

Talking Trash: Cleaning Up Baltimore's Waters with the Trash TMDL



STEPHANIE
RAWLINGS-BLAKE
MAYOR

BALTIMORE CITY

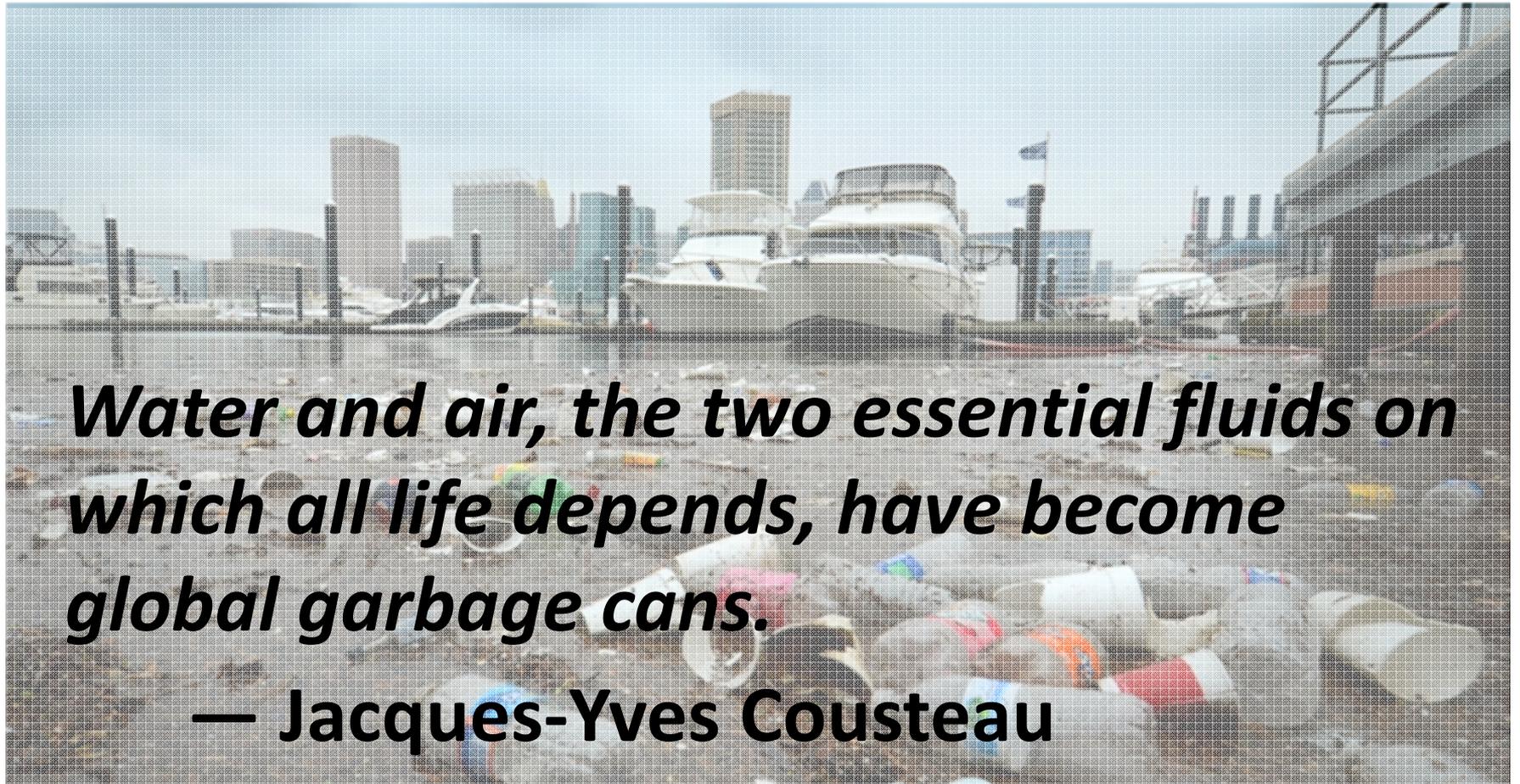
DPW

DEPARTMENT OF PUBLIC WORKS

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Water and air, the two essential fluids on which all life depends, have become global garbage cans.

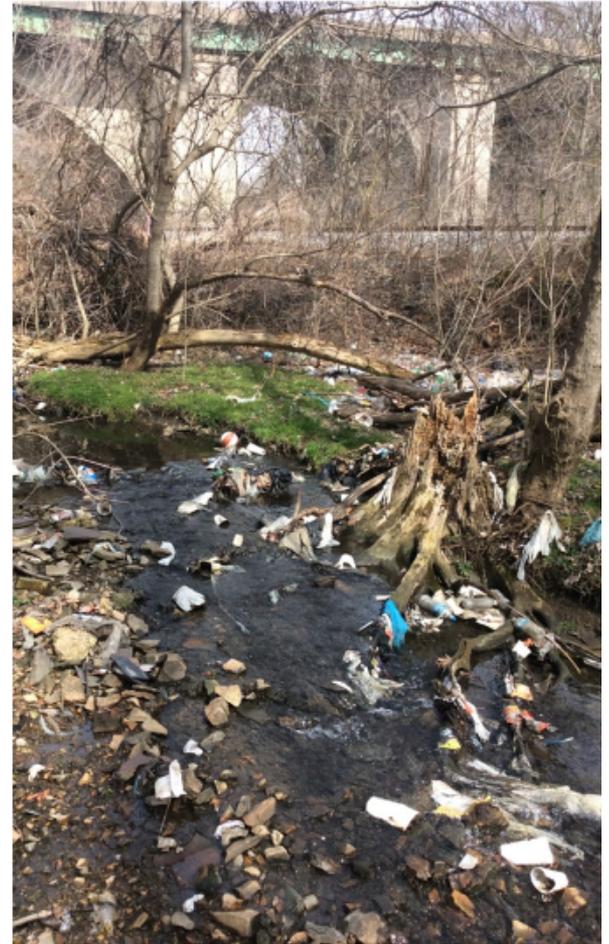
— Jacques-Yves Cousteau

Agenda

- **Baltimore's Trash Problem**
- **Overview of the Trash TMDL**
- **Development of the Implementation Plan**
- **Plan Recommendations**
- **Moving Forward: Opportunities & Challenges**
- **Conclusion / Lessons Learned**



Baltimore's Trash Problem

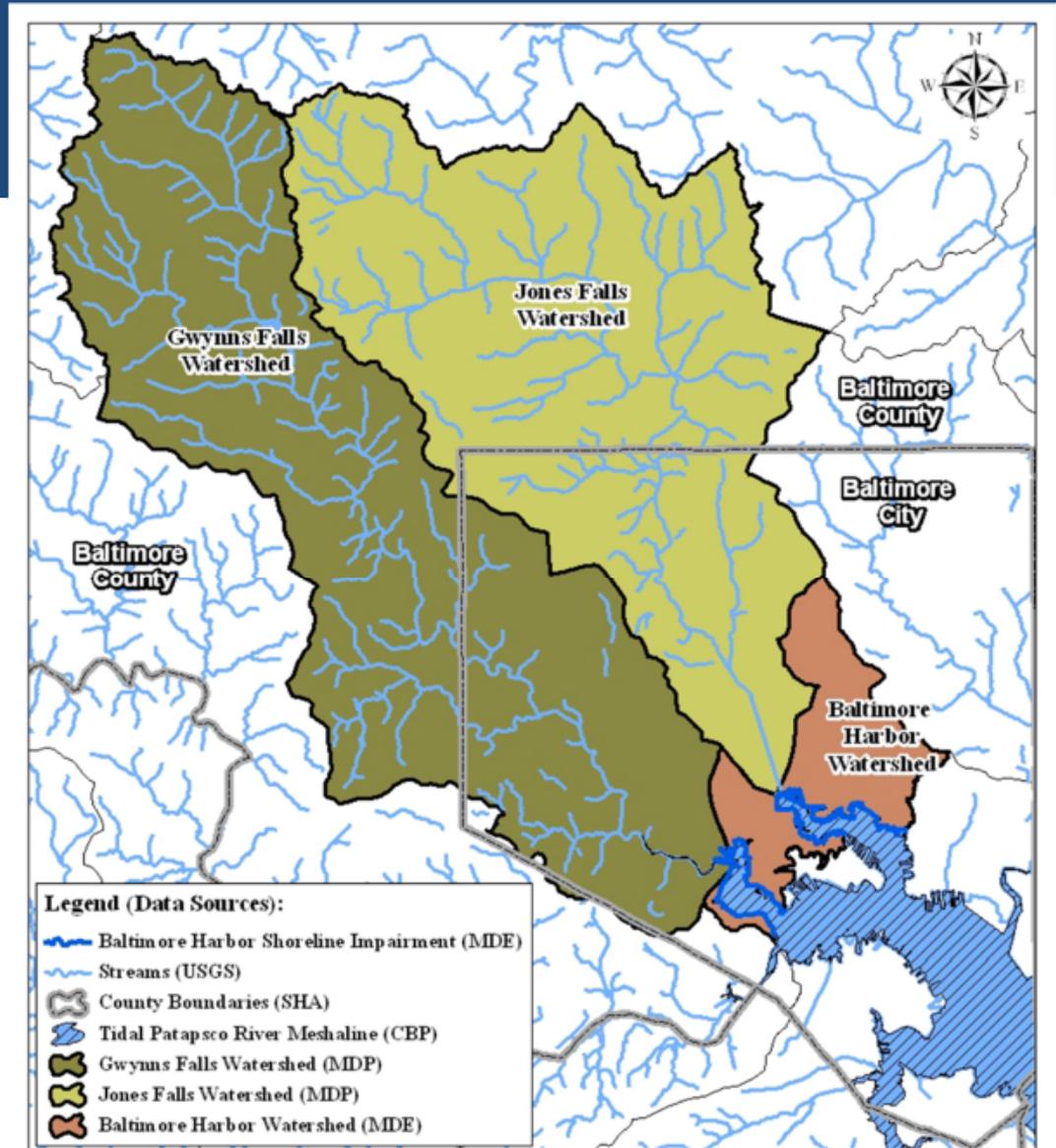


Baltimore City Department of Public Works



Trash TMDL

- Approved by the EPA January 5, 2015.
- The TMDL is for the Middle Branch and Northwest Portions of the Patapsco River
- TMDL for both Baltimore City and Baltimore County



TMDL Reduction

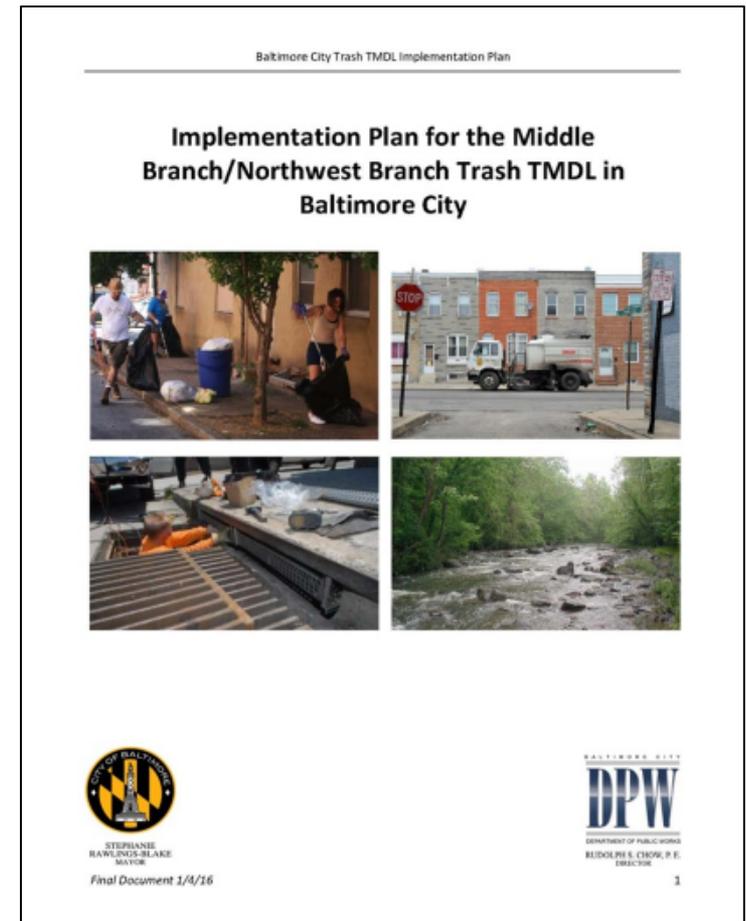
228,370.6

Watershed	Annual WLA (lbs/yr)	Annual TMDL (lb / yr removed)	Annual LA (lbs/yr)
Baltimore Harbor	42,869.4	45,012.9	3,058.2
Gwynns Falls	93,519.3	98,195.3	7,035.4
Jones Falls	81,107.0	85,162.4	13,376.3
Total City	217,495.7	228,370.6	23,469.9

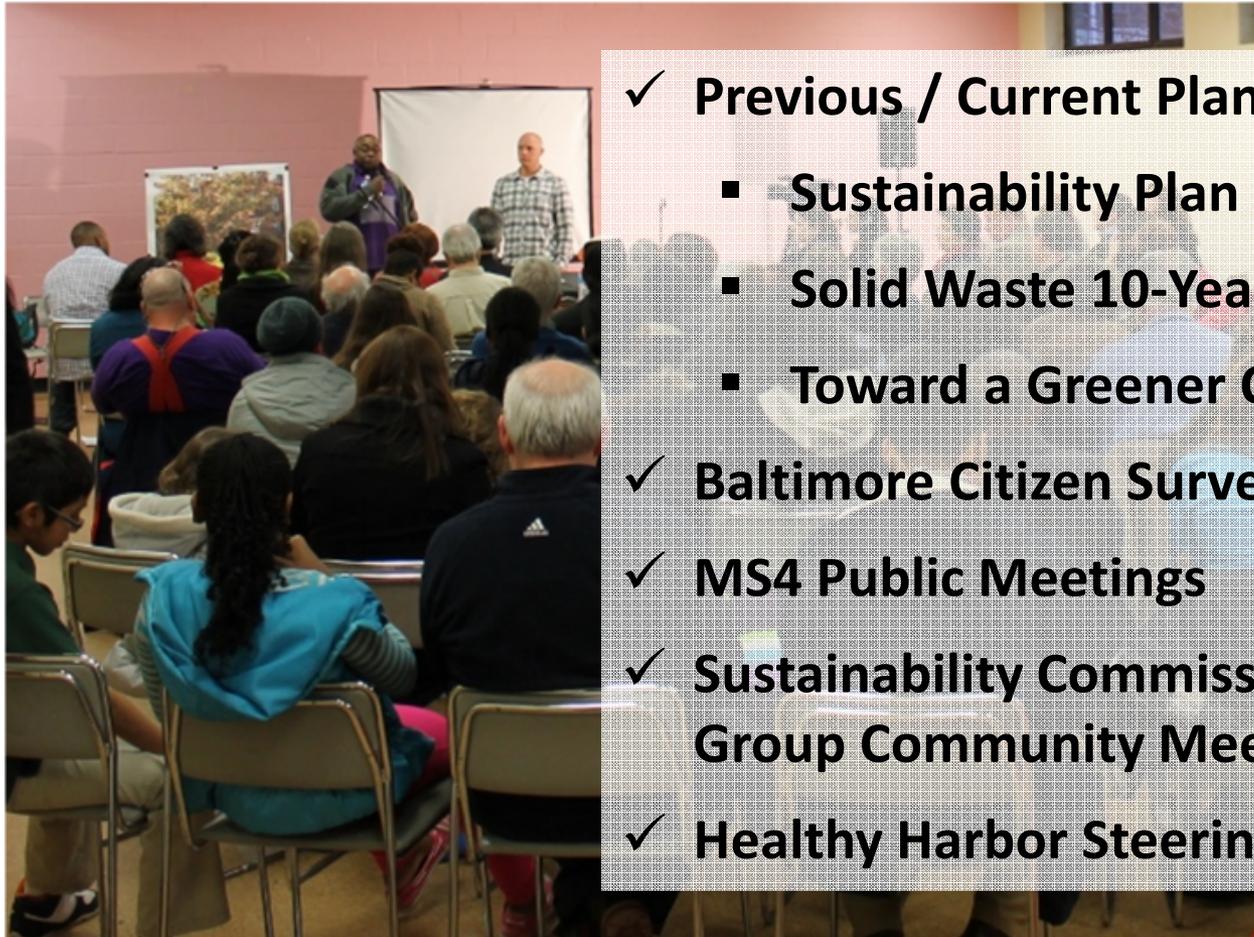


TMDL Implementation Plan

- Background
- **Plans, Reports and Surveys**
- **Current Trash Practices**
- **Gap Analysis**
- **Projects, Programs and Partnerships**
- Tracking and Reporting
- Adaptive management
- Financial Strategy



Plans, Reports and Surveys



- ✓ **Previous / Current Plans and Studies**
 - **Sustainability Plan**
 - **Solid Waste 10-Year Management Plan**
 - **Toward a Greener Cleaner Baltimore**
- ✓ **Baltimore Citizen Surveys (BBMR)**
- ✓ **MS4 Public Meetings**
- ✓ **Sustainability Commission Waste Work Group Community Meetings**
- ✓ **Healthy Harbor Steering Committee**

Current Practices

Current Practice or Project	Included in the Baseline	Enhanced since 2011	Initiated since 2011
Pollution Prevention			
Mixed Refuse and Recycling Collection			
Bulk Trash Collection Services			
Corner Baskets			
Citizen Drop-off Centers			
Street and Alley Cleaning			
DHCD inspectors / Special Investigation Unit			
Municipal Can Program			
Community and Watershed Liaisons			
DPW Websites and Social Media			
Storm Drain Art			
FlashCAM Cameras			
Trash and Illegal Dumping Code Enforcement			



Current Practices

Current Practice or Project	Included in the Baseline	Enhanced since 2011	Initiated since 2011
Collection at Street Level			
Mayor's Spring and Fall Cleanups			
Community Pitch-in Program			
Dead and Stray Animals			
Mechanical Street Sweeping and Alley Sweeping			
Stormwater Credit Program			
Collection within Storm Drain or Waterway			
Inlet Cleaning (CSR)			
DPW Debris Collection Systems			
Harbor Skimmers and Booms			
Project Clean Stream			
Water Wheel Trash Interceptor			
Storm Drain Inlet Screens			
Inlet Cleaning (Preventative)			
Canoe 'n Scoop			



Methodology / Gap Analysis

CURRENT PRACTICES (since 2011)	Methodology	WLA (lbs)	Source
Expanded City-wide Mechanical Street Sweeping	(Lbs. street sweeping debris current year – Lbs. street sweeping debris 2011) x 57.7% (TMDL area/Total City area) x 8.9% (percentage of trash in the debris collected)	424,484	Baltimore Co. Trash TMDL 2015
Styrofoam Collection	Collection at the NW Citizen Drop-off Center (weight pounds)	8,841	Baltimore City DPW 2015
DPW School Presentations	Baseline x 2%	4,567	Trash Load Reduction Methods SF Bay Area MS4 Technical Report 2012
DPW Events / Community Presentations	Baseline x 2%	4,567	Trash Load Reduction Methods SF Bay Area MS4 Technical Report 2012
Community Clean-ups (MD Stormwater Participation Events)	Trash collected for events in TMDL area x 20% (accounts for some trash being debris or bottles with liquids)	6,200	DC Trash TMDL WIP 2015
Canoe 'n Scoop (Harbor Clean-ups)	Trash collected for events in TMDL area x 20% (accounts for some trash being debris or bottles with liquids)	750	DC Trash TMDL WIP 2015
TOTAL Existing		449,409	
Trash TMDL WLA Reduction Goal		238,371	
Remaining WLA		(211,038)	



Stakeholder Meetings

**Presentations to DPW Stormwater Advisory Committee
Meeting with Local Environmental Groups
Healthy Harbor Steering Committee**



Implementation Plan

Projects

Programs

Partnerships

Collection as a Stop Gap

- Phase I (FY16 - 20): Begin installing projects, expand programs; operate and collect data to validate loading rates
- Phase II (FY21 – 25): Evaluate projects and programs, modify as needed
- Phase III: (FY26 - 35) Initiate decrease / phase out service

Prevention as a Sustainable Method

- Phase I (FY16 - 20): Initiate pilots, create and launch campaign
- Phase II (FY19 - 25): Evaluate programs; expand/ modify as needed
- Phase III (FY26 - 35): Modify and repeat

Projects

Modified inlets

- Storm drain screens and inserts

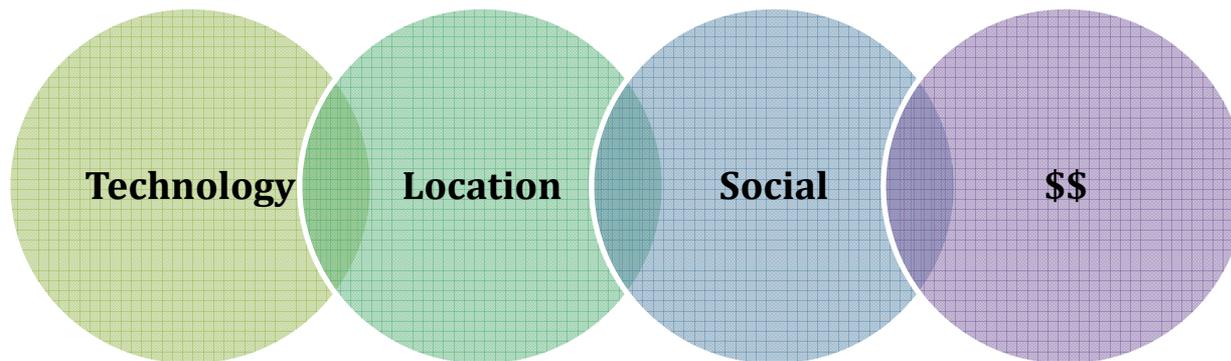
Debris collectors

- Small in-line
- Large in-line
- End-of-pipe



Trash TMDL Project Selection

- Wt. trash captured (20)
- Costs (18)
- Stream hot spot (12)
- Routine flooding (10)
- Dirty streets CSRs (8)
- Vacant properties (8)
- Dependency (6)
- Vandalism potential (6)
- Education / outreach (4)
- Stream restoration (4)
- Debris visibility (2)
- Alternative funding (2)



Programs

Expanded City-wide Mechanical Street Sweeping

Preventative Inlet Cleaning

Routine Waterways Cleaning

Municipal Cans

Styrofoam Recycling



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Pollution Prevention (Partnerships)



Anti-Litter Campaign

Digital and Social Media

School Education Programs

Events/Community Presentations

Volunteer Events

Enforcement



Moving Forward: DPW Projects/Programs

Storm Drain Inlet Screen and Inserts: April 2016

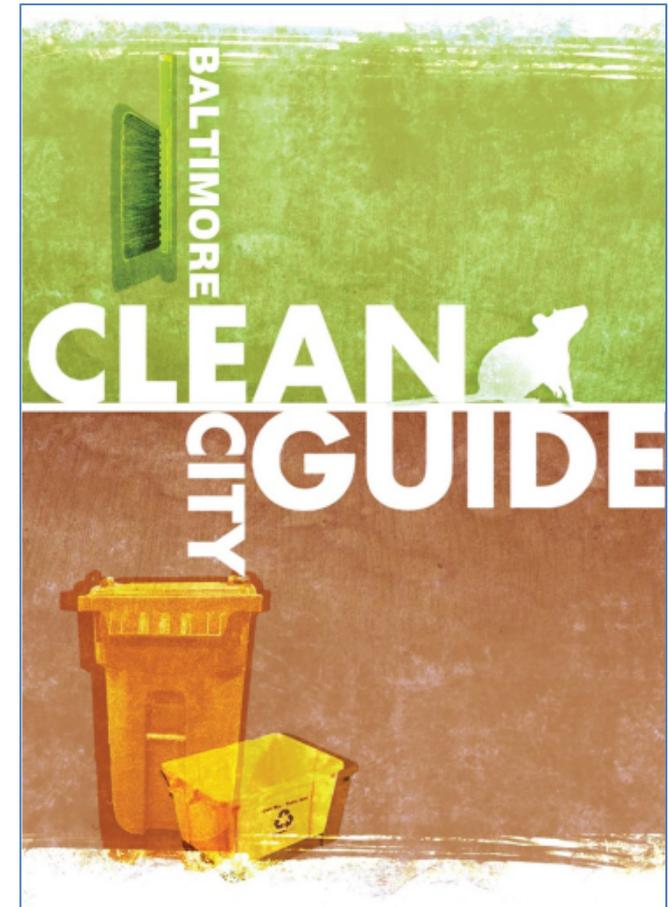
Preventative Inlet Cleaning: beginning June 2016

Municipal Can Program: early 2016

Street Sweeping initial study: April – June 2016



Moving Forward: Partnerships



Clean Corps Baltimore
Clean City Guide



Baltimore City Department of Public Works



Moving Forward: Challenges



Monitoring



Legislation / Enforcement

Maryland's Beverage Container Recycling Goals:
Currently, less than 25% of Maryland's bottles and cans are being recycled.

By 2027 80%
By 2030 90%

To reach these associated goals, the plan proposes a series of measures that will result in all cities seeing major reductions in litter.



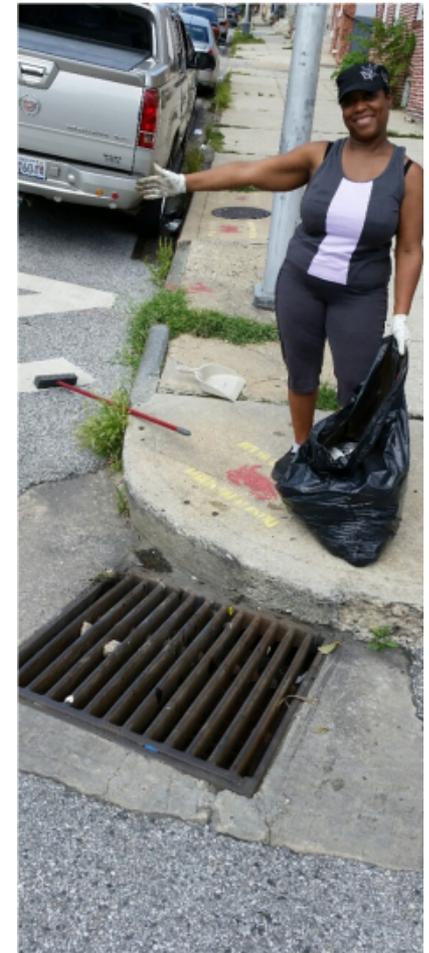
Behavior Change



**Trashball.
A neat game.
A neat city.**

Lessons Learned

- **Trash is the gateway drug to water quality – *use this to your advantage***
- **Avoid the silver bullet approach**
- **Communicate early and often**
- **Understand regulatory mandates v. public perception**
- **Trash WLAs are not an exact science (but data can be improved)**
- **Foster partnerships to address political changes**
- **Be in it for the long haul**



Questions?



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Baltimore City Department of Public Works

