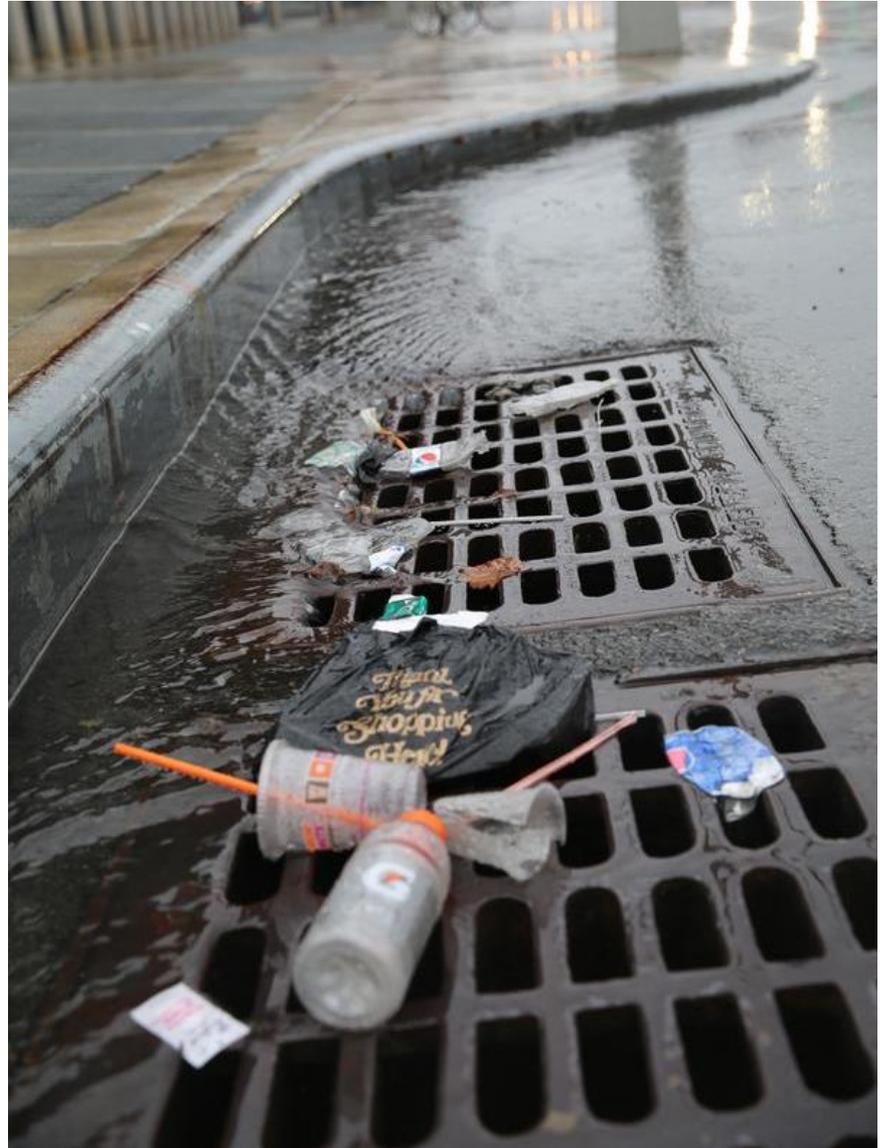




Trash Free NYC Waters Working Group

September 27th, 2016

- Introductions
- About Marine Debris
- Recent History of Marine Debris in NYC
 - Studies
 - Controls
- Trash Free NYC Waters Campaign
 - B.Y.O.
 - The Bag Challenge
- Next Phase of Trash Free NYC Waters Campaign
- Next Steps



What is the problem?

Trash is ending up in our waterways. Sometime this water-borne trash is referred to as **floatables**, other times as **marine debris**.



What is the problem?

This water-borne trash can have a wide range of **negative impacts**.

Fish and wildlife are harmed when they mistakenly eat trash or become tangled in it.

Trash can also carry pathogens and toxins. This means **human health** is at risk when people swim near trash or eat seafood that has been exposed to these toxins.

Because water-borne trash can be dangerous to human health, beaches and shorelines are sometimes forced to close. This affects both the **quality of life** and the **economy** for nearby communities.



What is the Goal?

New York State water quality standards call for **no trash** in waterways in any amount.

This is a big ask for a city of nearly 8.5 million people with 520 miles of coast line. Many local waterways struggle to meet this standard.



Birdseye View of Coney Island

DEP has been working on this problem for a long time. A robust 2 part study in the 80s and 90s analyzed **sources, transport mechanisms** and **control strategies**.

Citywide Floatables Study I

1989-1993

(impacts, characteristics, sources, transport)

- Primary source of floatable trash is street litter reaching waterways through the sewer system

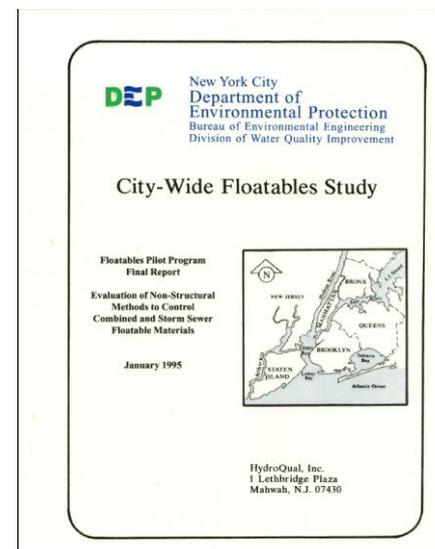


Citywide Floatables Study II

1993-1995

(evaluation of controls)

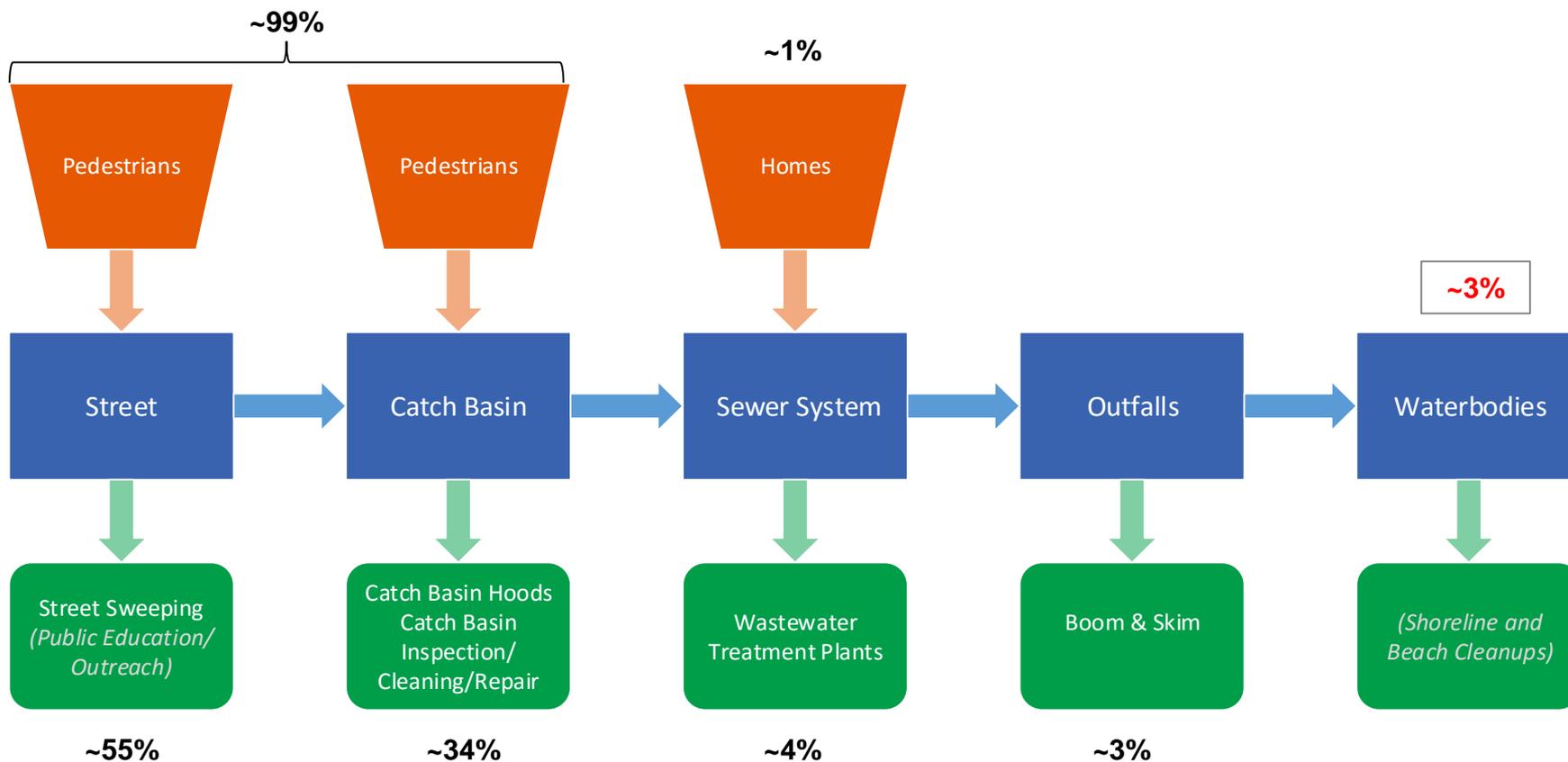
- Street sweeping, catch basin grates and hoods, and end of pipe containment are effective strategies for reducing the amount of street litter reaching waterways. Public education has low impact.



Current Controls

Based on these studies, DEP has implemented the **2005 Modified Citywide Floatables Plan**. This plan prevents an estimated **97%** of street litter in combined sewer areas from reaching the harbor.

Sources



Controls

Street Sweeping

Currently, DSNY sweeps more than **6,000** miles of roadway each day. Based on previous studies, street sweeping is estimated to reduce street litter reaching waterways by approximately **55%**.

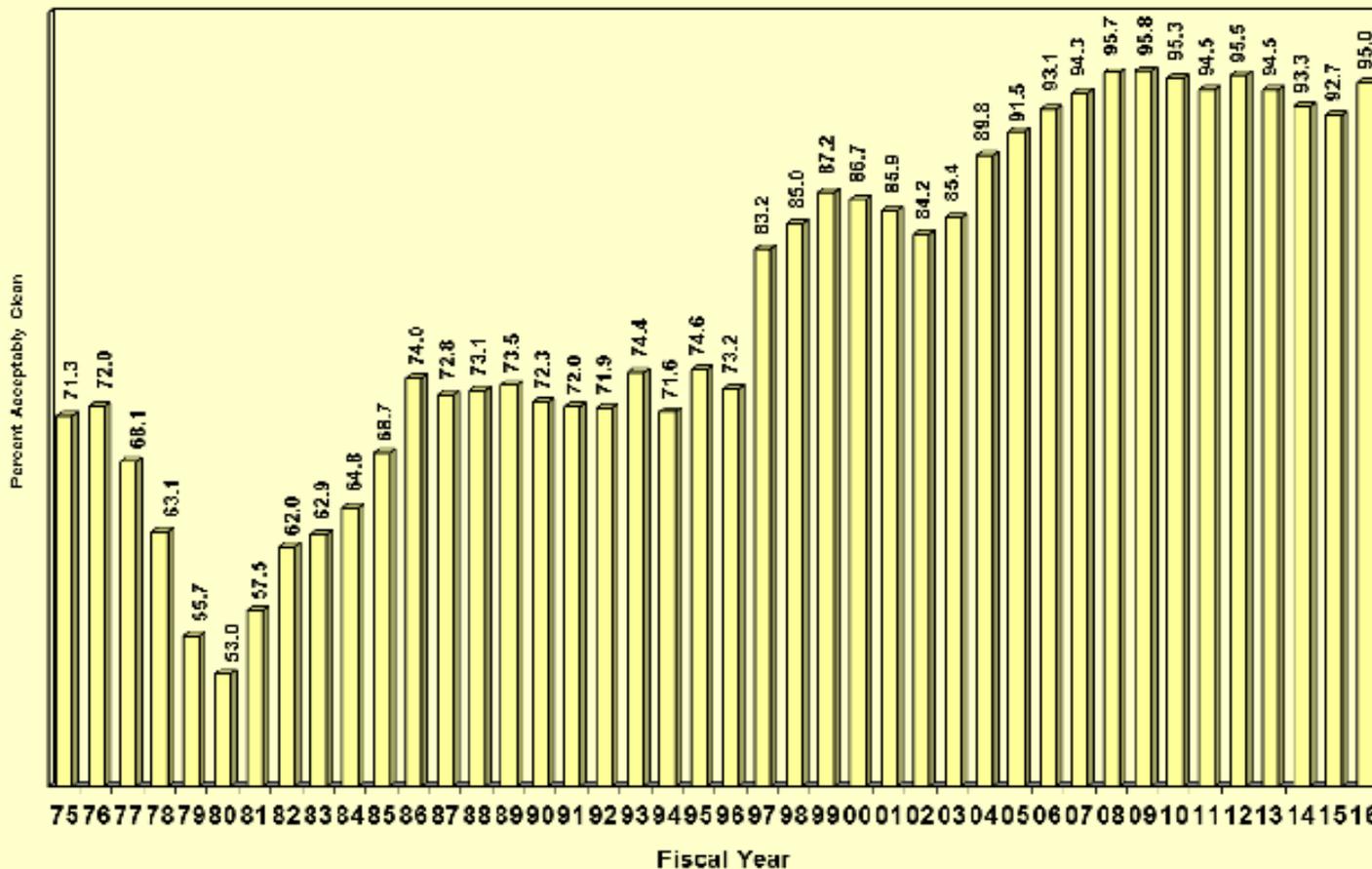
The Scorecard Street Cleanliness Ratings also show that the **95.0%** of the streets in New York City were acceptably clean in fiscal year 2016. Cleaner streets mean less litter reaches local waterbodies.



A Department of Sanitation (DSNY) mechanical broom

Department of Sanitation

Scorecard Street Cleanliness Ratings Percent of Acceptably Clean Streets Fiscal 1975 - 2016



Streets in NYC are generally cleaner than they were in the '70s, 80's and 90's

Catch Basins

Catch basins serve to collect rainwater and direct it to the sewer system. Their design also helps prevent litter from entering the sewer system.

Grates limit passage of larger items into the catch basin and earlier studies estimate that hoods retain between **65-80%** of the floatable items passing through the grate.

Milestones in catch basin hooding program:

- **1996**- At beginning of program, slightly more than **50%** of DEP catch basins requiring hoods had hoods.
- **1999**- Approximately **85%** of DEP catch basins requiring hoods had hoods. DEP identified catch basins requiring extensive repairs before hood installation.
- **2010**- **All** identified repairs and hood installations had been completed.

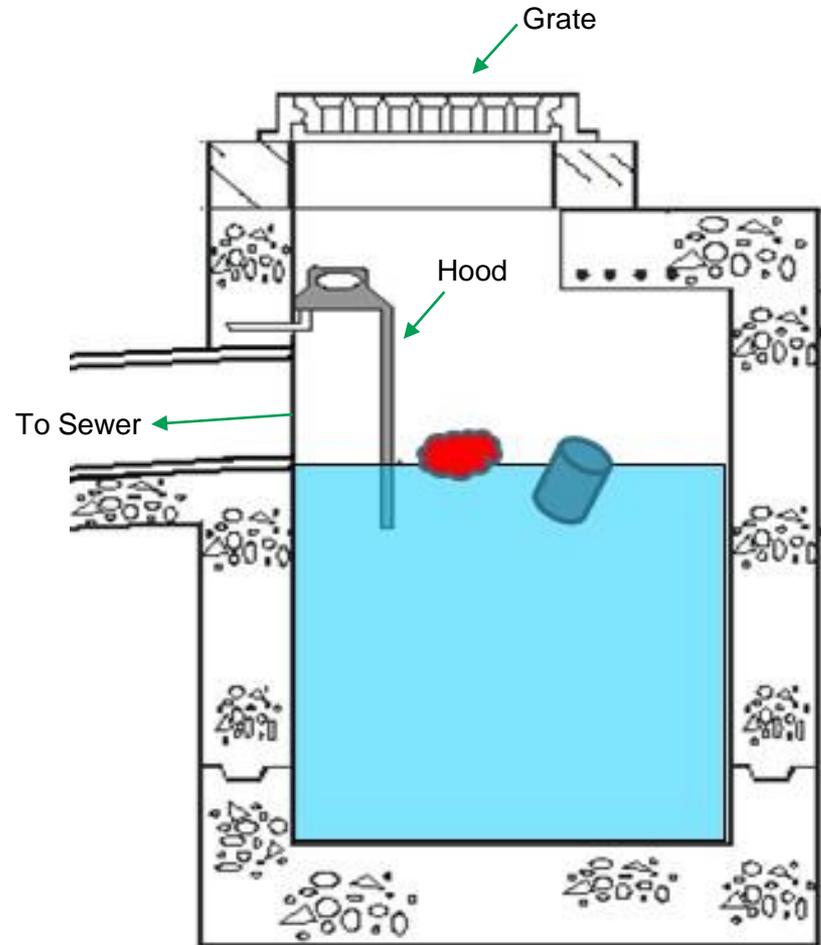


Diagram of a hooded catch basin



A DEP employee cleans a catch basin

Catch Basins

Standard practice at DEP is to inspect catch basins a minimum of once every 36 months. Consistent with Local Law No. 48 of 2015, DEP is now inspecting catch basins annually for the next three years. Catch basins are also inspected in response to 311 complaints. In 2015 DEP completed **39,793** programmatic catch basin inspections.

If warranted based on inspection, the catch basin will be cleaned. In 2015, DEP cleaned **30,042** catch basins.

Missing hoods found during inspection must be replaced within 90 days. In 2015, the average time to replace a hood was **10.6 days**.

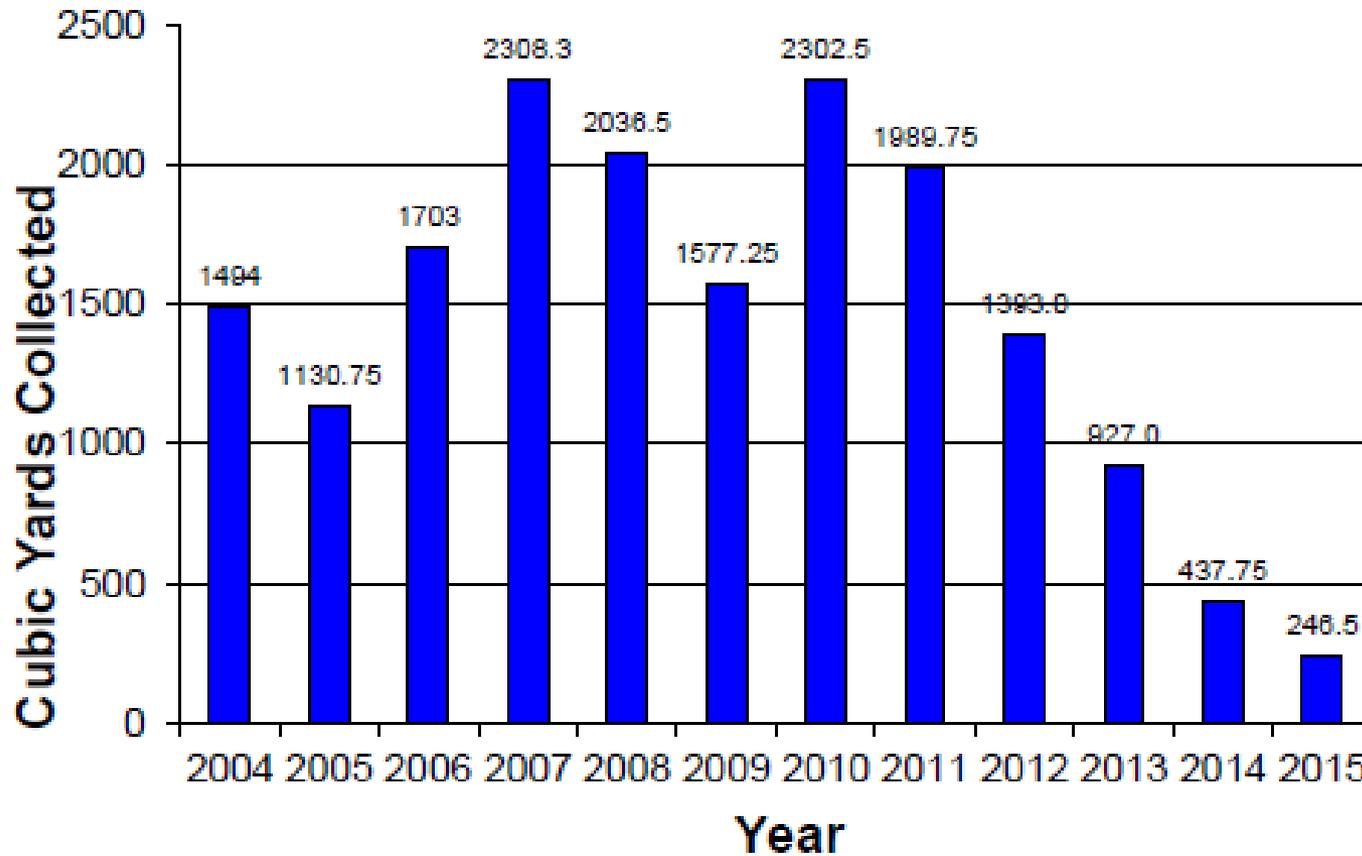
End-of-Pipe Controls

Based on earlier studies, containment booms are estimated to retain up to **75%** of floatable litter. DEP maintains 22 permanent floatable containment facilities and 1 temporary for a total of 23, corresponding to stormwater and combined sewer drainage areas totaling approximately **60,000 acres**. Following significant rain events, crews are dispatched to inspect and, if needed, remove collected trash and debris.



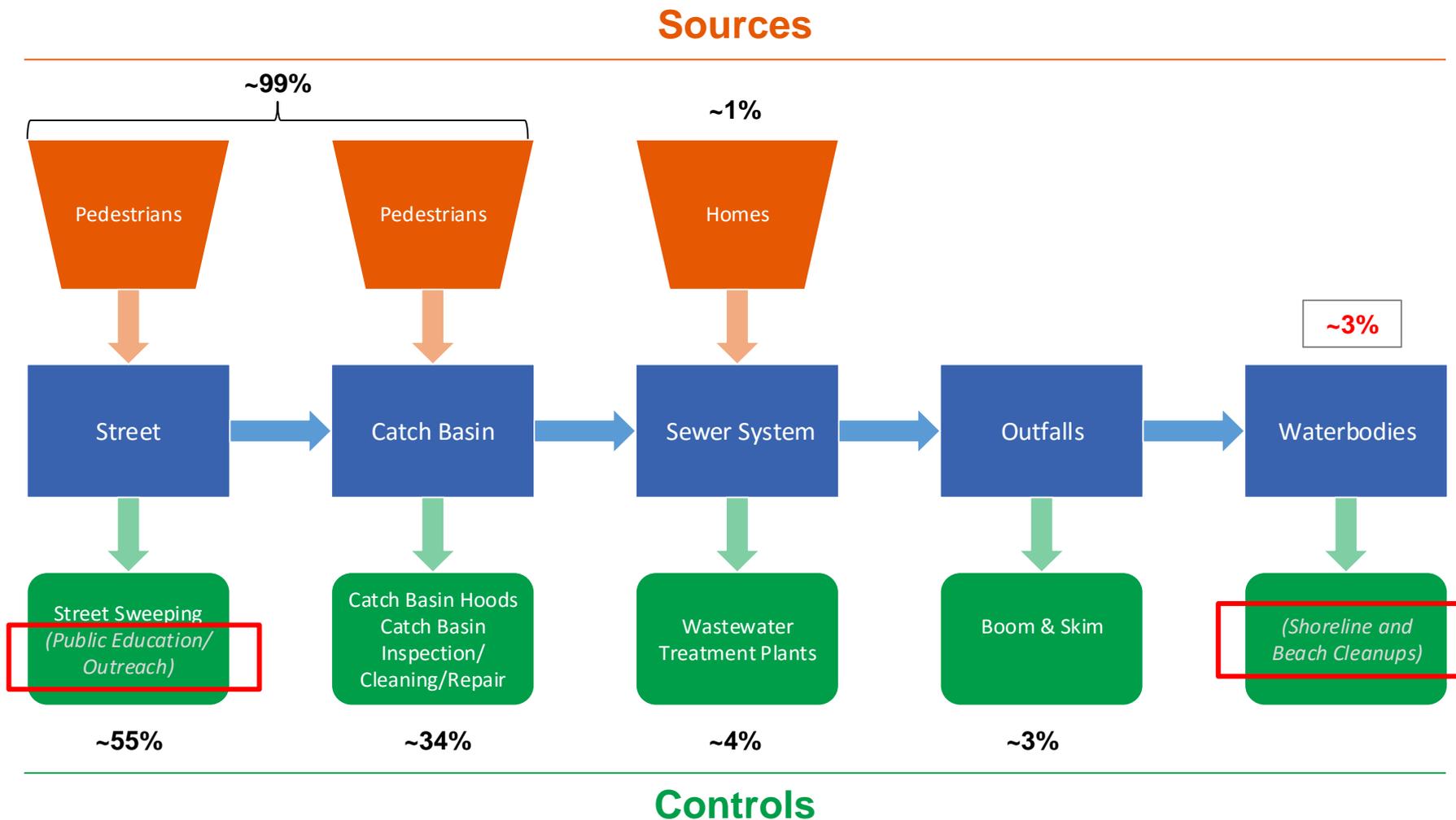
A boom captures floatable trash and debris

DEP Boom and Skim Program: Total Floatables Collected 2004 - 2015



Trash and debris reaching end-of-pipe controls has decreased from peak in 2007

Public Education and Outreach



Public Education and Outreach

New York City has multiple programs that seek to increase the environmental literacy of New Yorkers, increase stewardship, and to educate about the behaviors that contribute to stormwater pollution. Several programs are relevant to the reduction of trash and debris.



Municipal Separate Storm Sewer System (MS4) Permit

The MS4 permit seeks to manage urban sources of stormwater runoff to protect and improve water quality. Trash and debris is a pollutant of concern for many NYC waterways. The City is therefore evaluating the existing controls within the MS4 and implementing a media campaign to raise public awareness and change behaviors related to marine debris.

B.Y.O. Campaign

B.Y.O., shorthand for Bring Your Own, is a campaign run by GreenNYC that encourages New Yorkers to move away from single-use items and towards more sustainable choices. This campaign aims to reduce waste before it can become marine debris. DEP has partnered with GreenNYC to support and amplify B.Y.O.



New York/New Jersey Aquatic Trash Prevention Grant Program

\$365,000 in grants funds were made available by the New England Interstate Water Pollution Control Commission (NEIWPCC), in cooperation with the EPA and state partners, for projects that aligned with the goals of EPA's Trash Free Waters program, for watersheds in both New York and New Jersey.



The Bag Challenge

The Bag Challenge is designed to target upstream prevention by encouraging behavior changes in both retailers and consumers. This program will challenge participating supermarkets and grocery stores to reduce their distribution of single-use bags by 5% over the course of one year.

The Bag Challenge aims to educate the supermarket industry and the communities they serve on how their land-based operations and decisions directly impact surrounding waterbodies by utilizing a combination of:

- Public outreach
- Market-based research
- Creative messaging



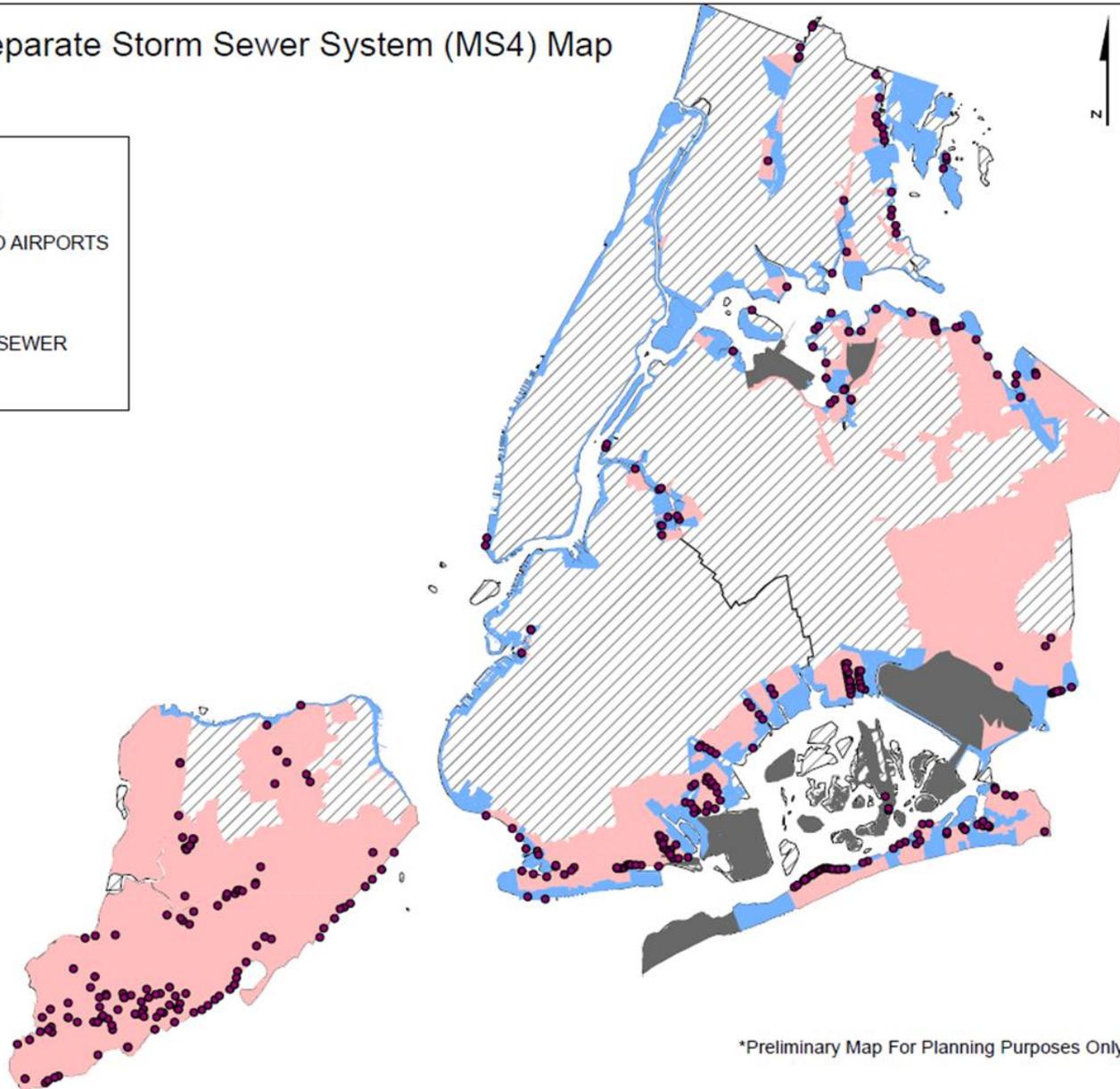
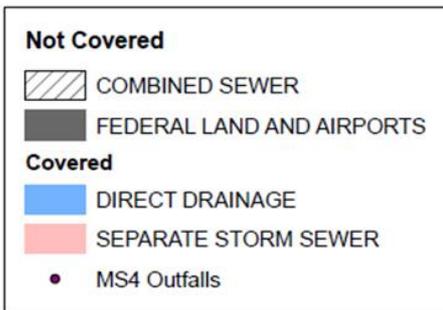
Questions?



Appendix

Draft MS4 Map

Draft Municipal Separate Storm Sewer System (MS4) Map



*Preliminary Map For Planning Purposes Only

Past NYC Studies

Year	Agency	Study
1989-1993	DEP	Citywide Floatables Study I (impacts, characteristics, sources, transport)
1993-1995	DEP	Citywide Floatables Study II (street litter, catch basins, containment/skimming)
1996-1997	DEP	Citywide CSO Floatables Plan
1999-2007	DEP	Technology Review and Testing (Vortex, catch basin modifications, nets/booms)
2005	DEP	Floatable Litter Reduction via Institutional, Regulatory, Public Education Programs
2005	DEP	Modified Citywide Floatables Plan
2006-	DEP	Floatables Monitoring/Reporting Program

Impaired Waterbodies

New York City Impaired Waterbodies

Legend

Shoreline

Pathogens

River/Stream

Floatables

Floatables, Pathogens

Estuary

Floatables

Nitrogen

Pathogens

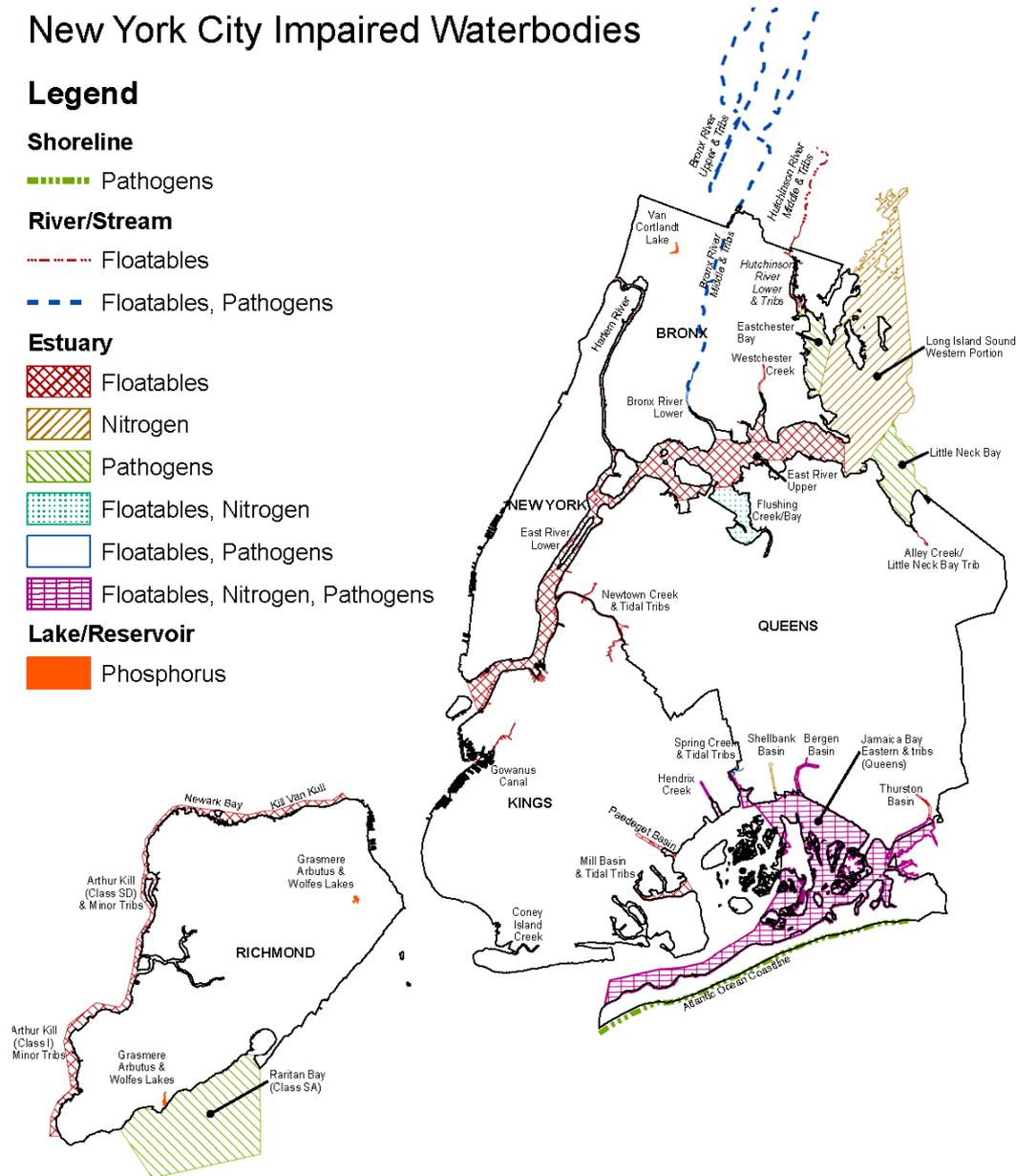
Floatables, Nitrogen

Floatables, Pathogens

Floatables, Nitrogen, Pathogens

Lake/Reservoir

Phosphorus



Location of End of Pipe Controls

