

# Baltimore City Department of Public Works



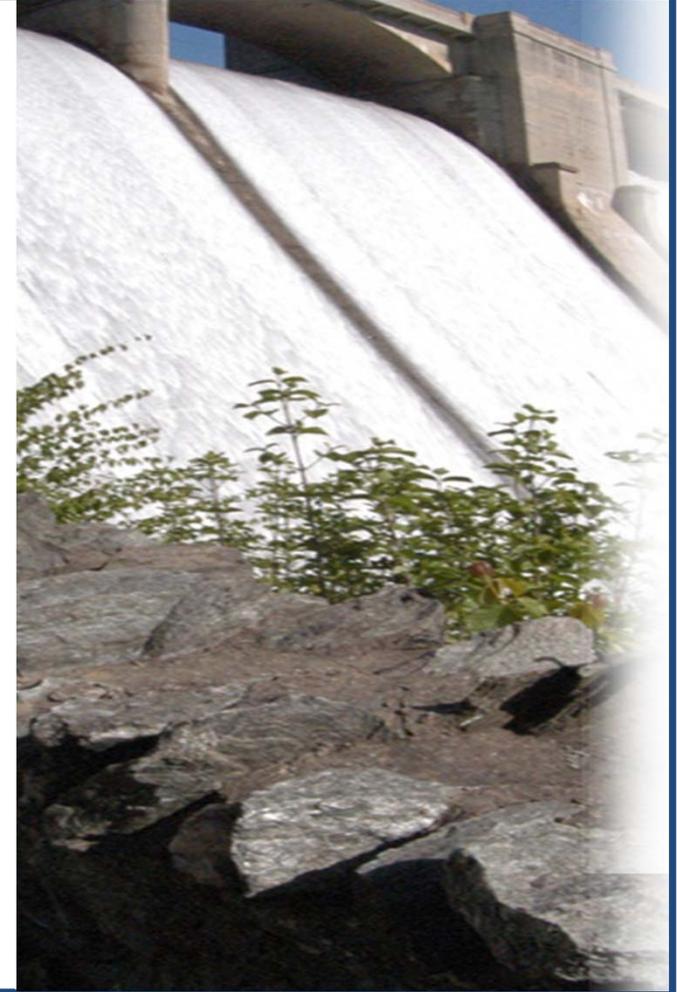
STEPHANIE  
RAWLINGS-BLAKE  
MAYOR

BALTIMORE CITY

**DPW**

DEPARTMENT OF PUBLIC WORKS

RUDOLPH S. CHOW, P. E.  
DIRECTOR



# Council Informational Hearing - Stormwater Enterprise Fund Usage and Expediting Stormwater Management Projects and Activities



**Department of Public Works  
City of Baltimore**

**June 2016**



**Baltimore City Department of Public Works**



# Agenda

- Stormwater fee structure and program funding
- MS4 permit conditions and reporting
- Projected expenditures
- Stormwater fee collections
- Financing and debt service
- Stormwater Management Plans Review



# Available Resources

- Plans and Laws
  - Annotated Code of Maryland, Section 4-202
  - City Code, Article 27 (2013)
  - MS4 & TMDL WIPs (August 2015)
  - Trash TMDL WIP (January 2016)
- Annual Budget Proposals
  - CIP Budget: appropriations + 6 year projection
  - Operations Budget: 1 year
- MDE Reporting
  - MS4 Permit Fiscal Report (MS4 Annual Report)
  - Watershed Protection and Restoration Program Report (WPRP)
  - Financial Assurance Plan Report (FAP)



# Ordinance 13-0175

## What Remained

- Rate Structure:
  - 3-tiered residential (SFP)
  - Other by ERU (NSFP)
- Basis of ERU (1,050 sf impervious)
- Billing mechanism and frequency
- Basic authority & process
- Use of funds, with no specified limitations
- Except state and local government, all customers must pay
- BOE to approve the rate... after the first 4 years

## What Changed

- Rate set for first 4 years:  
\$15 / ERU / quarter
- Legislated fee reductions
  - 20% cap on non-residential
  - Religious structures at \$3 / ERU
  - Historic cooperative residential
- BMZA in the appeals process
- Cap on penalties
- Private roads to SFP exempt
- Specific credits listed: industrial permit and direct discharge



# Stormwater Fee Structure

ERU = Equivalent Residential Unit  
1 ERU = 1,050 square feet



Single family  
residential  
property (SFP)



Flat Fee  
(3 tiers)

- Tier 1: 2/3 ERU ; \$10/ Quarter
- Tier 2: 1 ERU; \$15 / Quarter
- Tier 3: 2 ERU; \$30 / Quarter

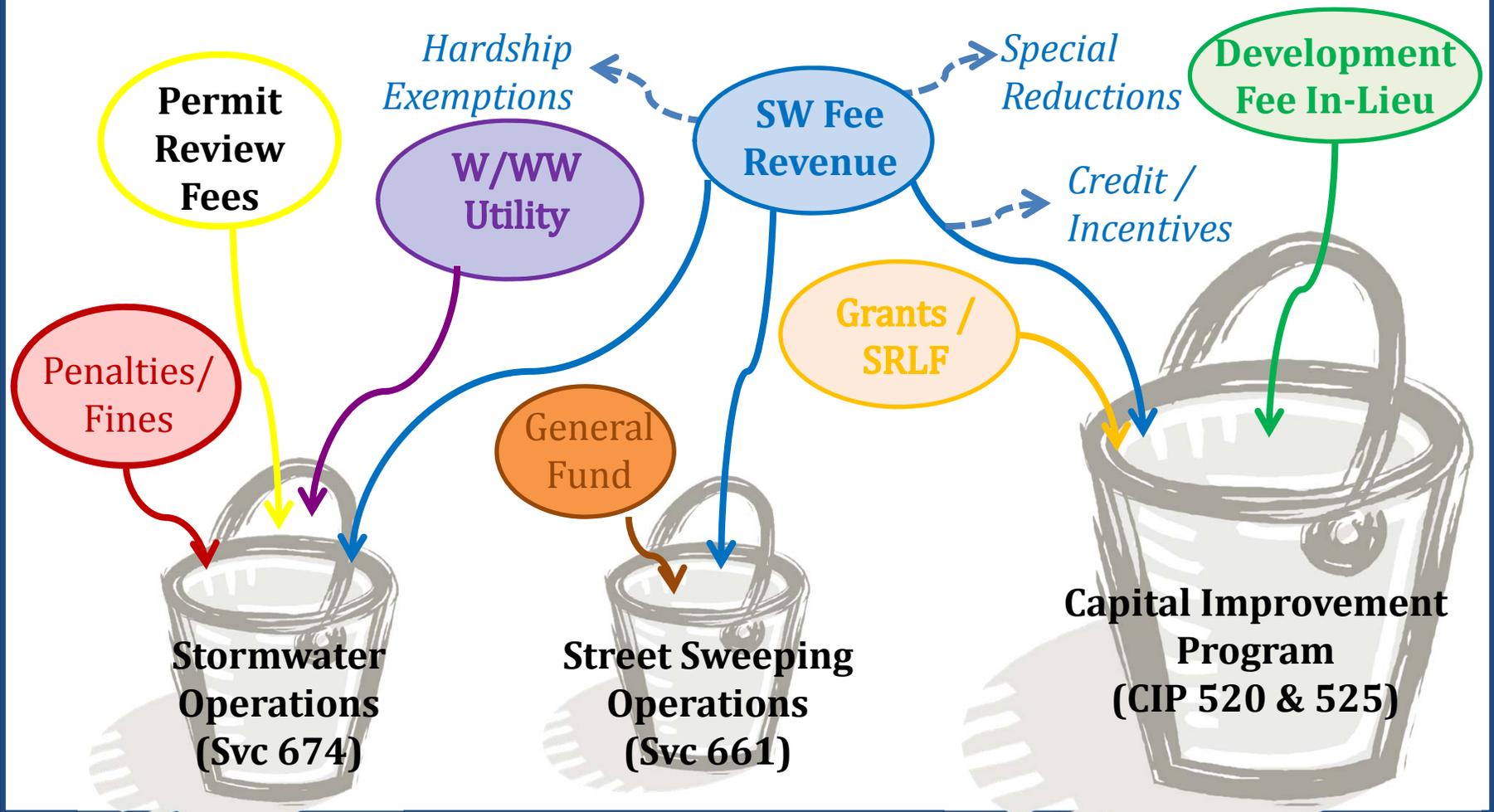


All other  
properties  
(NSFP)

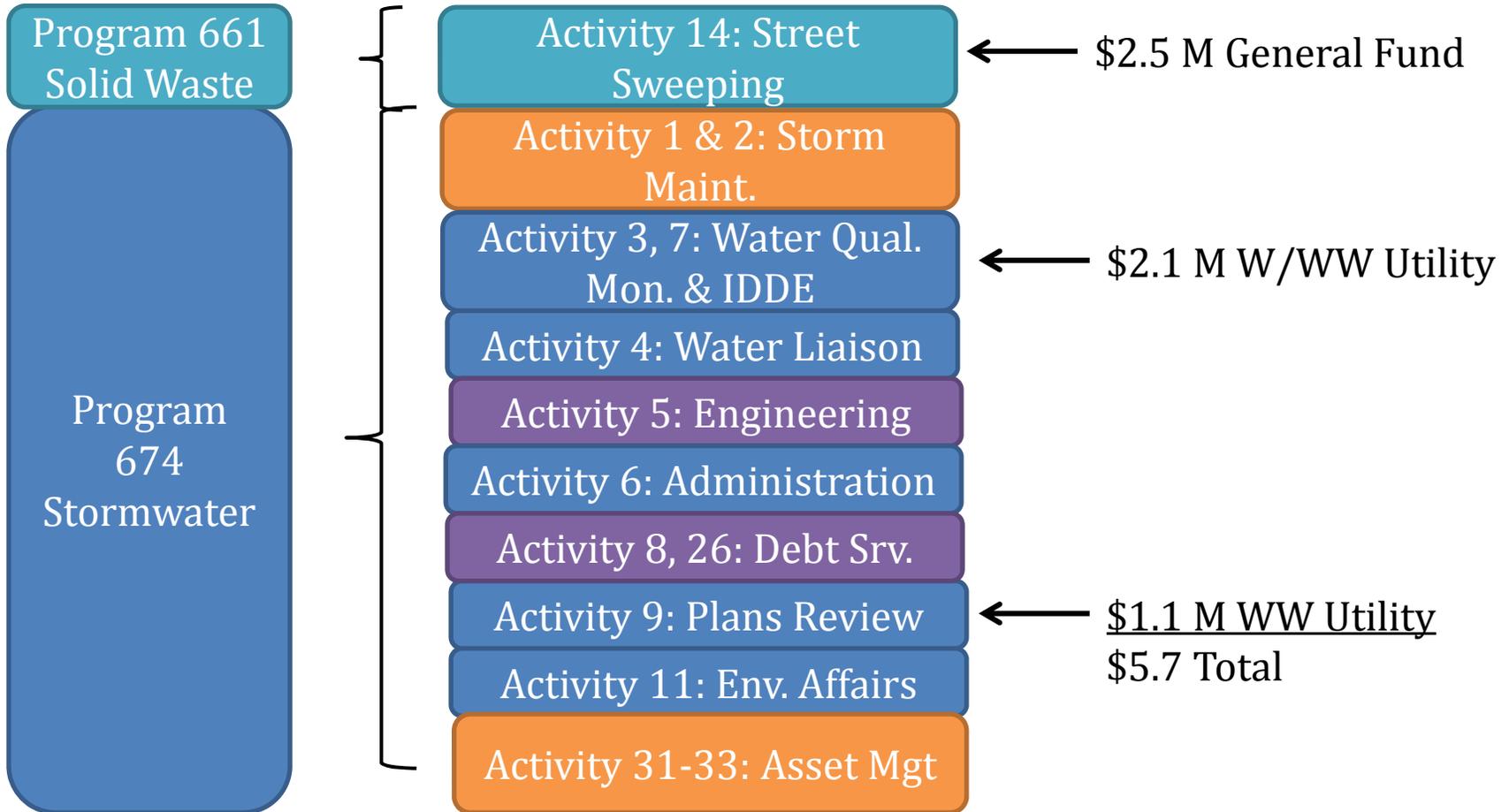


\$15 / Quarter per ERU

# Funding for Stormwater Program



# FY 16 Operations Budget



# NPDES MS4 Permit Conditions

- Permit Administration
- Legal Authority
- Source Identification
- Management Programs
  - Stormwater Management
  - Erosion and Sediment Control
  - Illicit Discharge Detection and Elimination
  - Property Management and Maintenance
  - Public Education
- Total Maximum Daily Loads
  - Watershed Assessments
  - **Restoration Plans**
  - Public Participation
  - **TMDL Compliance**
- Assessment of Controls - Chemical, Biological and Physical Monitoring
- Annual Report



# Restoration & TMDLs

## NUTRIENT AND SEDIMENT TMDLS

Bay TMDL: Phase II WIP

20% Impervious Surface Restoration (ISR) in MS4 Permit (Dec. 2013 - 2018)

MS4 & TMDL WIP:

- Projects
- Programs
- Partnerships

Local TMDLs (7)

Directs distribution of ISR

Local nutrients achieved in current MS4 permit

Local sediment, under contention

Bay TMDL: Phase III WIP

More data, better model

Expect more ISR in next MS4 permits until 2025

Maintenance of all BMPs installed as part of 20% ISR

**Chlordane - 2**  
(1999-2001)

**Bacteria-4**  
(2007-9)

**PCB-2**  
(2012)

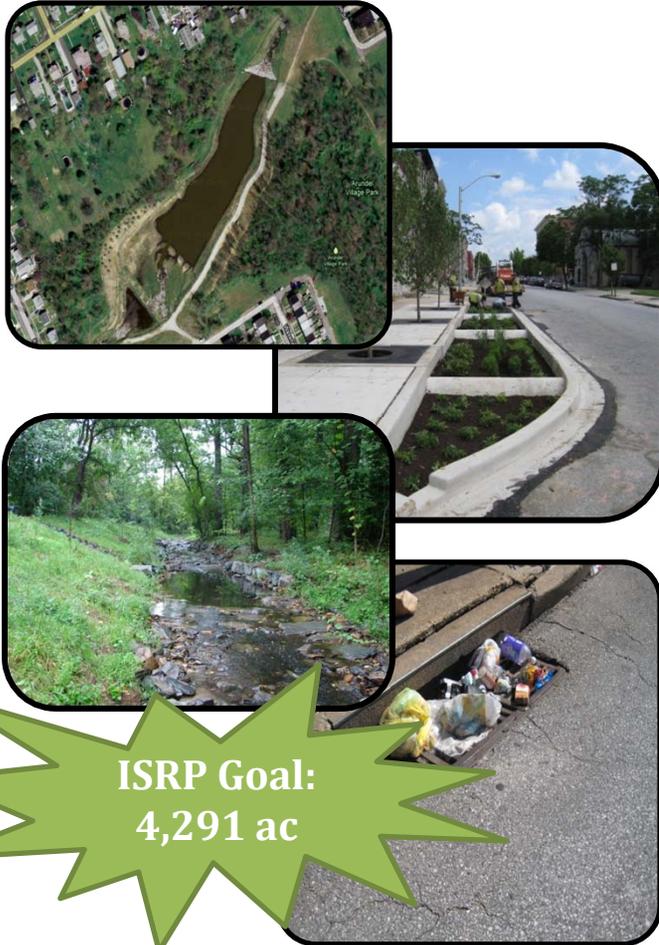
**Trash- 1**  
(2015)



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# MS4 and TMDL WIP



ISRP Goal:  
4,291 ac

- **Projects**

- Large Stormwater BMPS
- Stream Restoration Projects
- Urban ESD Projects
- Impervious area / Greening Projects

**Budget**

CIP  
\$88 M by  
FY 2019

- **Programs**

- Increased street sweeping
- Preventative inlet cleaning
- Illicit Discharge Detection and Elimination Program

Operations  
(Direct)  
\$11 M / yr

- **Partnerships**

- Volunteer projects
- Development regulations
- Grants and incentives
- Education / outreach

Operations  
(Indirect)

# Historic Expenditures\*

## Operations

Monitoring, enforcement, and program admin.	\$ 3.1 M
Maintenance	\$ 4.8 M
Street sweeping	\$ 3.3 M
<i>Subtotal for Operations</i>	<u>\$11.2 M</u>

## Capital Improvements

Infrastructure rehabilitation	\$ 1.5 M
Permit compliance	\$1.5 M
<i>Subtotal for CIP</i>	<u>\$3.0 M</u>

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<b>Total</b>	<b>\$14.2 M</b>
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\*Average of expenditures from FY 2010 to 2013.



# WIP Details

MS4 WIP Project	BMP Type	Watershed	Location	Drainage Area (ac)	Eq. Imp Area Restored	Estimated Pollutant Removal (lbs / yr)			Estimated Capital Cost	Schedule to Start (FY)		Status as of 6/30/2015
						TN	TP	TSS		Design	Construction	
Structural / Traditional BMPs												
S01	SW Pond Retrofit	Gwynns Falls	Gwynns Run, Carrolton Park	38	25	132	17	15,525	\$505,000	2016	2018	
				38	25	132	17	15,525	\$505,000	2016	2018	Pending
S02	SW Pond Retrofit	Gwynns Falls	Seton Business Park Park	62	41	214	27	25,169	\$795,000	2016	2018	
				62	41	214	27	25,169	\$795,000	2016	2018	Pending
S03	Pond Retrofit and New Pond	Back River	North Point Road @ Kane and Quad	92	60	317	40	37,260	\$3,290,000	2015	2016	
				92	60	317	40	37,260	\$3,290,000	2015	2016	Pending
S04	Wetland / Pond	Back River	Perring Parkway at Cloville (HR-R28B)	23	15	63	13	8,484	\$344,000	2016	2018	
				23	15	63	13	8,484	\$344,000	2016	2018	Pending
S05	Wetland / Pond	Back River	Herring Run Park below Shannon at Lyndale (HR-R15C)	31	20	84	17	11,465	\$550,000	2016	2018	
				31	20	84	17	11,465	\$550,000	2016	2018	Pending
S06	Wetland	Back River	Herring Run Park below Shannon at Kavon Ave (HR-R39)	31	20	84	17	11,465	\$550,000	2016	2018	
				31	20	84	17	11,465	\$550,000	2016	2018	Pending
S07	Wetland	Back River	Herring Run Park below Parkside at Sinclair (HR-R15A)	100	65	275	56	37,260	\$1,600,000	2016	2018	
				100	65	275	56	37,260	\$1,600,000	2016	2018	Pending

← Planned  
← Current

What are we doing?      Where?      Env. benefit?      Cost?      When?



# Matching WIP to CIP

**260 Sites**

Actual locations of BMPs, as shown on Urban Waters Mapping Tool.

**78 WIP**

As listed in WIP, updated in MS4 Annual Report.

**33  
Contracts**

As listed in BOE Agenda for design and construction.

**6 CIP**

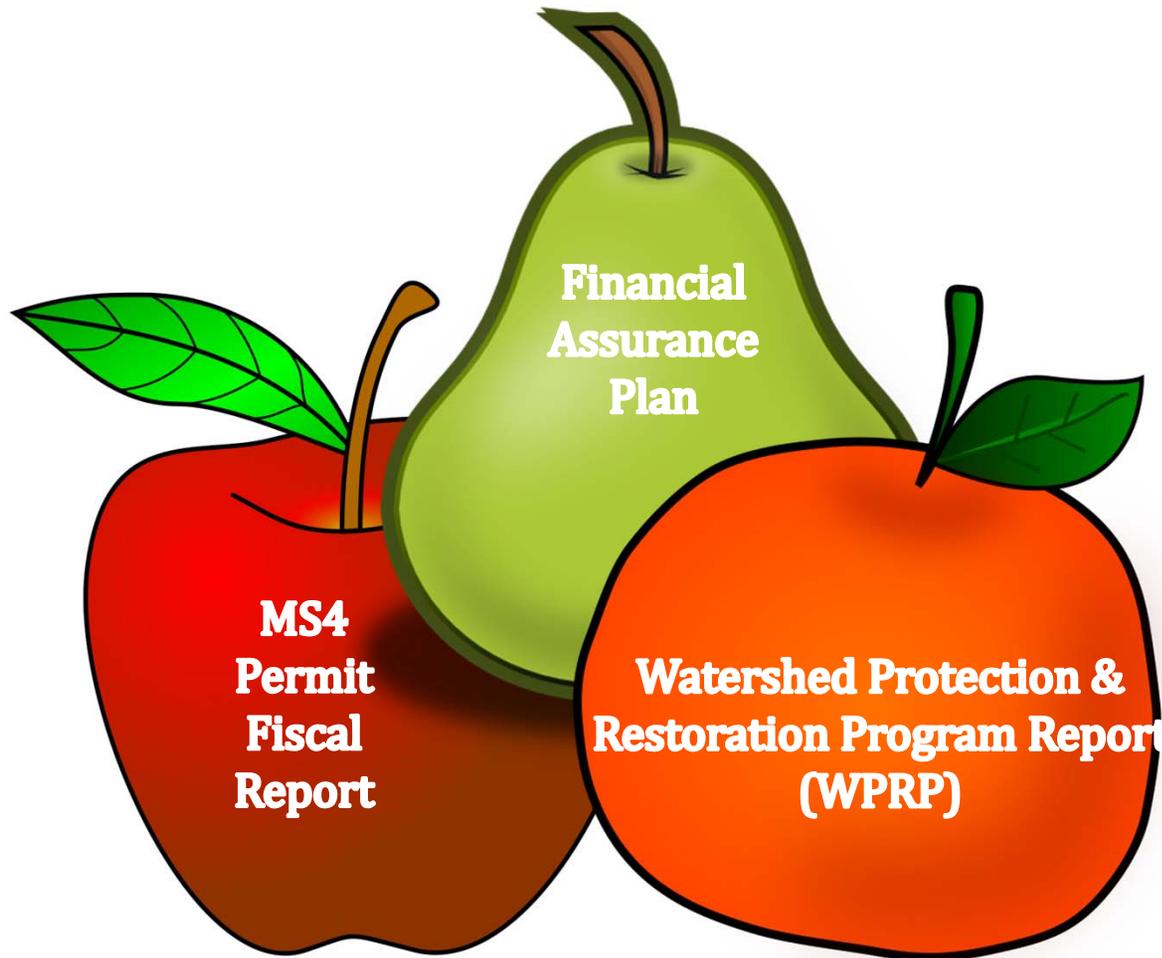
As listed in CIP Budget proposals



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# MDE Requires 3 Separate Reports



# MS4 Report via Operations Dist.

Description	MS4 Ref	661-14	674-1	674-2	674-3	674-4	674-5	674-6	674-8	674-9	674-11	674-33
Legal authority	B											
Source ID	C											
Stormwater management	D.1											
Erosion and sediment	D.2											
Illicit det/elimination	D.3											
Trash elimination	D.4											
Property management	D.5.A											
Inlet cleaning	D.5.B.ii											
Street sweeping	D.5.B.i											
Road maintenance	D.5.B.iii											
Public education	D.6											
Watershed assessment	E.1											
Watershed restoration	E.2-4											
Chemical monitoring	F.1											
Biological monitoring	F.1											
Physical assessment	F.1											
Design manual monitoring	F.1											
TMDL assessment	F.2											
Non-MS4 Costs												



# MS4 Translated to WPRP

MS4 Reporting Categories	WPRP Categories						
	CIP	O & M	Ed/Out	Planning	Dev. Rev	Grants	Admin
Legal authority							
Source ID							
Stormwater management							
Erosion and sediment							
Illicit detection/elimination (IDDE)							
Trash elimination							
Property management							
Inlet cleaning							
Street sweeping							
Road maintenance - other							
Public education							
Watershed assessment							
Watershed restoration (all projects)							
Chemical monitoring							
Biological monitoring							
Physical assessment							
Design manual monitoring							
TMDL assessment							
Total NPDES program							
Other activities related to stormwater*							
Total Stormwater							

**Note:** Only Stormwater Utility Funding is listed in WPRP.



# FAP Report

- Categorized by state legislation
- All funds related to NPDES MS4 compliance, with specifics on ISRP
- Reporting:
  - 2016: separate July 1 then every 2 years in Annual Report
  - Executive Summary (Narrative)
  - MDE excel template
  - Certification Statement

Actions to Meet ISRP  
(Operation & Capital)

ISRP Annual and 5-year  
Projected Costs

ISRP Annual and 5-year  
Projected Appropriations

Fund Sources for NPDES  
Compliance

Specific Actions of Past Year



# Debt Service

- Existing Debt Service Appropriations for 520 and 525
  - County Transportation Bonds (\$30.4M)
  - General Obligation Bonds (\$4.1M)
- State Revolving Loans
  - \$583K in FY 2017 (approved)
  - \$20.7 in FY 2018 (IUP)
- Future Revenue Bonds
  - Begin in FY 2018

## How Debt Service Works

Projects in FY 17 will cost \$10M

If 100% paygo,  
FY 17 Revenue Req. = \$10M

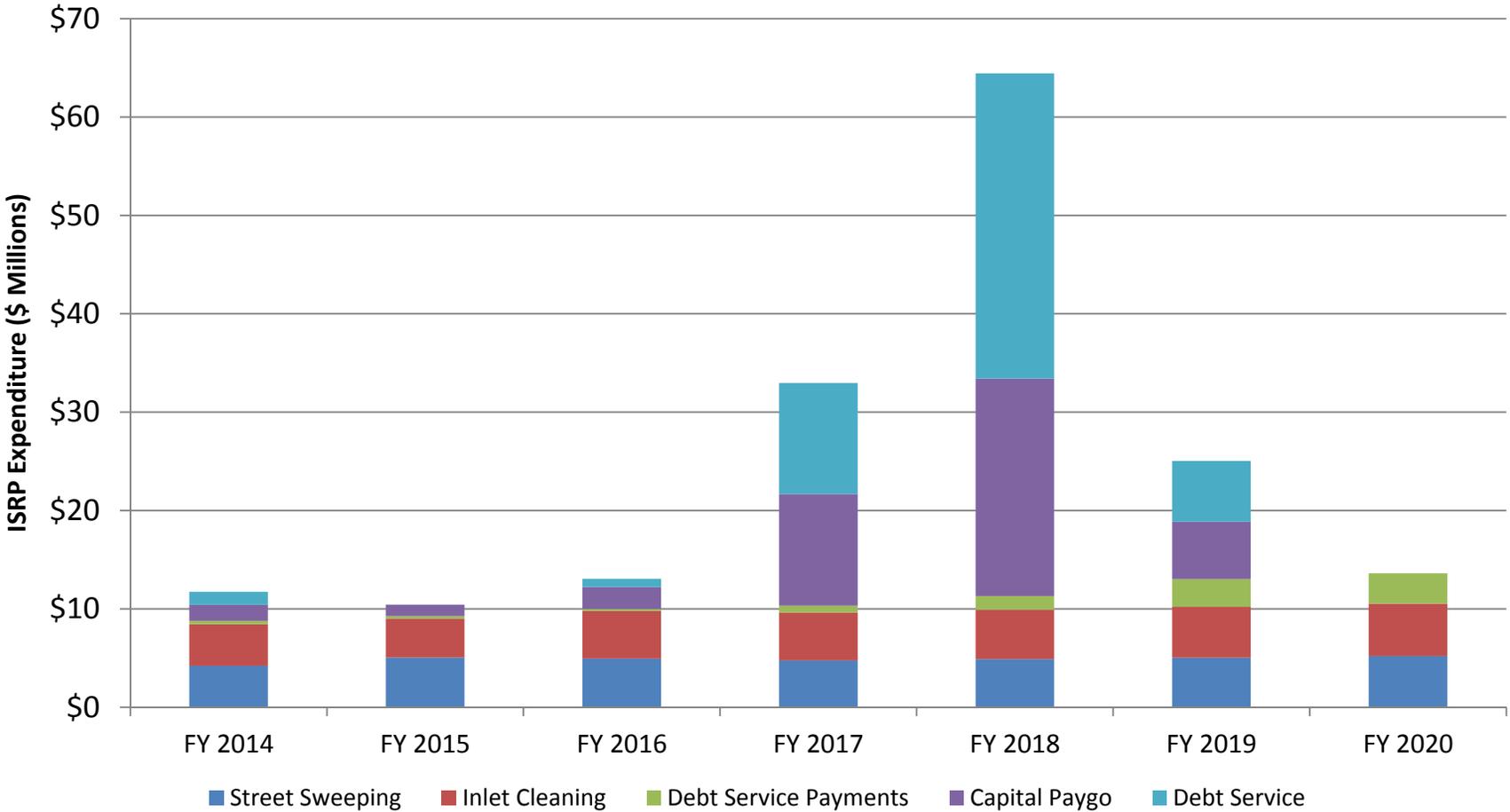
If 25% paygo, 75% is debt svc\*  
FY 17 Revenue Req. =  
\$2.5M (paygo)  
\$0.2M (debt srv)  
**\$2.7M (total)**

FY 18 – 47 Revenue Req. =  
**\$0.5M / year**

\* Assume 30 year @ 5%



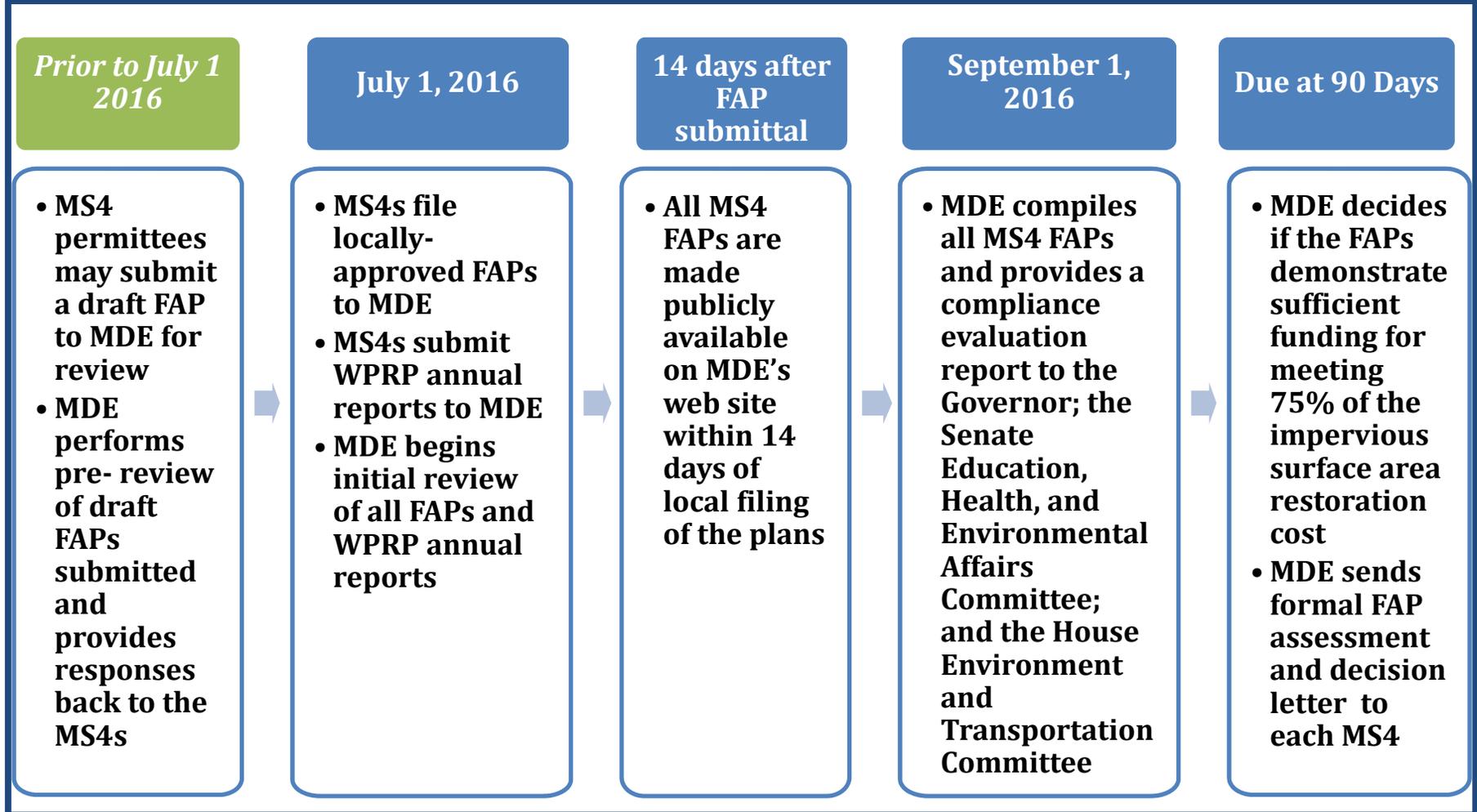
# ISR Expenditure Projections



**Baltimore City Department of Public Works**



# MDE's Timeline on FAPs





# Payment Allocation

Fund	Billed	Portion	Payment	Allocation
Water	\$ 79.00	35%	\$100	\$ 35.35
WW	\$ 107.00	48%		\$ 47.87
BRF	\$ 7.50	3%		\$ 3.36
SWM	\$ 30.00	13%		\$ 13.42
Total	\$ 223.50			\$ 100.00



# Stormwater Utility Revenue

Fiscal Year	Storm Fee Billings (\$M)	Receipts from Customers (\$M)	% Rev / Billing	Cum. Billing (\$M)	Cum. Actual Revenue (\$M)	Cum. % Rev / Billings
2014	\$23.40	\$17.70	76%	\$23.40	\$17.70	76%
2015	\$28.90	\$28.30	98%	\$52.30	\$46.00	88%



Approved credits,  
adjustments and  
exemptions



# Revenue Credits and Reductions

Type	Max. red.	Duration	#	Annual Reduction
<b>Credit</b>				
Participation	\$30 / year	1 yr	41	\$760
Treatment	45%	3 yr, BMP 1 yr, Activity	62	\$77,768
Small Dev.	33%	3 yr	0	\$0
Vacant Lot	45%	3 yr	22	\$594
NPDES	55%	5 yr	74	\$817,072
Direct Discharge	30%	5 yr	73	\$384,630
<b>Reduction</b>				
20% Cap	Cap	1 yr	89	\$817,600
Religious Structure	\$12/ ERU	3 yr	248	\$157,140
<b>Total</b>				<b>\$2,255,564</b>



# Incentive Programs

## Planned Incentives

- Standard design details for BMPs
- Design guidelines
- Urban Waters mapping tool
- Alternative as-built process
- Expedited review process for small restoration projects
- GROW Centers
- Collaboration meetings with NGOs

- Proposal Grant Appropriations
  - \$2.75 M for CIP
  - \$200 K for planning / incentive
- City funded grant program
  - \$100 K/ yr for City-funded grant program
  - Matched with Office of Sustainability and EPA (2015)
  - Administered by the Chesapeake Bay Trust
- New Staffing: Grant Procurement Officer



# Plans Review and Inspections

## Plans Review

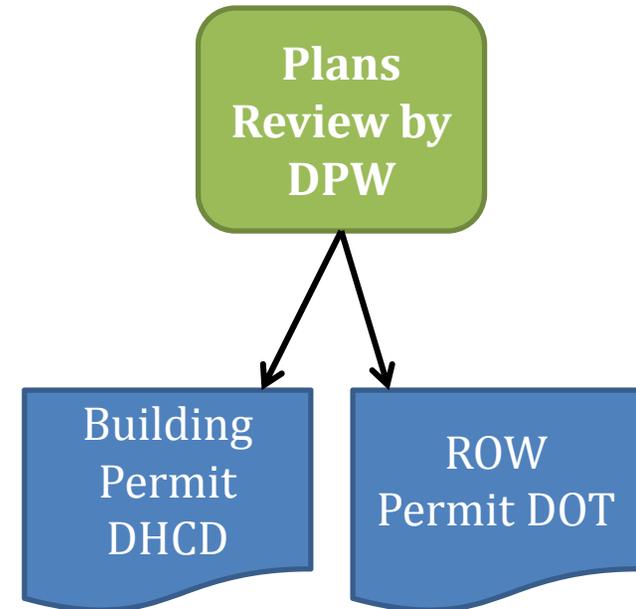
- Stormwater Management (Article 7, Div. II)
- Erosion & Sediment Control (Article 7, Div. III)
- Wet Utilities (Article 25 and Standard Details)

## Inspections

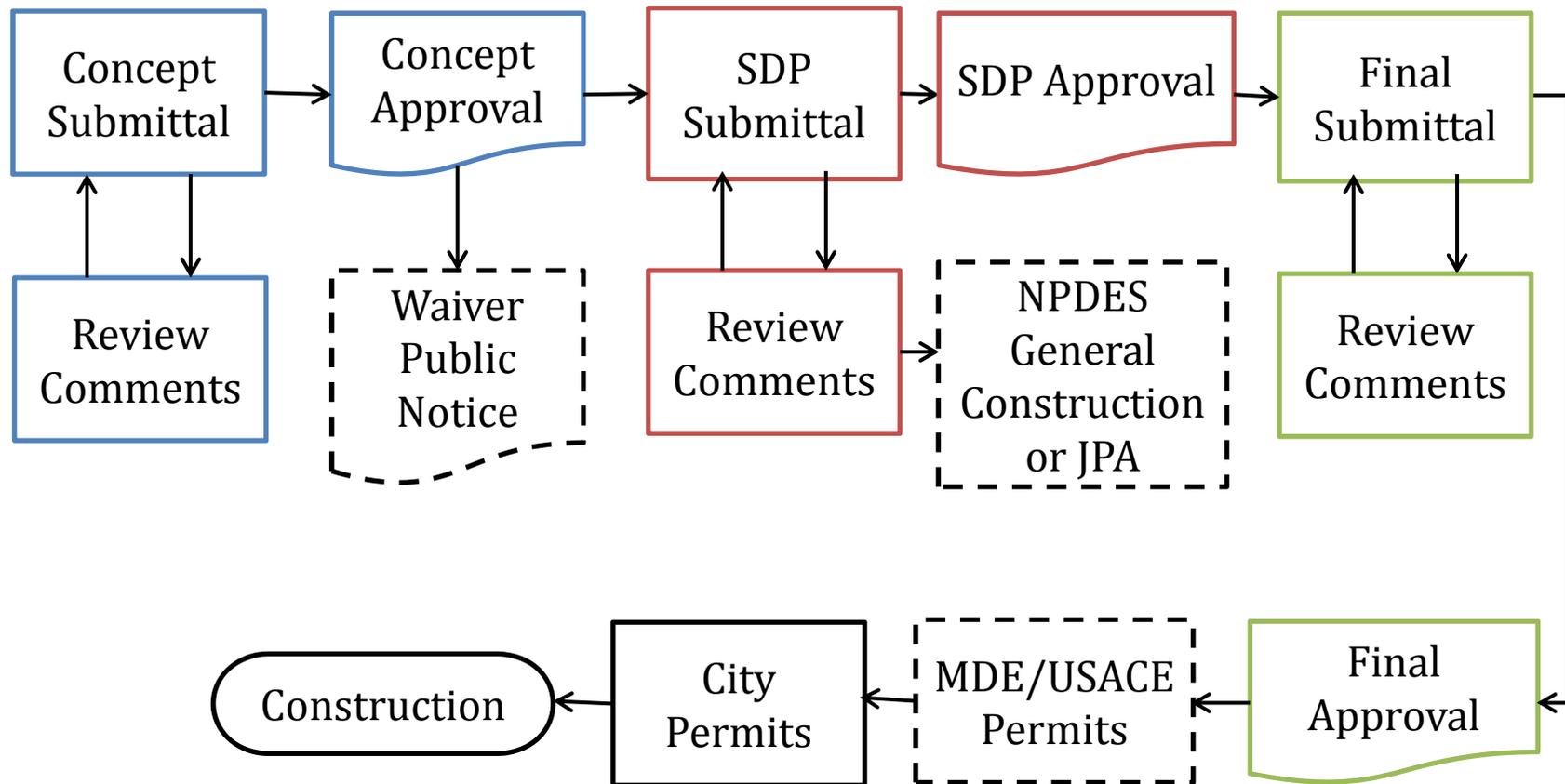
- Pre-construction notification
- Bi-weekly Inspections
- Milestone SWM inspections
- Final Inspection/ Removal of ESC

## Post-construction Inspection

- SWM: Every 3 years or by complaint
- ESC: By complaint

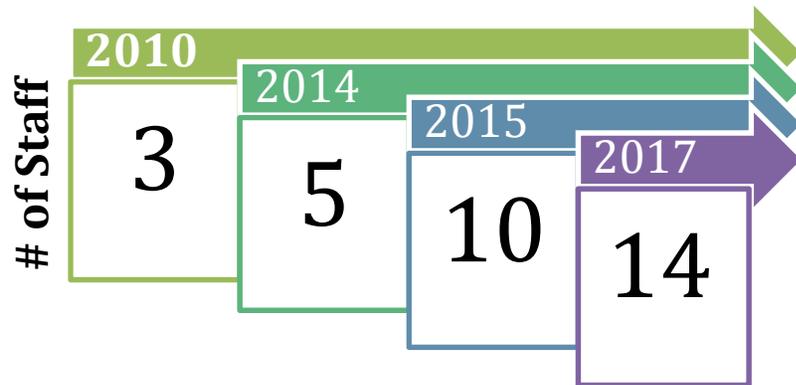
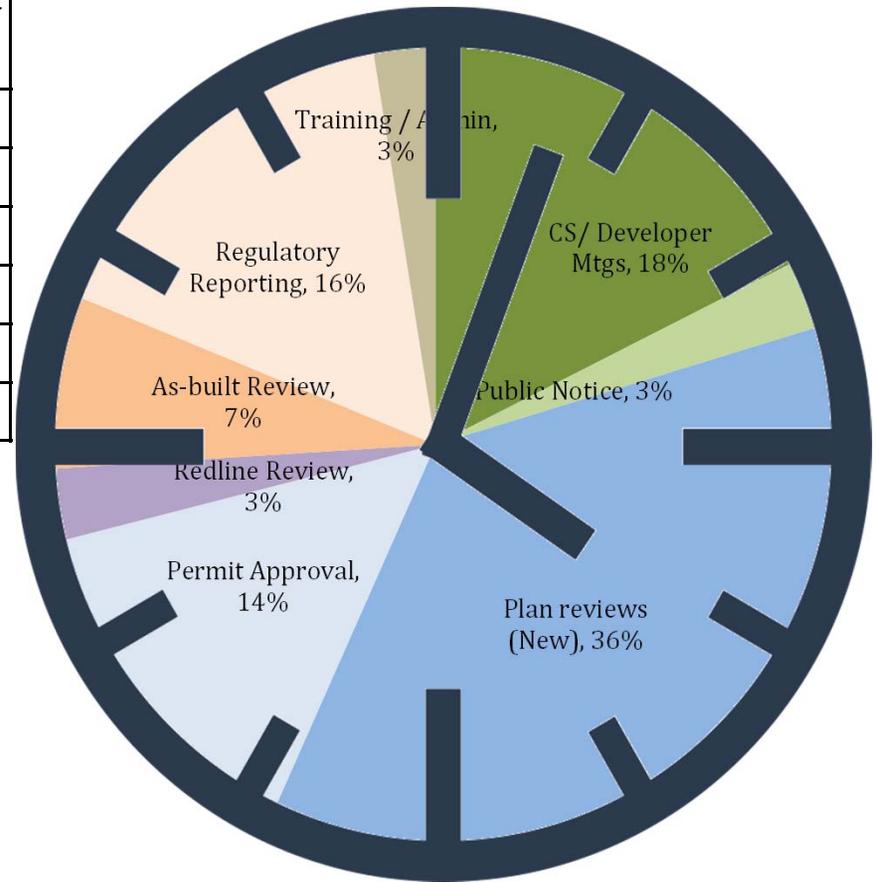


# SWM /ESC Review Process (3 phase)

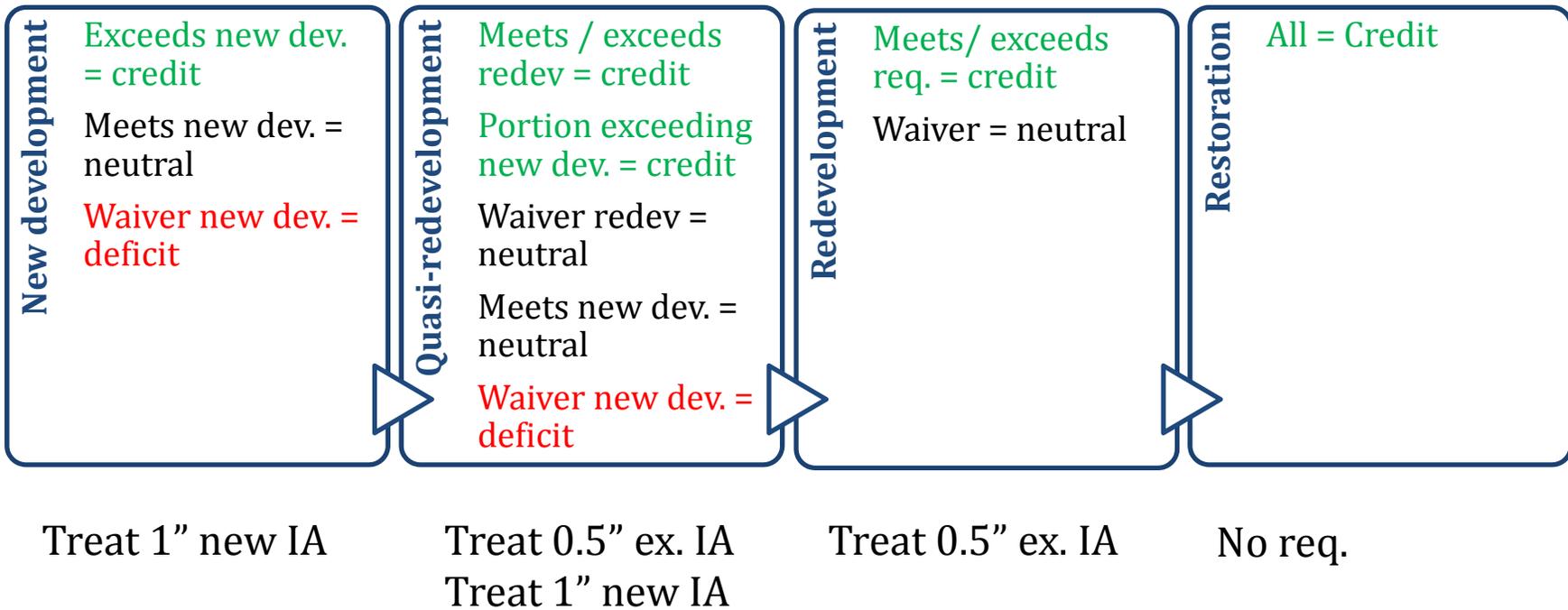


# Plans Review Capacity

Project Type	# In Review	Avg Review (hr)
ESC Only	21	40
Large Project (> 2 ac)	17	120
Roadway / Utility	40	120
Small (< 2 ac)	61	60
Restoration	13	100
<b>Total</b>	<b>152</b>	



# Development & Mitigation



# Plans Review in FY 2017

- Accountability/ performance tracking for Outcome Stat
- Increased staff
- Customer service focused the owner, not just designer
- Working with DHCD / DOT on permit approval procedures
- Reduction of public notice requirements
- On-line guidance on DPW website focused on the developer and restoration partner
- Standard details for ESD Practices
- Small ESC Project method
- Regulatory reporting (GIS) → mapping tools

