

Stormwater Enterprise Fee Structure Analysis

Concord Public Works Commission



Concord Public Works

Alan Cathcart – CPW Director

Stephen Dookran – Town Engineer

Samiksha Poudel – Stormwater Engineer

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Weston & Sampson

Jaurice Schwartz – Team Leader

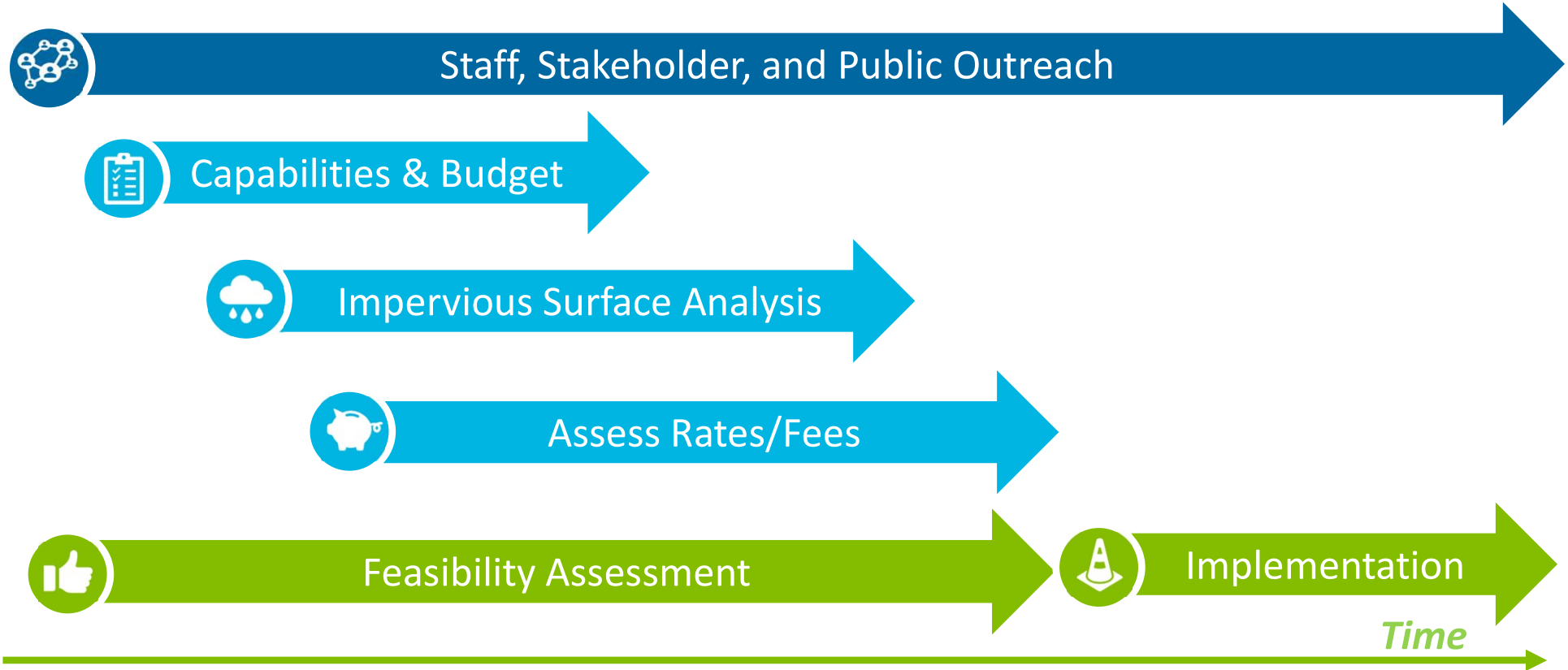
Stormwater Budget Drivers

- MS4 Permit Compliance
- O&M/Inspections
- Culvert/Bridge Needs
- Drainage Improvements
- Watershed Management Planning Recommendations
- Resiliency Planning
- Staffing
- Equipment

**Target Annual
Budget**

**\$1 Million After
Credits**

Steps to Setting up a Stormwater Fee System



Stormwater Enterprise (SWE) Fund

- Simple Set Fee Structure
 - Annual or Quarterly Fee (Residential v. Commercial/Industrial)
 - Impervious Area Based Method
 - a. Calculated on Impervious Area
 - b. Establish a Common Unit: An Equivalent Residential Unit (ERU) is the amount of impervious area on a single-family residential parcel.
 - Flat Rate
 - Tiered
 - Rates Based on Actual Costs for Stormwater Management
-

Exempt Parcels

REQUIRED to pay a stormwater utility fee:

- All tax-exempt parcels, including town-owned and state-owned parcels
- All parcels with greater than 0 SF of impervious area regardless of classification

NOT REQUIRED to pay a stormwater utility fee:

- All parcels with 0 SF of impervious area, regardless of classification.

Why include private roads and vacant parcels?

While one's own parcel's impervious area contributes to stormwater runoff, ALL property owners use and benefit from the stormwater infrastructure on Town-owned roads, including owners of vacant parcels.

Stormwater Fees in Massachusetts

Small Residential

- Typically 1 to 3 family homes
- Flat Rates
 - \$30 to \$114 per year
- Tiered Fees
 - Up to \$1,286 per year

Other Residential & Non-Residential

- Impervious Area/ERU
 - ERUs from 2,671 SF to 4,443 SF
 - Fees from \$40/ERU to \$91/ERU per year
- Tiered Fees
 - Fees from \$90 to \$120,000 per year

Collected Revenue

- \$250,000 to \$4.1 million annually

Breakdown of Parcel Type and Total Impervious Area

Target Funding Amount: \$1,000,000 (Budget for \$1,111,111 assuming 10% Credits)

ERU: 5,570 SF

ERU Rate: \$118

Parcel Type	Number of Parcels	Percent of Parcels	Impervious Area (SF)	Percent of Impervious Area	Approximate Stormwater Fees to Be Collected
1 to 3-Family Residential	4,870	88.19%	27,382,307	51.84%	\$576,055
Non-Residential/ Larger Multi-Family Residential	652	11.81%	25,433,432	48.16%	\$535,056

Parcel Classifications

1 to 3-Family Residential includes:

- Single family residential, two-family residential, and three-family residential
- Multiple houses on one parcel
- Two and three-family condos
- Accessory land to residential (parcels with small buildings, garages, etc.)

1 to 3-Family Residential Properties

Single-Family Residential: 67 Crest St



Description	Square Footage
Other /Misc.Imp.Surface	236.8
Paved Driveway	785.8
Paved Sidewalk/walkway	96.9
Roof (structure)	2,346.5
Total Impervious Area	3,476.7
Total Square Footage	15,229

- Other /Misc.Imp.Surface
- Paved Driveway
- Paved Sidewalk/walkway
- Roof (structure)

Two-Family Residential: 25-27 Maple St



Description	Square Footage
Paved Driveway	1,700.7
Paved Sidewalk/walkway	226.0
Roof (structure)	1,259.4
Total Impervious Area	3,186.1
Total Square Footage	6,874

- Other /Misc.Imp.Surface
- Parking
- Paved Driveway
- Paved Sidewalk/walkway
- Roof (structure)

Parcel Classification

Non-Residential/Larger Multi-Family Residential includes:

- Condos with 4 or more units
- Apartments complexes
- Commercial and industrial properties
- Tax-exempt properties (cemeteries, churches, hospitals, private schools, town-owned and state-owned properties)

Larger Multi-Family Residential

Concord Greene Condominiums



159-181 Thoreau St Apartments



Description	Square Footage
Other /Misc.Imp.Surface	44,788.6
Parking	132,353.0
Paved Driveway	70,772.7
Paved Sidewalk/walkway	11,603.5
Roof (structure)	181,350.4
Swimming Pool	1,840.6
Total Impervious Area	442,708.9
Total Square Footage	1,107,295

- Other /Misc.Imp.Surface
- Parking
- Paved Driveway
- Paved Sidewalk/walkway
- Road/Street Surface
- Roof (structure)
- Swimming Pool

Description	Square Footage
Parking	13,680.9
Paved Driveway	6,286.1
Paved Sidewalk/walkway	1,431.6
Roof (structure)	13,315.0
Total Impervious Area	34,713.6
Total Square Footage	110,956

- Other /Misc.Imp.Surface
- Parking
- Paved Driveway
- Paved Sidewalk/walkway
- Roof (structure)

Non-Residential Parcels

300 Baker Ave Office Park



200 Strawberry Hill Rd



Description	Square Footage
Other /Misc.Imp.Surface	8,051.4
Parking	470,339.8
Paved Sidewalk/walkway	13,487.2
Roof (structure)	201,909.4
Total Impervious Area	693,787.9
Total Square Footage	2,830,093

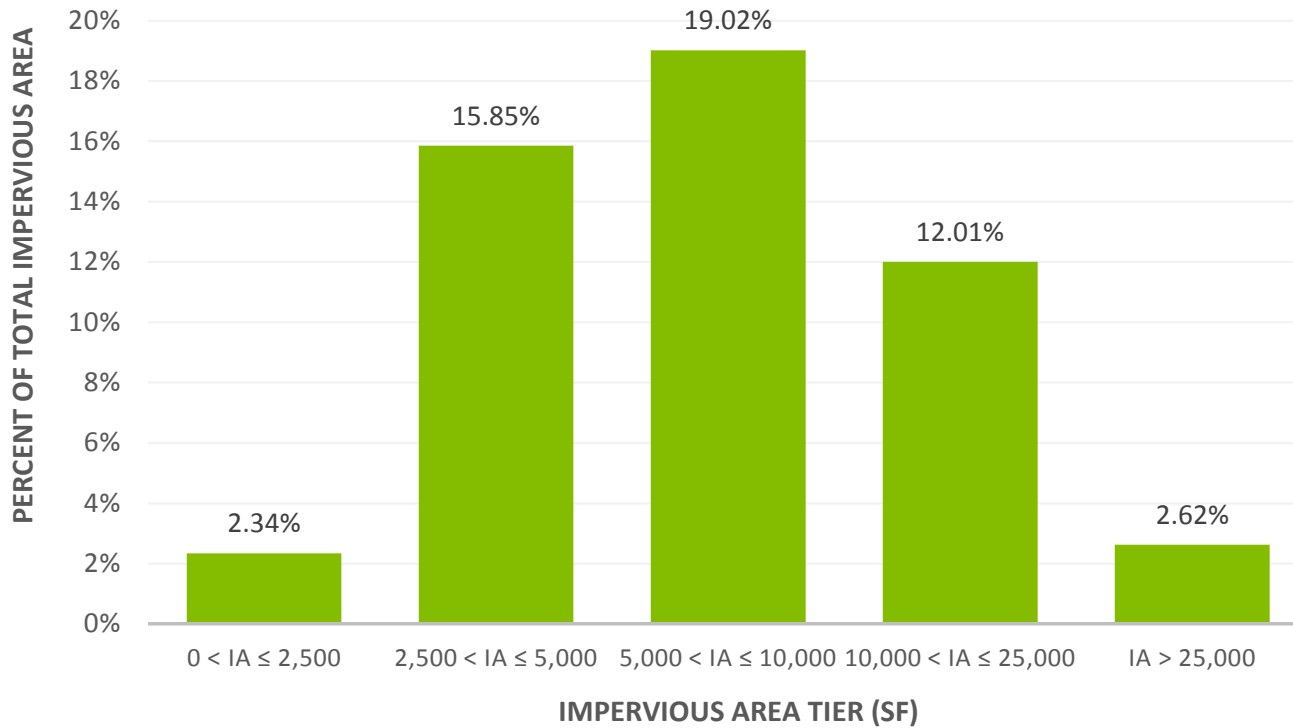
- Other /Misc.Imp.Surface
- Parking
- Paved Driveway
- Paved Sidewalk/walkway
- Road/Street Surface
- Roof (structure)
- Swimming Pool

Description	Square Footage
Other /Misc.Imp.Surface	35,650.1
Parking	74,604.7
Paved Sidewalk/walkway	189,670.9
Roof (structure)	70,826.5
Total Impervious Area	189,670.9
Total Square Footage	1,243,891

- Other /Misc.Imp.Surface
- Parking
- Paved Driveway
- Paved Sidewalk/walkway
- Roof (structure)

1- to 3-Family Residential: Percent of Overall Impervious Area

Small (1-3 Family) Residential Impervious Area Over Total Impervious Area in Town

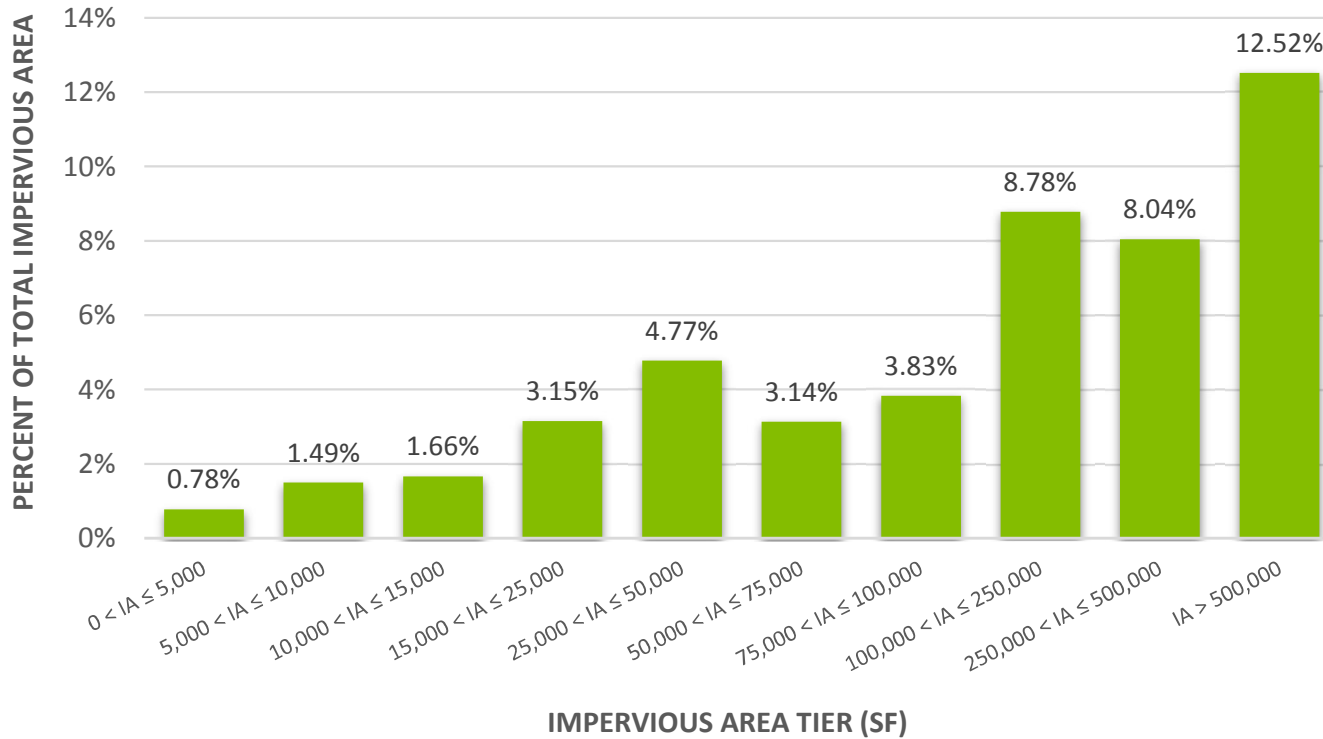


Tier	Total Impervious Area (SF)	Tier IA/ Town IA
0 < IA ≤ 2,500	1,234,454.30	2.34%
2,500 < IA ≤ 5,000	8,373,924.08	15.85%
5,000 < IA ≤ 10,000	10,047,402.85	19.02%
10,000 < IA ≤ 25,000	6,341,587.41	12.01%
IA > 25,000	1,384,938.78	2.62%
TOTAL	27,382,307.42	51.84%

Town IA: 52,815,739.09 SF
S.R. IA: 27,382,307.42 SF
Percent of Total IA: 51.8%

Non-Residential and Larger Multi-family Residential Percent Of Overall Impervious Area

Non-Residential and Larger Multi-Family Residential Impervious Area over Total Impervious Area in Town

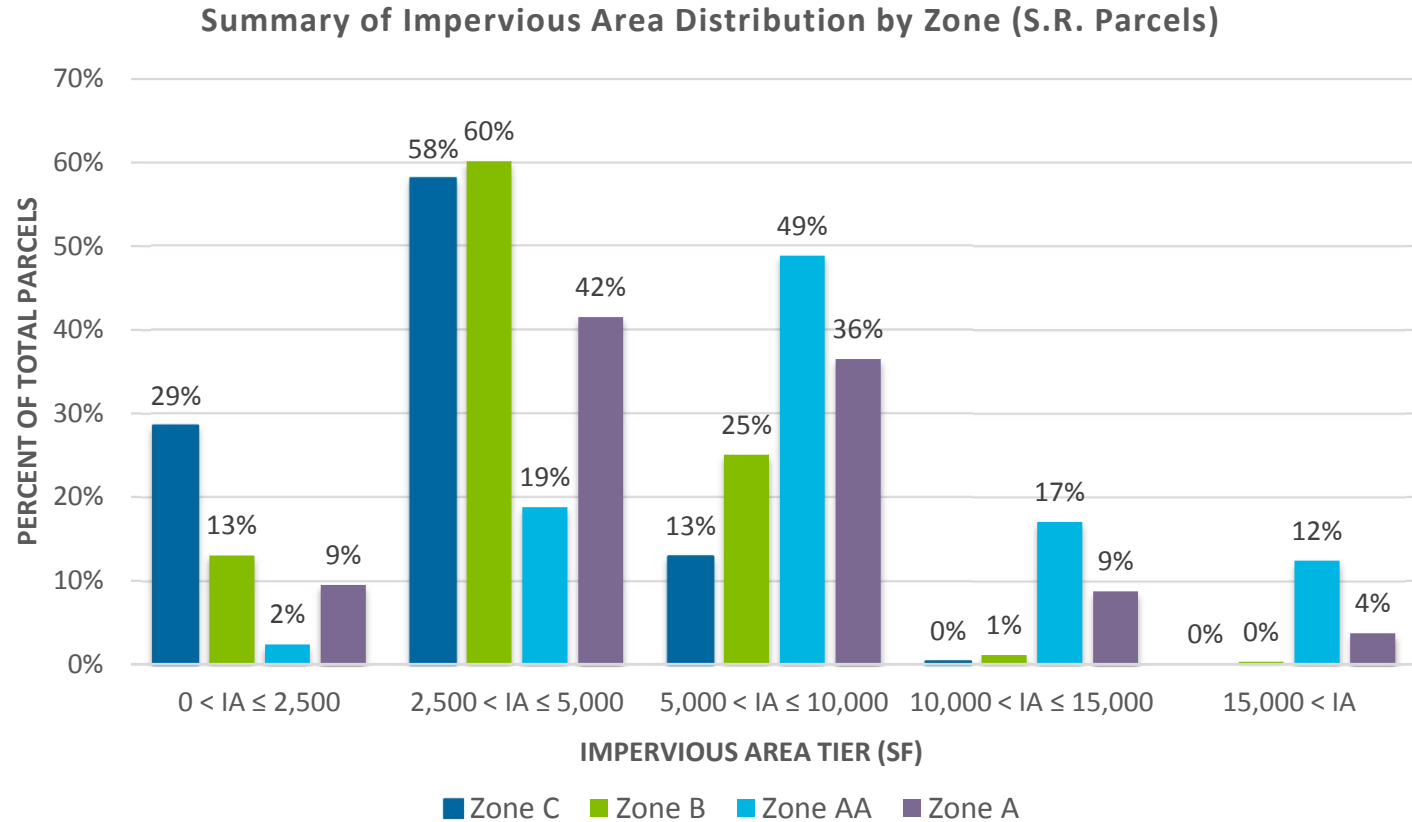


Tier	Total Impervious Area (SF)	Tier IA/ Town IA
0 < IA ≤ 5,000	410,093.31	0.78%
5,000 < IA ≤ 10,000	788,931.19	1.49%
10,000 < IA ≤ 15,000	875,609.64	1.66%
15,000 < IA ≤ 25,000	1,661,572.39	3.15%
25,000 < IA ≤ 50,000	2,521,514.95	4.77%
50,000 < IA ≤ 75,000	1,656,407.93	3.14%
75,000 < IA ≤ 100,000	2,024,137.40	3.83%
100,000 < IA ≤ 250,000	4,636,903.68	8.78%
250,000 < IA ≤ 500,000	4,245,636.30	8.04%
IA > 500,000	6,612,624.90	12.52%
TOTAL	25,433,431.68	48.16%

Town IA: 52,815,739.09 SF
N.R./L.R IA: 25,433,431.68 SF
Percent of Total IA: 48.2%

Distribution of Impervious Area by Zone: 1- to 3-Family Residential Parcels

- Zone C and Zone B have a larger percentage of 1- to 3-family residential parcels in the smallest two impervious area tier.
- Zone AA and Zone A have a majority of 1- to 3-family residential parcels in both the second and third impervious area tiers.
- Zone C and Zone B have very few 1- to 3-family residential parcels in the two largest impervious area tiers. Zone AA and Zone A have a larger number of 1-to 3-family residential parcels falling into those tiers.



Option 1: Individual ERU Rate Structure

- **1 to 3-Family Residential Parcels:** Flat Rate
- **Non-Residential/Larger Multi-Family Residential Parcels:** Fee Based on Impervious Area/ERU
 - Each parcel pays a unique fee directly proportional to their amount of impervious area
 - Parcels with < 1 ERU are assumed to have 1 ERU in the rate structure

Option 1: Individual ERU Rate Structure

Parcel Type	No. of Parcels	Percent of Parcels	Total Impervious Area (SF)	ERUs	ERU Rate	Flat Rate	Fees Collected
1- to 3-Family Residential							
Single Family Residential	4595	94.35%	-	-	-	\$118	\$542,210
Two-Family Residential	101	2.07%	-	-	-	\$118	\$11,918
Three-Family Residential	2	0.04%	-	-	-	\$118	\$236
Multiple Houses	108	2.22%	-	-	-	\$118	\$12,744
One to Three Family Condo	53	1.09%	-	-	-	\$118	\$6,254
Accessory Land	11	0.23%	-	-	-	\$118	\$1,298
Total (1- to 3- Family):	4870	100%	-	-	-	-	\$574,660
Non-Residential/Large Residential (N.R./L.R.)							
Apartment	35	5.37%	1,670,149.79	302.89	\$118	-	\$35,741
Four Family Condo or Greater	34	5.21%	2,109,718.73	378.76	\$118	-	\$44,694
Non-Residential	231	36.04%	9,077,340.52	1,652.89	\$118	-	\$195,041
Tax Exempt Properties	133	42.33%	12,154,443.02	2,256.86	\$118	-	\$266,309
Vacant Land	45	11.04%	421,779.61	116.99	\$118	-	\$13,805
Total (N.R./L.R.):	652	100.00%	25,433,431.68	4,708.39	-	-	\$555,590
Total Revenue Collected:							\$1,130,250

Options 2/2B: Tiered Impervious Area Rate Structure

- **1 to 3-Family Residential Parcels: Tiered Structure**
 - 4-Tier and 5-Tier structure
 - Smaller, more equitable tiers
 - Tiers determined by impervious area
 - Unique flat fee set for each tier rate based on the ratio of that tier's mean impervious area to the ERU

- **Non-Residential/Larger Multi-Family Residential Parcels: Tiered Structure**
 - 10-Tier Structure
 - Tiers determined by impervious area
 - Unique flat fee set for each tier based on the ratio of that tier's mean impervious area to the ERU
 - Parcels with < 1 ERU assume 1 ERU in the rate structure

Option 2: Four-Tiered Fee Structure for 1- to 3-Family Residential Parcels and Ten-Tiered Fee Structure for Non-Residential/Large Residential Parcels

Parcel Type	IA Range (SF)	No. of Parcels	Percent of Parcels in Tier	Average IA/ERU	Flat Rate	Fees Collected
1 to 3-Family Residential						
Tier 0	IA ≤ 2,500	634	13.02%	0.350	\$41.30	\$26,184
Tier 1	2,500 < IA ≤ 5,000	2269	46.59%	0.663	\$78.23	\$177,513
Tier 2	5,000 < IA ≤ 25,000	1927	39.57%	1.527	\$180.19	\$347,218
Tier 3	25,000 < IA	40	0.82%	6.216	\$733.49	\$29,340
Total (1- to 3-Family Residential):		4870	100%	-	-	\$580,255
Other Residential/Non-Residential						
Tier 1	IA ≤ 5,000	215	32.98%	1.000	\$118.00	\$25,370
Tier 2	5,000 < IA ≤ 10,000	108	16.56%	1.311	\$154.75	\$16,713
Tier 3	10,000 < IA < 15,000	71	10.89%	2.214	\$261.26	\$18,550
Tier 4	15,000 < IA ≤ 25,000	83	12.73%	3.594	\$424.10	\$35,200
Tier 5	25,000 < IA ≤ 50,000	70	10.74%	6.467	\$763.12	\$53,418
Tier 6	50,000 < IA ≤ 75,000	27	4.14%	11.014	\$1,299.66	\$35,091
Tier 7	75,000 < IA ≤ 100,000	24	3.68%	15.142	\$1,786.72	\$42,881
Tier 8	100,000 < IA ≤ 250,000	35	5.37%	23.785	\$2,806.64	\$98,232
Tier 9	250,000 < IA ≤ 500,000	13	1.99%	58.633	\$6,918.73	\$89,943
Tier 10	500,000 < IA	6	0.92%	197.864	\$23,347.99	\$140,088
Total (N.R./L.R.):		652	100%	-	-	\$555,486
Total Revenue Collected:						\$1,135,741

Option 2B: Five-Tiered Fee Structure for 1- to 3-Family Residential Parcels and Ten-Tiered Fee Structure for Non-Residential/Large Residential Parcels

Parcel Type	IA Range (SF)	No. of Parcels	Percent of Parcels in Tier	Average IA/ERU	Flat Rate	Fees Collected
1- to 3-Family Residential						
Tier 0	IA ≤ 2,500	634	13.02%	0.350	\$41.30	\$26,184
Tier 1	2,500 < IA ≤ 5,000	2269	46.59%	0.663	\$78.23	\$177,513
Tier 2	5,000 < IA ≤ 10,000	1475	30.29%	1.223	\$144.31	212,863
Tier 3	10,000 < IA ≤ 25,000	452	9.28%	2.519	\$297.24	134,353
Tier 4	25,000 < IA	40	0.82%	6.216	\$733.49	29,339
Total (1- to 3-Family Residential):		4870	100%	-	-	\$580,252
Other Residential/Non-Residential						
Tier 1	IA ≤ 5,000	215	32.98%	1.000	\$118.00	\$25,370
Tier 2	5,000 < IA ≤ 10,000	108	16.56%	1.311	\$154.75	\$16,713
Tier 3	10,000 < IA < 15,000	71	10.89%	2.214	\$261.26	\$18,550
Tier 4	15,000 < IA ≤ 25,000	83	12.73%	3.594	\$424.10	\$35,200
Tier 5	25,000 < IA ≤ 50,000	70	10.74%	6.467	\$763.12	\$53,418
Tier 6	50,000 < IA ≤ 75,000	27	4.14%	11.014	\$1,299.66	\$35,091
Tier 7	75,000 < IA ≤ 100,000	24	3.68%	15.142	\$1,786.72	\$42,881
Tier 8	100,000 < IA ≤ 250,000	35	5.37%	23.785	\$2,806.64	\$98,232
Tier 9	250,000 < IA ≤ 500,000	13	1.99%	58.633	\$6,918.73	\$89,943
Tier 10	500,000 < IA	6	0.92%	197.864	\$23,347.99	\$140,088
Total (N.R./L.R.):		652	100%	-	-	\$555,486
Total Revenue Collected:						\$1,135,738

Option 3: Tiered Impervious Area Rate Structure

- **1 to 3-Family Residential Parcels: Tiered Structure**
 - 4-Tier structure, with larger first tier that encompass a larger percentage of parcels
 - Smaller, more equitable tiers
 - Tiers determined by impervious area
 - Unique flat fee set for each tier rate based on the ratio of that tier's mean impervious area to the ERU

- **Non-Residential/Larger Multi-Family Residential Parcels: Tiered Structure**
 - 10-Tier Structure, with larger first tier that encompass a larger percentage of parcels
 - Tiers determined by impervious area
 - Unique flat fee set for each tier based on the ratio of that tier's mean impervious area to the ERU
 - Parcels with < 1 ERU assume 1 ERU in the rate structure

Option 3: Three-Tiered Fee Structure for 1- to 3-Family Residential Parcels and Ten-Tiered Fee Structure for Non-Residential/Large Residential Parcels

Parcel Type	IA Range (SF)	No. of Parcels	Percent of Parcels in Tier	Average IA/ERU	Flat Rate	Fees Collected
1- to 3-Family Residential						
Tier 1	IA ≤ 15,000	2903	59.61%	0.895	\$105.60	\$494,940
Tier 2	15,000 < IA ≤ 30,000	1927	39.57%	3.494	\$412.24	\$66,784
Tier 3	30,000 < IA	40	0.82%	7.412	\$874.67	\$18,368
Total (1 to 3-Family Residential):		4870	100%	-	-	\$580,092
Other Residential/Non-Residential						
Tier 1	IA ≤ 15,000	394	60.43%	1.000	\$118.00	\$46,492
Tier 2	15,000 < IA ≤ 30,000	96	14.72%	3.762	\$443.87	\$42,611
Tier 3	30,000 < IA < 45,000	46	7.06%	6.428	\$758.50	\$34,891
Tier 4	45,000 < IA ≤ 60,000	23	3.53%	9.303	\$1,097.74	\$25,248
Tier 5	60,000 < IA ≤ 75,000	15	2.30%	11.842	\$1,397.38	\$20,961
Tier 6	75,000 < IA ≤ 100,000	24	3.68%	15.142	\$1,786.74	\$42,882
Tier 7	100,000 < IA ≤ 150,000	27	4.14%	21.088	\$2,488.36	\$67,186
Tier 8	150,000 < IA ≤ 300,000	15	2.30%	81.946	\$9,669.58	\$145,044
Tier 9	300,000 < IA ≤ 500,000	6	0.92%	68.687	\$8,105.12	\$48,631
Tier 10	500,000 < IA	6	0.92%	197.864	\$23,348.01	\$140,088
Total (N.R./L.R.):		652	100%	-	-	\$614,034
Total Revenue Collected:						\$1,194,126

Credits

Can Reduce Overall Revenue Generated by ~10%

- Concord is exploring options for a credit policy.
- Example Credit Options:
 - Small Residential (1-3 Family) stormwater improvements (e.g., rain barrels, pervious pavement)
 - NPDES MS4 Credit
 - Education Credits
 - Commonly Owned Undeveloped
 - Private Ways
 - Stormwater Best Management Practice (BMP)
 - Senior Need Based Credit
 - Blind Residents
 - Disabled Veterans
 - Low-Income



Image: <https://concordma.gov/2424/Rain-Barrels>

Next Steps

- Finalize Stormwater Budget & Fee Structures
- Public Engagement
- Town Meeting Adoption
 - Proposed Stormwater Budget
 - PWC to Set Rates
- Begin Fee Collection – July 1st
 - Add Fee to Water/Sewer Bill
- Develop Credit System

