

Maintenance, Participation, and Adaptive Management: Stakeholder Meeting #4

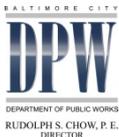


**City of Baltimore
Department of Public Works**

September 2014



STEPHANIE
RAWLINGS-BLAKE
MAYOR



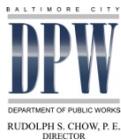
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Baltimore City Department of Public Works



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ACTING BUREAU HEAD

MS4 Recap / Comments



Baltimore City Department of Public Works



6 Pillars of Practical Watershed Planning

1. Plan for more projects than you need.
2. Plan for resources that will affect funding needs.
3. **Plan to maintain.**
4. Plan to be a part of a bigger picture.
5. **Plan for effective public participation.**
6. **Plan to adapt.**

* the items highlighted in **red** are the focus of this presentation



5 Years: 20% Restoration



Projects

- Large Stormwater BMPS
- Stream Restoration Projects
- Urban ESD Projects
- Impervious area / Greening Projects
- Debris Collection within Public System

Programs

- Increased street sweeping
- Preventative inlet cleaning
- Illicit Discharge Detection and Elimination Program
- Erosion and Sediment Control Enforcement
- Education / Outreach

Partnerships

- NGOs
- MD Stormwater Remediation Fee Credit Program
- Private Development
- Incentives

Projects / Programs / Partnerships

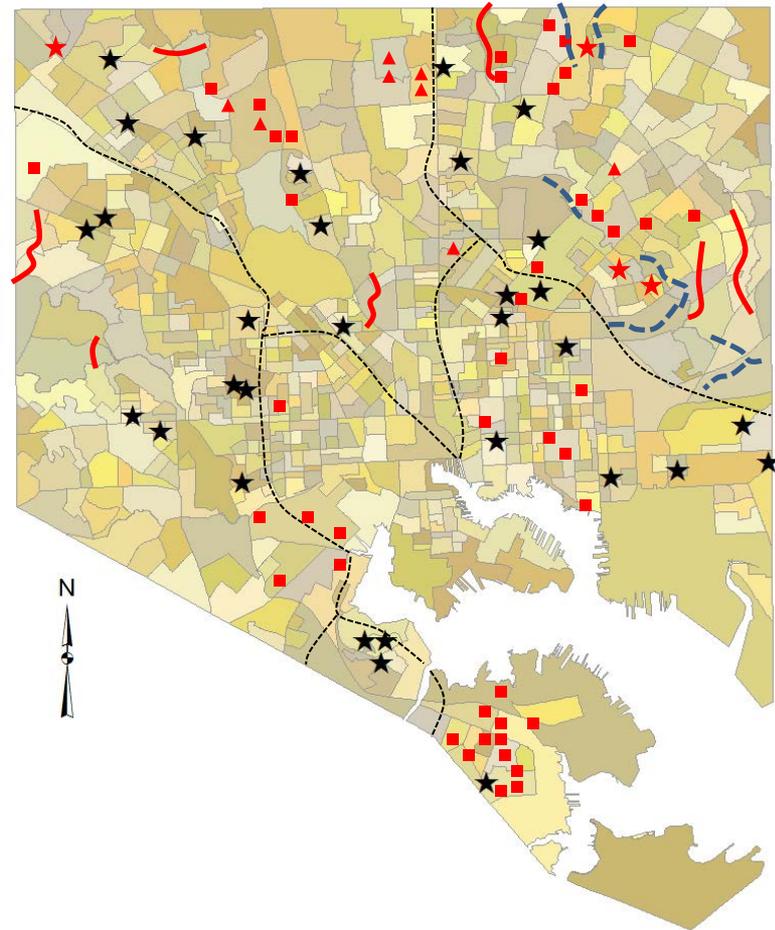
	(Projected)	Imp. Area
Restoring stream banks and stabilize failing outfalls		2,840 acres 60%
Installing ponds, bioretention, and structural filtration practices		250 acres
Retrofitting existing stormwater ponds		150 acres
Installing micro-practices and green roofs		55 acres 10%
Creating new green spaces from vacant lots and schools		30 acres
Planting street trees / reforestation		150 acres 3%
Expanded City-wide mechanical street sweeping		440 acres
Preventive cleaning of catch basins and debris collectors		45 acres 10%
Illicit Discharge Detection and Elimination (IDDE) program		250 acres*
Erosion and sediment control enforcement		50 acres* 7%
Public Education		20 acres*
Development Requirements		180 acres
Voluntary practices & SWM Fee Credit Practices		215 acres 8%
	TOTAL	4,675 acres



Green Infrastructure

Potential Projects

- ★ Year 1 – 5 Schools
- ★ Other Schools
- BMPs / ESD Projects: Public
- ▲ BMPs / ESD: Private
- ~ Stream Restoration: CIP
- ~ Stream Restoration: SWAPs
- - - Watershed Boundaries



Pillar 3: Plan to Maintain

Aesthetic

How the stormwater facility looks

Landscaping / Pruning

Trash / Litter Removal



Functional

How the stormwater facility functions

Tree Health

Sediment Removal

Structural Integrity

Filter Media Performance

Who is Responsible for Maintenance?

Partner	Type of Property		
	City property / ROW	Private Property	Adopt-a-lot / CMOS
City (DPW / Developing Agency)	Aesthetic Functional	Inspection	Inspection
Community	Aesthetic	NA	Aesthetic Functional
Private Property Owner	NA	Aesthetic Functional	NA

Current Challenges

- Multiple agencies maintain their own BMPs
- Varied funding sources and quality maintenance (in-house / contractors)
- NGO and community role and abilities
- Materials / labor / equipment

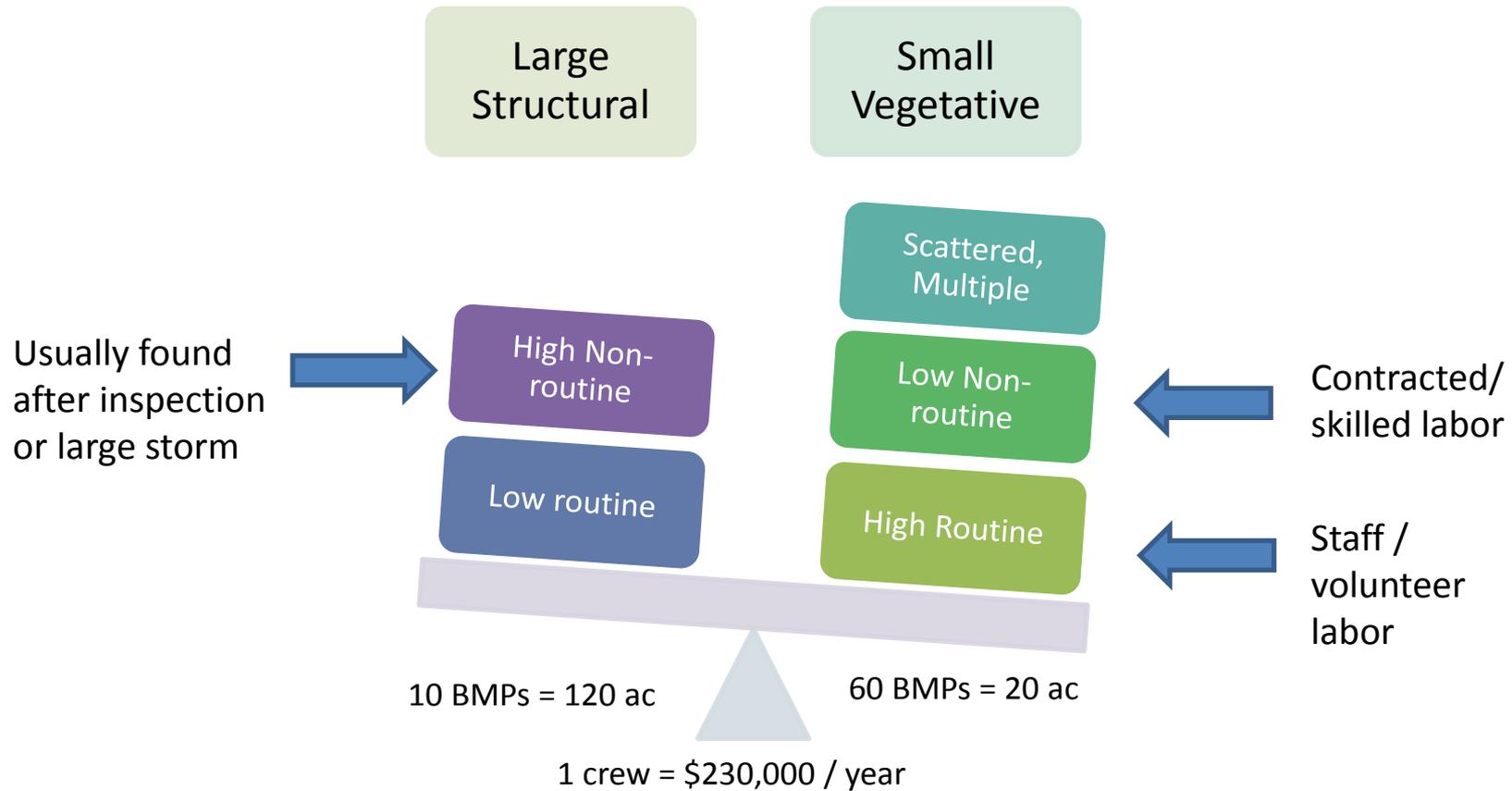


DPW Stormwater Maintenance

Frequency	Aesthetic	Functional
Weekly	<ul style="list-style-type: none"> Litter & debris removal Mowing 	<ul style="list-style-type: none"> Plant watering
Monthly	<ul style="list-style-type: none"> Plant growth Mulch movement 	<ul style="list-style-type: none"> Plant harvest Sediment removal
Annually	<ul style="list-style-type: none"> Plant replacement or modification Education signs 	<ul style="list-style-type: none"> Mulch replacement Upper soil replacement
Non-routine		<ul style="list-style-type: none"> Support soil & stone replacement Underdrain replacement Curb / wall replacement



DPW Stormwater Maintenance Costs



Pillar 5: Public Participation



1. Stormwater Banking
2. NPDES Industrial Permit Holders
3. Green Pattern Book
4. Trash and Litter Programs
5. Public Education
 - Increasing water conservation;
 - Residential and community swm
 - Proper erosion and sediment control
 - Disposal of household hazardous waste
 - Improving lawn care and landscape mgmt
 - Residential car care and washing; and
 - Proper pet waste management.

Understand

Care

Act

Current Trash and Litter Reduction Programs

Storm Drain Inlet Screens

- ▲ Phase 1: McElderry Park / Carrollton Ridge
- Phase 2: Adjoining neighborhoods

Municipal Trash Container Pilot

Belair-Edison / Four by Four, Mondawmin area
(Mondawmin, Panway-Braddish, Liberty Square, Burleigh-Leighton, Parkview-Woodbrook)

Mechanical Alley Sweeping

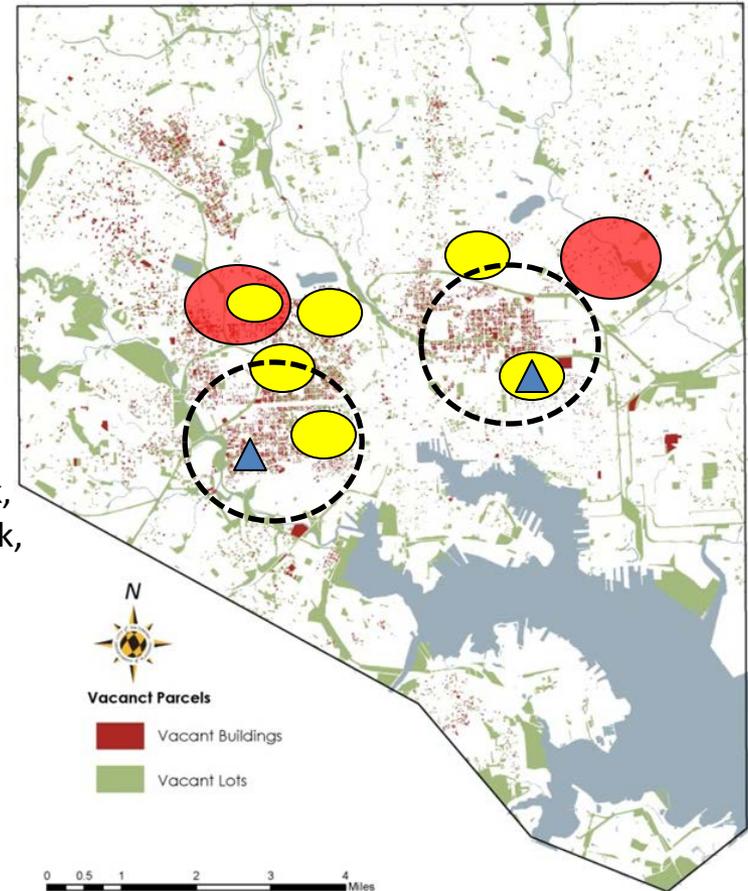
Belair-Edison, CHM, Panway-Braddish, Reservoir Hill, Washington Village/Pigtown, McElderry Park/Elwood Park, Sandtown-Winchester, Mondawmin/Parkview/Woodbrook, Hollins Market

First 4 months of expanded street sweeping (April – July):

- 1,195 tons of trash collected

This equates to the following reductions in pollutant loads:

- 4,182.5 lbs of nitrogen (2.09 tons)
- 1,673.0 lbs of phosphorus (0.83 tons)
- 501,900.0 lbs sediment (250.95 tons)



Other Trash and Litter Reduction Programs

Street and Harbor Cleaning

- Proactive Inlet cleaning
- Neighborhood Corner Can Pilot
- Care-A-Lot (vacant lot maintenance)

Structural BMPs

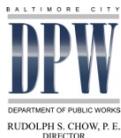
- Trash Interceptors
- Water Wheel

Trash Clean-up Events and Programs

- Mayor's Spring / Fall Clean-ups
- Community Pitch-in
- Stormwater Participation Events
- Adopt-a-Stream (BWB)

Public Education and Outreach

- Clean Water Baltimore website
- Community liaisons
 - school presentations
- Clean Water Communities (BWB / WP)
- Storm Drain Art (BWB)
- Zero Litter
- Baltimore Trash Talk

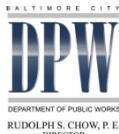


Trash and Litter Reduction: Initial Recommendations

- Create a public outreach and education campaign
- Create a “one-stop shop” for resources and information on the DPW’s web site.
- Explore new opportunities for supporting community and NGO clean-up efforts
- Increase and improve enforcement
- Reduce source pollution through legislation



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Current Public Education Programs

DPW flyers / website

- Make Your Home a Solution to Pollution
- Fats, Oils & Grease
- Water Saving Tips and Tricks
- Stormwater Management guidance documents

DPW outreach

- Clean Up, Baltimore
 - PSAs / mascots
 - school presentations
- Festivals / events

Partner Programs

- BWB: Water Audit Program / rain barrel workshops / other workshops



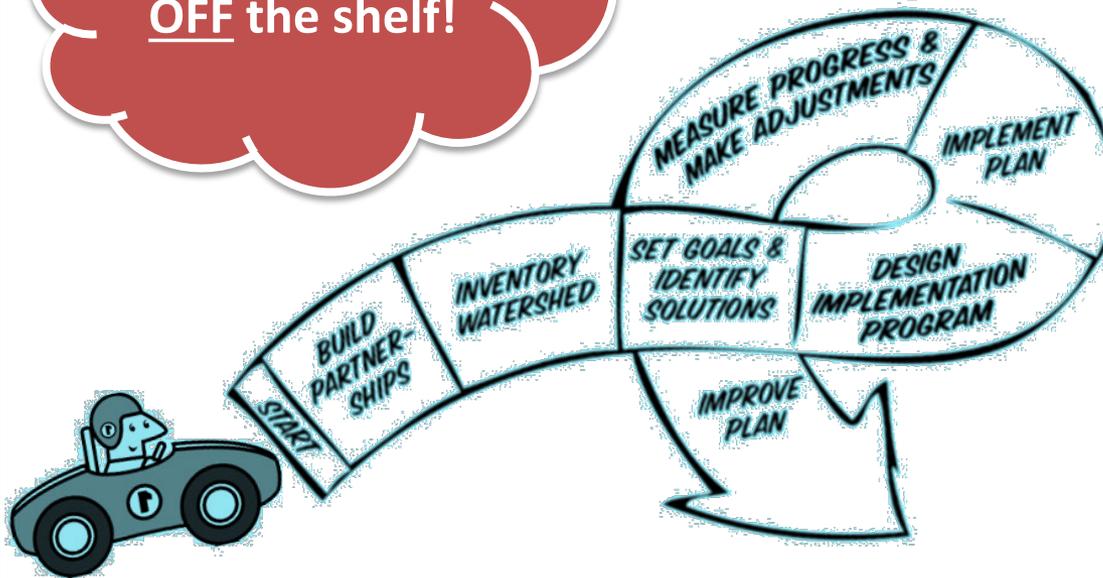
Public Education: Initial Recommendations

- Create a “one-stop shop” for resources and information on the cleanwaterbaltimore web site.
- Develop a set of informational sheets, presentations, and workshops.
- Better utilize social media and public outreach events.
- Strengthen partnerships.
- Create a public education campaign to reduce pet waste.



Pillar 6: Adaptive Management

Keep the plan
OFF the shelf!



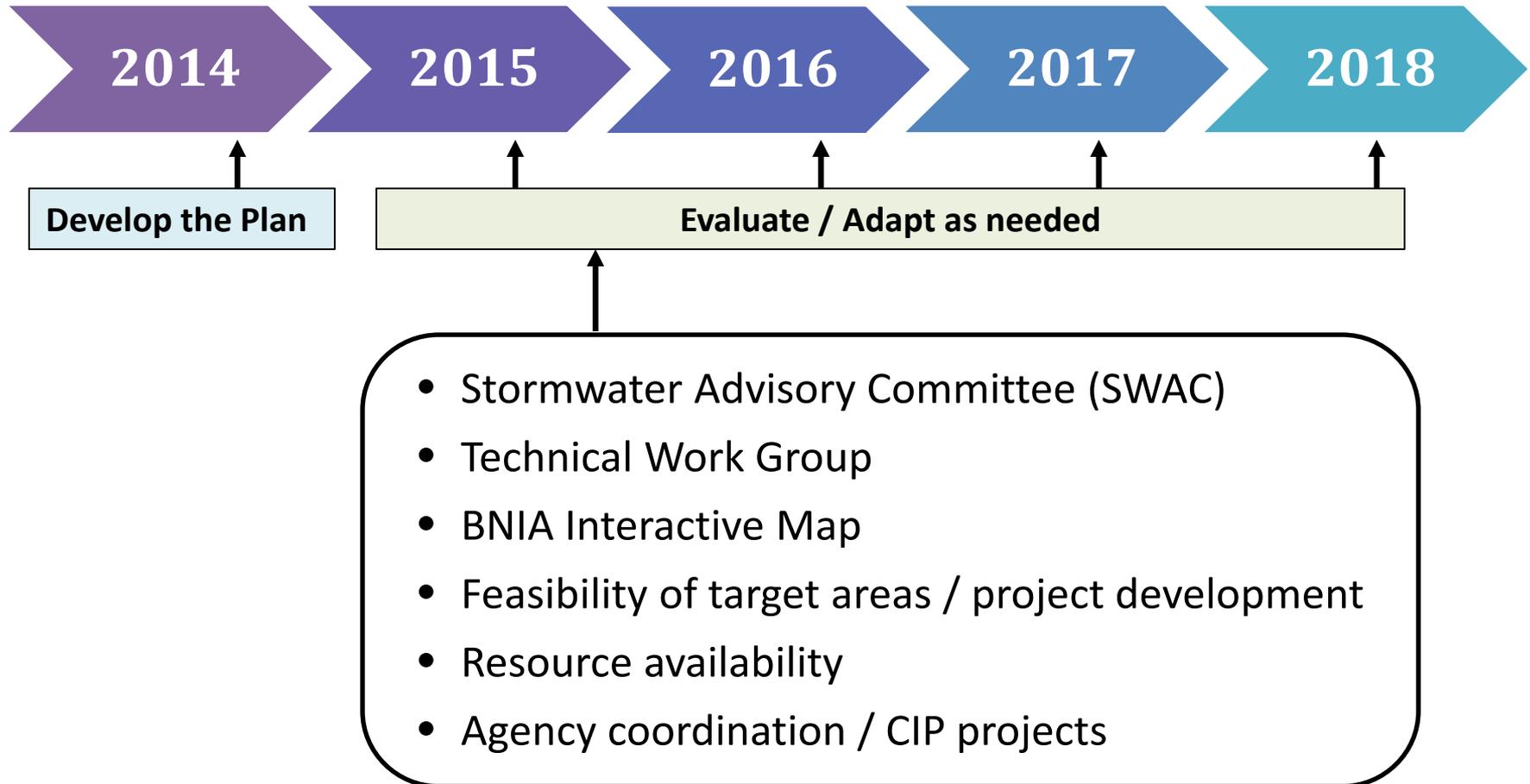
Reference: "A Quick Guide to Developing Watershed Plans to Restore and Protect Our Waters", USEPA

Justification
Criteria

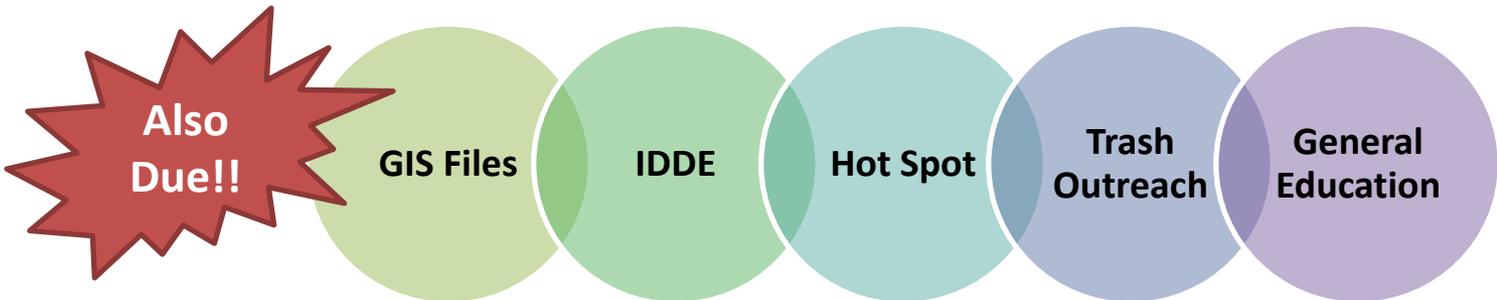
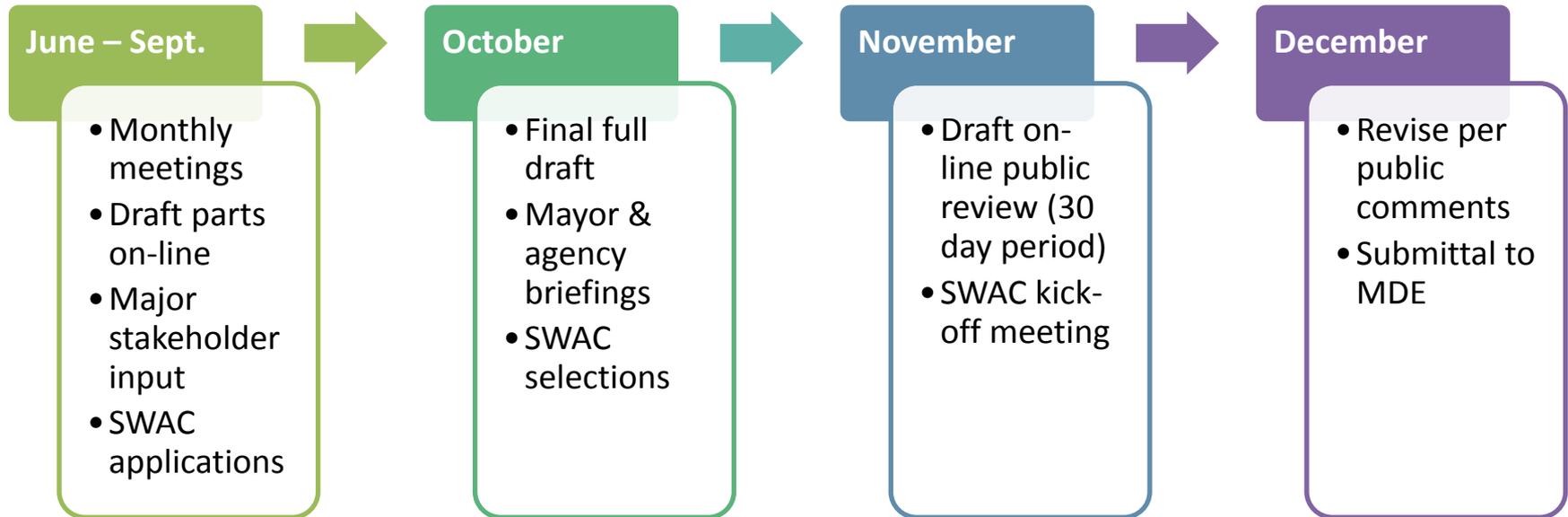
New Options
& Innovation

Legislation &
Regulations

Adaptive Management

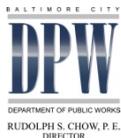


Next Steps



Restoration Plan Outline

- Background
 - City Description
 - Summary of TMDLs
 - Watershed Assessments
 - Previous restoration
 - Other regulatory factors
 - Other environmental initiatives
 - Development of plan methodology
- Description of projects and programs
 - Summary
 - Proposed projects
 - Proposed programs
 - Education elements
 - Maintenance
- Milestones
 - Tracking mechanisms
 - Program milestone
 - Project milestones
- Adaptive Management
 - Annual report and procedure for changes
 - Evaluation
- Financial Strategy



Want to Stay Involved?

- Website
 - Power point presentations
 - Meeting “minutes”
 - Preliminary maps and plans
- Facebook
- E-mail publicworks@baltimorecity.gov, re: MS4 Plan
- Phone: 410-396-0732



Baltimore City Department of Public Works



Thank You for Your Time.

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