

# Baltimore City Department of Public Works



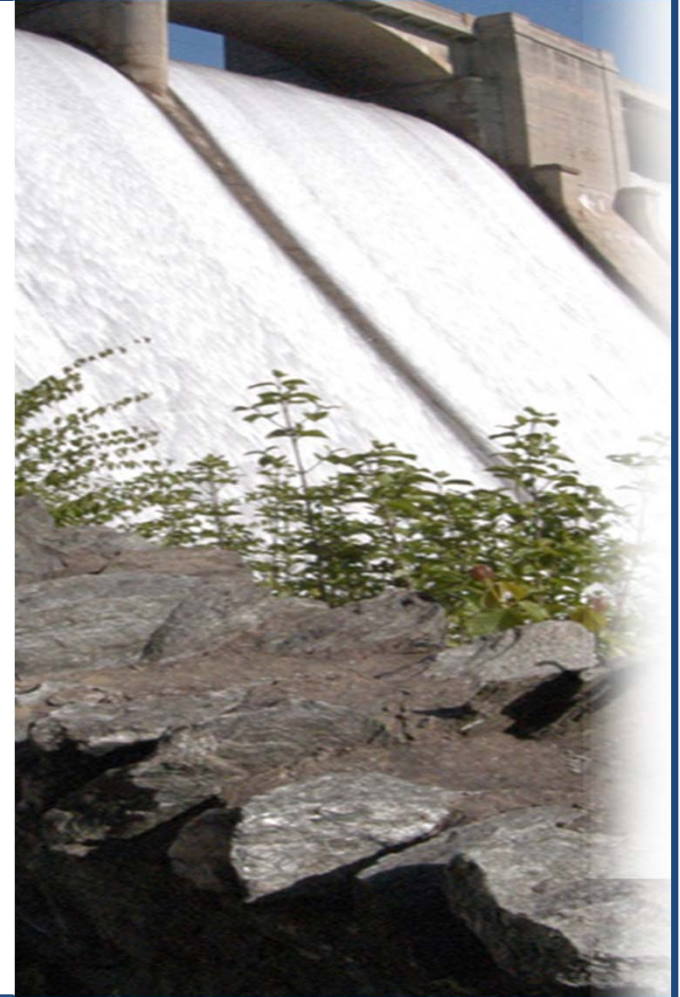
STEPHANIE  
RAWLINGS-BLAKE  
MAYOR

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**

# 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



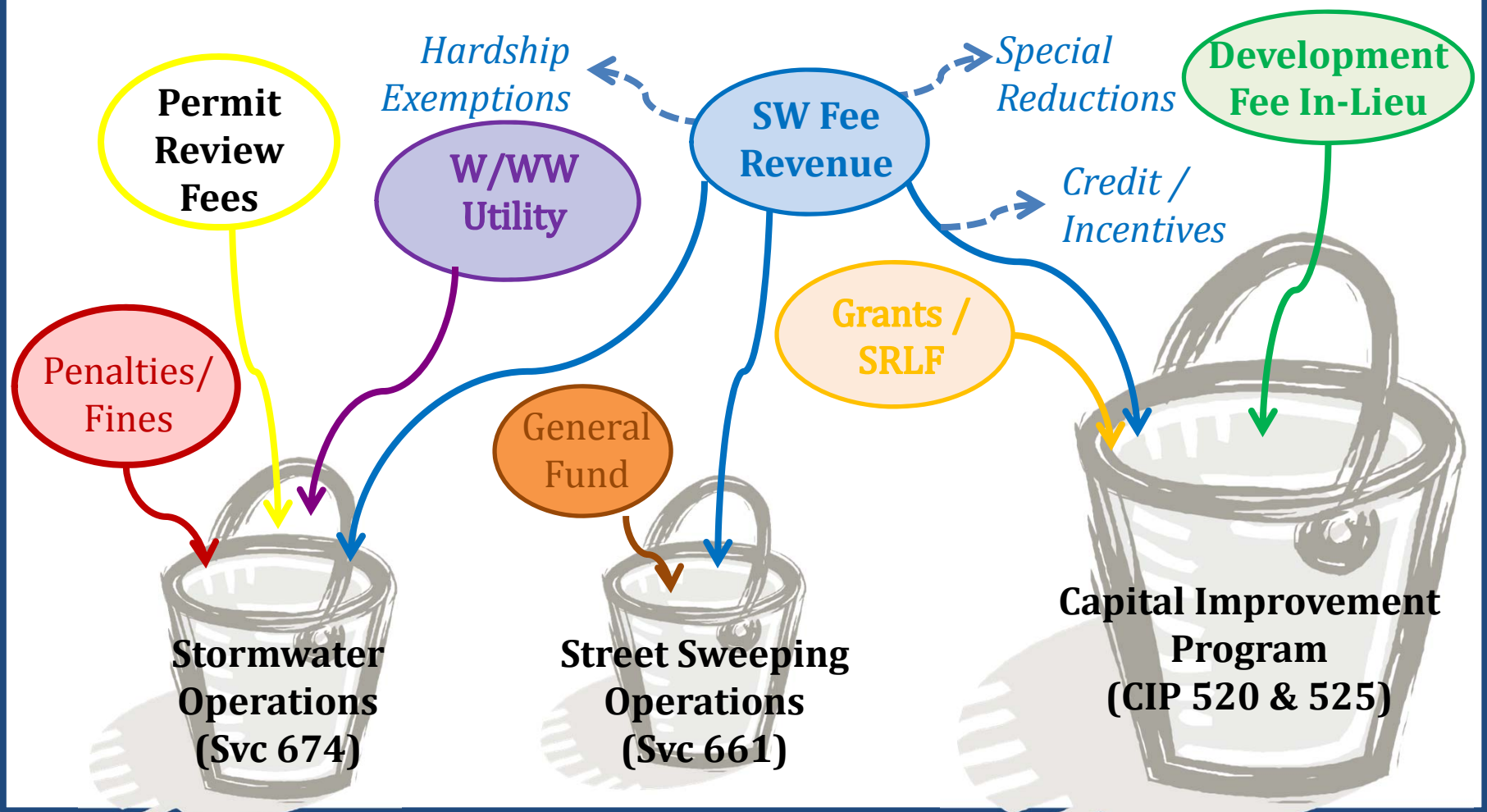
All other  
properties  
(NSFP)



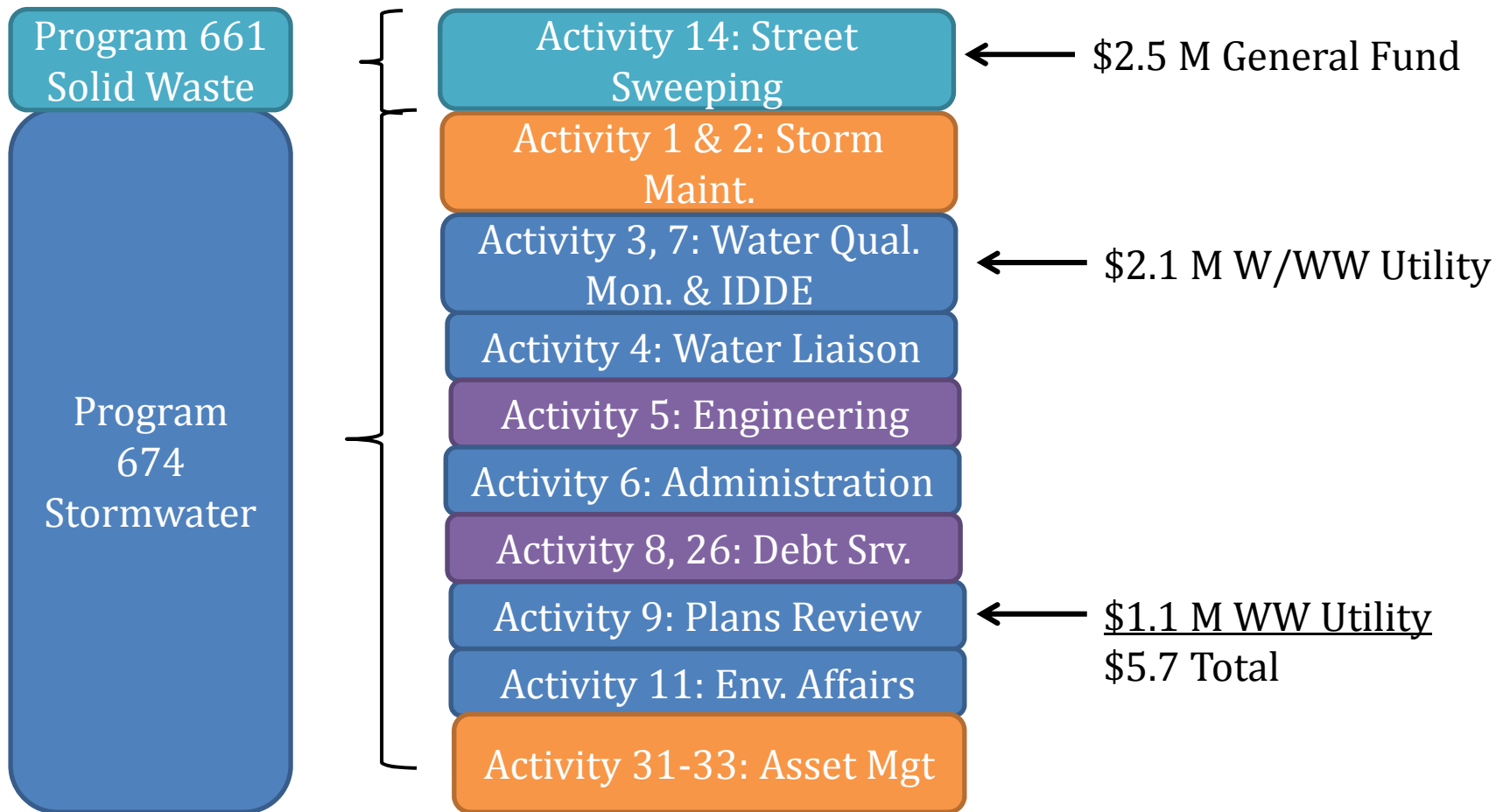
\$15 / Quarter per ERU



# Funding for Stormwater Program



# FY 16 Operations Budget





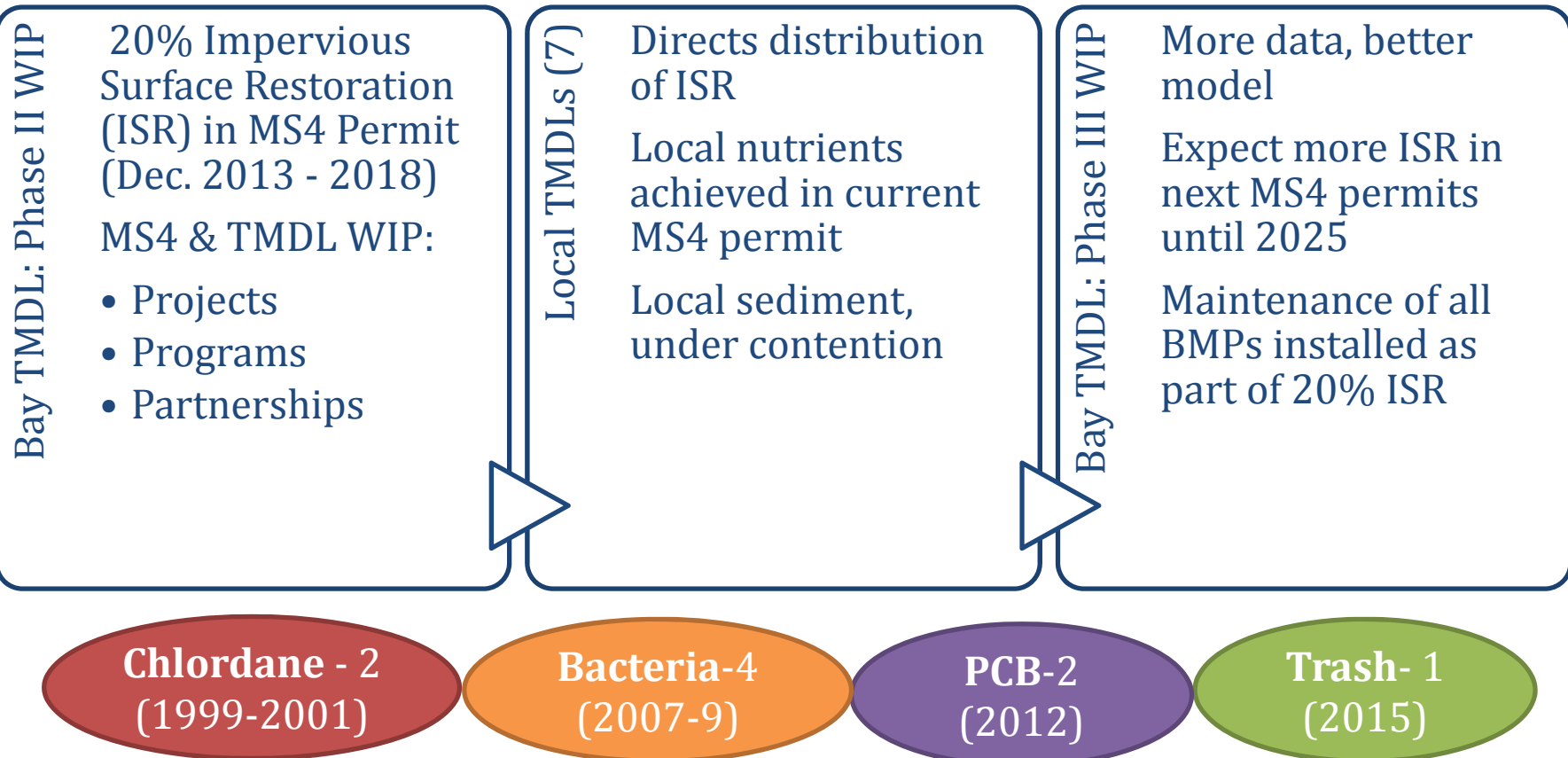
# NPDES MS4 Permit Conditions

- 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



# 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)



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# 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>

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



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# WIP Details

MS4 WIP Project	BMP Type	Watershed	Location	Drainage Area	Eq. Imp Area Restored	Estimated Pollutant Removal (lbs / yr)			Estimated Capital Cost	Schedule to Start (FY)		Status as of 6/30/2015
				(ac)		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 Karon 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?



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# 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

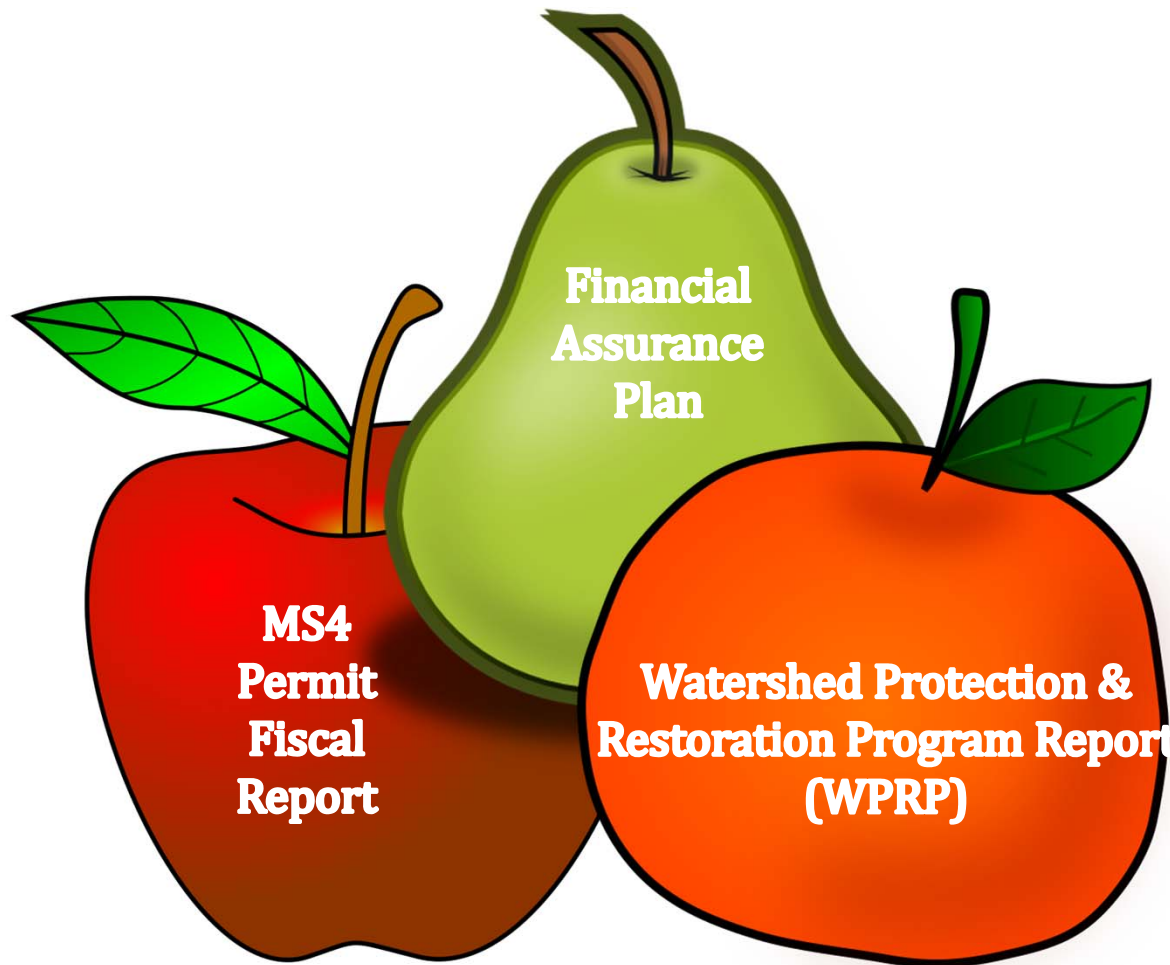


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# MDE Requires 3 Separate Reports



# 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												



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# 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.



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# 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



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# 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

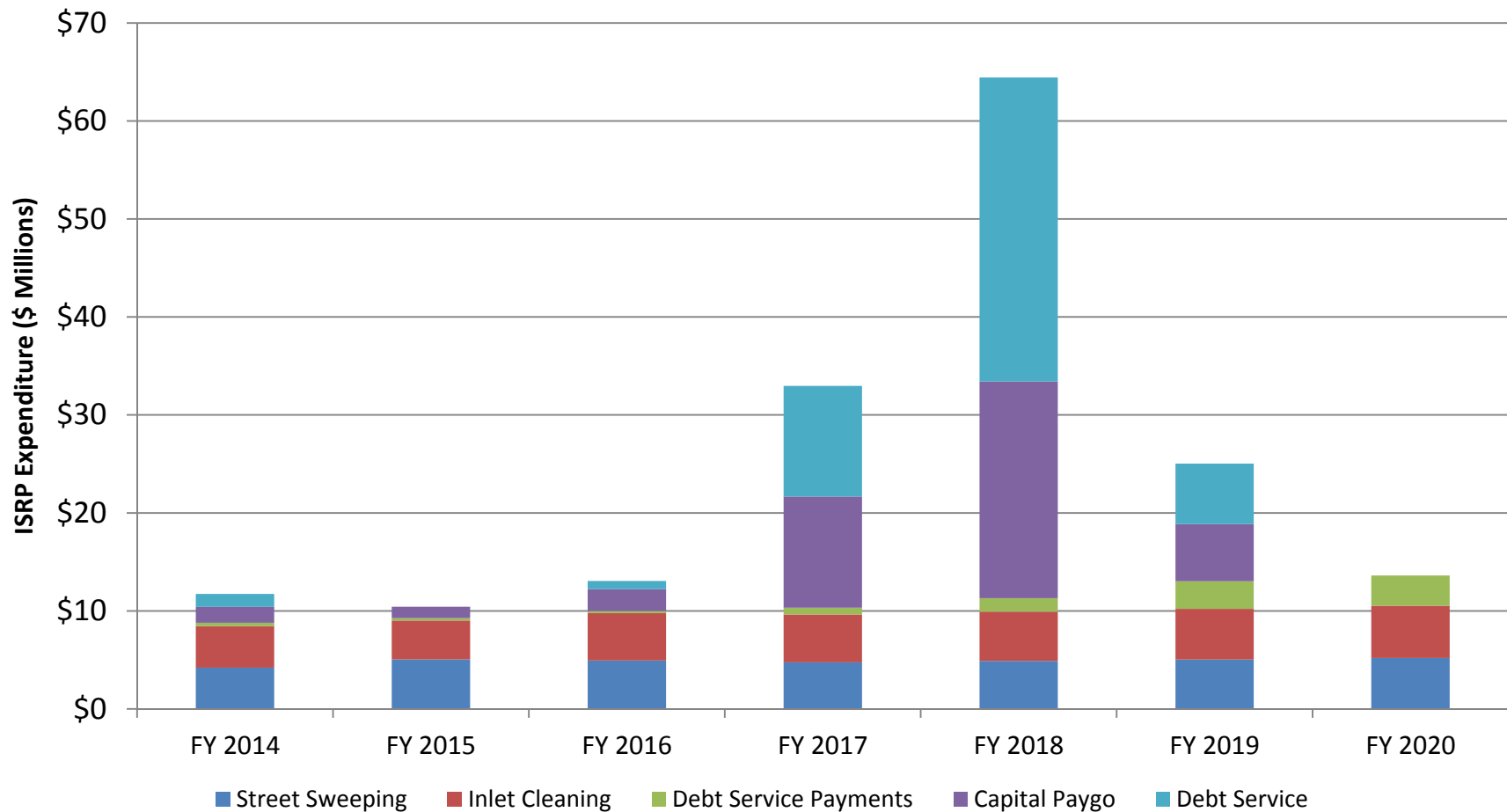
If 25% paygo, 75% is debt svc\*  
FY 17 Revenue Req. =  
\$2.5M (paygo)  
\$0.2M (debt srv)  
**\$2.7M (total)**

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

\* Assume 30 year @ 5%



# ISR Expenditure Projections

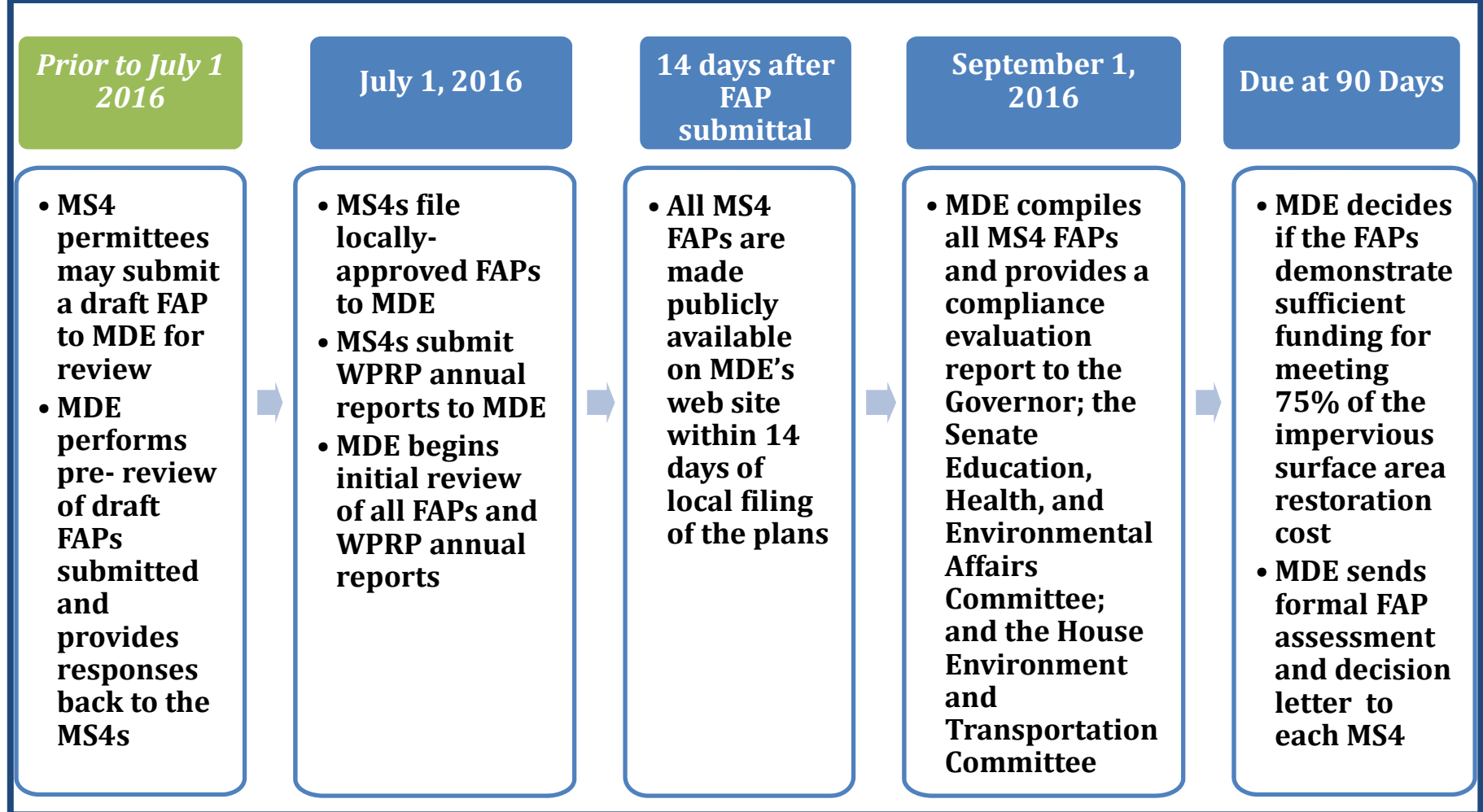


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# MDE's Timeline on FAPs




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# Billing and Revenue

		<b>CITY OF BALTIMORE</b> <b>METERED WATER BILL</b> Department of Finance, Bureau of Revenue Collections 200 Holiday Street, Baltimore, Maryland 21202 TIN: 52-6000769		AMOUNT DUE NOW 217.18			
ACCOUNT NUMBER 3234 W NORTH AVE				AMOUNT DUE AFTER 10/24/2011 228.04			
21133-0686				PROPERTY IDENT. 3203 013			
BILLING PERIOD		WATER CONSUMPTION					
PREVIOUS READING DATE	PRESENT READING DATE	NUMBER OF DAYS	TOTAL (100 CUBIC FEET)	AVG. DAILY CONS. (CUBIC FEET)	TOTAL (THOUSANDS)	AVG. DAILY CONS. (GALLONS)	
06/21/2011	09/19/2011	90	27	30	20	224	
TYPE OF BILL		PREVIOUS READING	PRESENT READING	CONSUMPTION	DAYS	RATE	AMOUNT CHARGED
Actual Regular Bill							
Dial #1		358	385				
Water Charges:		(consumption x rate)		27		2.933	79.19
Sewer Charges:		(consumption x rate)		27		3.944	106.49
Total Water Consumption Billed:				27			79.19
Total Sewer Service Charges:				27			106.49
Bay Restoration Fee:							7.50
Storm Water Charge:							24.00
					Amount Due Now:		217.18
					Amount Due After 10/24/2011:		228.04
Emergency Service: (410) 396-5352 (24 hrs.)							
Billing Inquiries: (410) 396-5398 (8:30 AM - 4:30 PM)							
Payment Inquiries: (410) 396-3988 (8:30 AM - 4:30 PM)							
Internet Inquiries: <a href="http://www.baltimorecity.gov/water.html">http://www.baltimorecity.gov/water.html</a>							

		<b>CITY OF BALTIMORE</b> <b>METERED WATER BILL</b> Department of Finance, Bureau of Revenue Collections 200 Holiday Street, Baltimore, Maryland 21202		AMOUNT DUE NOW 217.18	
ACCOUNT NUMBER 02158082004 SERVICE ADDRESS 3234 W NORTH AVE		PLEASE RETURN THIS PORTION OF BILL WITH YOUR PAYMENT		AMOUNT DUE AFTER 10/24/2011 228.04	
21133-0686				REVENUE COLLECTIONS P O BOX 17535 BALTIMORE, MD 21297-1535	
				Please make checks or money order payable to DIRECTOR OF FINANCE and write your account number on your check to ensure proper credit.	
				3203 013	

## Charges for 4 Funds

## Wastewater Utility Fund

# MD Bay Restoration Fund

## Stormwater Utility Fund

One payment check written to  
Department of Finance



# 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



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# Stormwater Utility Revenue

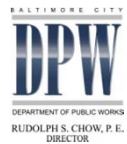
<b>Fiscal Year</b>	<b>Storm Fee Billings (\$M)</b>	<b>Receipts from Customers (\$M)</b>	<b>% Rev / Billing</b>	<b>Cum. Billing (\$M)</b>	<b>Cum. Actual Revenue (\$M)</b>	<b>Cum. % Rev / Billings</b>
2014	\$23.40	\$17.70	76%	\$23.40	\$17.70	76%
2015	\$28.90	\$28.30	98%	\$52.30	\$46.00	88%



Approved credits,  
adjustments and  
exemptions



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# 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>



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# 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

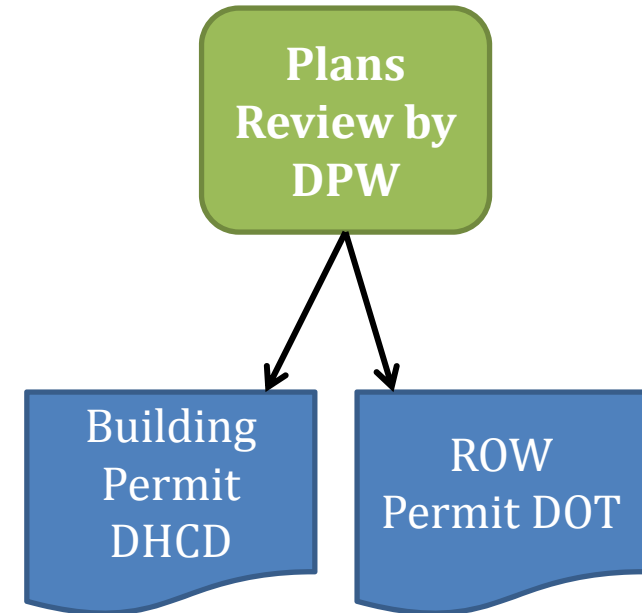
- Stormwater Management (Article 7, Div. II)
- Erosion & Sediment Control (Article 7, Div. III)
- Wet Utilities (Article 25 and Standard Details)

## Inspections

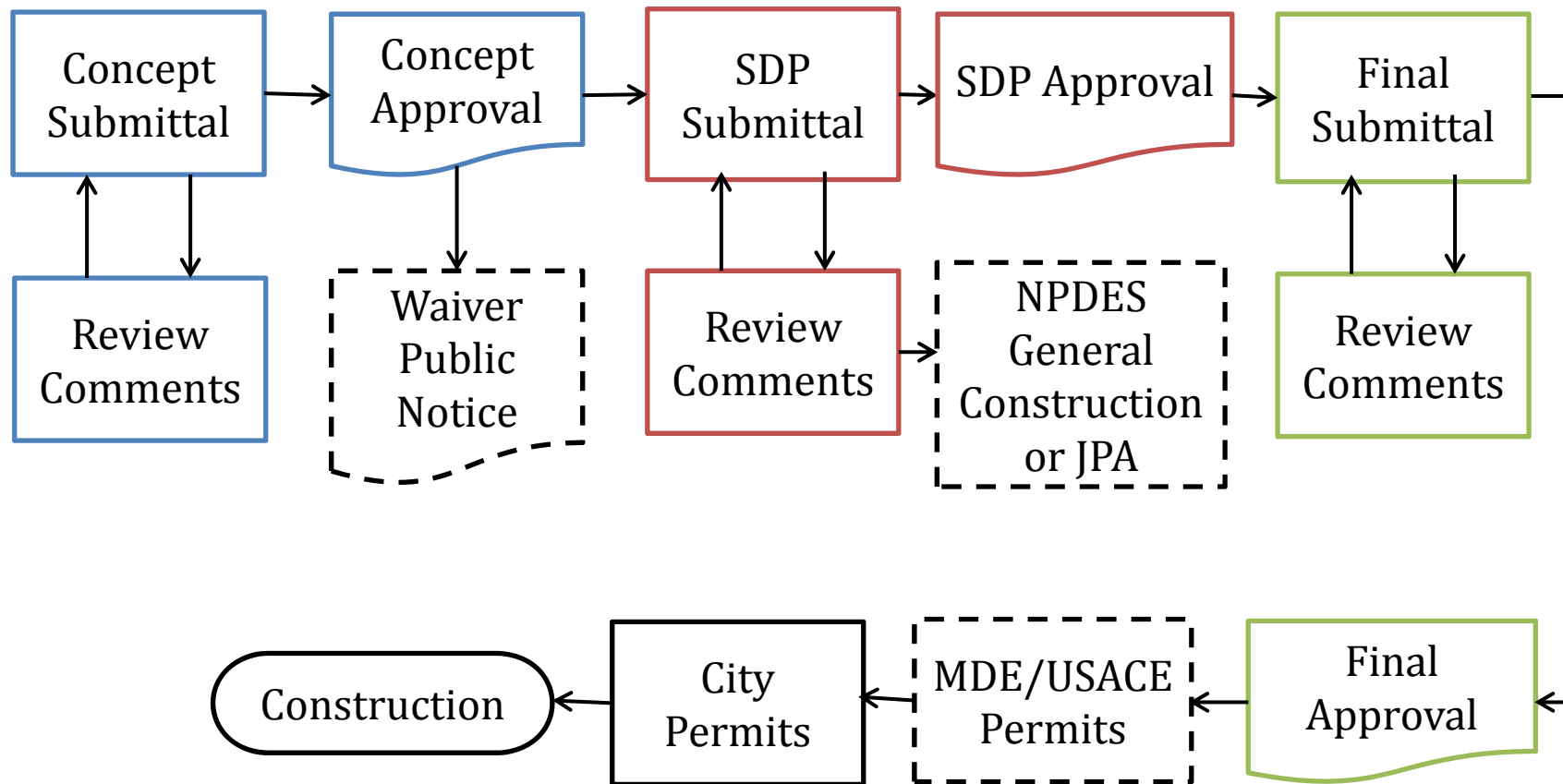
- Pre-construction notification
- Bi-weekly Inspections
- Milestone SWM inspections
- Final Inspection/ Removal of ESC

## Post-construction Inspection

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

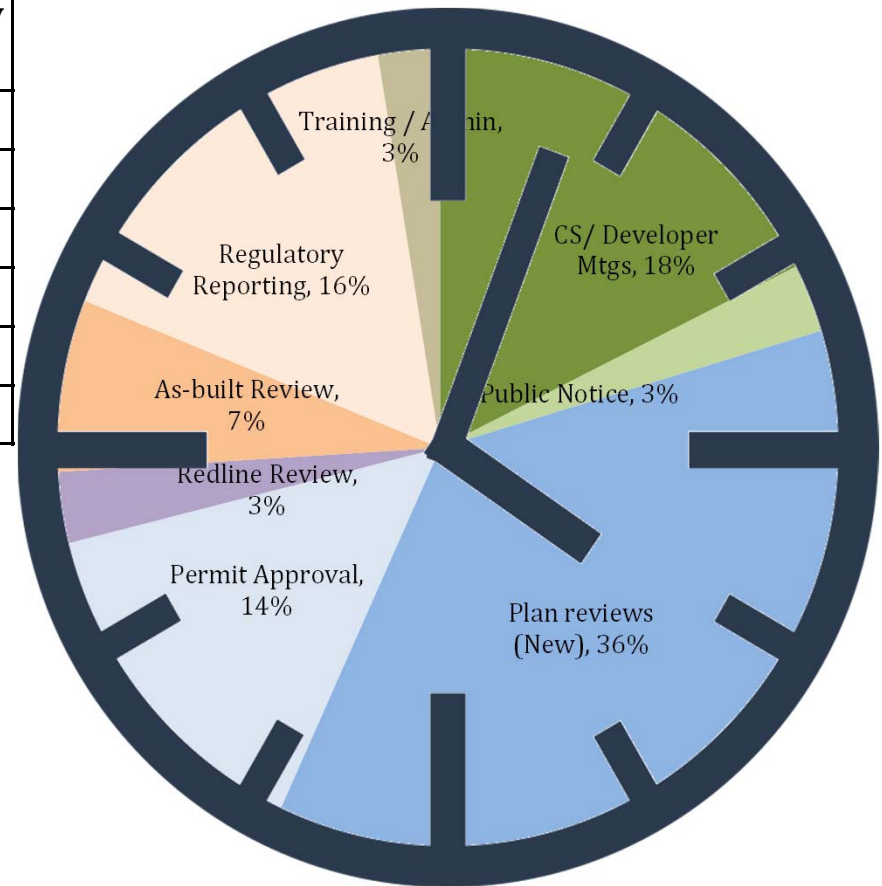
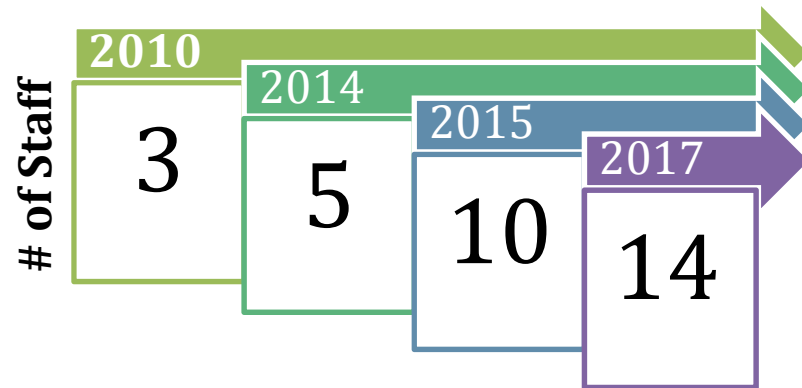


# SWM /ESC Review Process (3 phase)

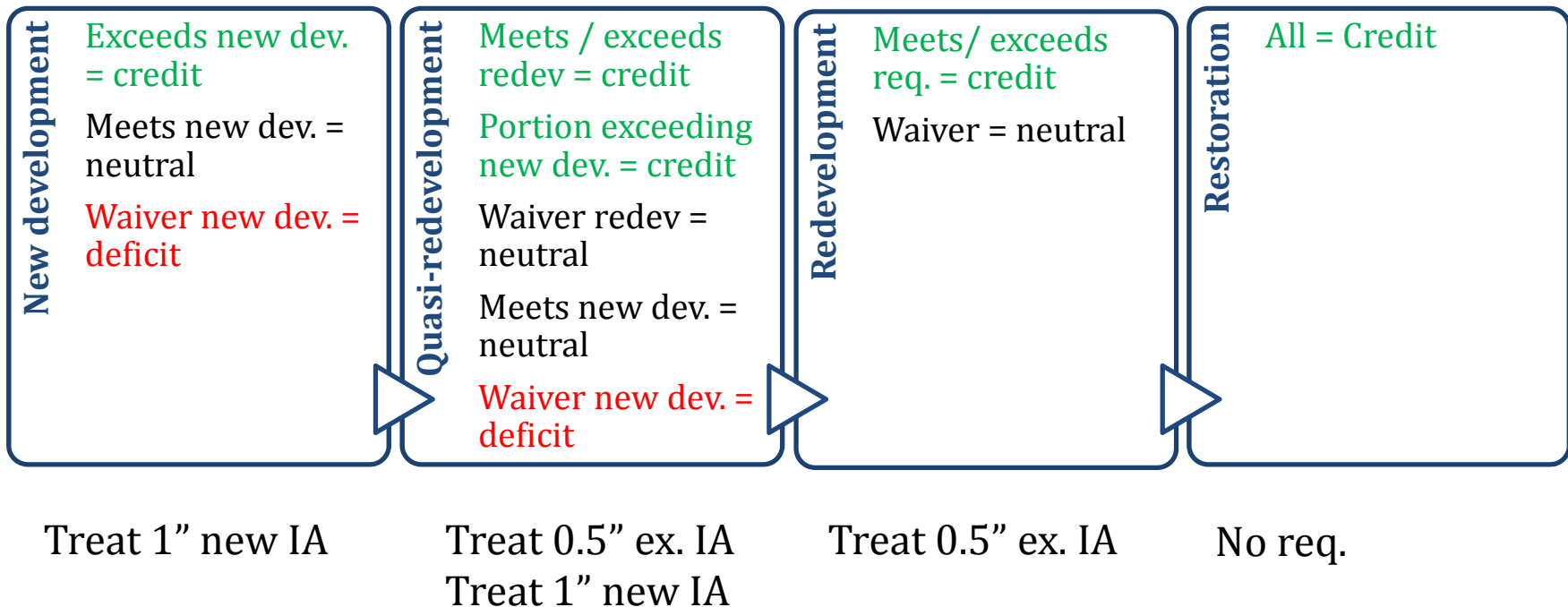


# Plans Review Capacity

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

