



STATE OF THE SEWERS 2017

Performance Metrics

February 23, 2018

Fiscal Year 2017 (July 1, 2016 through June 30, 2017)



Bill de Blasio
Mayor

Vincent Sapienza, P.E.
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

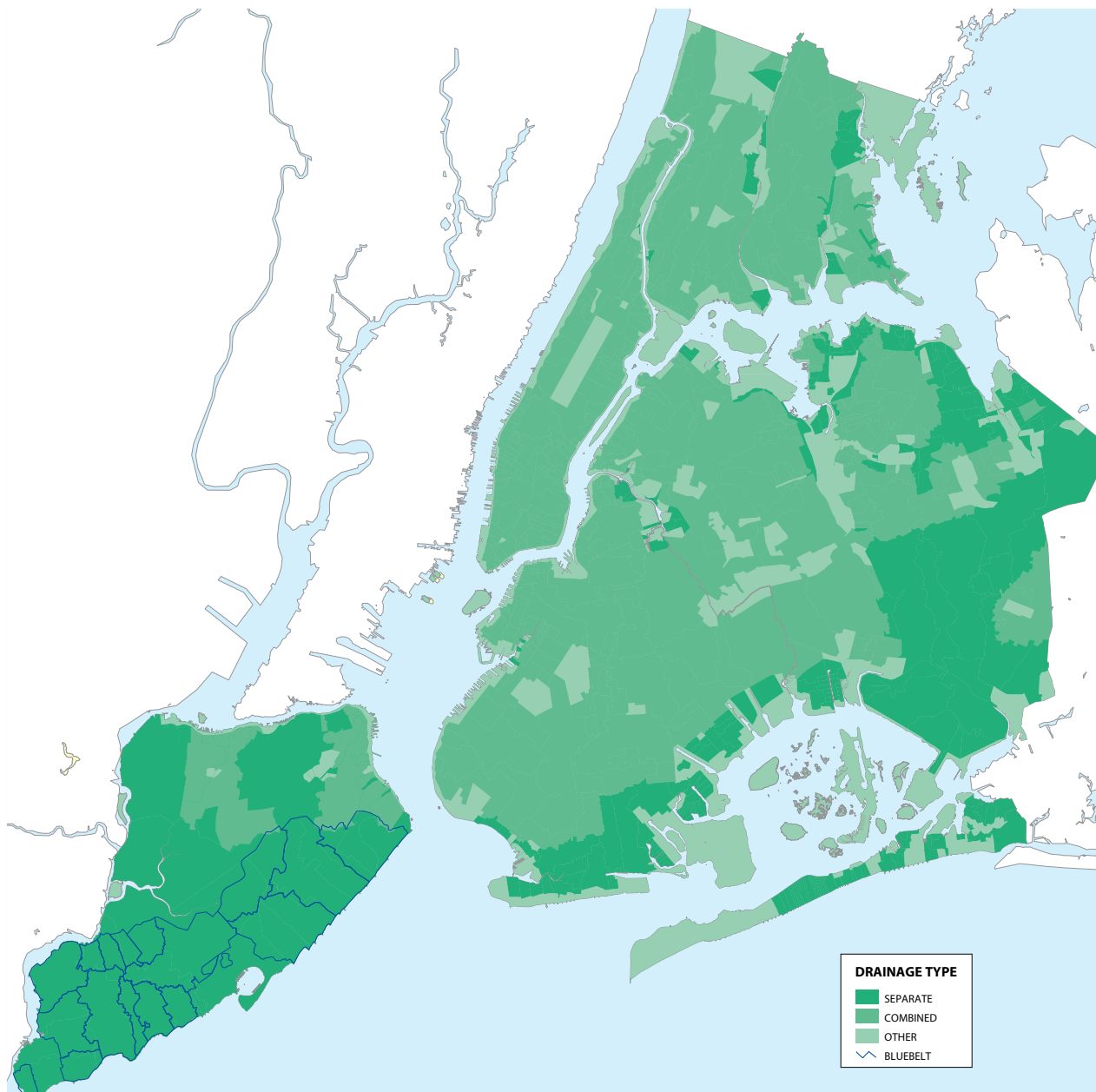
THE SEWER SYSTEM

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](#).



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 2017 began July 1, 2016 and ended June 30, 2017.

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.



CITYWIDE

DEP's extensive and robust sewer inspection, analysis and cleaning programs continue to net improvements across all key performance indicators citywide. While some variations can be seen in a year-to-year comparison of the data, the trend over the past five years demonstrates that DEP's programs have achieved meaningful improvements.

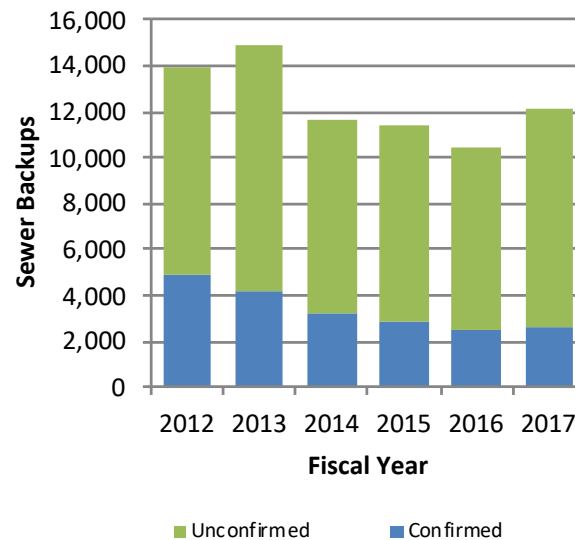
Between 2012 and 2016, DEP received an average of 12,465 total sewer backup complaints (both confirmed and unconfirmed), compared to an average of 12,116 total sewer backup complaints between 2013 and 2017, a decrease of 3%. Notably, with respect to confirmed sewer backups, average annual complaints dropped 13% when the five-year average of 2012-2016 is compared to that of 2013-2017, a decrease from 3,535 complaints to 3,088.

Similar improvements can be seen in recurring confirmed sewer backups (both wet and dry weather), which have decreased by 14% over the same time-periods (averaging 673 annually for 2012-2016, compared to 578 for 2013-2017). Dry weather recurring sewer backups also netted a 20% decrease, dropping from an average of 417 in 2012-2016 to an average of 335 in 2013-2017.

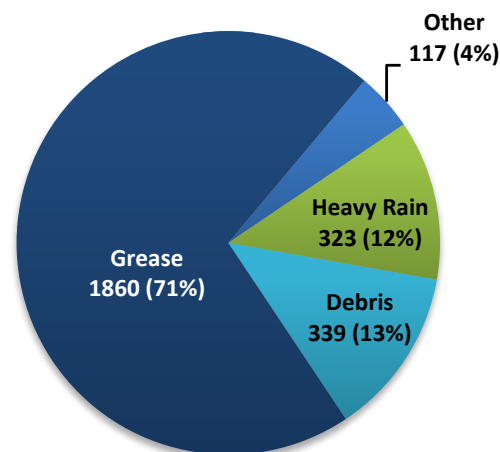
In FY2017, 71% of backups were grease-related; 13% attributed to debris; 12% attributed to heavy rains; and 4% due to other causes.

Systematic sewer cleaning continued on pace, with more proactive cleaning than reactive.

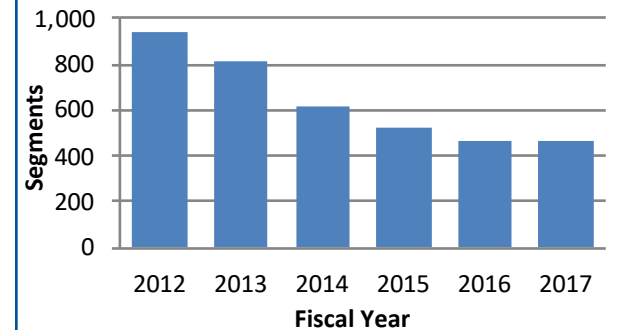
Sewer Backup Complaints



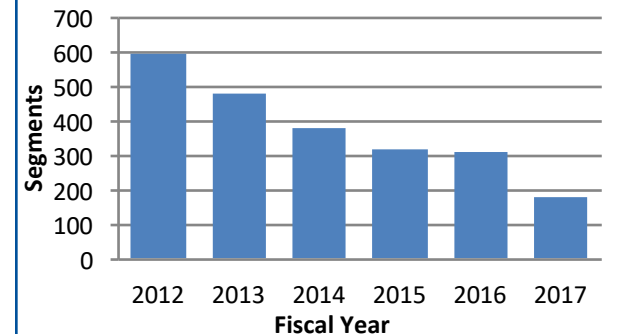
FY17 Confirmed Sewer Backup Causes



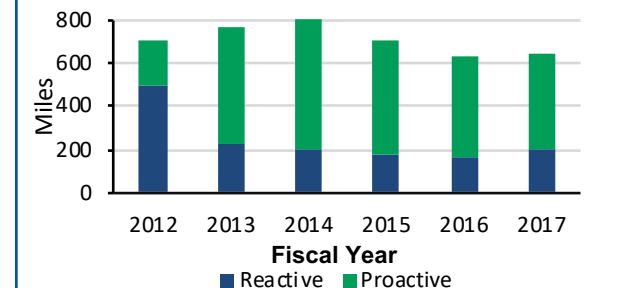
Recurring Confirmed Backup Segments



Recurring Confirmed Dry Weather Backup



Sewer Cleaning Miles



SEWER BACKUP AND CATCH BASIN RESOLUTION TIME

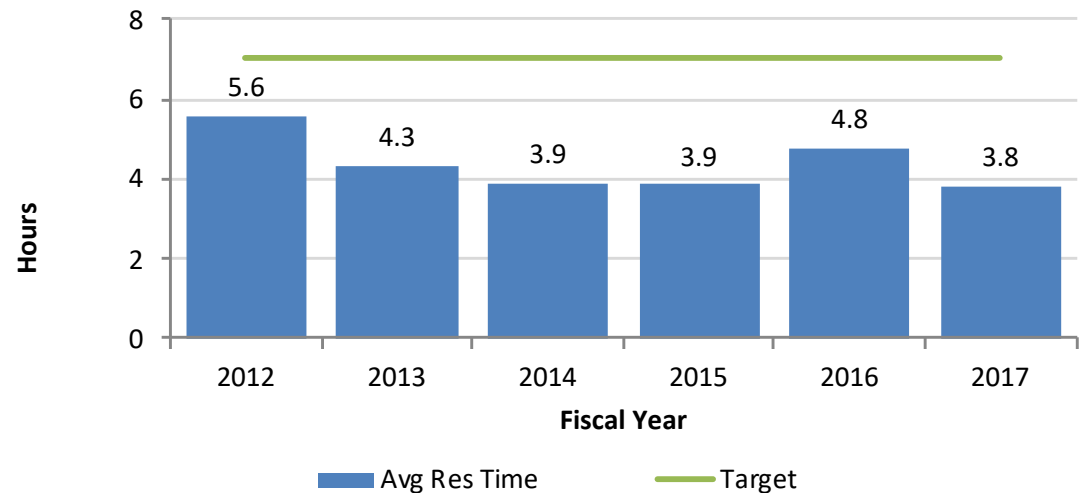
New York City has more than 148,000 catch basins to collect storm water runoff from streets and sidewalks. DEP's rigorous sewer and catch basin inspection, analysis, and cleaning programs have produced improvements in the level of sewer service citywide.

Over the past six years, the time to resolve sewer-related issues has remained below our service level targets of 6 hours to resolve a sewer backup complaint and 9 days to resolve a catch basin complaint.

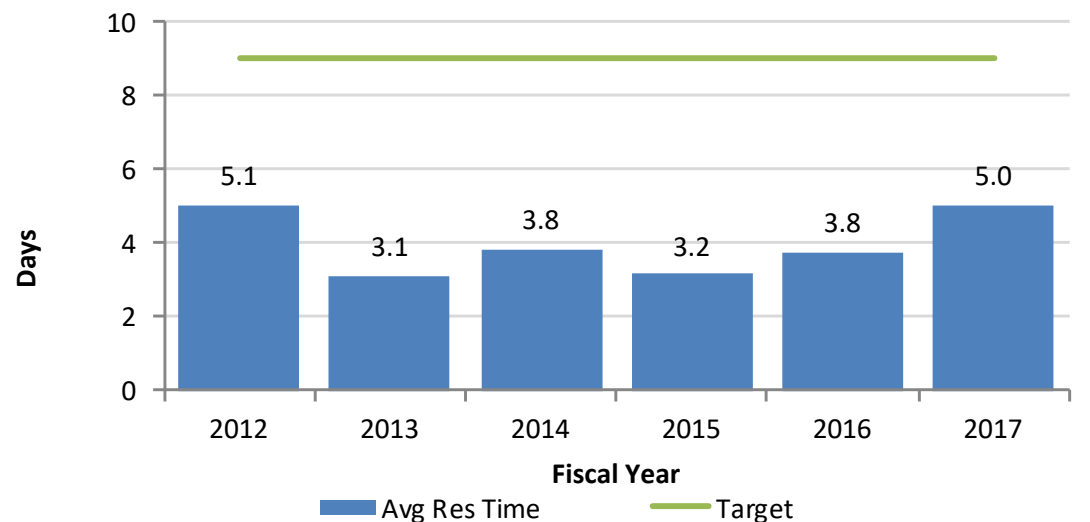
From 2012-2016, DEP resolved sewer backup complaints in 4.5 hours, on average. Between 2013 and 2017, the average time was 4.1 hours.

For catch basin-related complaints, the average resolution time from 2012 to 2016 is the same as for 2013 to 2017: 3.8 days. However, the 2017 resolution time for catch basin complaints has grown since 2015. This increase is primarily attributable to Local Law 48 of 2015 that required DEP, starting in July 2016, to inspect all 148,000 DEP catch basins on a yearly basis, rather than on the prior 3-year cycle, in which DEP inspected 1/3 of the DEP catch basins city-wide each year.

Sewer Backup Resolution Time

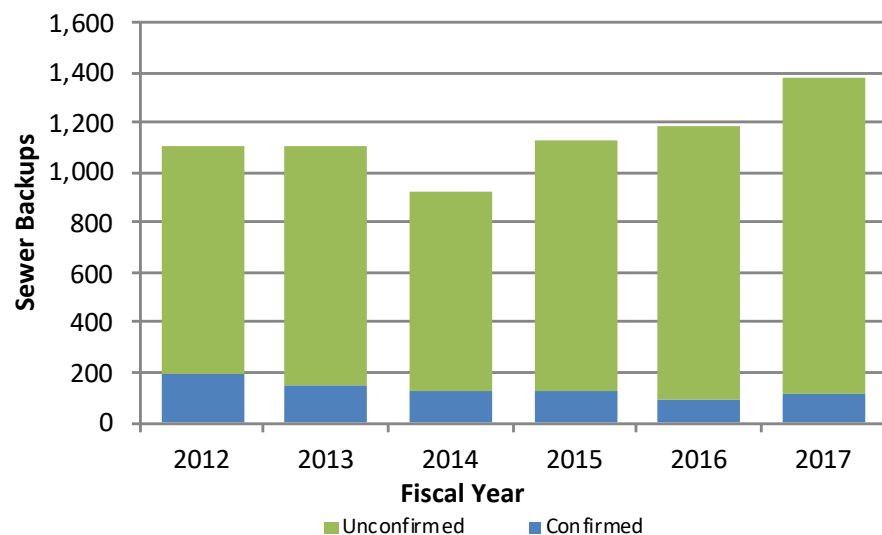


Catch Basin Resolution Time

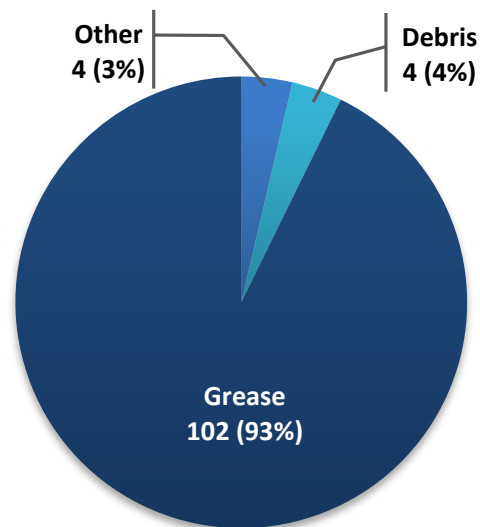


BRONX

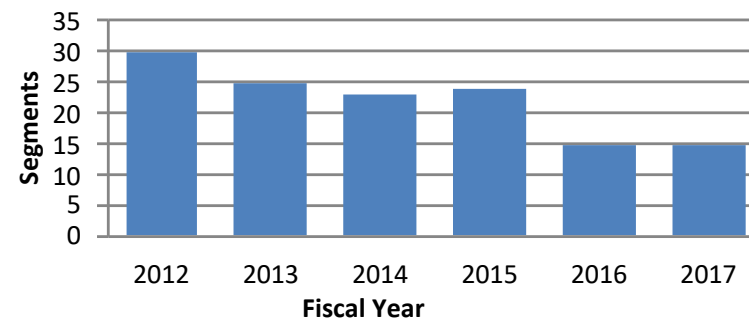
Sewer Backup Complaints



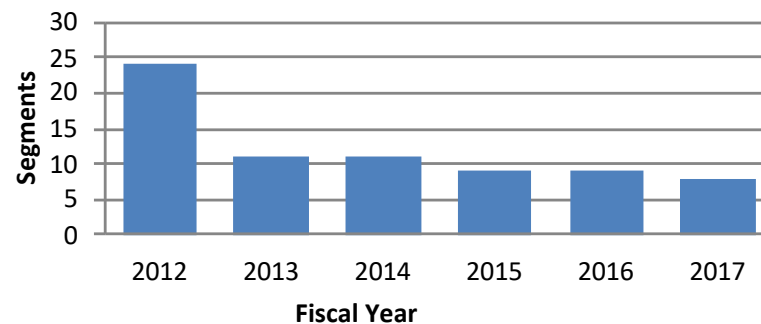
FY17 Confirmed Sewer Backup Causes



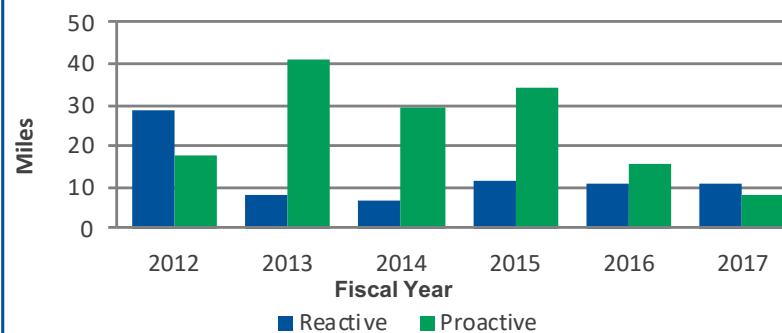
Recurring Confirmed Backup Segments



Recurring Confirmed Dry Weather Backup Segments

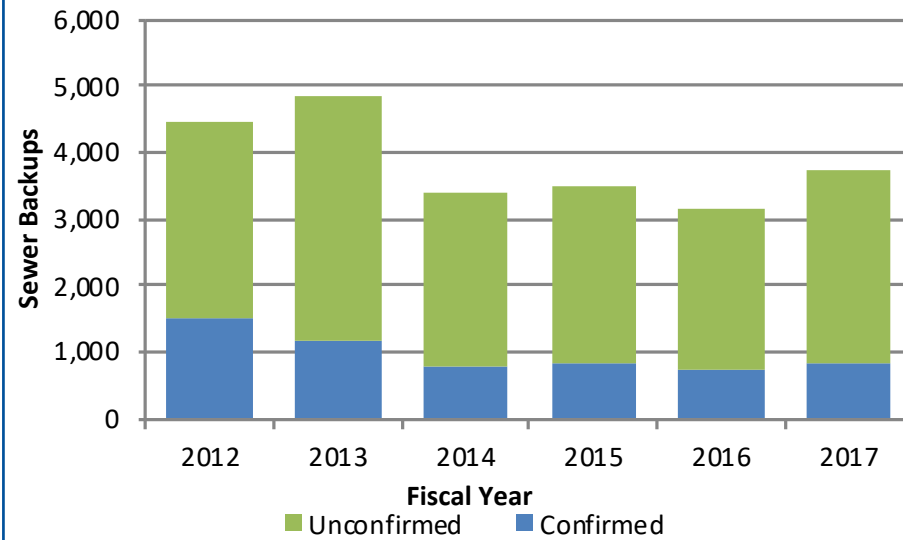


Sewer Cleaning Miles

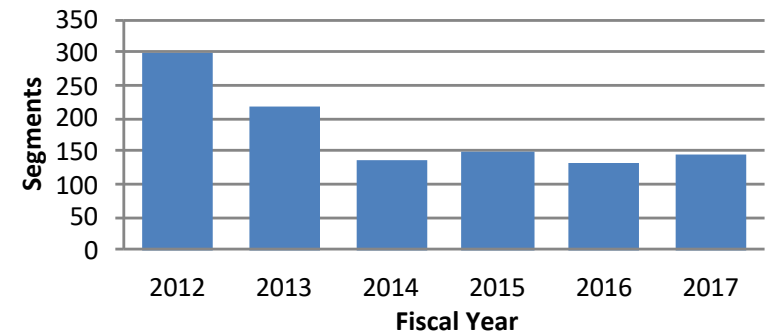


BROOKLYN

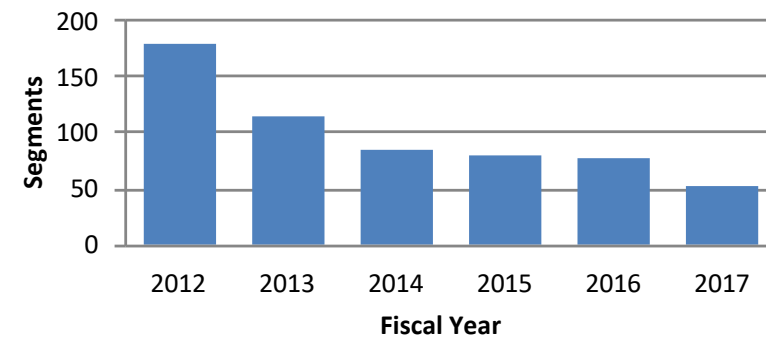
Sewer Backup Complaints



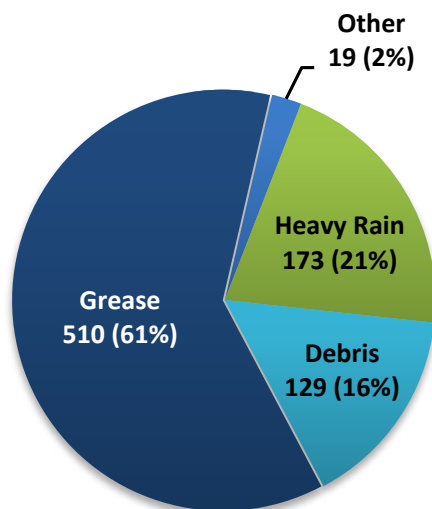
Recurring Confirmed Backup Segments



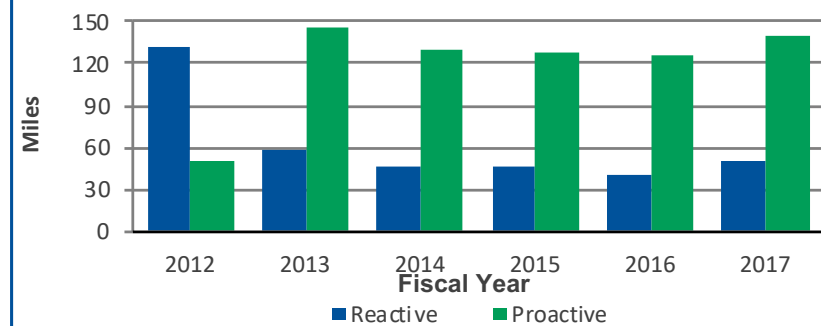
Recurring Confirmed Dry Weather Backup Segments



FY17 Confirmed Sewer Backup Causes

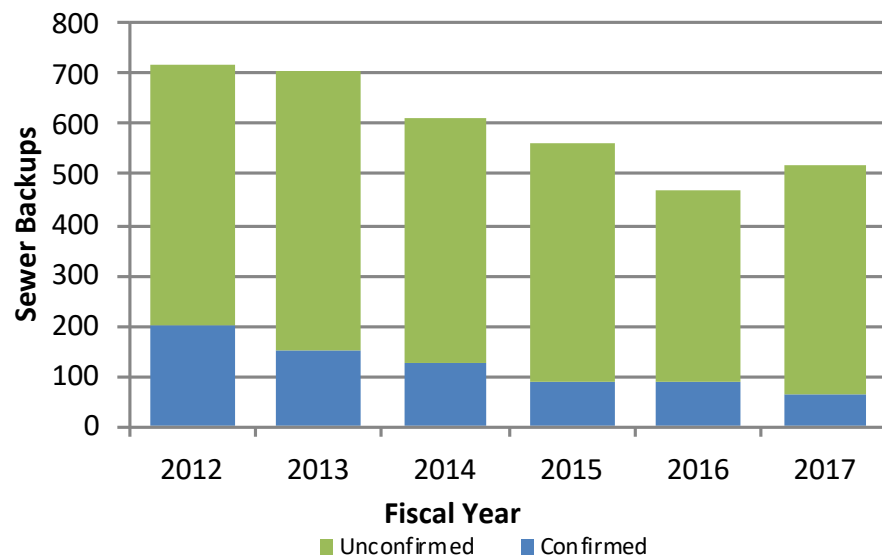


Sewer Cleaning Miles

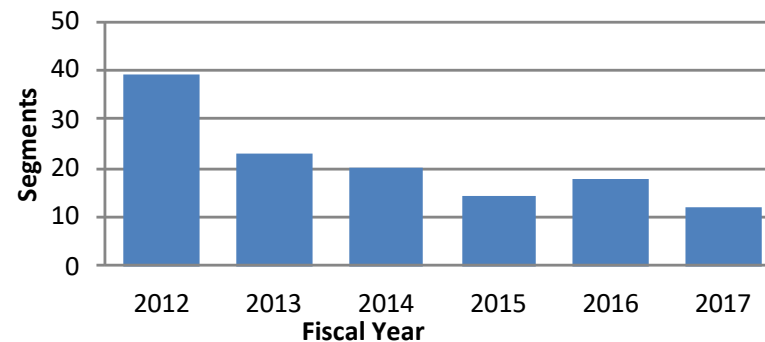


MANHATTAN

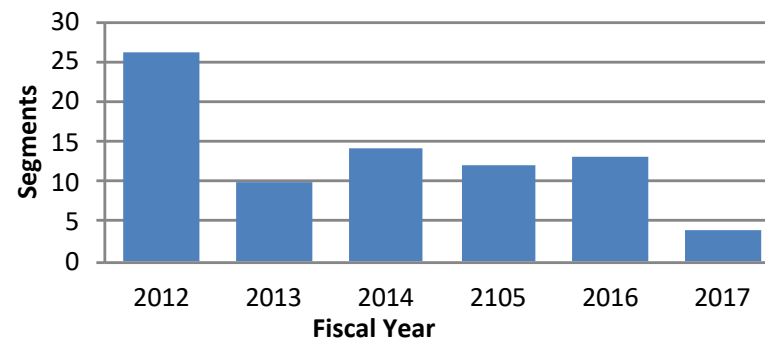
Sewer Backup Complaints



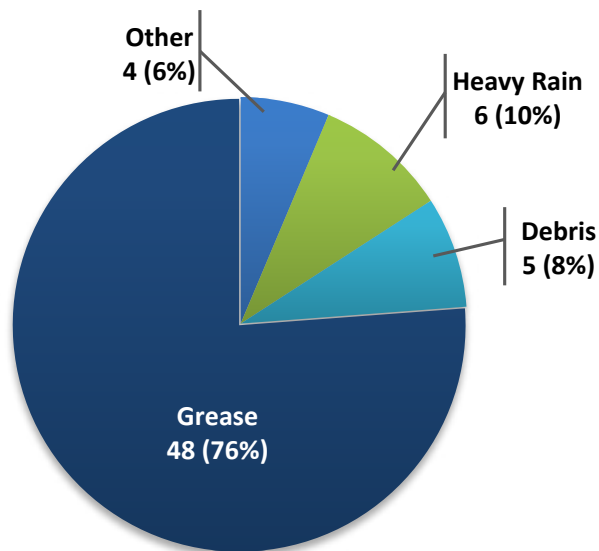
Recurring Confirmed Backup Segments



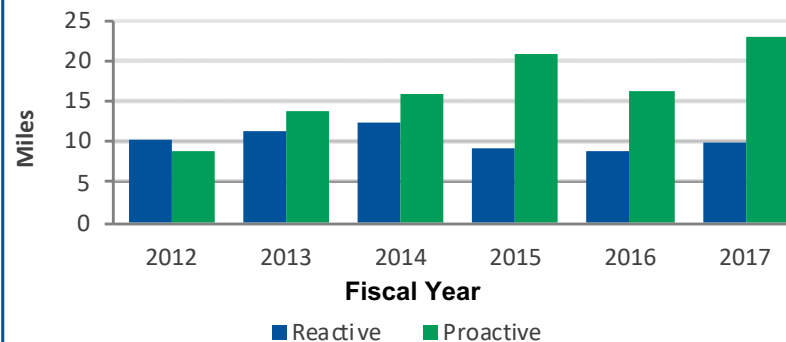
Recurring Confirmed Dry Weather Backup Segments



FY17 Confirmed Sewer Backup Causes

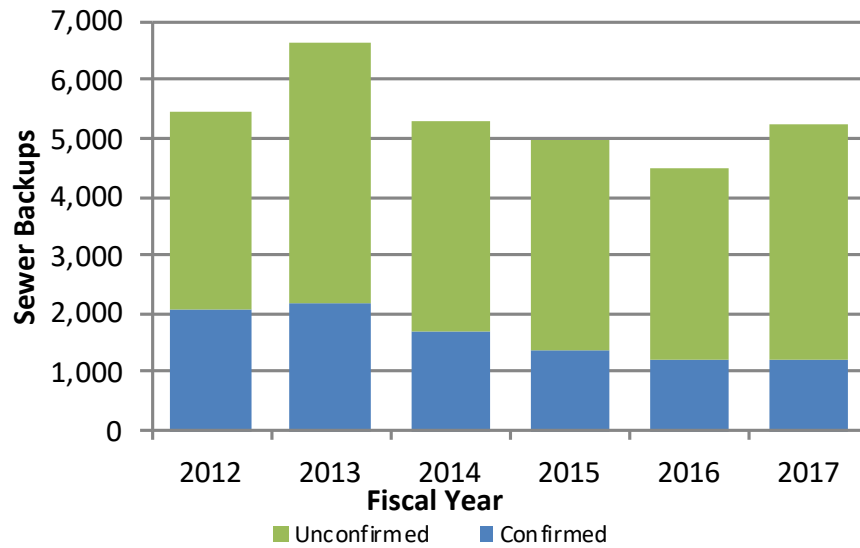


Sewer Cleaning Miles

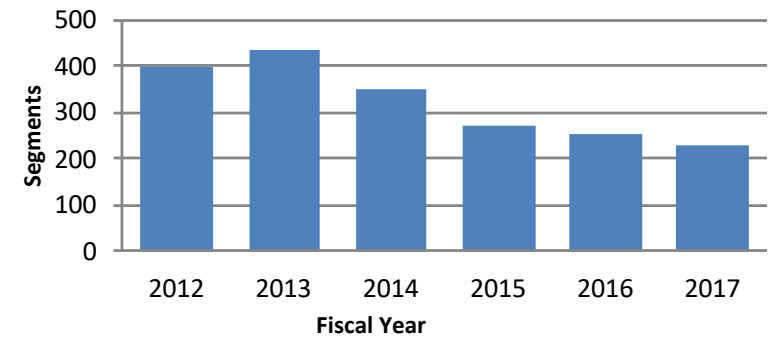


QUEENS

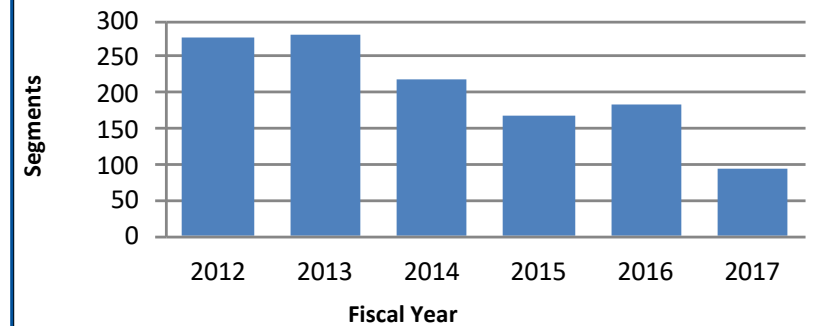
Sewer Backup Complaints



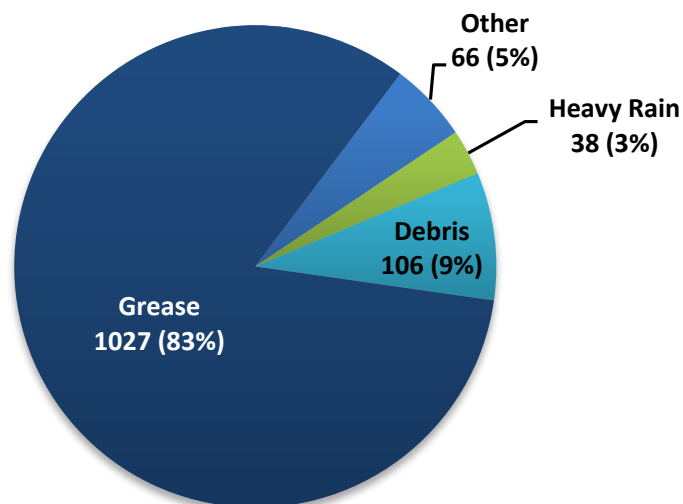
Recurring Confirmed Backup Segments



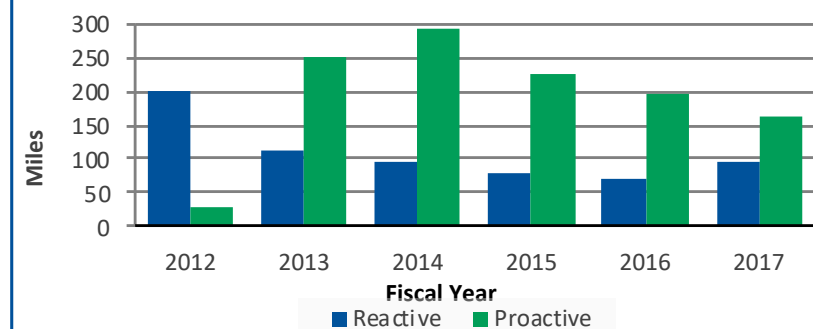
Recurring Confirmed Dry Weather Backup Segments



FY17 Confirmed Sewer Backup Causes

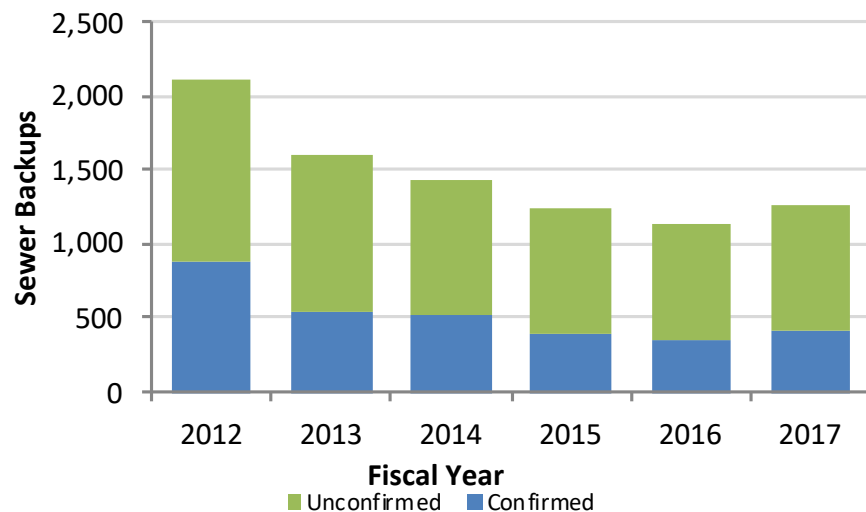


Sewer Cleaning Miles

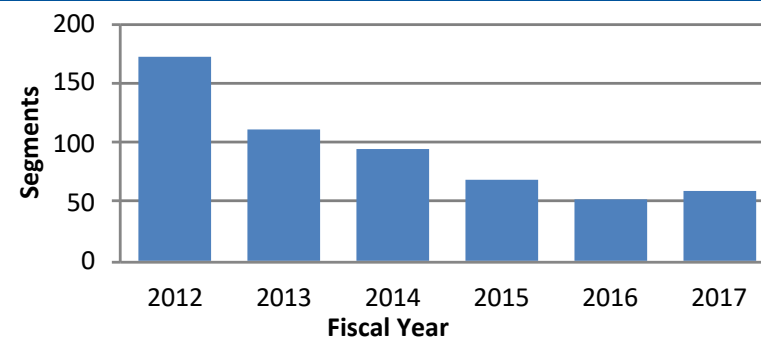


STATEN ISLAND

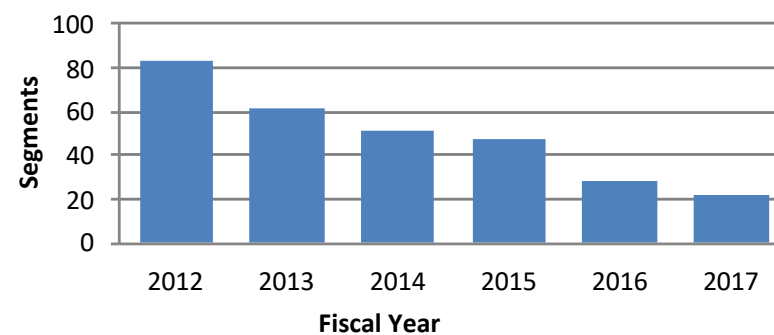
Sewer Backup Complaints



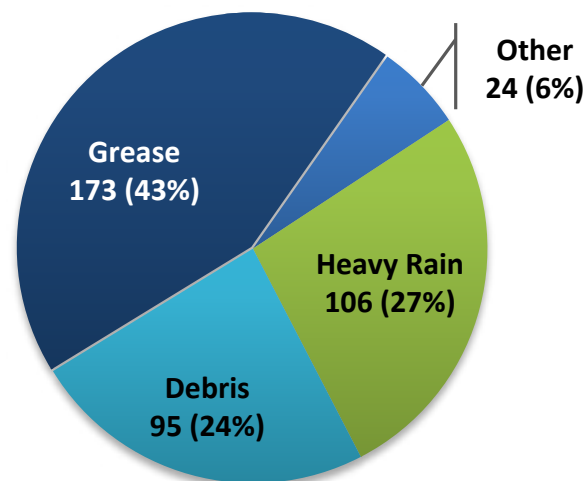
Recurring Confirmed Backup Segments



Recurring Confirmed Dry Weather Backup Segments



FY17 Confirmed Sewer Backup Cause



Sewer Cleaning Miles

