

IMPLEMENTING A TRASH TMDL FOR THE ANACOSTIA RIVER, WASHINGTON, DC

2019 STAC WORKSHOP ON MICROPLASTICS IN THE CHESAPEAKE BAY AND ITS WATERSHED

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OF ENERGY &
ENVIRONMENT

★ ★ ★ WE ARE
WASHINGTON
DC GOVERNMENT OF THE
DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

EXAMPLES OF WHAT WE DEAL WITH IN THE DISTRICT



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WHAT IS A TMDL?

**Point Sources
(aka end of
pipe)**

+

**Non- Point
Sources
(overland
sheetflow)**

+

**Margin of
Safety**



TMDL

OK, SO HOW DO YOU CALCULATE A TMDL FOR TRASH?

- ❖ You start with the Water Quality Standard (WQS) – How much trash can there be in the Anacostia River before you see a negative response? WQSs are usually numeric.
- ❖ Big Problem – The WQS for trash for the Anacostia is NARRATIVE leaving it open to interpretation.
- ❖ Big question – How much trash is too much? Should it be zero. Is zero realistic? What about perpetual violation of the WQS?

OK, SO HOW DO YOU CALCULATE A TMDL FOR TRASH?

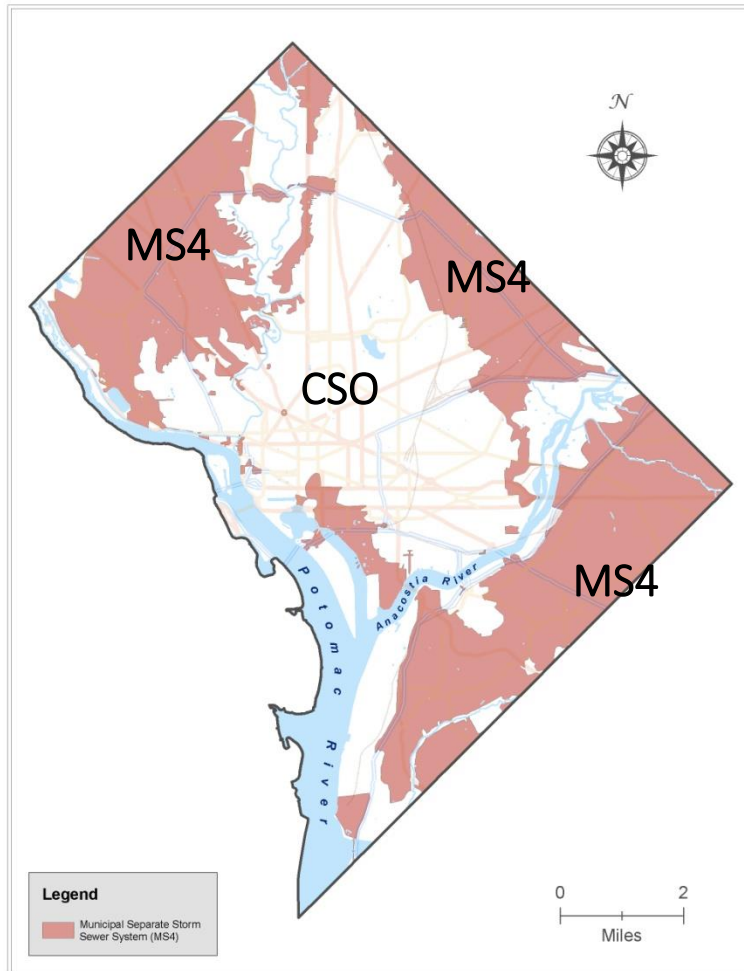
- ❖ This followed LA River Trash TMDL example.
- ❖ It was decided that the jurisdictions needed to determine the “baseline load” from point and non-point sources.
- ❖ Baseline load = typical annual amount being deposited in the Anacostia River from all sources.

OK, SO HOW DO YOU CALCULATE A TMDL FOR TRASH?

- ❖ This gives us a “negative TMDL,” or TMDL which needs to be captured or taken out of a waterbody.

- ❖ Two years of monitoring were undertaken to determine this:
 1. Stream counts and debris
 2. Monitoring of loads from stormwater and combined sewer systems with combinations of varying land use types.
 3. Trash loads from one CSS outfall was monitored in the lower Anacostia River.

OK, SO HOW DO YOU CALCULATE A TMDL FOR TRASH?



- ❖ ~1/3 of the District is served by a Combined Sewer System (CSS) → estimated to produce ~94,000 lbs/yr
- ❖ ~2/3 served by a Municipal Separate Storm Sewer System (MS4) → estimated to produce ~103,000 lbs/yr
- ❖ Total non-point source load (attributed to illegal dumping) → estimated to produce 20,048 lbs/yr

IMPLEMENTING THE TMDL

Two major policy pieces pushing compliance:

- 1) District's 2012 National Pollutant Discharge Elimination System (NPDES) permit for the MS4 (MS4 permit)– Requires the District to have , by 2017, the controls in place to capture or remove 103,188 lbs/yr which is the equivalent of the MS4 point source load.

GOAL MET IN 2015!!!

- 2) DC Water's NPDES permit for the CSS requires establishment and implementation of a Long Term Control Plan (or DC Clean Rivers Project) – DC Water is constructing large underground tunnels to store CSO effluent for eventual piping to the local sewage treatment plant, Blue Plains.

First tunnel scheduled completed during Spring of 2018. Will lead to estimated 80% reduction in combined sewer overflows

TARGETING



- ❖ Being a city the District is very piped.
- ❖ The MS4 area is divided up into sewersheds.
- ❖ From past monitoring efforts we estimated trash loads leaving those sewersheds.
- ❖ We target implementation in sewersheds with above average trash loads.

EXAMPLE BMP – MARVIN GAYE PARK BANDALONG



Designed and built by Stormwater Systems, Inc., Cleveland, GA
Maintained by Anacostia Riverkeeper

EXAMPLE BMP – NASH RUN TRASH WEIR



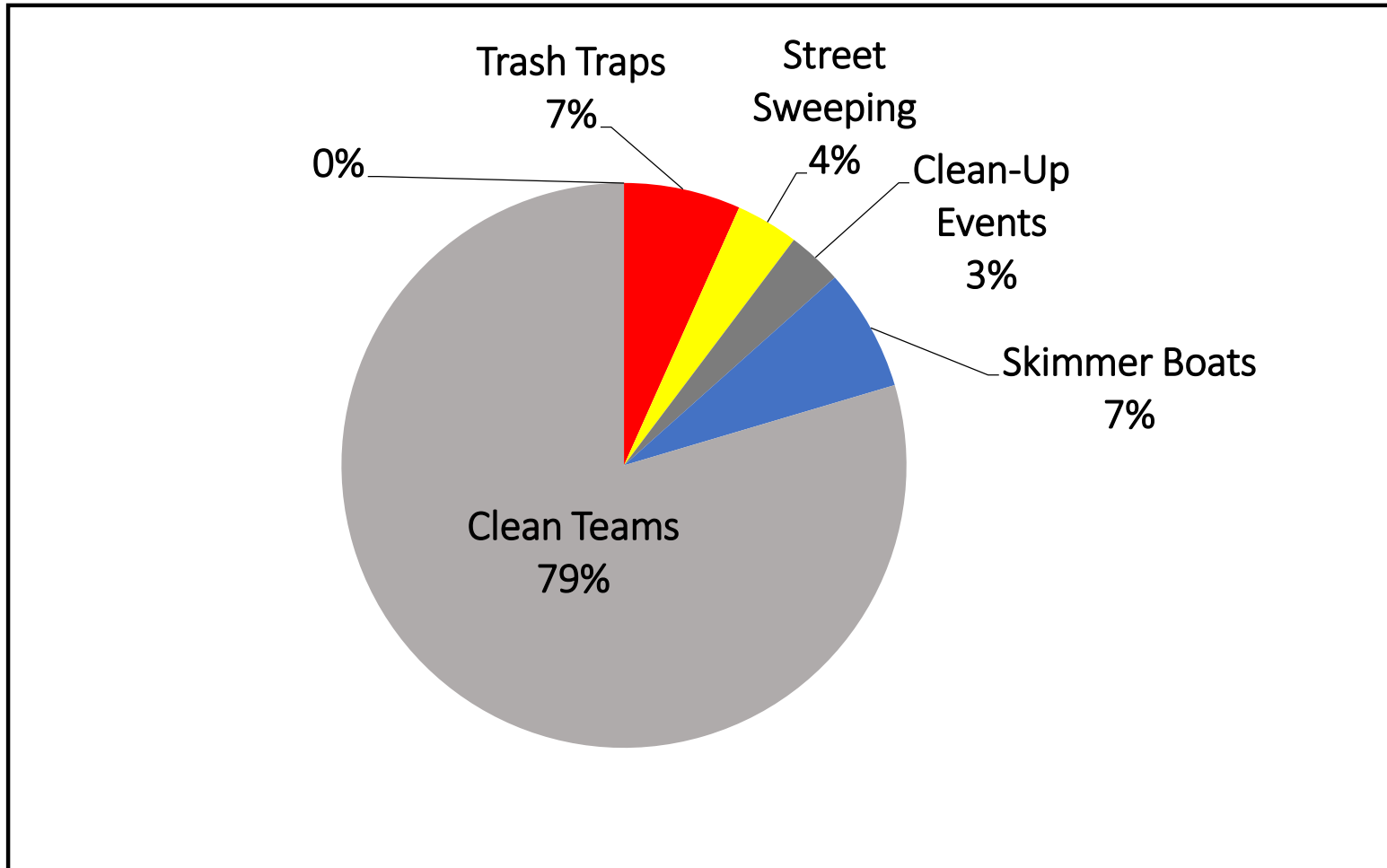
Photo by Anacostia Watersheds Society, 2014

WHAT ABOUT EVERYWHERE ELSE? GOTTA' RELY ON NONSTRUCTURAL CONTROLS

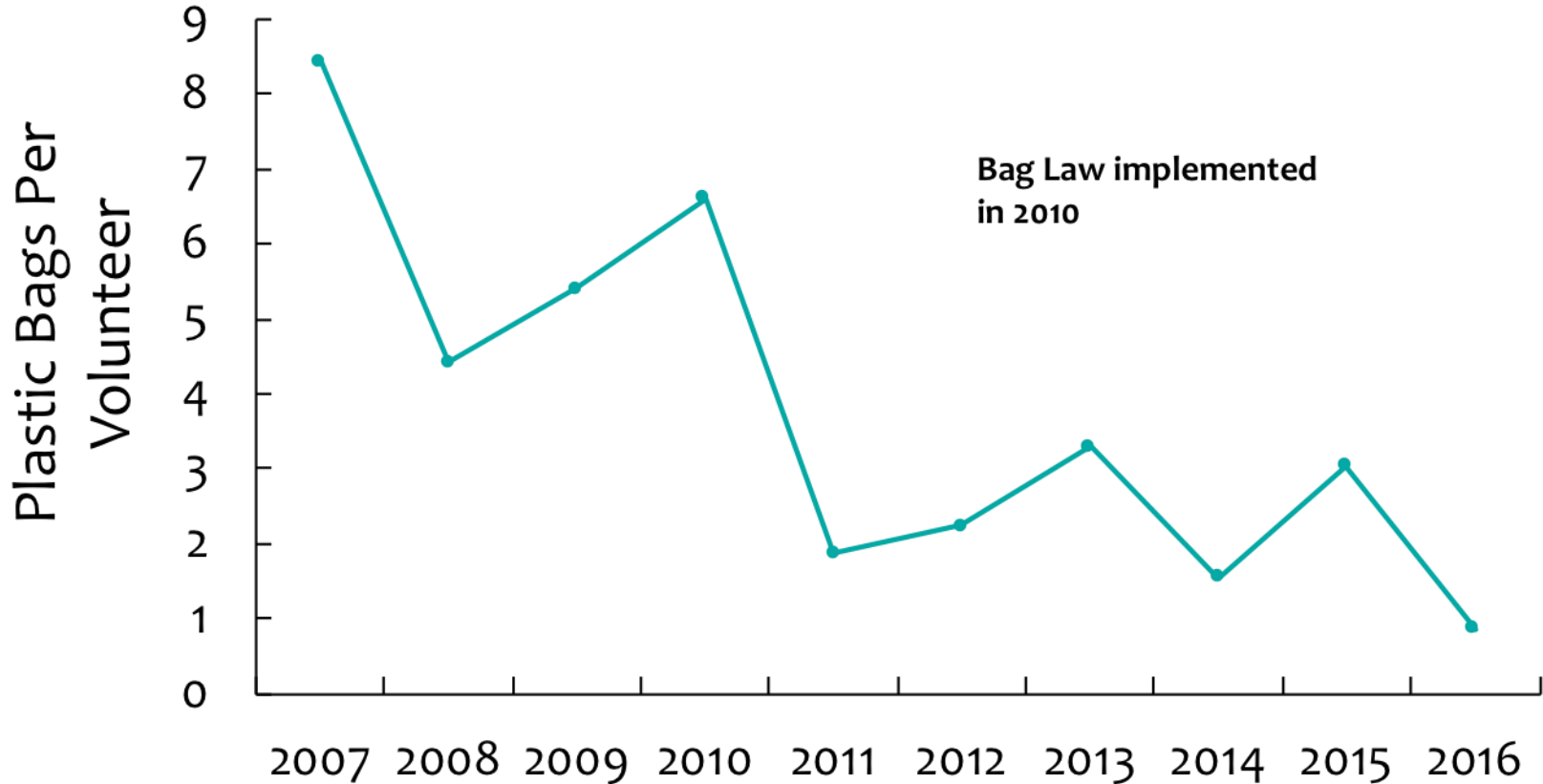
- ❖ DC Clean Team Program – Hire unemployed citizens to maintain streets. This includes trash pickup. 9,000,000 lbs per year removed city-wide.
- ❖ Trash Free Potomac Watershed Anti-Littering Campaign
- ❖ Street Sweeping in Environmental Hotspots
- ❖ DC has a \$0.05 fee on plastic retail bags. (aka the Bag Law)



2017 LOAD REDUCTIONS BY PRACTICE

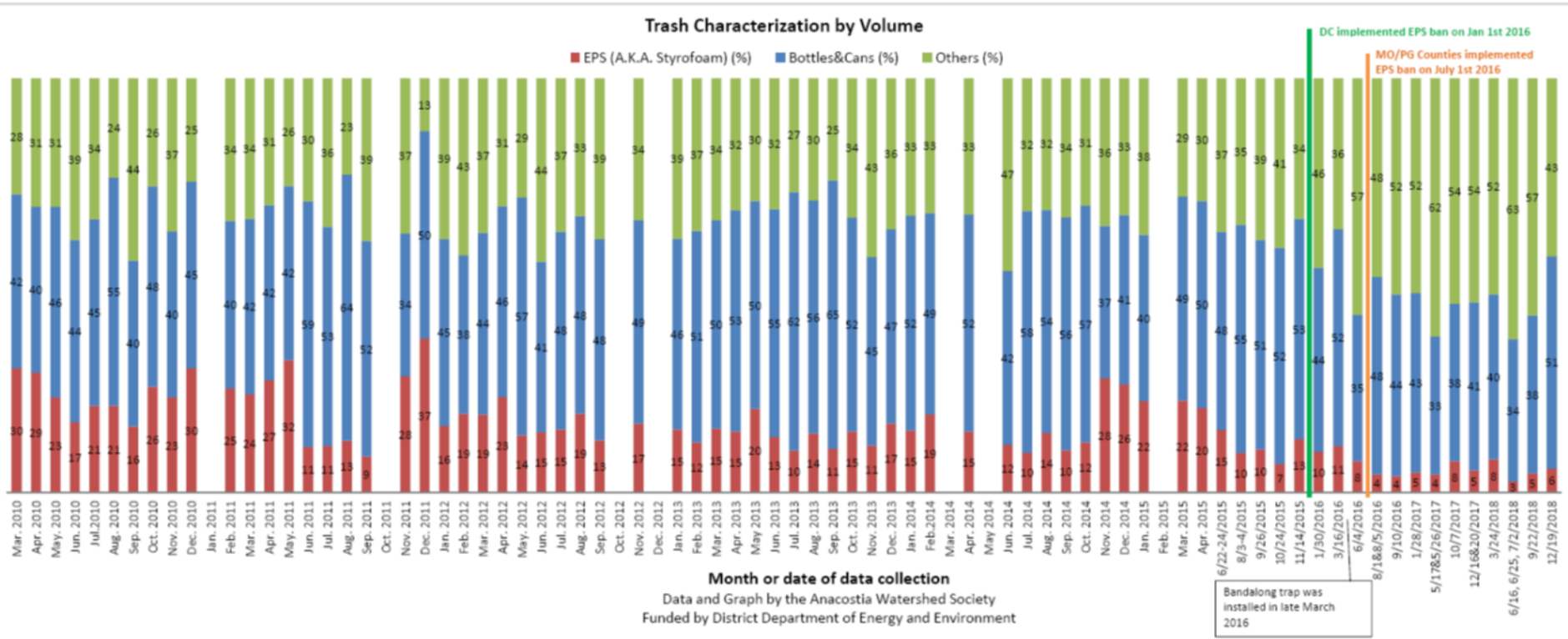


EVIDENCE OF PROGRESS



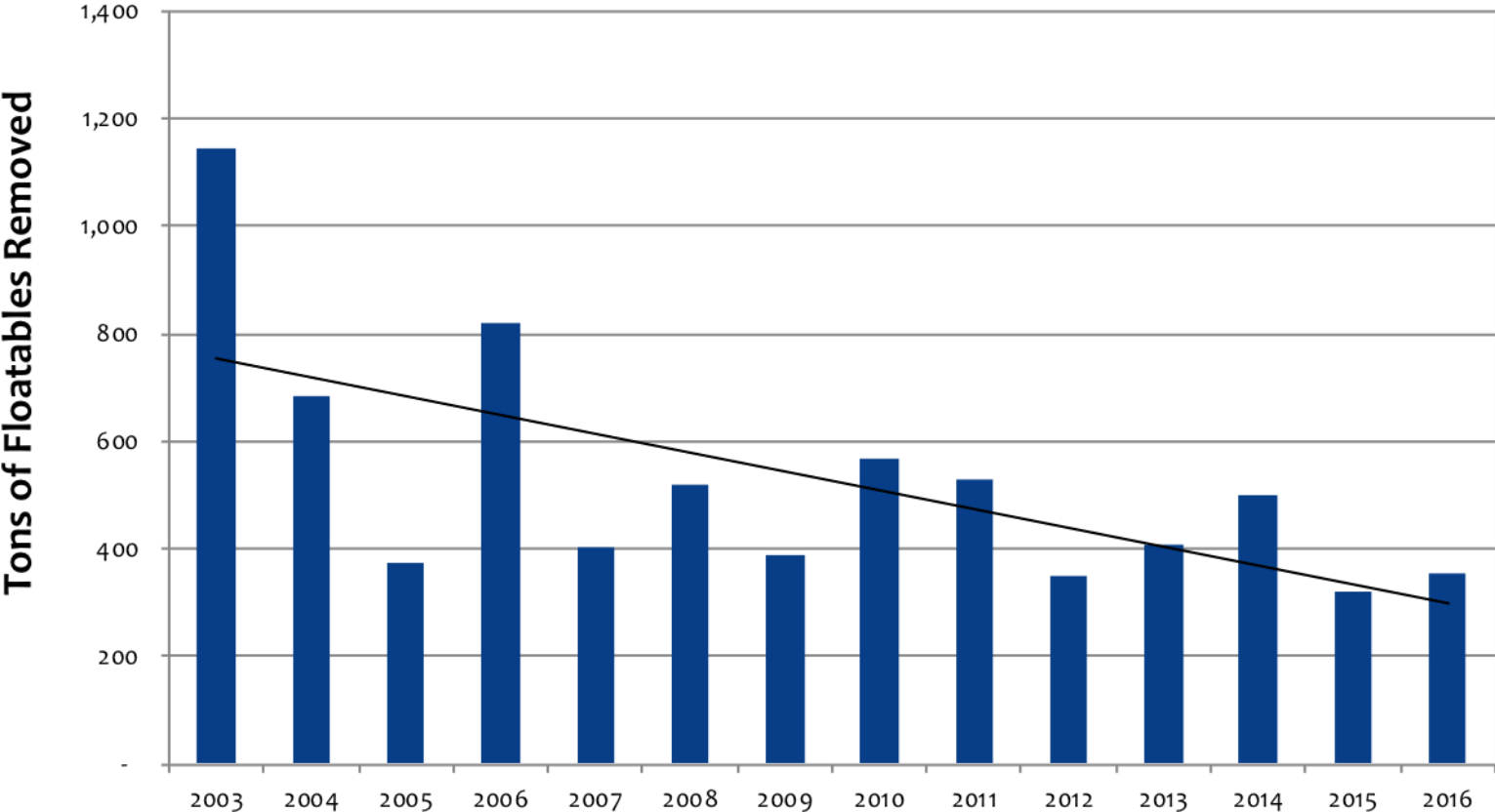
Number of plastic retail bags seen per volunteer at trash cleanups in DC since before and after passage of the Bag Law – Data courtesy of Alice Ferguson Foundation, 2017

EVIDENCE OF PROGRESS



Beginning to see a declining trend in volume of foam captures by the Nash Run Trash Trap (Anacostia Watershed Society, 2019).

EVIDENCE OF PROGRESS



Tons of floatables captured per year in the Anacostia River by DC Water & Sewer Authority Skimmer Boat Fleet

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