Catch Basin Cleaning

STATE OF THE SEWERS 2016

Performance Metrics

Fiscal Year 2016 (July 1, 2015 through June 30, 2016)

NYC Environmental Protection

Bill de Blasio
Mayor

Vincent Sapienza, P.E.
Acting Commissioner

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INTRODUCTION

The New York City Department of Environmental Protection (DEP) protects public health and the environment by supplying clean drinking water, collecting and treating wastewater, and reducing air, noise, and hazardous materials pollution. To achieve this mission, DEP operates and maintains 7,500 miles of sewers that convey an average of 1.3 billion gallons of wastewater per day to 14 in-city wastewater treatment plants.

Over the last decade, DEP has embraced a data-driven, proactive approach to operating and maintaining the sewer system. By using a range of digital tools and innovative practices, DEP develops targeted programs to provide a high level of service to our customers while focusing on investments that will prioritize our resources.

Staten Island Bluebelt

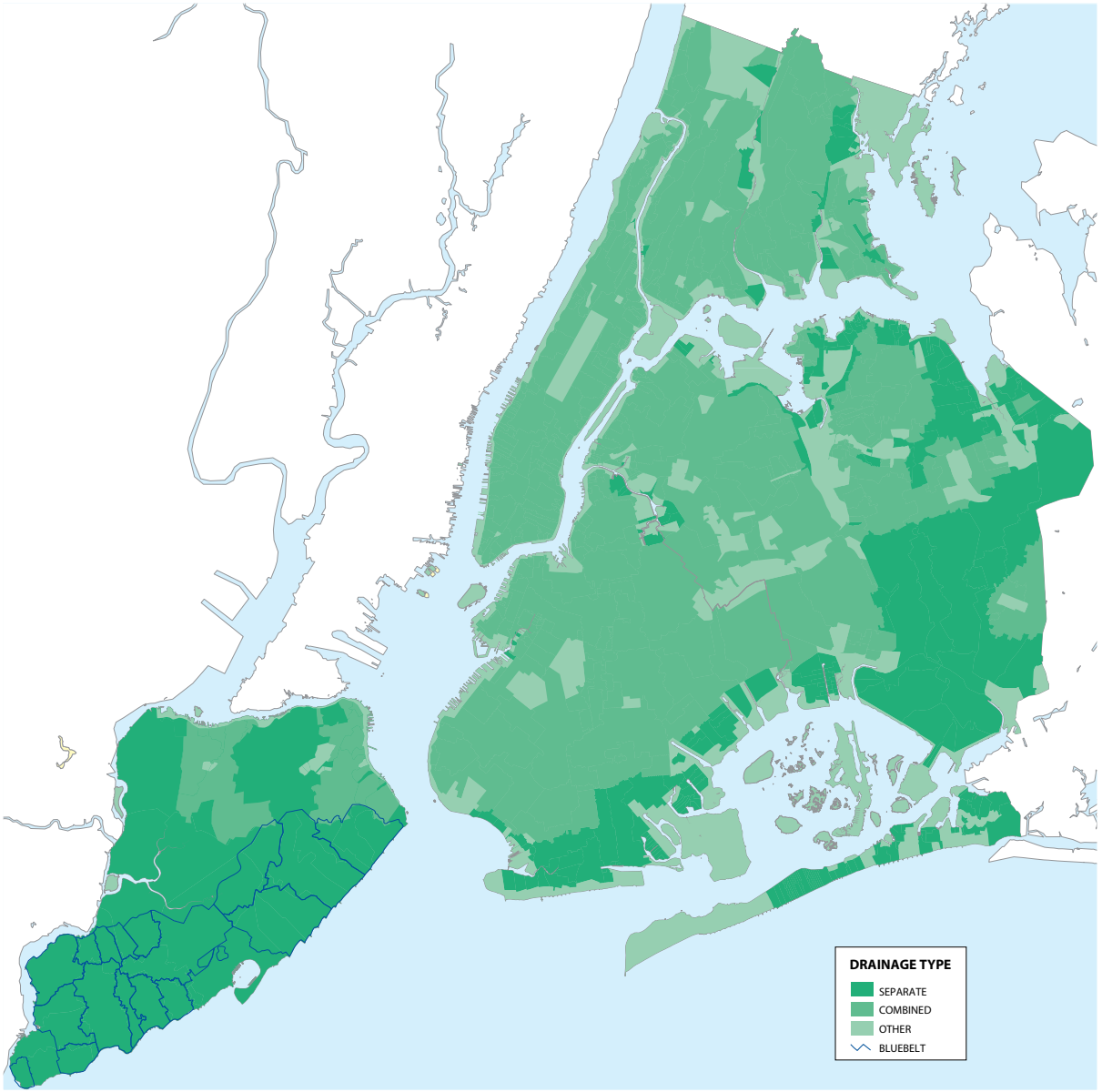
THE SEWER SYSTEM

Approximately 60% of New York City's sewer system is combined, handling sanitary waste from both homes and businesses as well as storm water. The other 40% of the sewer system is separated – sanitary sewers carry sewage to the treatment plant, while storm sewers carry storm water runoff in a separate pipe directly to a local waterway.

In wet weather, wastewater treatment plants that receive combined flow can treat up to twice the designed dry weather flow. However, to eliminate flooding from roadways, the capacity of the city's sewer system is greater than that of the plants. When the plants reach their capacity at twice dry weather flow, regulators release the excess flow from the sewers into the harbor as combined sewer overflow to protect against sewage backing up into homes and businesses.

Sewers vary in size; however, all sewers are designed to convey wastewater through the system at a speed fast enough to minimize the deposition of debris and sediment in the pipes but slow enough to minimize scouring and erosion. DEP targets its programs and resources to ensure the system continues to operate as designed and to maintain the system in a state of good repair.

To learn more about how DEP's sewer system functions, click here.



CEASE THE GREASE

New York City needs the help of all of its residents to keep our sewer system running properly. Cooking oil and grease are wastes that the City's sewer system cannot handle and should not be discarded down the drain. Grease can cling to the insides of pipes and the sewer system, building up and eventually blocking pipes completely. If wastewater can't move freely through pipes and out into the sewer system, it can back up into your home and can cause unsanitary conditions and damages that can be expensive to repair. To learn how to properly dispose of grease, click here.

Door-to-Door Outreach Campaign to Visit 50,000 Homes in Southeast Queens to Encourage Residents to Properly Dispose of Grease and Help Reduce Sewer Backups

PERFORMANCE METRICS

DEP uses a variety of metrics to evaluate our operations across the agency, from frontline supervisors to senior management. This data-driven approach allows us to focus our resources, develop targeted programs, and provide the highest level of service to our customers. All annual performance metrics in this report correspond to fiscal years. For example, Fiscal Year 2016 began July 1, 2015 and ended June 30, 2016.

Sewer Backup Complaints

When our field crews respond to a customer call about a potential sewer backup, they first open manholes around the area where the backup or blockage is reported. If the sewer segment has higher than expected wastewater levels, the crew will note this as a "confirmed sewer backup" whether or not any backups occur. If a crew does not detect higher wastewater levels than expected, it is noted as an "unconfirmed sewer backup."

Recurring Confirmed Backup Complaints

The sewer system is divided into 160,000 "sewer segments" that run between two adjacent manholes. In order to identify systemic issues, DEP tracks street segments with recurring confirmed sewer back- ups (multiple backups on the same segment in the same year) during both dry and wet weather.

Sewer Cleaning

Proactive sewer cleaning includes miles of sewers cleaned as part of the inspection and analysis programs, regular sewer maintenance program, and the Department of Design and Construction inspection and cleaning. Sewer cleaning activities in response to a 311 complaint are categorized as "Reactive" cleaning

Confirmed Sewer Backup Causes

After visually inspecting affected sewer segments, crews identify and record the potential cause of a confirmed sewer backup.

- "Grease" refers to the buildup of fats, oils, and grease in a sewer.
- "Debris" refers to sand, silt, and roadbed aggregate that accumulate along the bottom of the sewer.
- "Heavy Rain" refers to microbursts and other brief, heavy rainstorms that can temporarily overtax the sewer.
- "Other" includes backups where conditions warranted further investigation.

Sewer Flushing

CITYWIDE

DEP's extensive and robust sewer inspection, analysis and cleaning program continues to net significant improvements across all key performance indicators citywide.

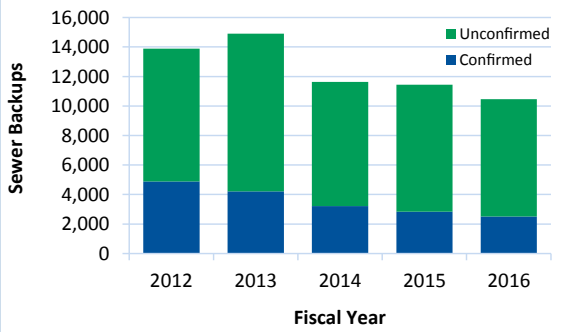
Total sewer backup complaints have fallen 25% since FY2012, and confirmed sewer backup complaints have fallen 49% over the same period.

The number of street segments with recurring confirmed sewer backups has decreased by 50% since FY2012. The number of street segments with recurring confirmed dry weather sewer backups also decreased by 47% since FY2012.

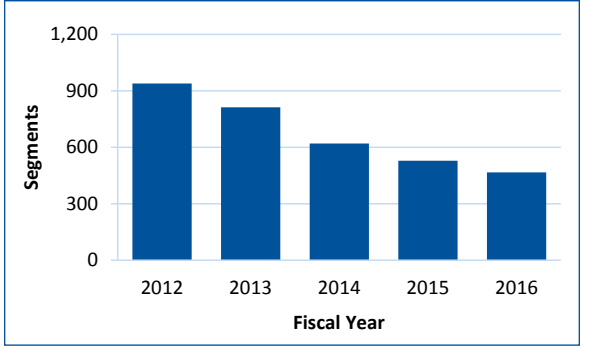
In FY2016, 71% of backups were related to grease; 16% attributed to debris; 8% attributed to heavy rains and 5% due to other causes.

Systematic, proactive sewer cleaning has increased by 133%, while reactive sewer cleaning has decreased by 67% from FY2012.

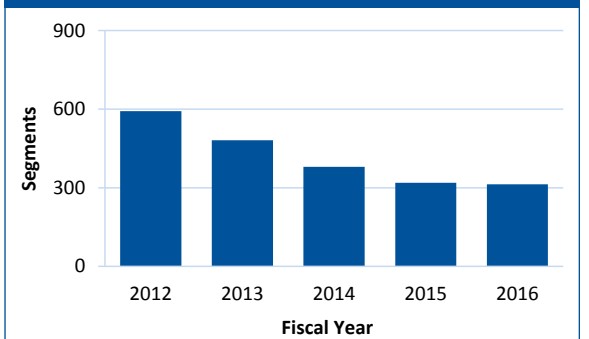
Sewer Backup Complaints



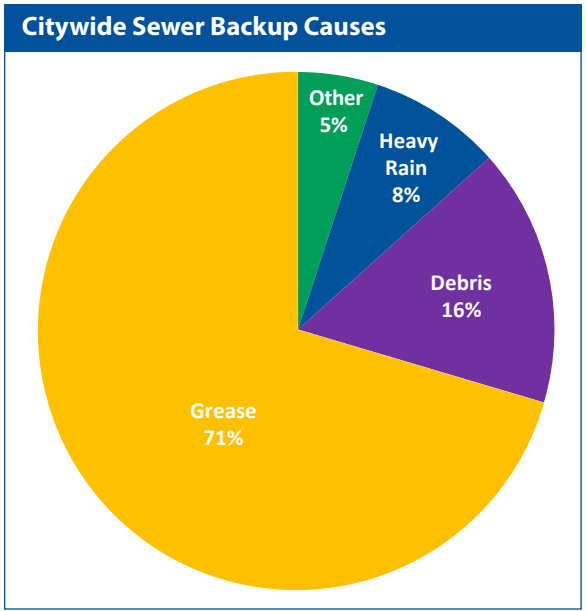
Segments with Recurring SBUs



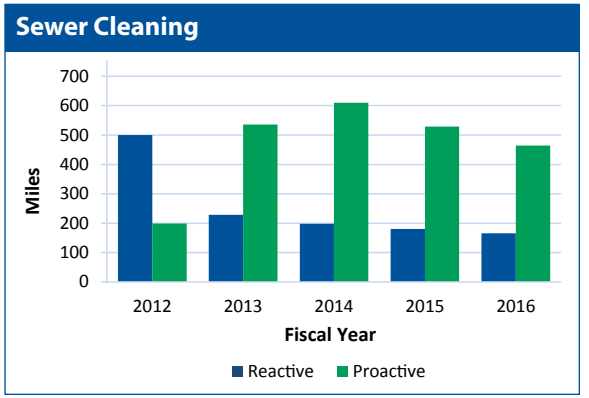
Segments with Recurring Dry Weather SBUs



Citywide Sewer Backup Causes



Sewer Cleaning



SEWER BACKUP AND CATCH BASIN RESOLUTION TIME

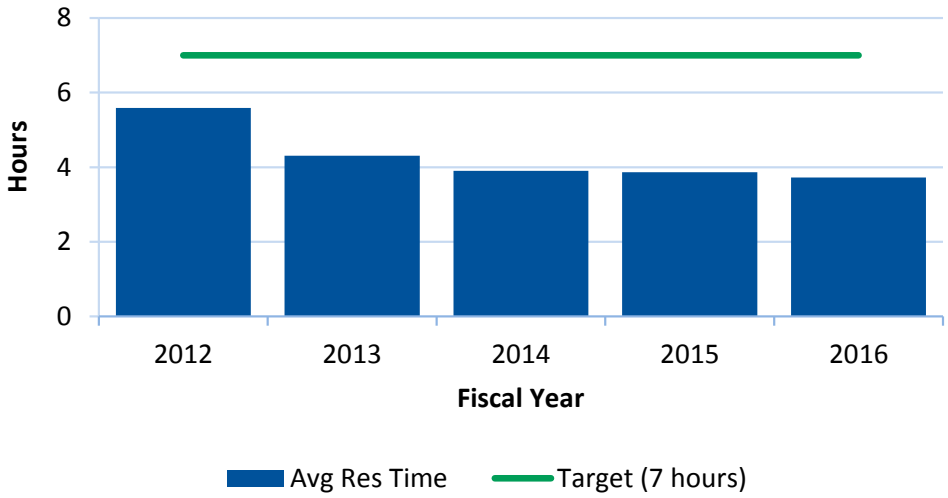
New York City has more than 148,000 catch basins to collect storm water runoff from streets and sidewalks. DEP's rigorous sewer and catch basin inspection, analysis, and cleaning program has produced improvements in the level of sewer service citywide.

Over the past five years, the time to resolve sewer-related issues has fallen significantly.

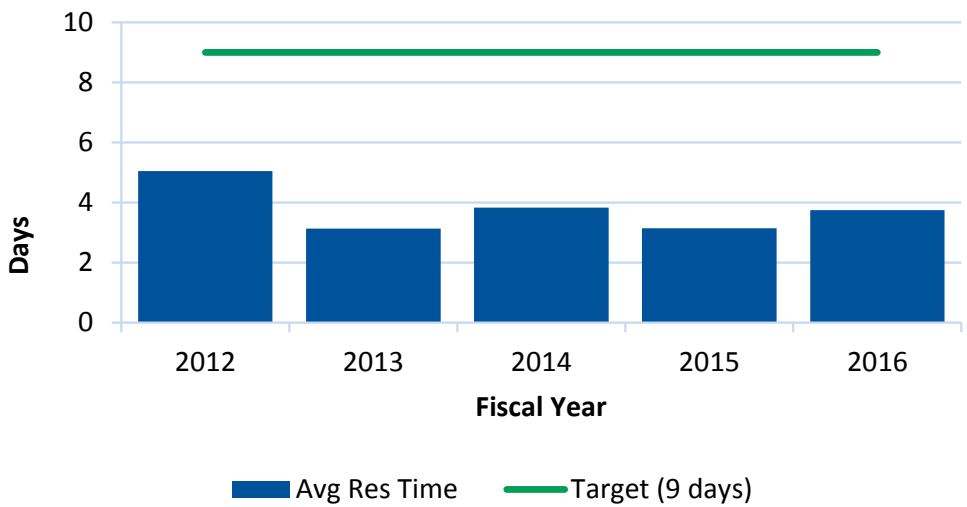
Sewer backup resolution times have fallen from a 2012 high of 5.59 hours to 3.7 hours in 2016 – a 33% total reduction.

Similarly, catch basin-related complaint resolution times have fallen from 5.05 days in 2012 to 3.75 days in 2016, a 26% total reduction.

Sewer Backup Resolution Time



Catch Basin Complaint Resolution Time



BRONX

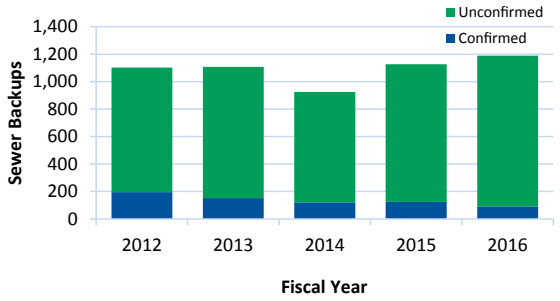
Over the past five years, total sewer backup complaints have increased 8%, but confirmed sewer backup complaints have fallen 53%.

Since FY2012, the number of street segments with recurring confirmed sewer backups has decreased by 50% and the number of street segments with recurring confirmed dry weather sewer backups decreased by 63%.

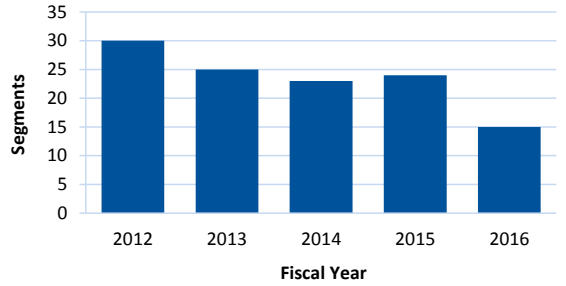
In FY2016, 89% of backups were attributed to grease; 5% to debris; and 6% attributed to heavy rains and other factors.

Reactive sewer cleaning has decreased by 44% from FY2012. The drop in reactive cleaning is due to the continued decline in the number of confirmed sewer backups.

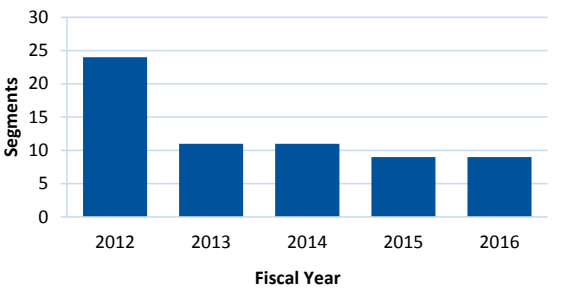
Sewer Backup Complaints



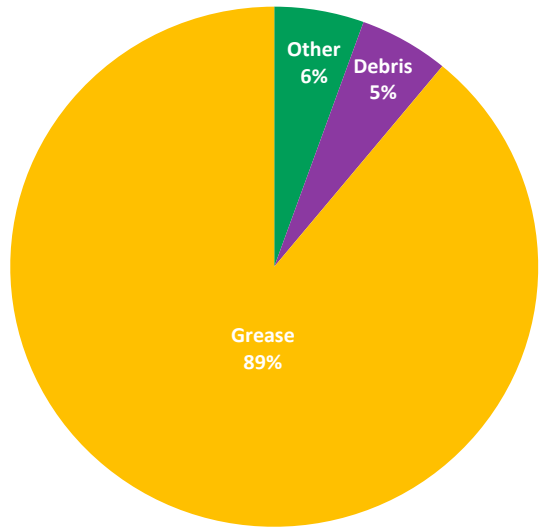
Recurring Backup Segments



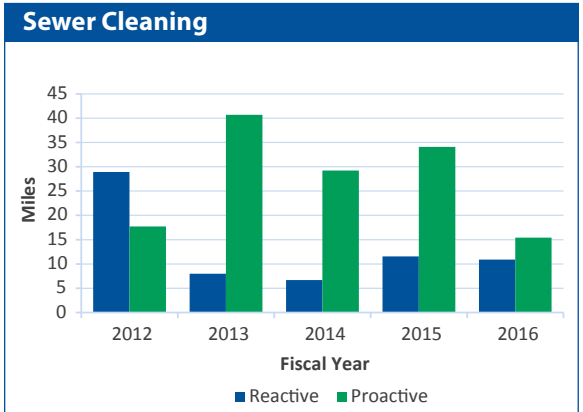
Recurring Dry Weather Backup Segments



Sewer Backup Causes



Sewer Cleaning



BROOKLYN

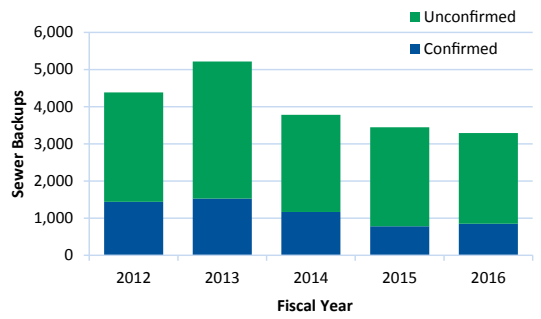
Since FY2012, total sewer backup complaints have fallen 29% and confirmed sewer backup complaints have fallen 52%.

Over the past five years, the number of street segments with recurring confirmed sewer backups has decreased by 57% and the number of street segments with recurring confirmed dry weather sewer backups decreased by 56%.

In FY2016, 50% of backups were attributed to grease; 28% attributed to debris; and 22% attributed to heavy rains and other factors.

Systematic, proactive sewer cleaning has increased by 153% while reactive sewer cleaning has decreased by 69% from FY2012. The drop in reactive cleaning is due to the continued decline in the number of confirmed sewer backups.

Sewer Backup Complaints



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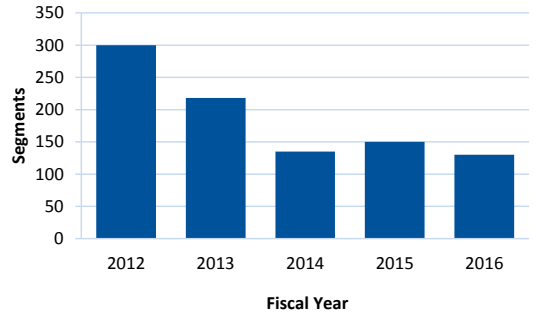
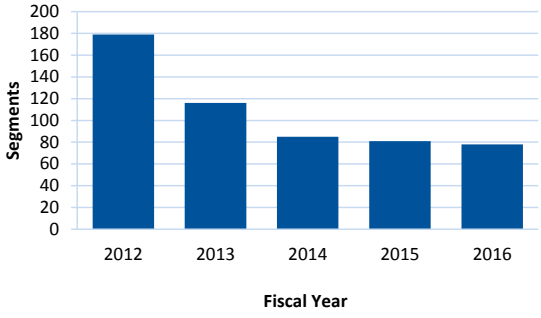


Recurring Dry Weather Backup Segments



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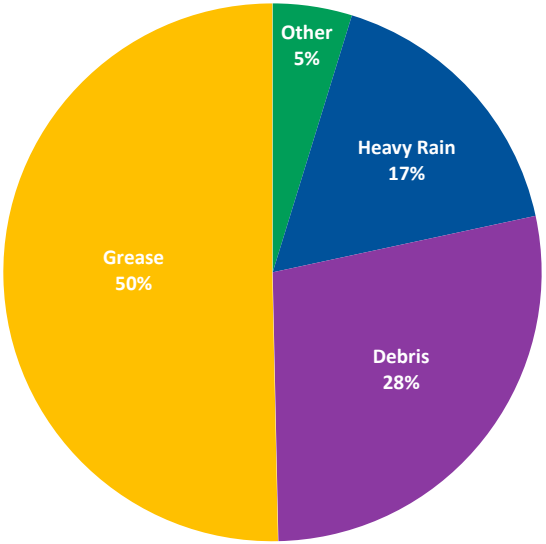
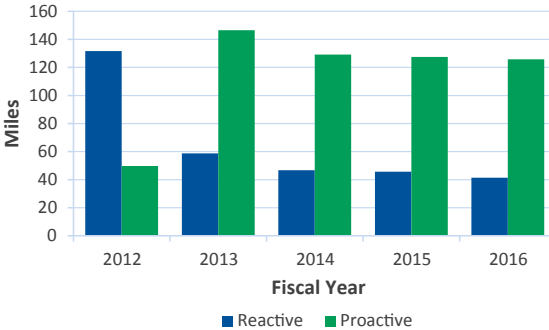


Sewer Cleaning



MANHATTAN

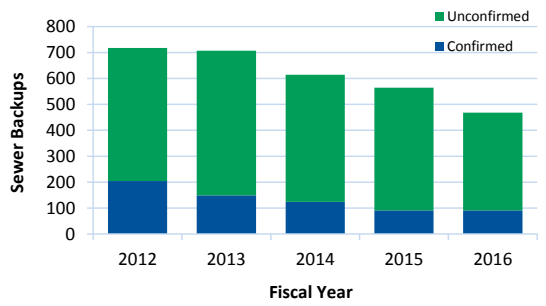
Since FY2012, total sewer backup complaints in Manhattan have fallen 35% and confirmed sewer backup complaints have fallen 55%.

Over the past five years, the number of street segments with recurring confirmed sewer backups has decreased by 54%, and the number of street segments with recurring confirmed dry weather sewer backups decreased by 50%.

In FY2016, 50% of all backups were attributed to grease; 32% to debris; and 18% attributed to heavy rains and other factors.

Systematic, proactive sewer cleaning has increased by 86%, while reactive sewer cleaning has decreased by 13% from FY2012. The drop in reactive cleaning is due to the continued decline in the number of confirmed sewer backups.

Sewer Backup Complaints



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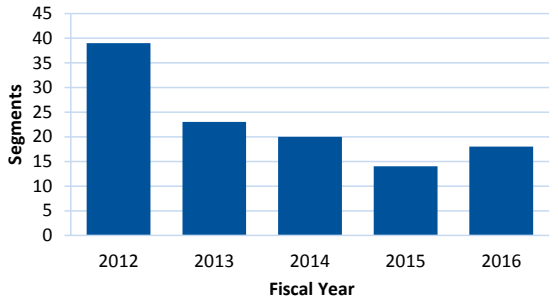

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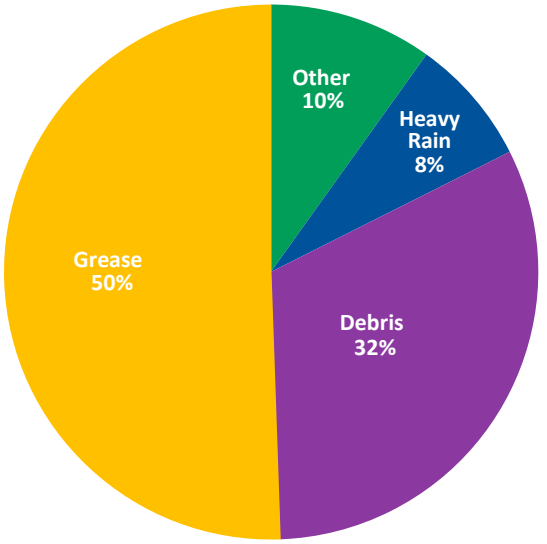
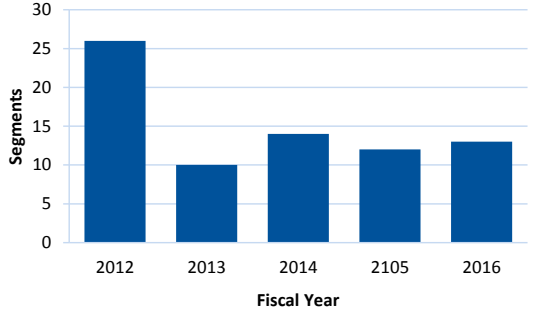


Recurring Dry Weather Backup Segments



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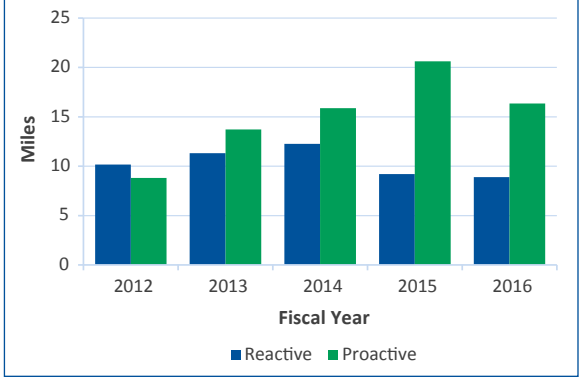


QUEENS

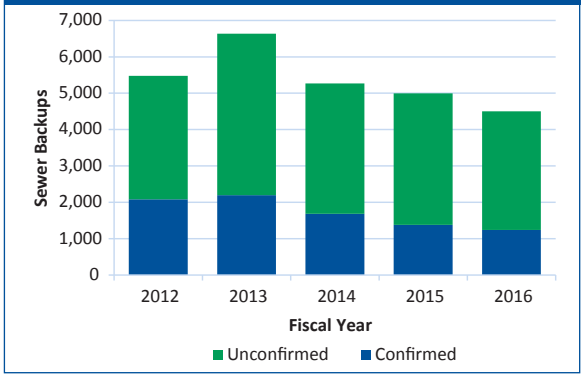
In Queens, total sewer backup complaints have fallen 18% and unconfirmed sewer backup complaints have fallen 40% since FY2012.

Over the past five years, the number of street segments with recurring confirmed sewer backups has decreased by 37%. The number of street segments with recurring confirmed dry weather sewer backups decreased by 34%.

In FY2016, 88% of backups were attributed to grease; 6% attributed to debris; and 6% attributed to heavy rains and other factors.

Systematic, proactive sewer cleaning has increased by 614% while reactive sewer cleaning has decreased by 64% from FY2012. The drop in reactive cleaning is due to the continued decline in the number of confirmed sewer backups.

Sewer Backup Complaints



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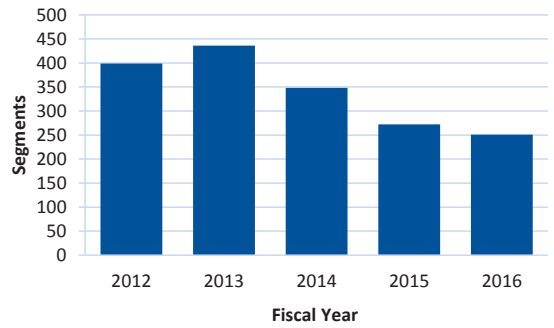

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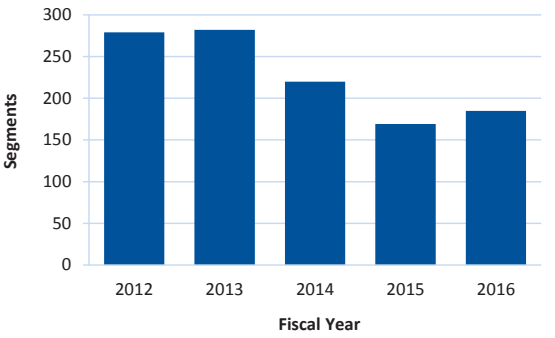

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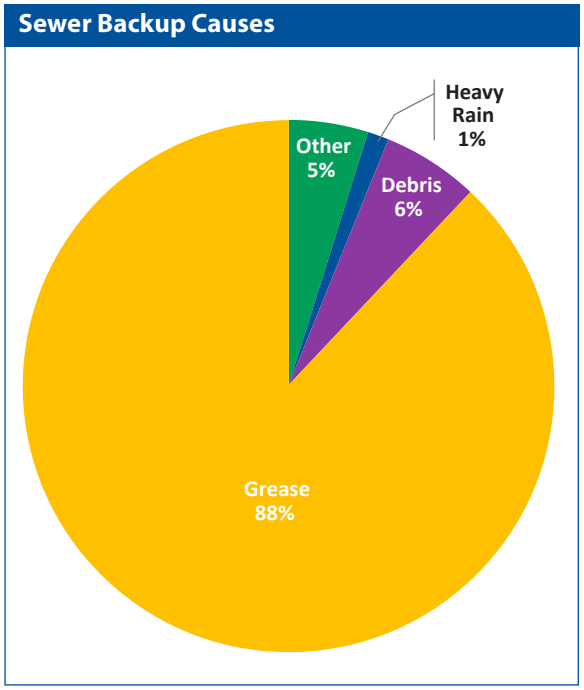

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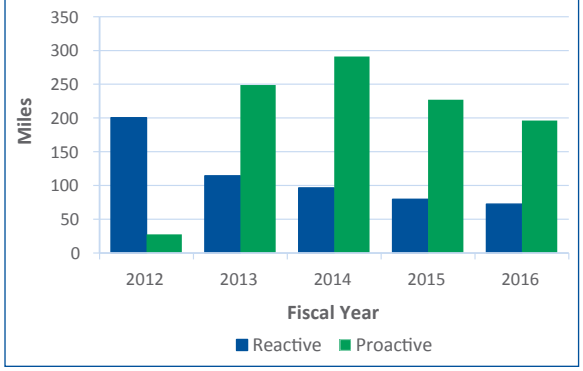


STATEN ISLAND

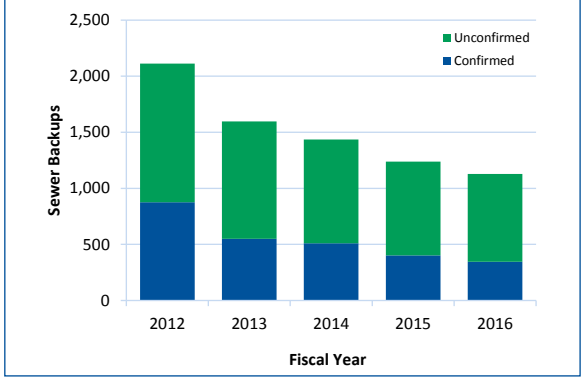
Since FY2012, total sewer backup complaints have fallen 47% and confirmed sewer backup complaints have fallen 61%.

Over the past five years, the number of street segments with recurring confirmed sewer backups has decreased by 69% and the number of street segments with recurring confirmed dry weather sewer backups decreased by 67%.

In FY2016, 50% of backups were attributed to grease; 27% attributed to debris; and 23% attributed to heavy rains and other factors.

Systematic proactive sewer cleaning has increased by 30% while reactive sewer cleaning has decreased by 60% from FY2012. The drop in reactive cleaning is due to the continued decline in the number of confirmed sewer backups.

Sewer Backup Complaints



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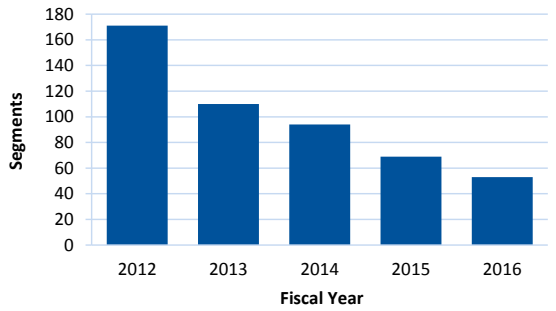
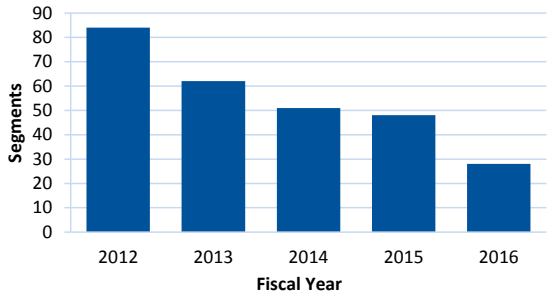


Recurring Dry Weather Backup Segments



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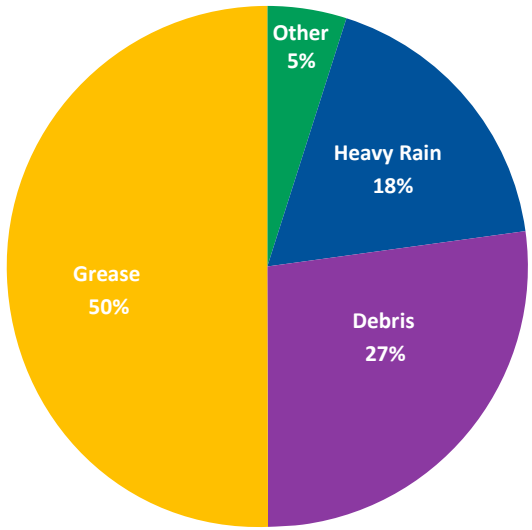

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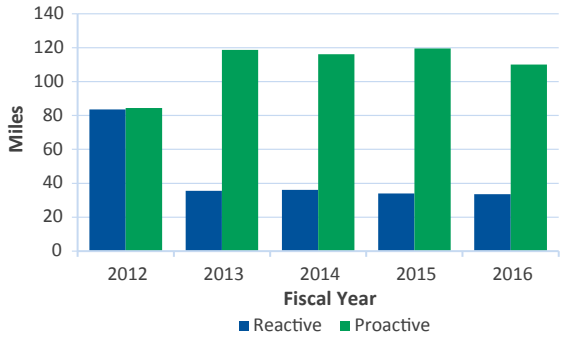

Bill de Blasio
Mayor

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