Good afternoon, Chairman Constantinides and Members of the Committee. I am Anastasios Georgelis, Acting Deputy Commissioner for Water and Sewer Operations in the New York City Department of Environmental Protection (DEP). With me are Michael DeLoach, Deputy Commissioner of Public Affairs at DEP, John J. Hodgens, Deputy Assistant Chief in the Bureau of Operations of the New York Fire Department, and other DEP staff.

Thank you for the opportunity to testify on these five bills: Introduction 821, relating to reporting on backflow prevention devices; Introduction 972, relating to fire hydrant signage; Introduction 1731, relating to fire hydrant repair standards; and Introductions 1425 and 1468, relating to sewer backups.

The Bureau of Water and Sewer Operations (BWSO) oversees approximately 14,000 miles of water and sewer mains and 150,000 catch basins, and over 109,000 fire hydrants in New York City. Our work includes day-to-day management of the underground water and sewer infrastructure, emergency response to events like water main breaks, as well as capital planning and oversight of water and sewer infrastructure projects.

Intro. 821 of 2015 would repeal and replace existing provisions in the Administrative Code relating to reporting on the installation and testing of backflow prevention devices (BPDs). An annual report would replace semiannual reports, and an estimate of the total number of facilities requiring BPDs, as well as the number of test reports submitted, are added requirements. The number of new notifications issued by DEP that a BPD is required to be installed has been deleted, but the number of facilities, including hazardous and non-hazardous, requiring the installation of BPDs, has been retained. Finally, the number of notices of violation issued for failure to file has been added to the number of violations for failure to install.

Protecting New York City’s public water supply is of paramount importance, and backflow prevention is one aspect of affording this protection. I would like to mention that DEP’s extensive water quality testing and monitoring program is the front-line defense in ensuring the quality of water in the distribution system. New York City tests its drinking water in the distribution system for approximately 240 chemical constituents, well above regulatory requirements. We perform more than 1,100 tests daily; 34,000 monthly; and 400,000 on an annual basis on over 36,000 samples collected from about 1,000 sampling locations throughout the City. Test results are reported to our regulators and are summarized in our annual report on the quality of New York City’s drinking water.
Backflow prevention devices, also known as cross connection controls, prevent potential contamination within premises from entering the public water supply. The possibility of contamination is caused by various kinds of plumbing configurations and/or equipment that use water under pressure. If the water pressure in the internal system in a medical facility like a hospital, for example, is greater than the pressure in the public water supply system, dangerous chemicals can be inadvertently forced back into the public supply unless a properly functioning backflow prevention device is in place to keep that from happening.

Protection of our drinking water through the mandated Cross Connection Control Program, which is required by Subpart 5-1.31 of the New York State Sanitary Code (Code), is a primary element of BWSO’s mission. The Code, contained in the Public Health Law, mandates that public water suppliers such as DEP require certain users to install cross connection controls, for which they must submit plans for the installation of the devices, as well as annual testing and reporting once the devices have been installed. This program is approved and reviewed annually by the State and City Departments of Health, and is reportable to the United States Environmental Protection Agency and the New York State Health Department (DOH) as one of the Filtration Avoidance Determination deliverables.

DOH’s guidance for the Code divides users into three categories: non-hazardous, such as a one- or two-family home or a “dry” commercial establishment (i.e., cell phone or computer shop); aesthetically objectionable, such as a residential building with an elevated storage tank; and hazardous, such as an auto repair shop or dry cleaner. DOH's Cross Connection Guidance defines a "Hazardous Facility" as “A building that potentially contains substances that if introduced into the public water supply would or may endanger or have an adverse effect on the health of other water consumers.” Typical examples in addition to those previously mentioned are laboratories, sewage treatment plants, industrial or chemical plants, and mortuaries.

DEP has developed a comprehensive Cross Connection Control Program (Program) in which we initially concentrated on those facilities representing the highest risk of possible contamination of our public water supply through cross connections. To assist building owners, we are constantly upgrading our Program guidelines, most recently in May 2017. We have made extensive efforts in the identification, inspection, enforcement and reporting of backflow prevention devices. Since 2012, we have reorganized the Program by setting up individual units within BWSO that focus on specific areas of expertise. The three units are Inspection, Enforcement, and Cross Connection Review. Our active program far exceeds our commitments to DOH and we continue our progress towards ensuring that any facility that requires a backflow prevention device has one.

DEP maintains an active database comprising records on some 101,033 properties. The number of properties tracked in this database is dynamic, shifting both upward and downward with changes in the nature of the property’s usage profile. We have been compiling more detailed and current information about the number of buildings in the City that require backflow prevention devices via both data mining and field inspection. Residential properties are not a subject of concern except where there are large boilers that use chemically treated water. Our approach has been to target our inspection resources more efficiently by identifying the types of commercial
and residential properties that are most likely to pose a risk. Our Inspection Unit uses a GIS mapping system along with information from the Department of City Planning to generate a Citywide map that targets potential high-risk areas and buildings. Each year we aim to inspect 3,000 to 4,000 properties Citywide. We continue to fill the gaps in our knowledge by getting inspectors into the field and doing the labor-intensive job of going to previously identified properties.

As a follow-up to our field inspections, our Enforcement Unit takes action where necessary. The Administrative Code provides for various enforcement measures, from issuance of Notices of Violation (NOVs) returnable to the Environmental Control Board and associated penalties, to termination of water service and disabling of equipment that creates risk to the public water supply. Our enforcement efforts do not stop with the issuance of an NOV. In addition to the penalties and enforcement actions, the unit reviews the list of properties cited to evaluate whether re-inspection is warranted based on failure to submit a report or install a device.

Once a property owner is notified and hires a licensed master plumber for the installation of a BPD, our Review Unit is responsible for the review and approval of the backflow prevention plans, the initial installation testing report, and all subsequent annual testing reports.

It is significant to point out that since 1987 all new construction is subject to evaluation of the need for a backflow prevention device in order to obtain a Certificate of Occupancy from the Department of Buildings. Consequently, post-1987 construction protocols assure compliance with the intent of Subpart 5-1.31 referenced above.

A decade ago, the number of “so-called” high-hazard facilities was estimated at 22,765 This number represented a presumptive list generated based on Department of Finance usage class categories and was intended to establish a starting point for identifying locations that had the highest probability of requiring BPDs. These inspections were completed in 2011 with a consultant inspection contract that began in January 2010.

There are currently 43,230 locations that have one or more backflow prevention devices installed. There are a total of 92,308 devices installed at these properties. The reason there are more devices installed than the number of locations is that some properties require more than one device. Of the universe of 101,033 properties inspected, 51,015 either have a device installed currently or have been notified of the need to install a device.

DEP would be able to comply with the reporting requirements of this bill with the exception of the first: the estimated number of hazardous and non-hazardous facilities requiring a BPD. As mentioned, these numbers change with the uses that buildings and facilities are put to. The number of properties tracked is dynamic, shifting both upward and downward with changes in the property’s usage profile. Properties can be reclassified from a status of need, to one of no need if the nature of the activity at the property changes. For example, if a gas station that uses hazardous chemicals and pressurized equipment were to be converted to a retail business supply store, the requirements regarding backflow prevention for that distinct property could change. These assessments are subject to continual evaluation on the part of DEP staff. As such, it should be understood that any reporting statistic represents a “snapshot” in time, subject to adjustment.
Intro. 972 of 2015 would require DEP to place signage on fire hydrants indicating that opening or tampering with hydrants is prohibited, and provide information on penalties and how to request that a hydrant be opened, such as for a spray cap.

Illegally opened fire hydrants release up to 1,000 gallons of water per minute and can reduce water pressure in neighborhoods, making it difficult to fight fires. Hydrants can be opened legally if equipped with a City-approved spray cap, which releases only 20 to 25 gallons per minute, ensuring adequate water pressure and reducing the risk that a child could be knocked over and injured by the force of the water. Spray caps can be obtained by an adult 18 or over, free of charge, at local firehouses.

When a resident goes to the local firehouse to request a spray cap, she or he fills out the required paperwork and an officer installs the spray cap in accordance with safety protocols. Depending on demand, weather, fire activity, water pressure and other factors, the officer in charge may vary the protocols. FDNY then turns the hydrant on and off at designated times.

This past summer, DEP joined with the Department of Youth and Community Development (DYCD), FDNY, and the South Bronx Overall Economic Development Corporation (SoBRO) to celebrate the 10th anniversary of the Hydrant Education Action Team (HEAT) Program. HEAT has helped reduce reports of illegally opened hydrants. HEAT deploys teams of teens hired through DYCD’s Summer Youth Employment program to inform New Yorkers about the dangers of illegally opening fire hydrants.

In partnership with SoBRO, DEP deploys four teams of 10–12 young adults who distribute literature, posters, and other informational materials about fire hydrant safety at community events, parades, greenmarkets, churches and libraries. The outreach campaign focuses on neighborhoods in northern Manhattan and the Bronx that have historically seen high rates of unauthorized fire hydrant use during heat waves. In addition to literature, the teams distribute reusable water bottles and other souvenirs that promote the safe operation of fire hydrants. Opening a hydrant illegally can result in fines of up to $1,000, imprisonment for up to 30 days, or both.

We do not believe installation of signage Citywide is warranted. We are concerned about the cost of producing and maintaining signage on 109,000 hydrants throughout the City; we are not sure that information about enforcement placed on a sign will act as a deterrent; and we are concerned that warnings about enforcement would tend to undermine the collaborative nature of our HEAT outreach efforts. We believe the success of our community outreach efforts confirms that this approach to reducing unlawful use is preferable. We would be willing to discuss with the Committee expanded community outreach or other ideas to further encourage and enhance compliance with the law.

Intro. 1731 of 2017 would establish standards for fire hydrant repairs. In addition to rulemaking and reporting requirements, high-priority hydrants, including those near a hospital, school, senior-citizen housing and others as determined by DEP, would have to be repaired within seven calendar days of receiving a complaint and non-priority hydrants within 10 calendar days.
There are 109,000 hydrants in the City over which DEP and FDNY have oversight; there are also hydrants that belong to the Department of Parks and Recreation, the Metropolitan Transportation Authority, The Port Authority of New York and New Jersey, the Triborough Bridge and Tunnel Authority, and other entities. The primary purpose of a fire hydrant is fire suppression. However, hydrants also serve other useful functions. For example, hydrants provide a method of testing the distribution system’s flow capabilities. They also provide a means for flushing the system mains.

FDNY and DEP have a long and successful relationship when it comes to public safety. In fact, DEP personnel and units respond to fire notifications of varying severity by FDNY. Upon a fire event, FDNY notifies DEP’s Emergency Communication Center (ECC), which then notifies the appropriate DEP Water Maintenance Yard. DEP personnel are dispatched to every fire two alarms and above to ensure that FDNY has the water pressure and resources they require in emergencies. In some cases at the request of FDNY, DEP personnel will also respond to one-alarm fire events. In addition, DEP personnel stay on site throughout the fire event until released by FDNY. Overall DEP’s role in response to fire events is to provide assistance and guidance to FDNY regarding their use of the water system in firefighting operations and to assess system pressures and performance.

To ensure that a hydrant will work properly when it is needed, a periodic testing and maintenance program must be followed. Although hydrants are operated by members of the Fire Department, it is generally the water utility’s responsibility to maintain them in working order. As recommended in the Manual of Water Supply Practices, all hydrants should be inspected regularly, at least once a year, to ensure their satisfactory operation. In freezing climates, dry-barrel hydrants may require two inspections per year. A common technique is to perform one inspection in the fall and another in the spring.

FDNY inspects the more than 109,000 hydrants twice a year, in spring and fall. FDNY inspectors record results of their inspection in BWSO’s database and designate whether the hydrant repair is priority or non-priority. This information is then automatically routed in the database to our repair crew.

To strive for continuous improvement, DEP has started a Hydrant Inspection Tablet Mobile Inspection Pilot Program with FDNY. This program uses a web-based mobile application on tablets so FDNY inspectors can locate hydrants in a map view, enter inspection results in the field and automatically upload them to the database. This will help reduce FDNY’s effort and inspection times even further.

As specified in FDNY’s All Units Circulars 205, a priority hydrant is defined as a hydrant that is the only hydrant in a block or a hydrant that is vital to the protection of high-profile locations or critical infrastructure locations such as hospitals, schools, senior housing, bridges, tunnels and mass transit systems. In addition, two adjacent hydrants in a block that are out of service are both reported as requiring priority repair.
In an effort begun in 2009 to improve response times, DEP set an ambitious but achievable target of 10 days to repair high-priority hydrants. As a result of discussions with the Mayor’s Office of Operations, effective January 2014, the target has been changed to seven days in the Mayor’s Management Report (MMR). Reported in the September 2017 (FY18) MMR, as shown in the table below, DEP’s average time to repair high-priority hydrants has been three days since FY 2015, which is significantly lower than our target of seven days.

Inoperative hydrants are generally reported by FDNY through local fire company surveys of neighborhood hydrants; less than 1% of the City’s 109,000 hydrants are inoperative at any given time. As you can see from the September 2017 MMR, DEP aims to ensure that there are fewer than 1% of broken and inoperative hydrants Citywide. We work hard with FDNY to address high-priority hydrant repairs immediately to ensure that there is an adequate supply of water for firefighting operations.

September 2017 (FY2018) MMR

<table>
<thead>
<tr>
<th>Hydrants</th>
<th>FY2015</th>
<th>FY2016</th>
<th>FY2017</th>
<th>Year to Date FY2017</th>
<th>Year to Date FY2018</th>
<th>% Δ</th>
<th>MMR Annual Target</th>
<th>Sept - 16</th>
<th>Sept - 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual backlog of broken and inoperative Hydrants</td>
<td>0.50%</td>
<td>0.52%</td>
<td>0.54%</td>
<td>0.42%</td>
<td>0.38%</td>
<td>-.04%</td>
<td>1.00%</td>
<td>0.39%</td>
<td>0.40%</td>
</tr>
<tr>
<td>Avg. Time to Repair/Replace High Priority B&amp;I hydrants (days)</td>
<td>2.5</td>
<td>2.9</td>
<td>2.5</td>
<td>3.5</td>
<td>2.8</td>
<td>-20%</td>
<td>7.0</td>
<td>2.7</td>
<td>2.9</td>
</tr>
</tbody>
</table>

The actual backlog of broken and inoperative hydrants citywide from FY2015 to FY2017 was between 0.50% to 0.54%. The current year-to-date backlog in FY2018 is 0.38%, which is a significant decrease compared to the past three fiscal years. Most importantly, we are far below the MMR’s annual target of 1%.

The average time to repair high-priority broken and inoperative hydrants from FY2015 to FY2017 was between 2.5 and 2.9 days. The current FY2018 year-to-date is 2.8 days, which is significantly lower than the MMR’s annual target of seven days.

While DEP already meets the proposed target on the time to repair high-priority hydrants, which is the paramount criterion for public safety, we do not believe that dedication of additional resources required to reduce the backlog of non-priority hydrants further is warranted, given the needs of all the components of the system that demand our attention.

Finally, the real-time reporting requirements in the bill are infeasible and of doubtful utility in light of the repair protocols we have outlined above, the close coordination between FDNY and DEP, and our exemplary record, which exceeds the MMR targets by as much as or more than 100%.

Intro. 1425 of 2017 would require that, by December 31, 2018, DEP submit and post on its website a plan to prevent sewer backups (SBUs). Also addressing sewer system backups is Intro.
1468 of 2017, which would amend the Administrative Code to require that, where an SBU occurs more than once at the same location within a 12-month period, the portion of the sewer system causing the second or subsequent backup is identified and cleaned within 10 days of such subsequent backup.

As New York City’s water and wastewater utility, DEP provides vital services to more than eight million New Yorkers: delivering over one billion gallons of fresh drinking water and treating approximately 1.3 billion gallons of wastewater daily. To reliably treat this volume of wastewater DEP utilizes a network of more than 7,500 miles of sewers to convey wastewater to one of its 14 wastewater treatment plants. To operate and maintain the many components of this extensive sewer system, DEP has five repair yards, seven sewer maintenance yards, a fleet of specialized vehicles, and a staff of laborers, supervisors, engineers, and analysts.

Over the last decade, DEP has shifted from a reactive to a proactive, data-driven approach to operating and maintaining the sewer system. DEP employs the principles of adaptive management to continually improve our sewer maintenance program, while balancing our overarching responsibility to deliver high quality drinking water and treat wastewater every day in an affordable and sustainable manner. DEP’s rigorous sewer inspection, analysis, and cleaning program has produced tangible improvements to the level of sewer service Citywide. In the last five years, we have achieved significant improvements in many of our key indicators, demonstrating the enhanced reliability of our system. For example, between Fiscal Year 2012 and Fiscal Year 2016, total SBU complaints dropped 25% and confirmed SBUs dropped 49%.

These reductions are a result of DEP’s ongoing operations and maintenance program, which relies on both responding to complaints and utilizing programmatic efforts to prevent backups. DEP also targets its efforts on reducing the amount of fats, oil and grease (FOG) discharged to the sewer system. These efforts include regulations that mandate the use of grease interceptors in certain commercial establishments, such as restaurants, as well as extensive public outreach to inform New Yorkers about actions they can take to prevent the improper disposal of grease into the system, a primary cause of SBUs.

DEP stepped up its FOG outreach efforts in 2015 to inform the public about grease problems in the sewer infrastructure. To date, the outreach effort has reached over 60,000 households in targeted communities through a combination of activities including door-to-door canvassing and workshops with community organizations and local houses of worship. The outreach program is also closely coordinated with the New York City Housing Authority where similar issues exist. Additionally, our education staff conduct classroom and assembly programs and has developed a special curriculum for teachers on the topic of grease and its proper disposal.

Most recently, in July 2017, we augmented our proactive approach by implementing a three-year pilot program to conduct targeted sewer inspections in parts of the City that have a relatively higher rate of SBUs. Using the principles of adaptive management, DEP will evaluate the results of this pilot and identify additional opportunities to improve our overall sewer maintenance program. All of DEP’s efforts, including the pilot program, are set forth in DEP’s Sewer Backup Prevention and Response plan, copies of which I am glad to provide to you today.
DEP performs these proactive sewer inspections and response through its Sewer Operations and Analysis Program (SOAP). This program was instituted in 2011 in an effort to reduce the number of recurring SBUs. SOAP locations are defined as sewer segments that experienced a recurring confirmed SBU in a three-month period. A sewer segment is defined as a City block. Once we identify the SOAP locations, these locations are referred to Field Operations for investigation and analysis of the sewer segments. The investigation may lead to cleaning, spot repair, or referral for capital replacement.

At times, field crews identify sewer conditions that require cleaning beyond their capabilities or determine that the sewer needs to be televisied. For example, the size and condition of the sewer or a record of recent repeated cleanings may limit the crew's ability to take effective action. In these instances, the work is transferred to DEP’s Capacity, Management, Operations, and Maintenance (CMOM) Section. CMOM then delineates the specific needs and boundaries of the work via more robust field inspection. Once the scope is defined, it can be assigned to DEP’s Citywide contractors for cleaning, debris removal, and internal visual inspection utilizing a sewer camera. Once cleaning and televising work is completed, CMOM inspectors report findings to Field Operations and Emergency Reconstruction staff as needed.

Once DEP completes remedial measures through the SOAP program, the sewer segment enters a 12-month monitoring period. During that time if an additional confirmed SBU occurs on that segment, DEP identifies and elevates this segment to our SBU Recurring after SOAP (SRAS) program and assigns it to the CMOM Section to develop and implement an action plan tailored to site-specific conditions. The CMOM analysis uses tools such as closed-circuit TV to evaluate the structural integrity of the sewer and engineering analysis of drainage plans and as-built drawings to ensure that the system is functioning as designed. CMOM personnel may also perform walkthrough inspections of larger sewers. Corrective action plans recommended by CMOM may include programmatic degreasing, flushing, or repair or replacement of a portion of the sewer.

BWSO has improved its program to address FOG. We identify liquid degreasing (LDG) locations, which are locations that have recurring or chronic SBUs where grease is the contributing cause. Sewer segments experiencing two or more SBUs where grease is the contributing factor are flagged to the respective borough managers for assessment and consideration to add to the programmatic LDG cleaning locations.

Both Intro. 1468 and Intro. 1425 address identification and cleaning of locations with more than one SBU during a 12-month period, so my comments apply to both bills. DEP has a robust plan to address SBUs and has recently commenced a three-year pilot program to further determine appropriate and effective enhancements to our Plan. We would ask that the Council either defer legislative action on these bills until the pilot has been completed, or amend the requirements of the bill to reflect DEP’s commitment to update the Council on its progress in implementing the Plan, including the pilot. We look forward to working with the Committee to most effectively and efficiently reduce further sewer system backups.

Again, thank you for this opportunity to testify. I would be glad to answer any questions.