767	2,521,112
Apartments	31	775,000	311,081	463,919
Lake County Forest Preserve	18	3,822,428	3,802,868	19,560
Lake County	9	565,657	545,882	19,775
State of Illinois	9	597,744	519,759	77,985
Water	9	4,529,230	4,465,890	63,340
Railroad	8	1,208,566	1,117,474	91,092
Agriculture	7	8,949,738	7,417,056	1,532,682
Totals	8,615	218,997,924	153,091,947	65,905,977

96% of parcels

89% of IA



Totals may not add due to rounding.

FEE BASIS OPTIONS

- Equivalent Residential Unit (ERU) – The average IA per residential parcel, equal to the total IA of residential parcels divided by the number of residential parcels.

	Parcels	Impervious Area (ft ²)
Single Family Residential	5,433	23,108,008
Multi-Family Residential	1,859	4,304,539
Totals	(A) 7,292	(B) 27,412,546
<hr/>		
Village ERU = (B) / (A)	3,800	square feet (rounded)

- Intensity of Development Factor (IDF) – The area within a parcel that is impervious vs. the total area of a parcel, expressed as a percentage. For instance, a 10,000 square foot parcel with 5,000 square feet of impervious area would be assigned an IDF of 50%. Fee is based both on ERU and IDF.
- Equivalent Hydraulic Area (EHA) – The total runoff area of a parcel that considers runoff factors of both pervious and impervious area.
- Directly Connected Impervious Area (DCIA) – The portion of IA with a direct hydraulic connection to the Village’s waterbody via continuous paved surfaces, gutters, drainpipes, or other conveyance that do not reduce runoff volume.

Totals may not add due to rounding.

INTENSITY OF DEVELOPMENT FACTOR



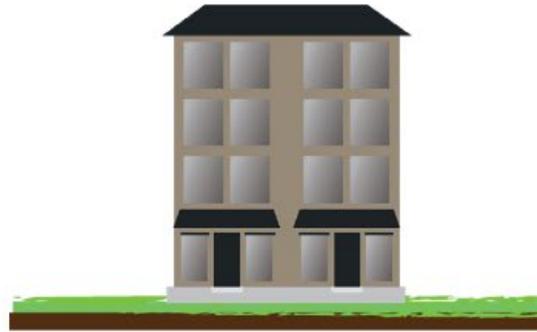
Vacant
IDF Factor: 0.2



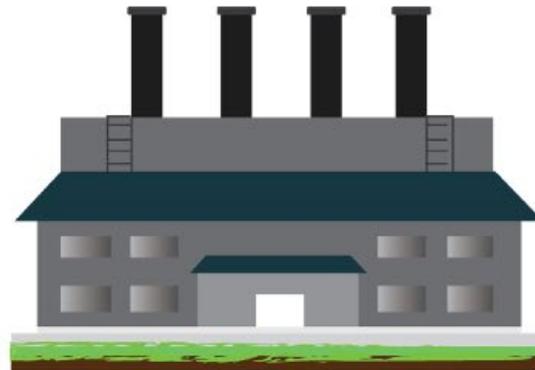
Light Development
IDF Factor: 0.5



Medium
Development
IDF Factor: 1.0



Heavy
Development
IDF Factor: 1.5



Very Heavy
Development
IDF Factor: 2.0

Source: Stormwater Fees: Pennsylvania Environmental Council, *Overview of Municipal Stormwater Fee Programs*, July 2019

INTENSITY OF DEVELOPMENT FACTOR

- Recommended by NewGen and Village Staff
- Fee basis is sum of system ERUs and IDFs
- Bi-Monthly Fee = (ERU x Fee) + (IDF x Fee)

IDF Classification	% Impervious	IDF	Parcels	% of Parcels	IDFs	% of IDFs
Vacant	0%	0.2	255	3.0%	51	0.5%
Light Development	1% - 20%	0.5	634	7.4%	317	3.1%
Medium Development	21% - 40%	1.0	3,982	46.2%	3,982	38.4%
Heavy Development	41% - 70%	1.5	2,955	34.3%	4,433	42.8%
Very Heavy Development	>70%	2.0	789	9.2%	1,578	15.2%
Totals			8,615	100.0%	10,361	100.0%
			Total System ERUs		17,343	
			Total System Fee Basis (ERUs + IDFs)		27,703	

Bi-Monthly Fees	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Fee per ERU and IDF	\$13.00	\$13.00	\$14.00	\$17.00	\$17.00
Bill for Average Residential Parcel	\$26.00	\$26.00	\$28.00	\$34.00	\$34.00

INTENSITY OF DEVELOPMENT FACTOR SAMPLE

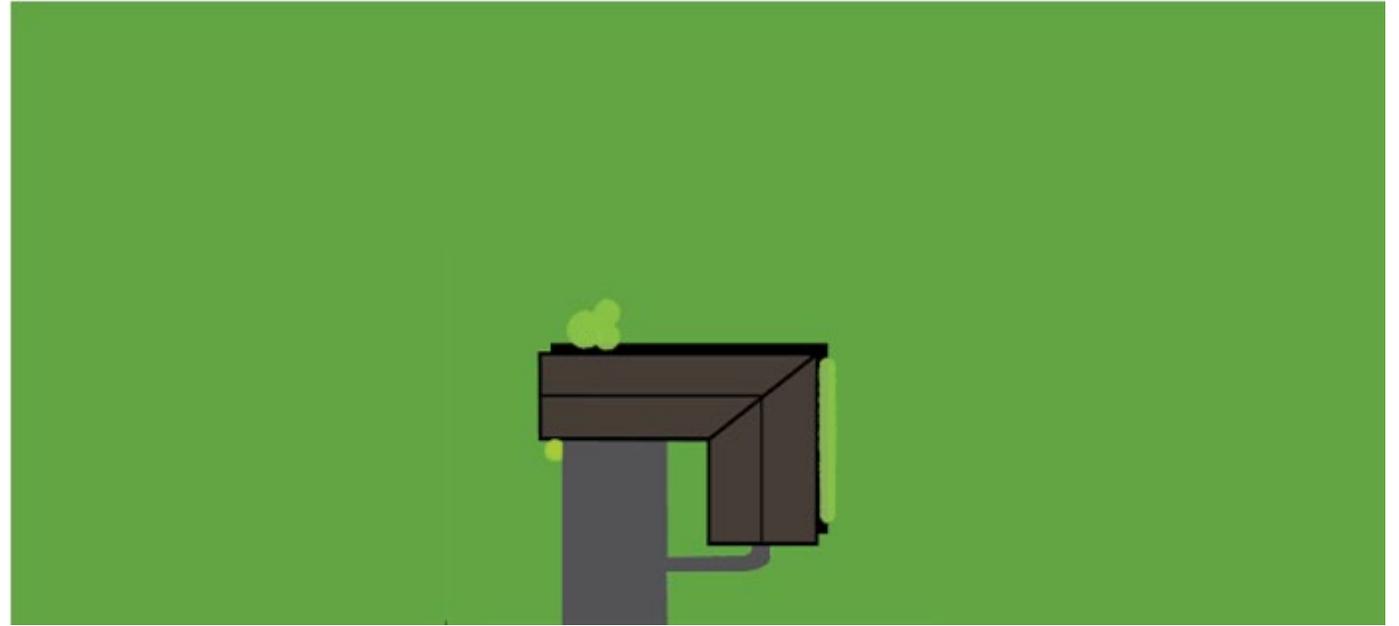
Impervious area = 3,800 for both parcels

FY 21-22 IDF Fee = \$13.00



ERU = 1.0
IDF = 1.5

$$\begin{aligned}\text{Bi-Monthly Fee} &= (\text{ERU} \times \text{Fee}) + (\text{IDF} \times \text{Fee}) \\ &= (1.0 \times \$13.00) + (1.5 \times \$13.00) \\ &= \$32.50\end{aligned}$$



ERU = 1.0
IDF = 0.5

$$\begin{aligned}\text{Bi-Monthly Fee} &= (\text{ERU} \times \text{Fee}) + (\text{IDF} \times \text{Fee}) \\ &= (1.0 \times \$13.00) + (0.5 \times \$13.00) \\ &= \$19.50\end{aligned}$$

IDF PROJECTED BI-MONTHLY SAMPLE BILLS

Property Type	Street	ERU	IDF	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Low ERU/Low IDF SFR	Woodfield Lane	0.4	0.5	\$11.70	\$11.70	\$12.60	\$15.30	\$15.30
Low ERU/High IDF MFR	Lynn Circle	0.4	2.0	\$31.20	\$31.20	\$33.60	\$40.80	\$40.80
High ERU/Low IDF SFR	Camelot Lane	1.8	0.5	\$29.90	\$29.90	\$32.20	\$39.10	\$39.10
Low ERU/High IDF MFR	Parkside Court	0.5	2.0	\$32.50	\$32.50	\$35.00	\$42.50	\$42.50
Low ERU/High IDF MRF	Red Top Drive	0.7	2.0	\$35.10	\$35.10	\$37.80	\$45.90	\$45.90
Low ERU/Mid IDF MFR	Brainerd Avenue	0.5	1.5	\$26.00	\$26.00	\$28.00	\$34.00	\$34.00
Avg. ERU/Avg. IDF SFR	Old Peterson Road	1.0	1.0	\$26.00	\$26.00	\$28.00	\$34.00	\$34.00
Mid ERU/Mid IDF SFR	Harding Avenue	1.1	1.5	\$33.80	\$33.80	\$36.40	\$44.20	\$44.20
High ERU/Mid IDF SFR	Forest Lane	3.7	1.5	\$67.60	\$67.60	\$72.80	\$88.40	\$88.40
High ERU/Low IDF SFR	Lake Street	6.5	0.5	\$91.00	\$91.00	\$98.00	\$119.00	\$119.00
Office Building	W Park Avenue	4.4	2.0	\$83.20	\$83.20	\$89.60	\$108.80	\$108.80
Apartments	E Cook Avenue	7.0	2.0	\$117.00	\$117.00	\$126.00	\$153.00	\$153.00
Car Dealership	S Milwaukee Ave	29.4	2.0	\$408.20	\$408.20	\$439.60	\$533.80	\$533.80
Industrial Building	US Highway 45	86.8	1.0	\$1,141.40	\$1,141.40	\$1,229.20	\$1,492.60	\$1,492.60
Hospital	S Milwaukee Ave	427.3	41.1	\$6,089.20	\$6,089.20	\$6,557.60	\$7,962.80	\$7,962.80

The Hospital is the sum of several parcels, resulting in an IDF greater than 2.0.

OTHER FEE OPTIONS

- Each parcel is allocated costs based on its actual ERU value (Winnetka)
 - Libertyville FY 21-22 fee = \$21.00 per ERU
- Residential vs. Non-Residential (Buffalo Grove)
 - Residential Parcels are all assigned 1.0 ERU
 - Non-Residential parcels are assigned actual ERU
 - Libertyville FY 21-22 fee = \$22.00 per ERU

- Tiered Residential (Downers Grove)

Libertyville	IA	ERU	FY 21-22 Fee
Small Residential	0 – 2,000 ft ²	0.5	\$10.50
Medium Residential	2,001 – 5,000 ft ²	1.0	\$21.00
Large Residential	5,001 – 7,500 ft ²	1.5	\$31.50
Very Large Residential	> 7,500 ft ²	2.0	\$42.00

- Equivalent Hydraulic Area (Moline Non-Residential Parcels)
 - Libertyville FY 21-22 fee = \$21.00 per ERU
- Directly Connected Impervious Area
 - Libertyville FY 21-22 fee = \$19.00 per ERU

SUMMARY OF FEE ALTERNATIVES

Cost Allocation %		Billing Method				
Customer Class	Actual ERU	Modified ERU	Tiered Residential	IDF	EHA	DCIA
Non-Residential	58.4%	61.2%	57.9%	43.1%	57.3%	61.8%
Single-Family Residential	35.1%	32.8%	34.1%	43.0%	36.4%	30.8%
Multi-Family Residential	6.5%	6.0%	8.0%	13.9%	6.2%	7.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

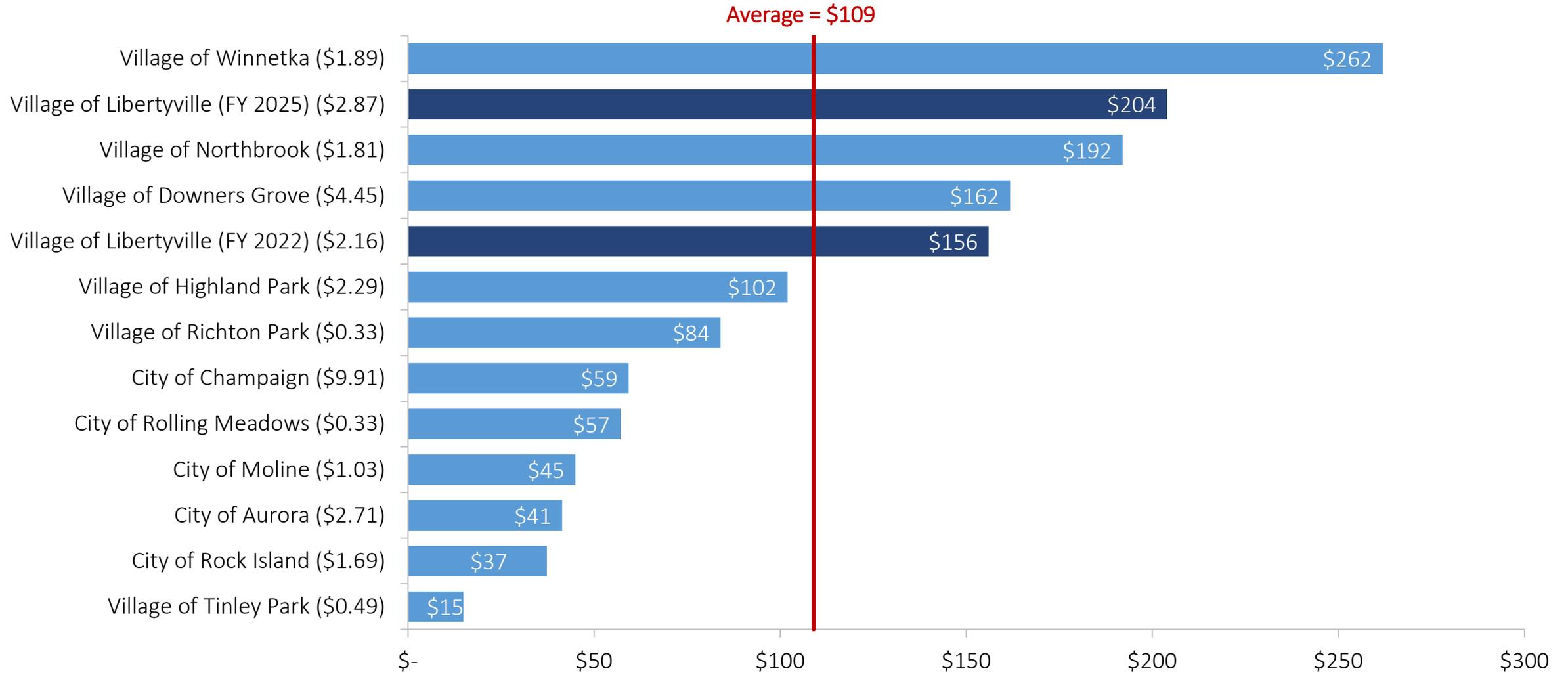
- All options other than IDF result in nearly the same allocation between Residential and Non-Residential customers.
- IDF method accounts for stormwater from both impervious and pervious portions of parcels, as well as undeveloped parcels, and therefore can be more equitable than ERU methods.
- IDF requires increased detail in rate implementation and public education.

Totals may not add due to rounding.

CREDITS AND APPEALS

- Two credits available, each granting a 50% reduction in fee, are not mutually exclusive:
 - Drainage Credit – Parcel owner must prove that 100% of runoff from property does not enter Village’s stormwater system
 - Sampling Credit – Parcel owner must prove that 100% of runoff from property does not enter watershed managed and sampled by Village
- Fee Appeals available:
 - Billing Errors: Fee is correct but has been sent to the incorrect address or fee has been calculated incorrectly, but impervious area is correct
 - Impervious Calculation Errors:
 - Existence – Fee is based on impervious area that does not exist
 - Location – Fee is based on impervious area in an incorrect location
 - Amount – Parcel Impervious area is calculated incorrectly
- Appeals contesting the types of surface areas designated by the Village as impervious will not be considered.

ANNUAL COST COMPARISON – RESIDENTIAL 1.0 ERU, 40% IDF



All non-Libertyville fees are as of FY 20-21. Value in parenthesis is the total revenue of the system in millions.

NEXT STEPS (PHASE II)

Assuming the Board decides to move into Phase II of the Feasibility and Rate Study:



Timeline is an estimate and will depend on the progression of the COVID-19 pandemic.



THANK YOU
Questions / Discussion

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