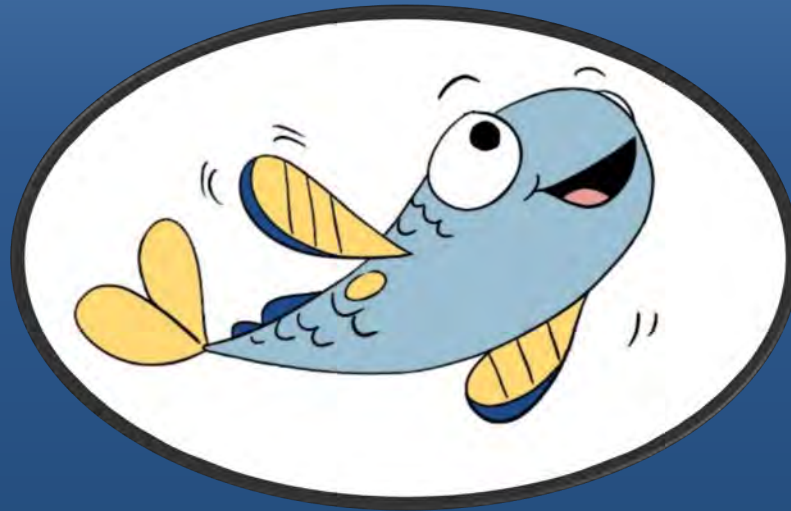


Stormwater Utility Feasibility Study

City Council Work Session

October 17, 2022



Think Blue !

Water | Wastewater | Stormwater

Tonight's Meeting

- Introduction
- Overview of the City's Stormwater System
- MS4 Requirements
- Stormwater Utility Structure and Pro Forma
- Open Discussion and Q/A
- Public Comment

Terms

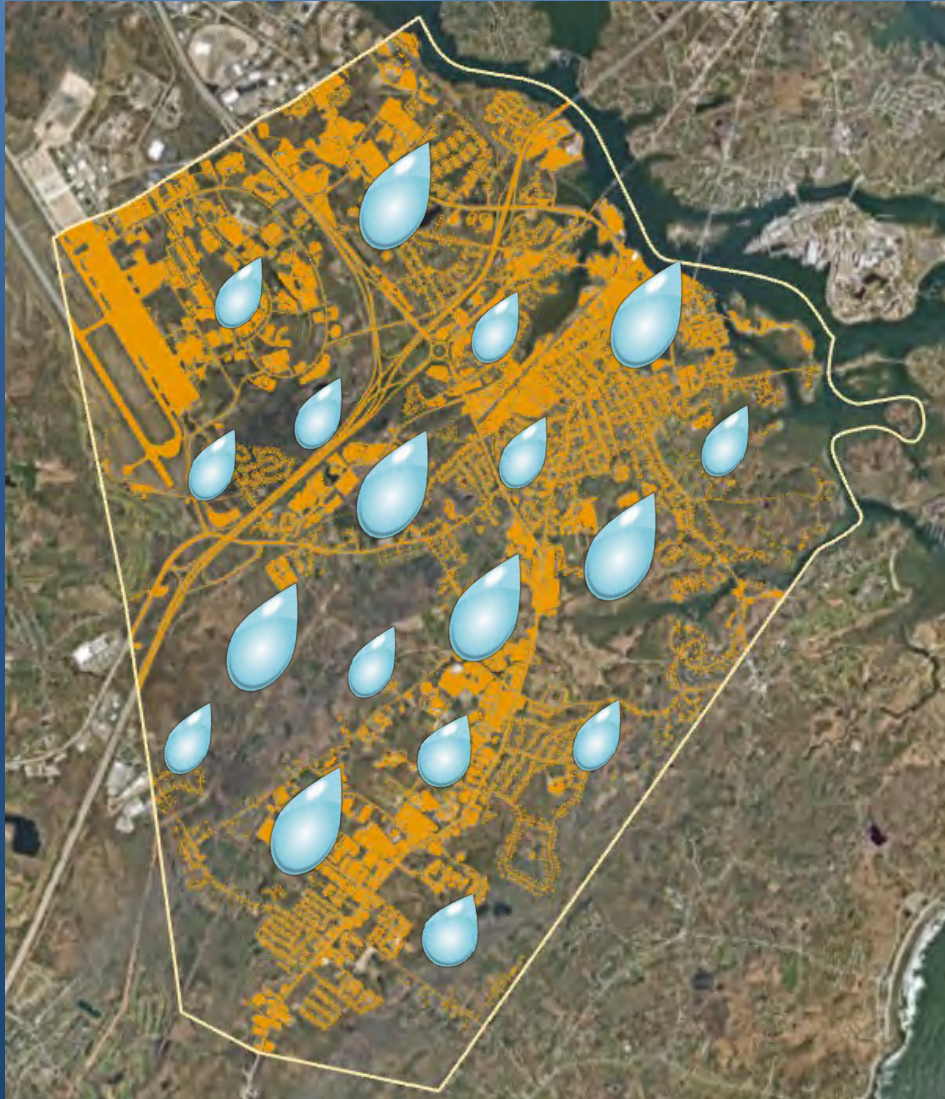
- **Stormwater** – Water from rain or melting snow that doesn't soak into the ground
- **Impervious cover** - Any surface in the urban landscape that cannot effectively absorb or infiltrate rainfall
 - Sidewalks, rooftops, roads, and parking lots
- **EPA MS4 Permit** - Municipal Separate Storm Sewer System
- **BMPs** - Best Management Practices
 - Structural, vegetative or practices used to treat, prevent or reduce water pollution
- **Utility** - Fee-based, not a tax. Portsmouth's Water and Sewer Enterprise Funds are utilities
- **Stormwater Utility** - Created to address flood and erosion control, water quality management, ecological preservation, and pollutant loads contained in stormwater

Enabling Legislation In New Hampshire

- Municipalities in New Hampshire have legal authority to form stormwater utilities under RSA 149-I.

45 Inches of Precipitation per Year

- Managing the Stormwater -

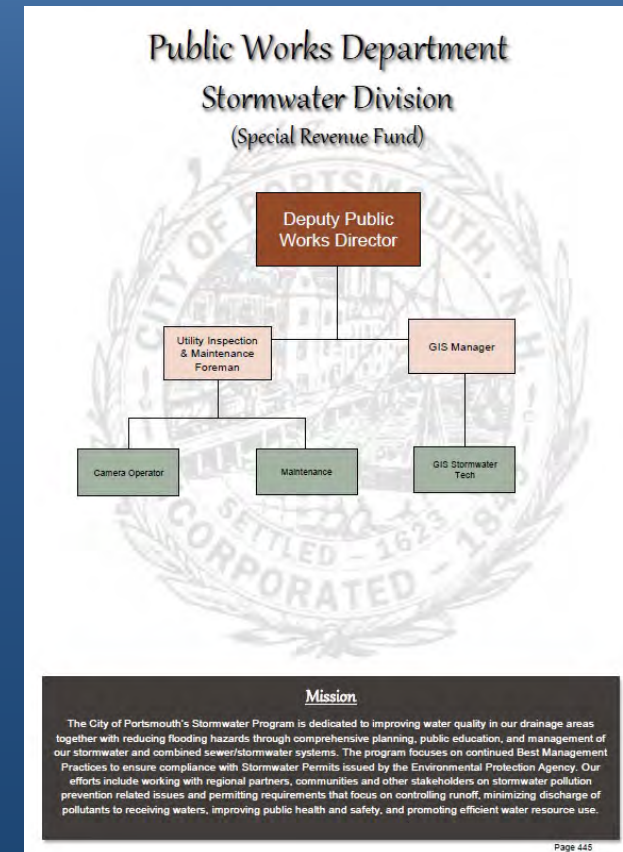


The City of Portsmouth's Stormwater Program is dedicated to

- Improving water quality in our drainage areas
- Reducing flooding hazards
- Public education
- Management of our stormwater

FY19 Budget Created Separate Stormwater Funding

- Set up Special Revenue Fund in FY19
 - 50% funding from General Fund, 50% from Sewer Fund
- Improved tracking of costs and regulatory requirements to project future funding needs and options such as creating a stormwater utility



Stormwater Utility Feasibility Study

- VHB
 - Technical Components
 - Calculated Impervious Areas for all Properties in the City
 - Review Regulatory Requirements
- Stantec
 - Utility Pro-Forma and Rate Projections

Stormwater Utility Feasibility Study

■ Benefits of a Utility

■ Dedicated Funding Source

- Current funding is 50% General Fund (taxes) and 50% Sewer (fees)

■ Fee based on relative usage or volume produced on each property

■ More sustainable and equitable funding

■ Improved Watershed Stewardship

- Incentivize property owners to install stormwater management & low impact development practices to reduce user fees

■ Assist with meeting Great Bay TN General Permit requirements

Stormwater Utilities in the U.S. (as of 2021)

Western Kentucky University Stormwater Utility Survey 2021



Figure 1. U.S. stormwater utilities (SWUs).

- 2057 stormwater utilities (SWUs) located in 41 states
- None in New Hampshire
- A few in New England
 - Examples:
 - Burlington, VT
 - Portland, ME
 - Northampton, MA
- Nationwide - average monthly single-family residential fee of \$6.01

Burlington, Vermont

- 2007 – 2008: Two year process to review and structure program in an effort to address the state and federal stormwater permit
- 2009: Established a dedicated stormwater program
- Current Budget: approx. \$2 million/year

Northampton, MA

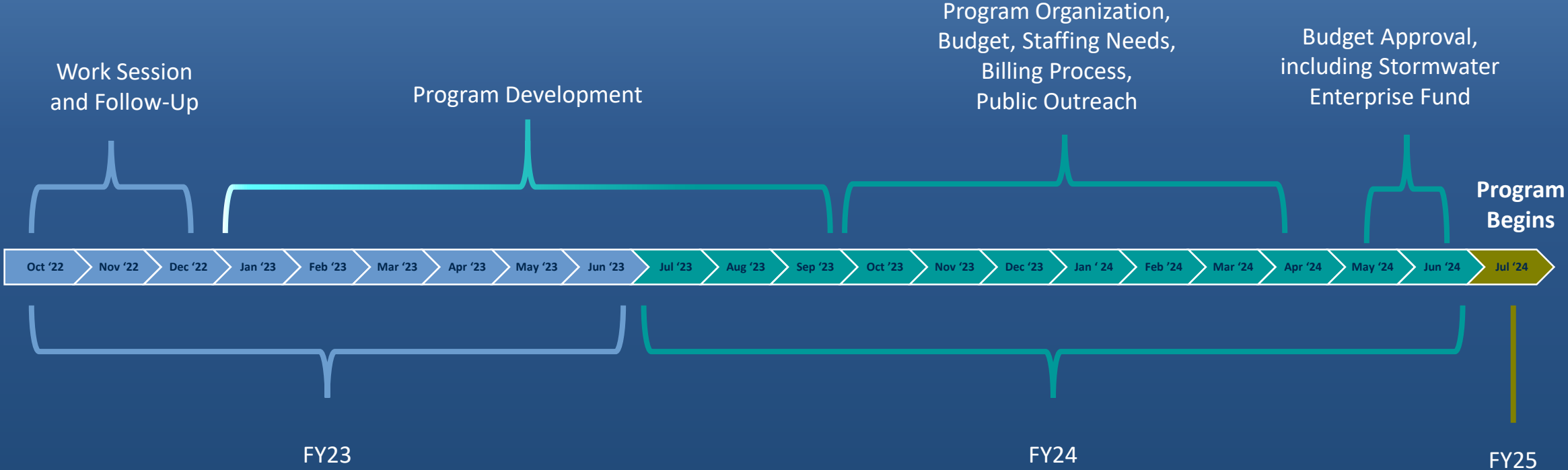
2014 Implementation and Fees

- 18 month review and deliberation before enacting
- Fixed annual fee for property owners who have
 - less than 2,000 square feet of impervious area
 - between 2,000 and 2,800 square feet
 - 2,800 and 4,100 square feet
 - More than 4,100 square feet
- Larger commercial, nonprofit and other large properties calculated on an individual basis based on the estimated area of impervious surface on the property

Portland, ME

- 2016: implemented Stormwater Utility Program after 2-year public outreach process
- Monthly Charges for Equivalent Residential Unit (ERU) of 1,200 sq. ft
 - Properties are assessed total ERU's based on total Impervious Cover area
- Up to 50% credit on residential properties for rain gardens, permeable pavement, cisterns, etc.
- Up to 60% credit for commercial properties for flow reduction and water quality treatment measures

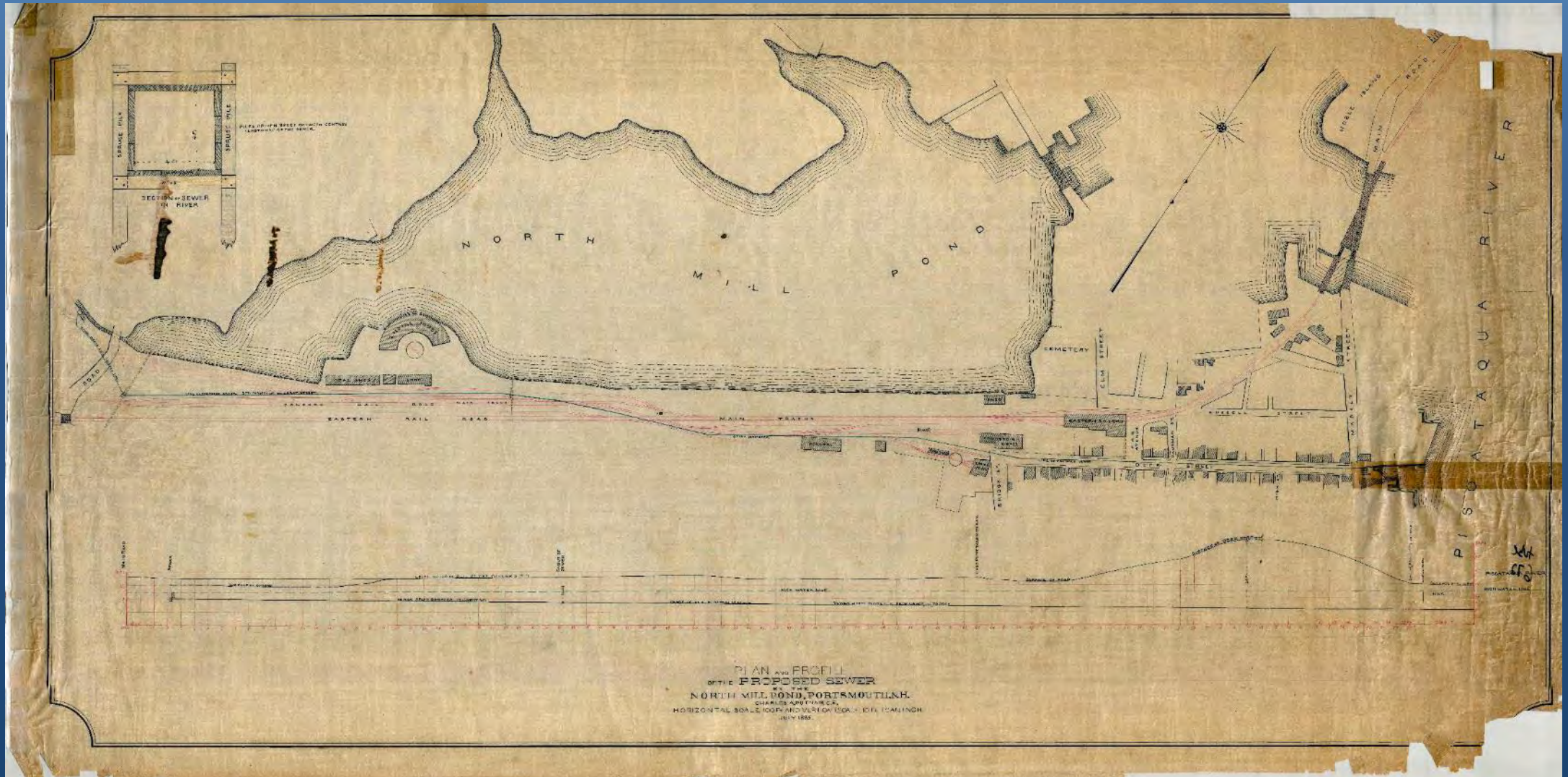
Portsmouth's Stormwater Utility Feasibility Tentative Timeline for Implementation



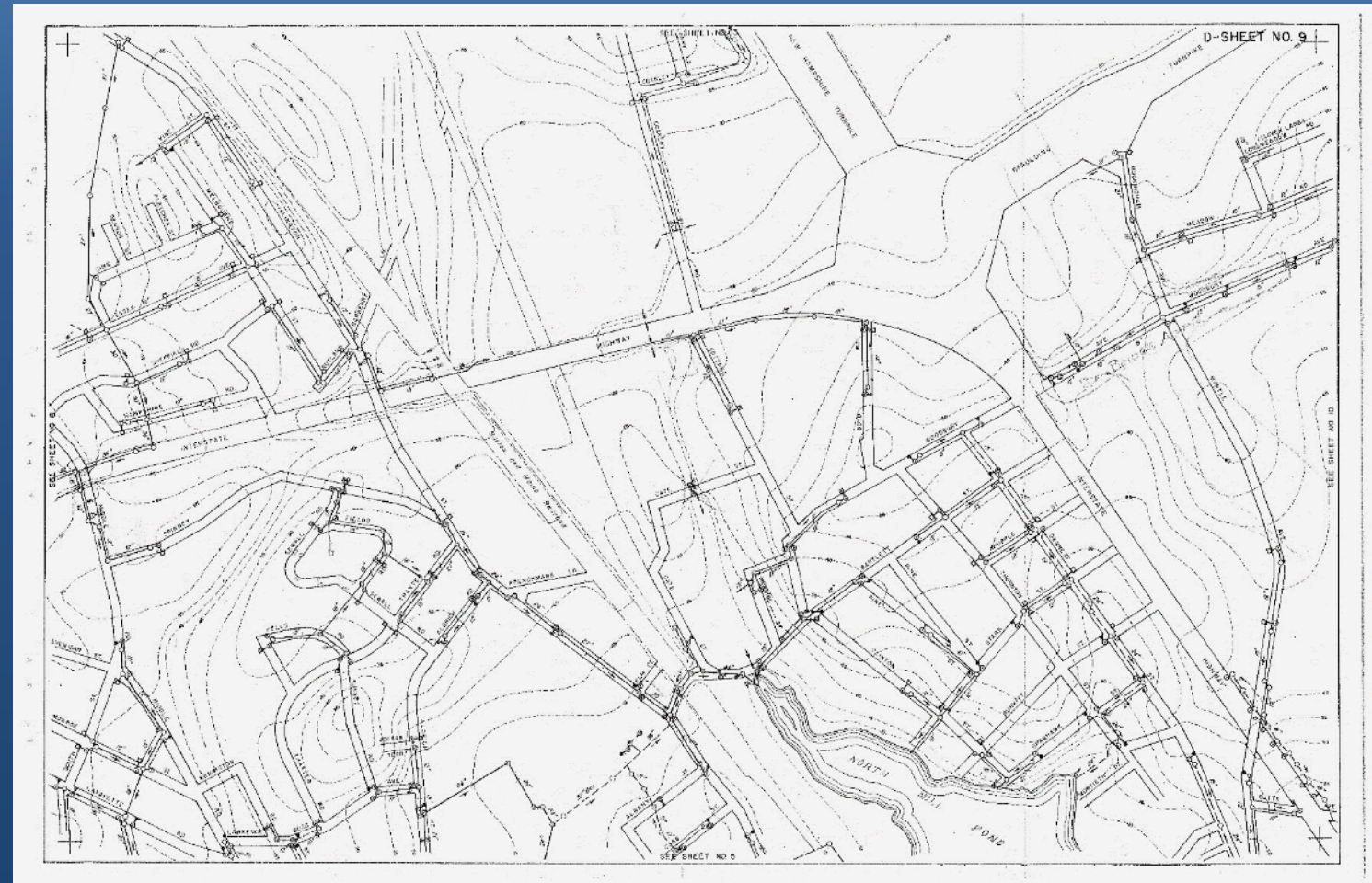
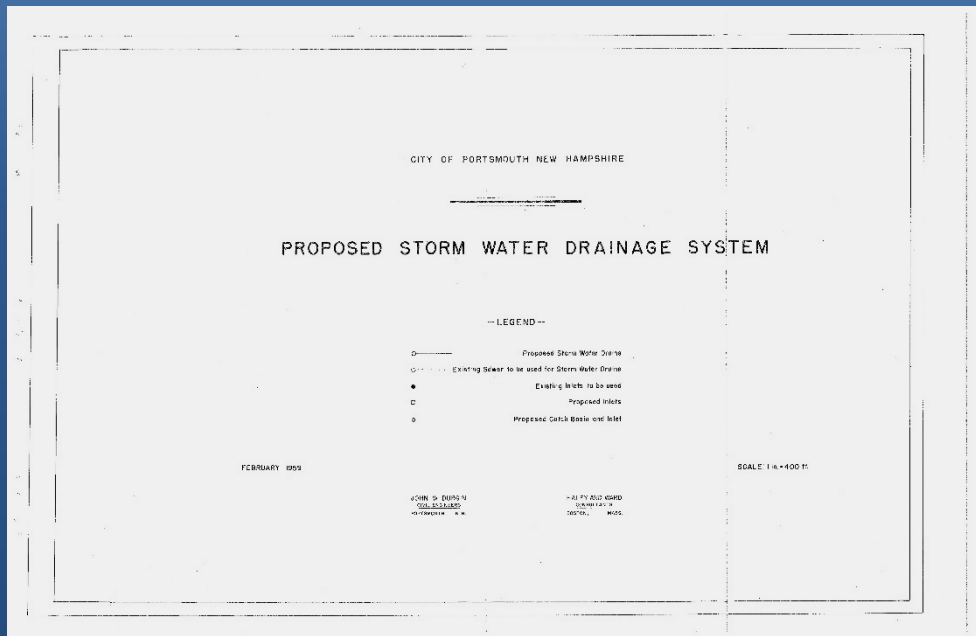
Portsmouth's Stormwater System



1885 "Brick Box" Sewer

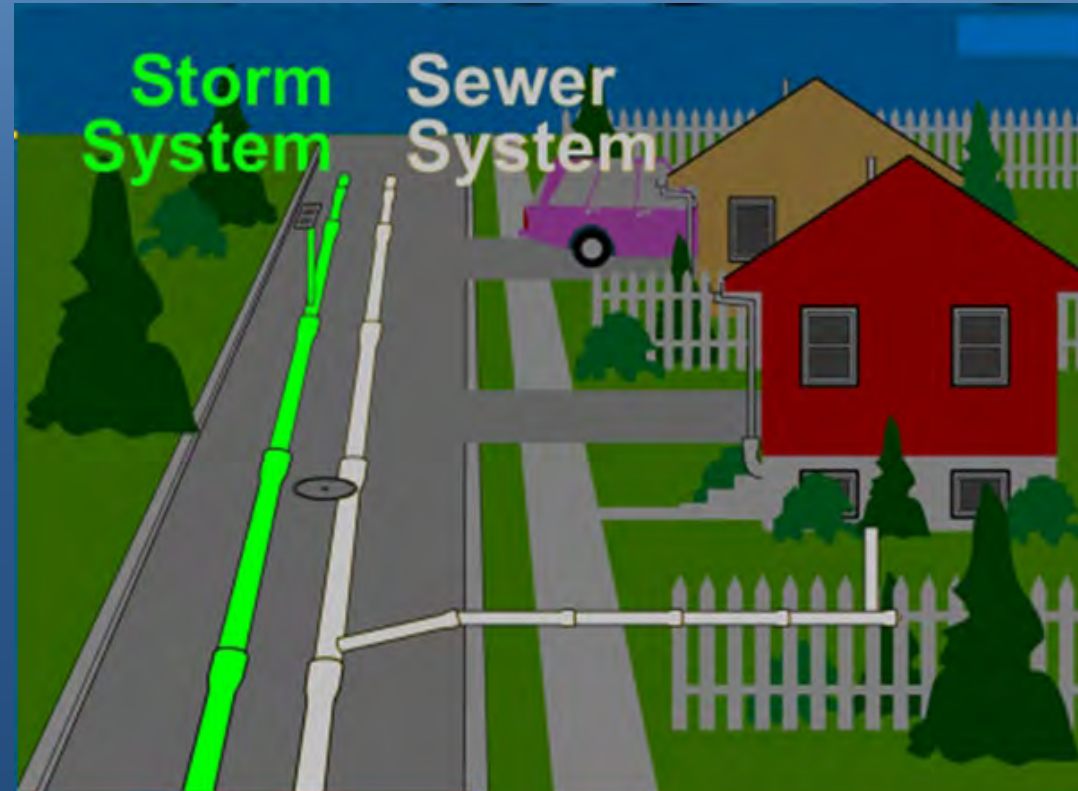


1959 – Portsmouth Designs Separate Stormwater Sewer System



Stormwater System Infrastructure

- 65 Miles of piping
- 3240 Catch Basins
- 968 Manholes
- 45 Treatment Systems (BMPs)
- 204 Regulated Outfalls



October 2022

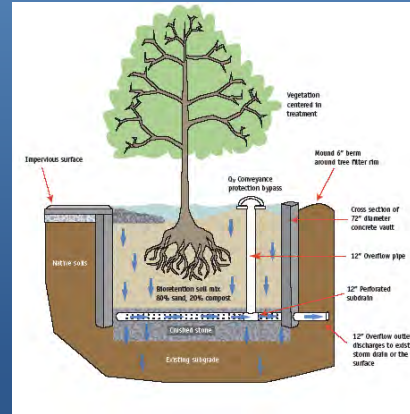
* Not including Pease International Tradeport

Green Infrastructure - BMPs

Rain Gardens



Tree Box Filters



South Mill Pond Vortex Unit



State Street Stormwater Interceptor

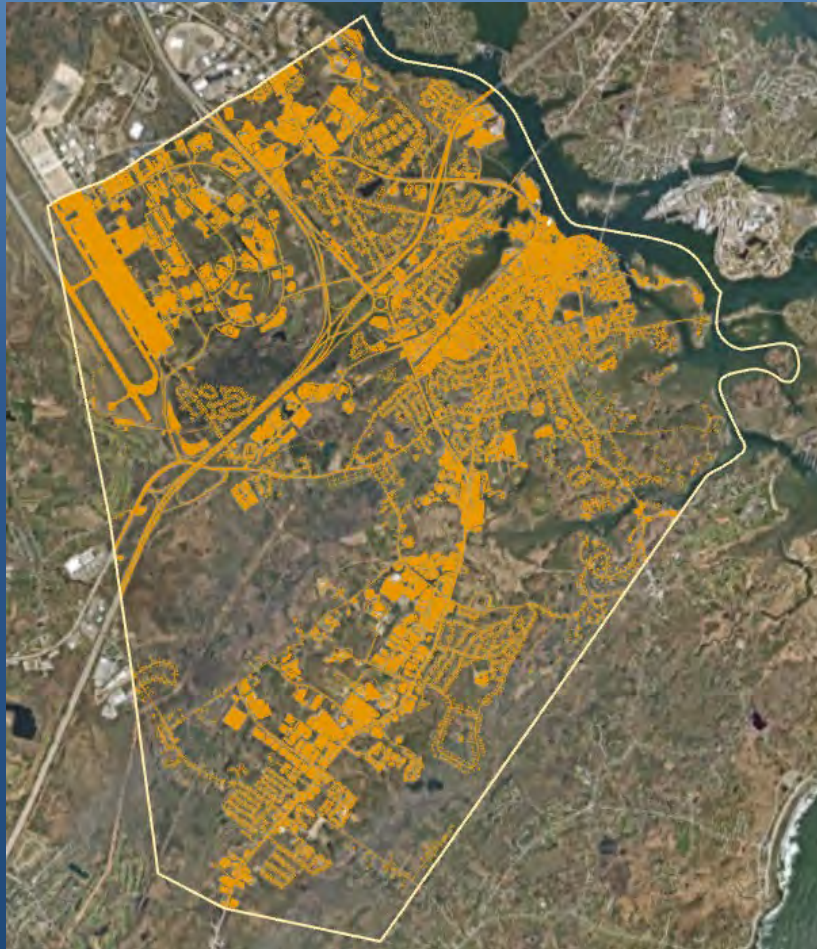


Sagamore Avenue Porous Pavement



Measured Impervious Area by Parcel

86M Square Feet of Impervious Area



Orange = Impervious Areas

Parcel Type	Parcel Count	Impervious Area (Sq. Ft.)
Single Family	4,182	12,827,678
Multi-Family	895	11,224,687
Mixed Use	16	1,708,266
Commercial	541	20,321,096
Industrial	89	7,468,846
City Road	53	16,609,005
City Parcels	102	3,485,343
State Roads	18	8,848,404
State Parcels	16	997,111
Federal Parcels	3	193,054
Tax Exempt	95	2,697,051

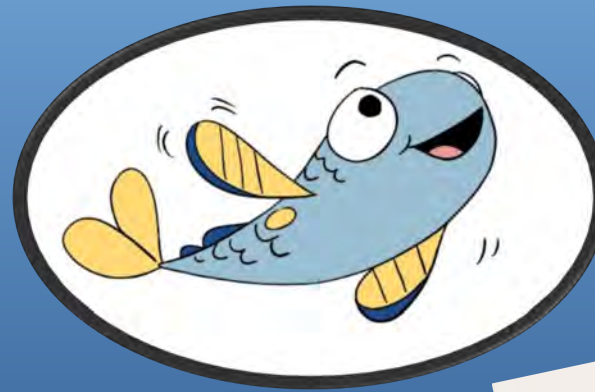
Stormwater Maintenance FY22

Item	Amount
Catch Basins Cleaned	550
Catch Basin Cleaning	115 Tons
Drain Lines Cleaned and Inspected	10,000 Feet
Street Sweeping Material Collected	150 Tons
Leaf Collection	2,211 Tons
Brush Collection	335 Tons



Public Outreach

- Household Hazardous Waste Day Collections (Spring, Fall)
- Dog License Flyer
 - “Scoop the Poop”
- Mailer to Residents
 - Handling Leaves and Yard Waste
 - Lawn Watering Efficiency
- Mailers to Businesses & Developers
 - Low Impact Development
 - Green SnowPro



Think Blue



Stormwater Program – FY23 Focus

- Continued work and planning to meet new EPA MS4 Stormwater Permit (FY23 = Year 5 of current permit)
- Wet weather outfall screening and sampling
 - 204 MS4 regulated outfalls
 - FY22 Conducted wet weather sampling at ~50 high priority outfalls
 - FY23 Planning to sample 40 - 50 outfalls
 - In-house analysis at Peirce Island Treatment Facility
- Begin catchment investigations of all priority outfalls
- Implementation of Salt Reduction Plan

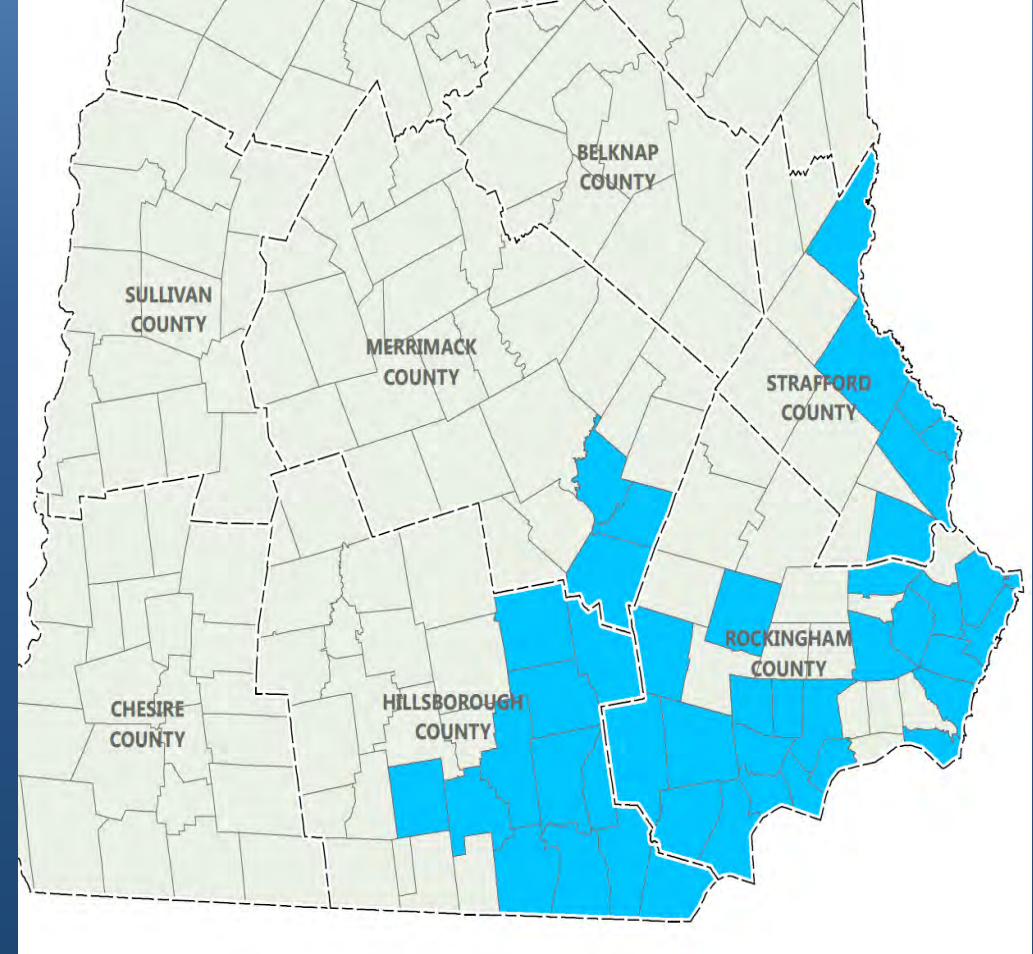


Regulatory Requirements



2017 NH MS4 Stormwater Permit

- 44 NH Communities
- Six Minimum Control Measures
 - Public Education Messages
 - Public Involvement/Engagement
 - Illicit Discharge Detection & Elimination
 - Enhanced Stormwater Regulations
 - Good Housekeeping
 - Reduce Water Quality Impairments
 - Chloride, Nitrogen, Bacteria, etc.



Future Regulatory Requirements

- MS4 Permit due to be renewed in 2023
- Will Require more Stormwater BMPs on City property
 - Likely to include TN reduction targets from the GBTN GP
- Continued Sampling of SW outfalls
- Salt Reduction Plan to address chloride impairments
- Continued Good Housekeeping (e.g., sweeping, CB cleaning, leaf litter)

UNH Stormwater Treatment Tracking (PTAP)



*City of Portsmouth TAC
Workshop*

Land Use Development
Tracking Form (PTAP) &
Enhanced Stormwater
Treatment Standards

**Tuesday
February 8th, 2022**

- Inventory of Stormwater Treatment Devices and Best Management Practices
- Requirement of Site Plan Review Regulations
- Great Bay Total Nitrogen Permit Compliance

Stormwater Infrastructure Needs

- Equipment upgrades for more efficient use of salt
- Stormwater Infrastructure Improvements
 - MS4 required BMP Retrofits on City Property
 - Treatment needs overlap with Great Bay TN General Permit
 - System capacity needs to address extreme precipitation events and sea level rise

Projected Future Regulatory Compliance Costs

Activity	FY22	FY23	FY24	FY25	FY26	FY27
IDDE & Catchment Investigation	\$39,500	\$42,500	\$50,000	\$50,000	\$50,000	\$50,000
Public Education Outreach /Engagement	\$0	\$0	\$4,500	\$4,600	\$4,700	\$4,800
Salt Reduction Plan	\$0	\$0	\$100,000	\$50,000	\$25,000	\$10,000
Sagamore Creek Watershed Management Plan	\$0	\$0	\$25,000	\$25,000	\$0	\$0
Professional Services	\$25,000	\$25,000	\$50,000	\$50,000	\$50,000	\$50,000
NSIR Planning & Engineering	\$0	\$0	\$15,000	\$15,000	\$75,000	\$75,000
Stormwater BMP Implementation/Construction	\$0	\$0	\$75,000	\$150,000	\$225,000	\$300,000
Approximate Totals (Rounded)	\$64,500	\$67,500	\$320,500	\$305,000	\$365,000	\$440,000

Pro-Forma and Options for Stormwater Utility



- 1) Stormwater Revenue Requirements
- 2) Impervious Area Analysis
- 3) Stormwater Fee Structure Analysis and Options
- 4) Stormwater Fee Credits

Development of Revenue Requirements

- FY 2023 Stormwater Budget used as starting point
- Allocation of shared salaries (water, sewer, stormwater)
- Augmented with expenditures identified in stormwater master plan
- Forecasted based on inflation assumptions

FY 2024 Revenue Requirements

* Pro-Forma Only – Anticipate FY2025 for Implementation

Expenditure Category	Existing	Additions	Total
Salaries and Benefits	\$459,857	\$697,809 ⁽¹⁾	\$1,157,666
Operations and Maintenance	\$88,434	\$27,200	\$115,634
Vehicles and Equipment	\$33,813	\$50,000	\$83,813
MS4 Compliance	\$67,106	\$259,551 ⁽²⁾	\$326,657
GBTN GP Compliance	-	\$234,000	\$234,000
Total	\$649,210	\$1,268,560	\$1,917,770

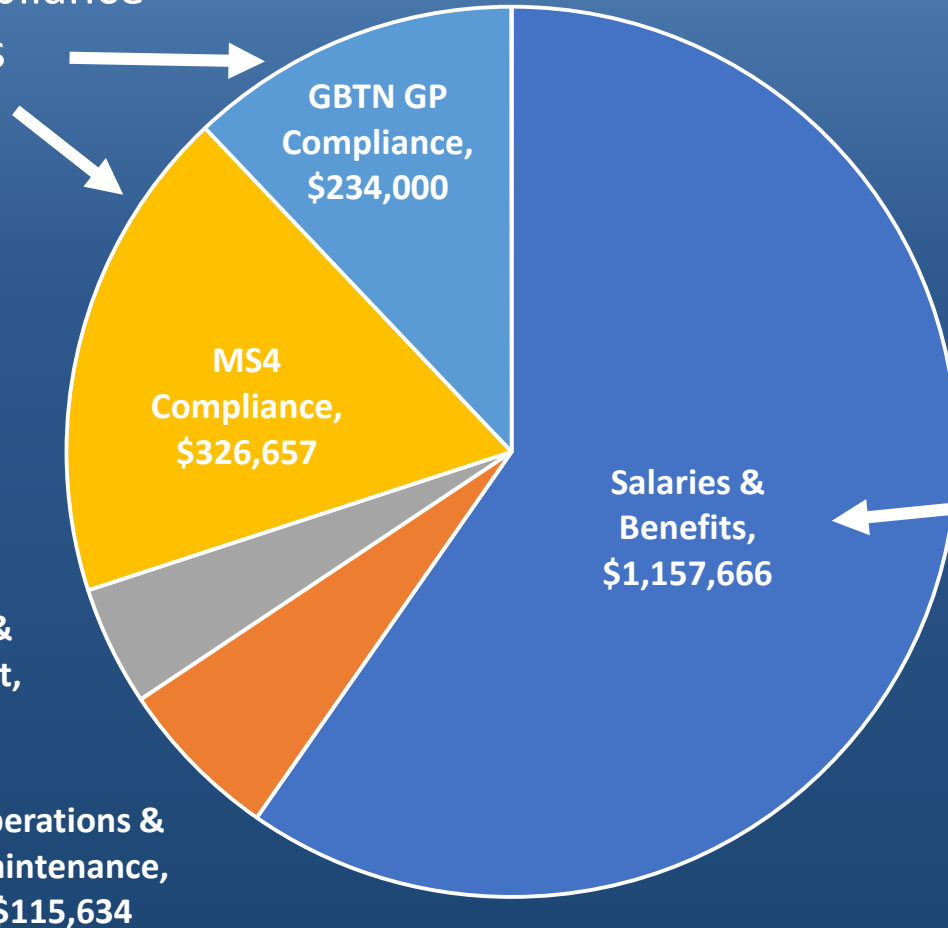
(1) Costs previously split between Water, Sewer and General Fund, now split between Water, Sewer, Stormwater and General Fund

(2) MS4 Compliance includes \$1M per year of annual debt financing to fund CIP projects each year.

FY 2024 Total Stormwater Revenue Requirements

\$1,917,770

✓ Regulatory Compliance Costs

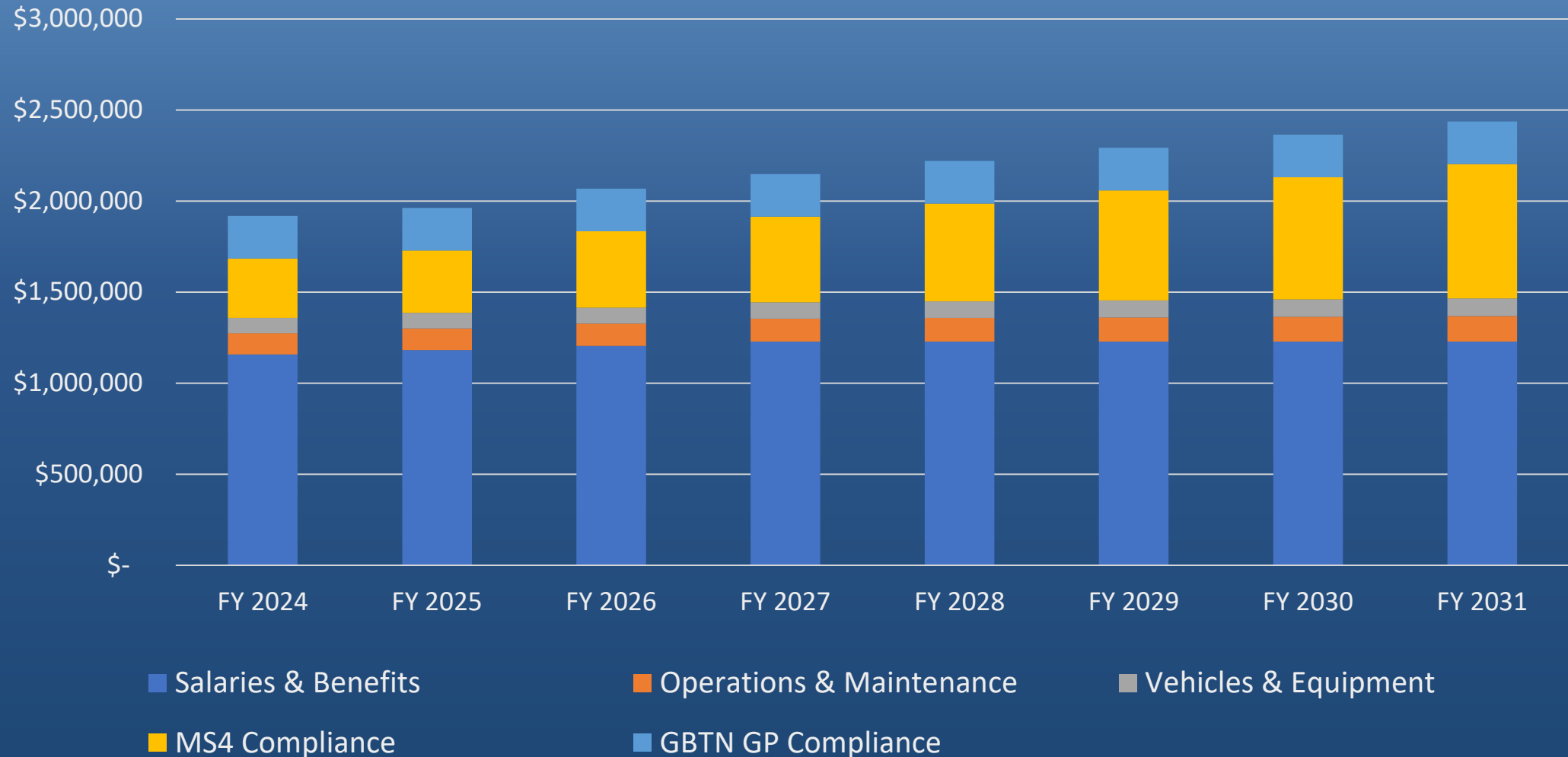


- ✓ Salaries & Benefits includes allocation of DPW Staff and City Hall Admin
 - ✓ Costs previously split between Water, Sewer and General Fund, would be split between Water, Sewer, Stormwater and General Fund
- ✓ Mostly Reallocations of existing staff
- ✓ MS4 Compliance plans include \$1M per year of annual debt financing to fund CIP projects each year.

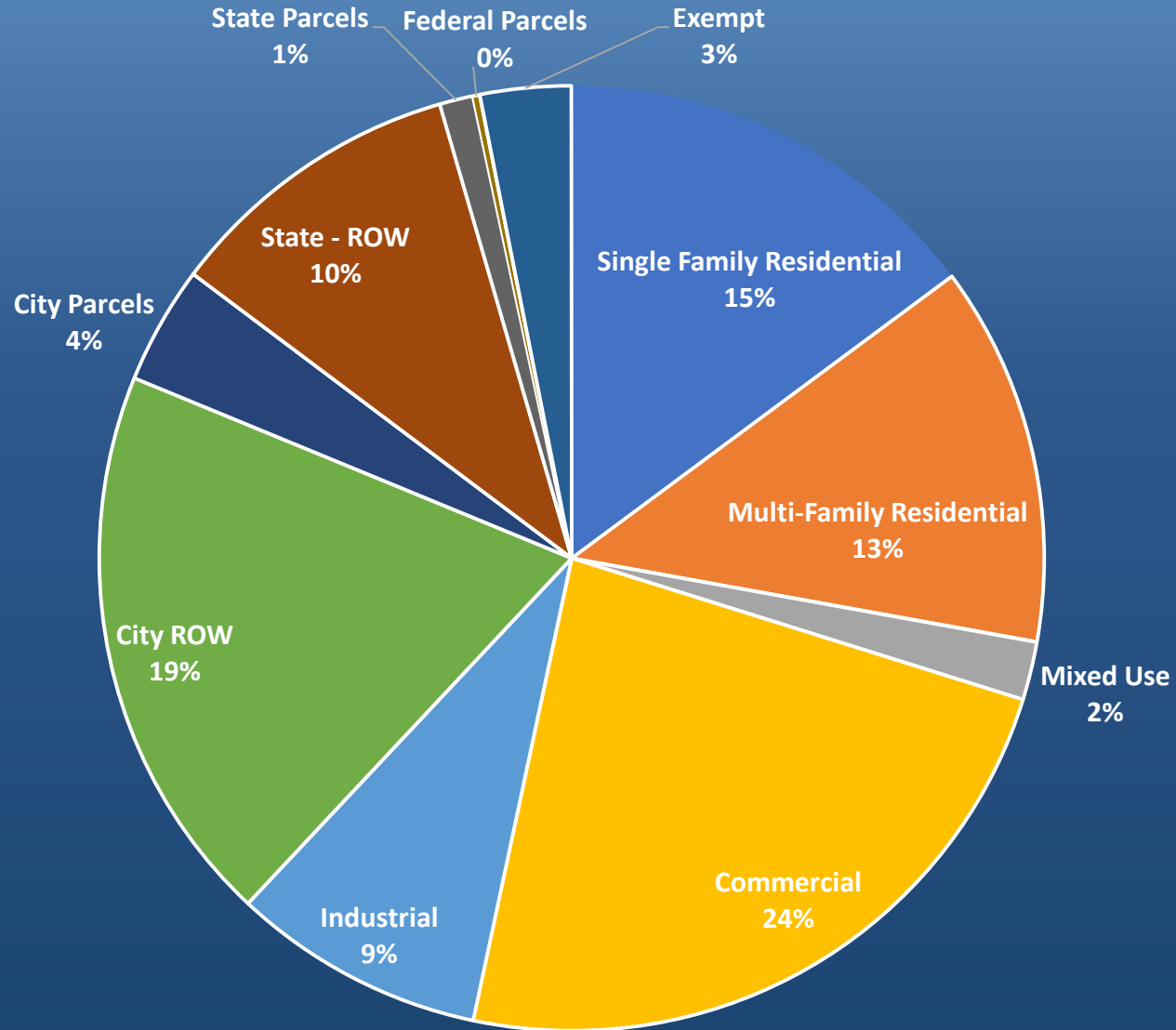
Financial Planning Assumptions

- Expenditure Annual Escalation by Type
 - Salaries & Wages, Repair & Maintenance, Utilities, etc.
- Annual Capital Financing for MS4 Compliance Projects
 - \$1 million per year in capital
 - 30-year maturity, 5% Interest

Projected Revenue Requirements



Measured Impervious Area



Single-Family Residential

15% of Total Impervious Area

70% of Total Parcels

Decision Points - Exemptions

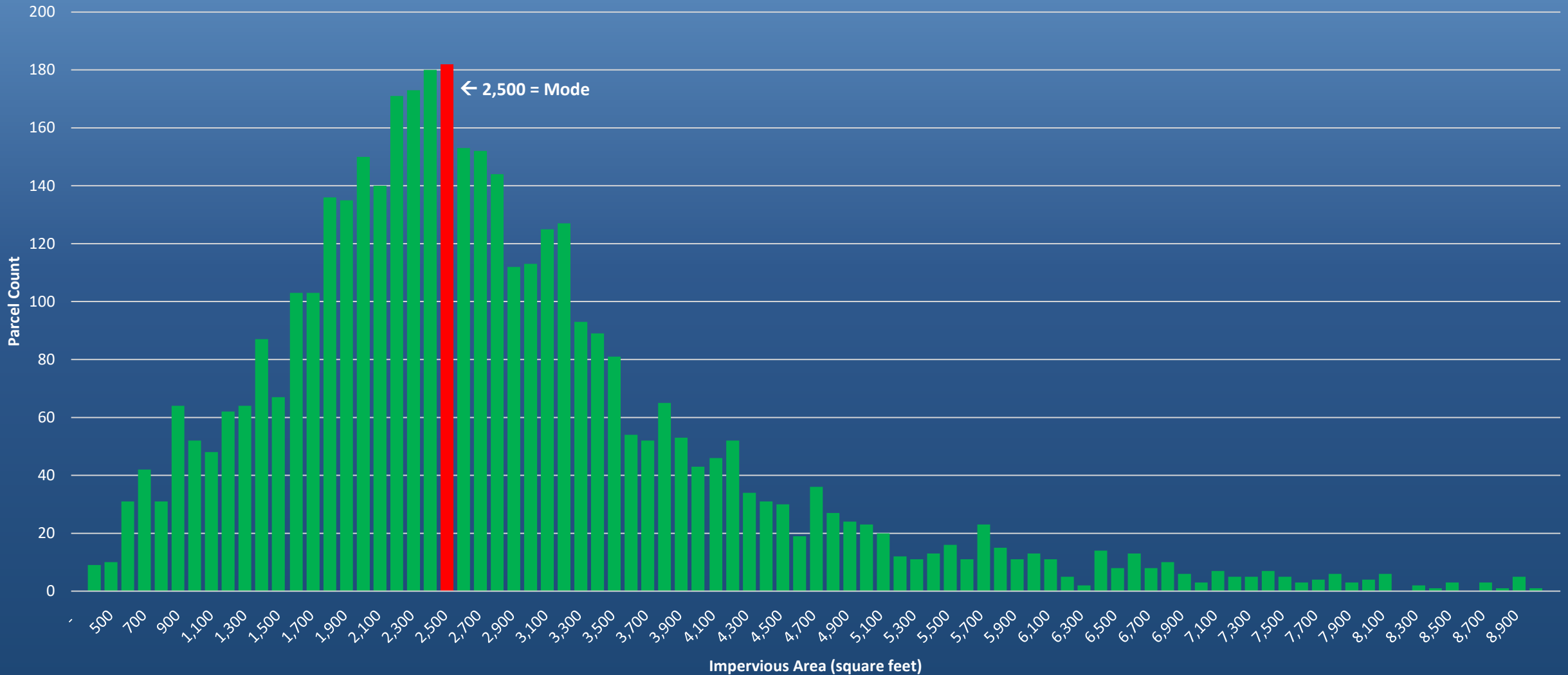
Assumed Exemptions:

- Public roads and rights-of-way
- Pease Development Authority (Pease has their own MS4 permit)
- All individual parcels with less than 400 square feet of impervious area

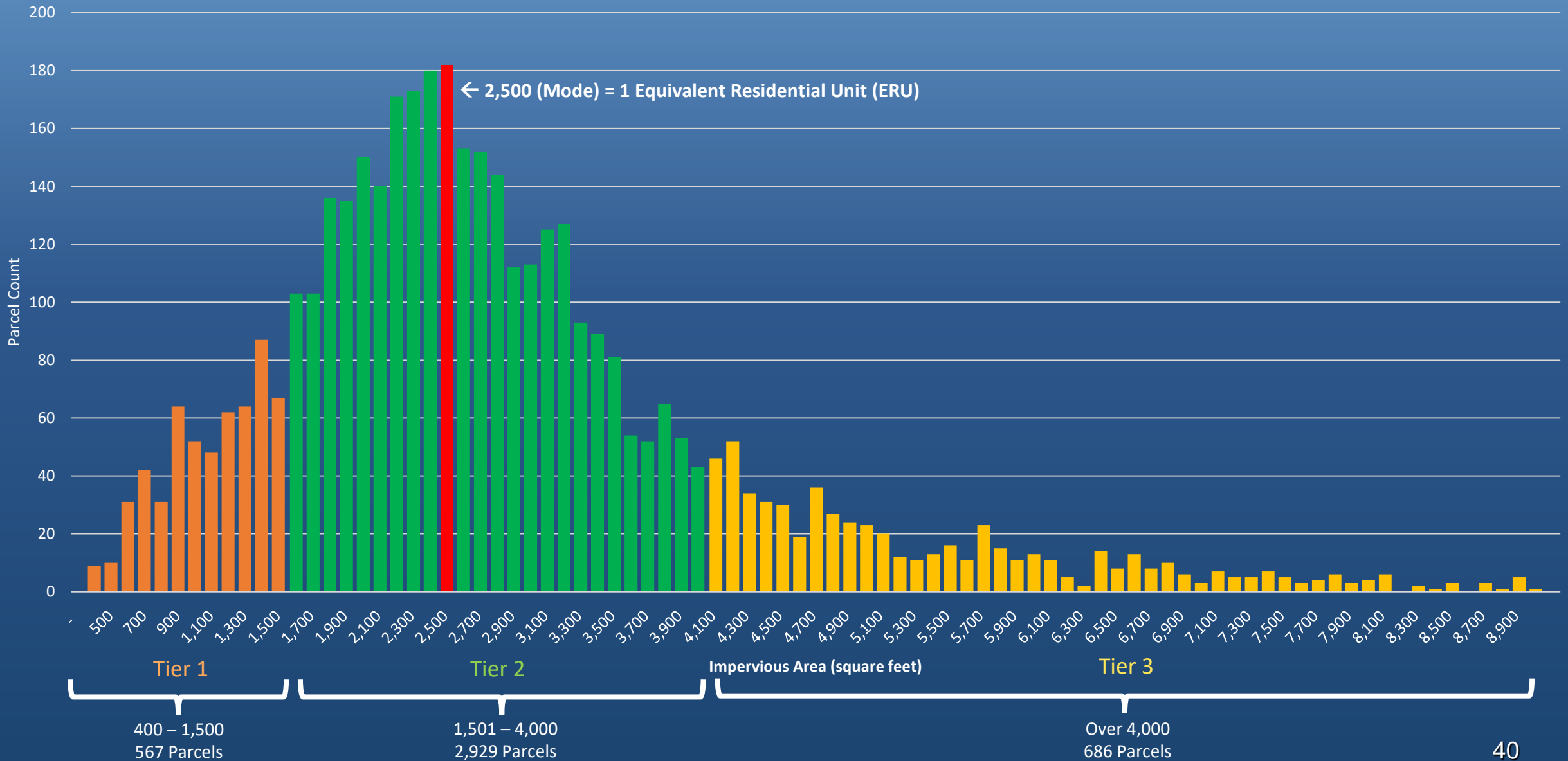
Stormwater Fee Options

Single-Family Residential Parcels		Non SFR Parcels
Option 1	3 - Tiered Structure <ul style="list-style-type: none">• Captures all SFR Parcels• Uniform Unit Rate per sq. ft. at midpoint of each tier	Measured Impervious per Equivalent Residential Unit (ERU)
Option 2	Uniform Fee for All SFR	

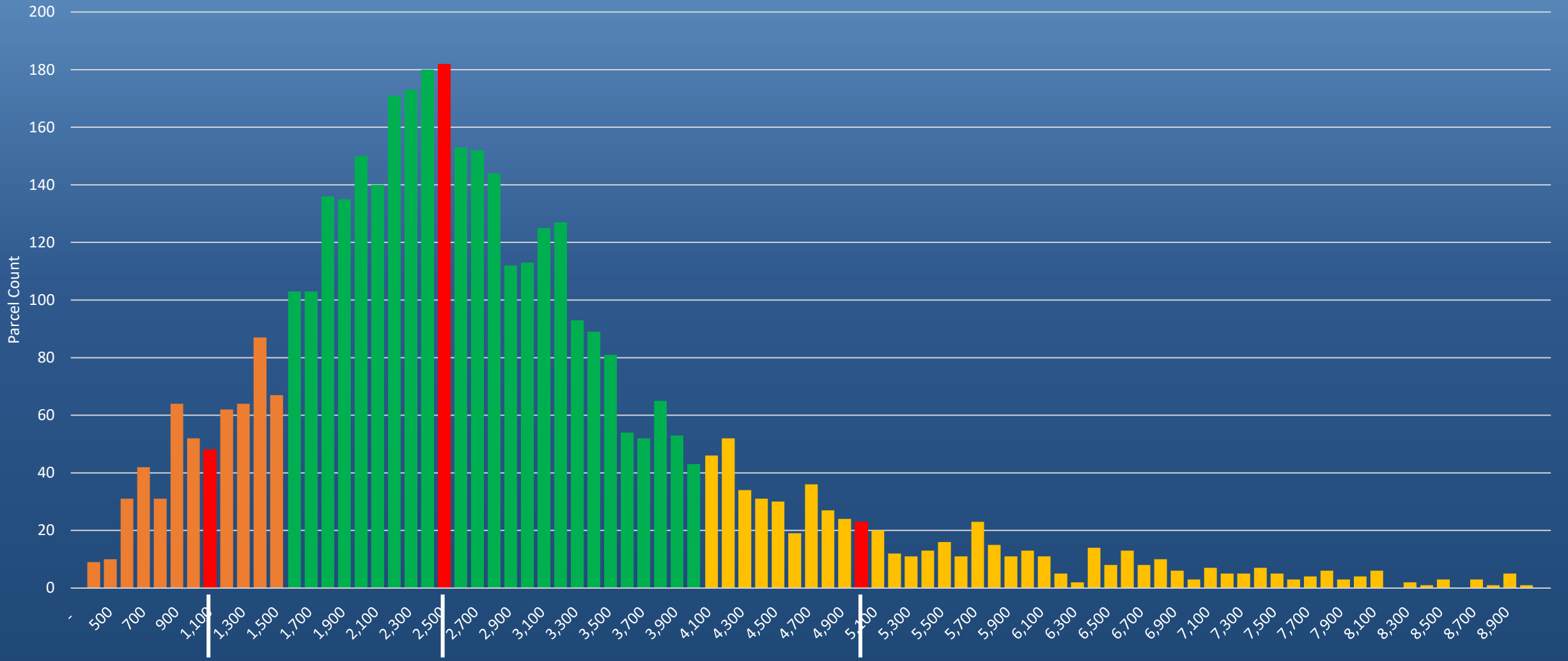
SFR Impervious Area Distribution



Option 1 - Three Tiers



Option 1 - Three Tiers



Monthly Fee: **\$2.97**
 Per Sq. Ft.: **\$0.0027**

\$6.76
\$0.0027

\$13.79
\$0.0027

Application of Fee Structure

Residential

Tier 1



0.44 ERU

Tier 2



1.00 ERU

Tier 3



2.04 ERUs

Non-Residential



41 ERUs

Option 1 - Three Tiers

Single Family Residential

Tiers	Monthly Fee	Unit Rate per Sq. Ft.	ERU Equivalent	Total Parcels
0 – 1,500	\$2.97	\$0.0027	0.44	567
1,501 – 4,000	\$6.76	\$0.0027	1.00	2,929
4,000 & Over	\$13.79	\$0.0027	2.04	686

Non-Single Family Residential

Parcel Type	ERUs (1 ERU = 2,500 sf)	Total Parcels
Multi-Family	4,490	895
Mixed Use	683	16
Commercial	8,128	541
Industrial	2,988	89
City Parcels	1,394	102
State Parcels	399	16
Federal Parcels	77	3
Tax Exempt	1,079	95
Monthly Fee	\$6.76/ERU	

Option 2 - Uniform Single Family

Single Family Residential

SFR	Monthly Fee	Total Parcels
All Parcels	\$6.76	4,182

Non-Single Family Residential

Parcel Type	ERUs (1 ERU = 2,500 sf)	Total Parcels
Multi-Family	4,490	895
Mixed Use	683	16
Commercial	8,128	541
Industrial	2,988	89
City Parcels	1,394	102
State Parcels	399	16
Federal Parcels	77	3
Tax Exempt	1,079	95
Monthly Fee	\$6.76/ERU	

Example Property Stormwater Fees



Small Single Family Residential Property	
Impervious Area (sq. ft.)	1,400
Tier 1 (ERU)	0.44
Option 1 - Tiers Monthly Stormwater Fee	\$2.97
Option 2 - Uniform Monthly Stormwater Fee	\$6.76

Example Property Stormwater Fees



Typical Single Family Residential Property	
Impervious Area (sq. ft.)	2,700
Tier 2 (ERU)	1.00
Option 1 - Tiers Monthly Stormwater Fee	\$6.76
Option 2 - Uniform Monthly Stormwater Fee	\$6.76

Example Property Stormwater Fees



Large Single Family Residential Property	
Impervious Area (sq. ft.)	9,700
Tier 3 (ERUs)	2.04
Option 1 - Tiers Monthly Stormwater Fee	\$13.79
Option 2 - Uniform Monthly Stormwater Fee	\$6.76

Example Property Stormwater Fees



Commercial Property	
Impervious Area (sq. ft.)	102,800
Number of ERU's	41
Monthly Stormwater Fee	\$277.16

Comparison of Annual Costs for a Single-Family Residential to Fund SW Budget

Stormwater Budget	DPW General Fund (Property Taxes)		DPW Sewer Enterprise Fund		Current Approach Annual Cost to Average SFR Home	Potential SW Utility Fee
	Proportion of Tax Bill	Annual Cost	Proportion of Billed Rate	Annual Cost		
\$2,000,000	\$0.16	\$77.80	\$0.87	\$52.20	\$130.00	\$6.76 / \$81.12

Notes: Prop Tax assumes average assessed home value of \$492,000 and sewer usage of 5 units per month.
Stormwater Fee assumes 1 ERU per SFR Property

- Stormwater utility approach aligns cost recovery with use of the system
- Limited to no correlation between property value/water use and use of stormwater system

Stormwater Fee Credits

- Stormwater fee credit is an ongoing reduction in the fee charged to a qualifying property in return for qualifying stormwater management
- Credit is recognition that onsite/offsite stormwater management reduces the City's stormwater expenditures
- Credits encourage property owners to proactively manage their stormwater impact



Example Types of Credits

Credit Type	Description
Commercial Property Stormwater Structural BMPs	Credits provided for qualifying BMPs: Basins, onsite-storage, green infrastructure, low impact development practices
Single-Family Stormwater Structural Control	Credits provided for qualifying cisterns, dry well, infiltration trench, permeable pavement, rain garden, green roof
Educational Credits	Credits provided to schools (public and private) that teach student stormwater management curriculum
Community Programs	Credits provided to non-profit organizations that offer community services related to stormwater management (educations, community clean-ups, etc.)
Social Equity Credits	Credits for low-income, financial hardship, religious/charitable, elderly/disabled, veterans

Credit Program Considerations

Eligibility

- Who is eligible to receive credits?
- All property types? Only non-single-family?

Qualifying Activities

- What stormwater management BMPs qualify (basins, onsite storage, green infrastructure)
- Threshold for qualification: Meet existing historical development requirements or exceed

Administration

- Credit manual
- Application
- Renewal Process

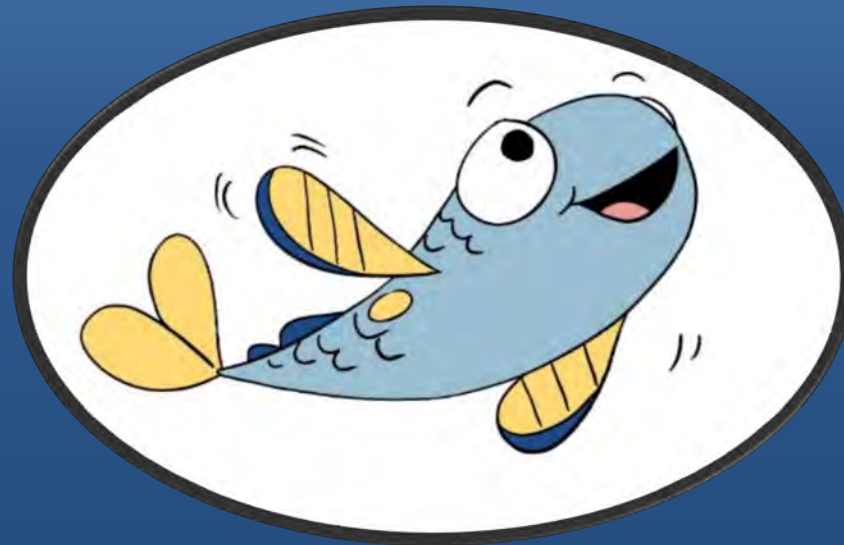
Level

- Define level of credit associated with each activity (X% to Y%)
- Determine maximum available credit

Credit programs typically evolve over time



Discussion



Think Blue !

Water | Wastewater | Stormwater