NYC Environmental Protection

Testimony of
Pam Elardo
New York City Department of Environmental Protection
before the
New York City Council
Committee on Environmental Protection

February 25, 2019

Thank you Chair Constantinides and members of the Committee on Environmental Protection for the opportunity to testify today. My name is Pam Elardo, Deputy Commissioner of the Bureau of Wastewater Treatment (BWT) at the NYC Department of Environmental Protection (DEP). I'm here to speak about DEP's ongoing sustainability and resiliency work at our newly named Wastewater Resource Recovery Facilities (WRRF). This name change is not superficial – it reflects our continuing transformation from basic handling and treatment of wastewater to being stewards of sustainable resources focused on minimizing waste, enabling a circular economy and embracing innovation.

DEP's legacy of clean water action dates back to the 1890s with the construction of the first rudimentary wastewater treatment plant designed to protect farming and fishing in Brooklyn. The City's rapid population and industrial growth through the early and mid-20th Century heightened the need for additional wastewater infrastructure, and the city started to address that with a number of facilities in the 1930s through the 1950's. With the passage of the Clean Water Act in 1972 and modern environmental advocacy, the City began investing heavily in water pollution control. Today, our waterways are cleaner than they've been in 140 years, and we now see whales, oysters, and wetlands returning to our shores.

As many of you know, DEP owns and operates one of the largest wastewater collection and treatment systems in the world, with 14 resource recovery facilities and 96 pumping stations to convey stormwater and wastewater to treatment.

Many of these facilities are by necessity low-lying, as much of the system is gravity-fed, and in waterfront locations for efficient release of clean water, the byproduct of the treatment process. As a result, coastal flooding and storm surges pose a major risk to our infrastructure.

Prior to Sandy, DEP had already been studying the impacts of climate change on wastewater treatment facilities, and in 2013 our agency developed a citywide resiliency approach that established resiliency design guidelines for all wastewater projects moving forward. Our NYC Wastewater Resiliency Plan stipulates that all critical equipment must be protected to the 100-year base flood elevation plus 32" to account for sea level rise.

Following Sandy, we performed an inventory of at-risk assets using a climate-based approach that not only considered how to protect those facilities damaged during Sandy but also those that could be affected by a similar storm. Our risk analysis determined that part of all 14 WWTPs and 60% of pumping stations are at risk and could incur $1 billion in damage in a single event. Repeated events could raise those damages to $2 billion.

DEP has established design standards for every new project program that evaluates each capital project for energy and greenhouse gas reduction, waste reduction, climate resiliency, environmental materials, and green infrastructure. This analysis ensures that every project is geared toward the lowest impact, best-resilient approach, and ensures high-quality service for our rate-payers into the future.

In order to address the risk at our existing facilities, and without facility-wide redesign contracts, DEP participates in FEMA and New York State grant programs totaling over $340M for resiliency upgrades. These grants have helped DEP avoid passing these costs directly onto our rate payers.

Improvements differ from facility to facility – there's no one-size fits all approach. Generally, the types of repairs include elevating or flood proofing essential equipment, installing deployable flood barriers, creating back-up power sources, sealing buildings and repairing or replacing damaged conduits. The majority of the work is slated to be completed by the end of 2021.

We approach resiliency as an essential component of sustainability, and under *One New York: The Plan for a Strong and Just City*, the Mayor pledged to dramatically reduce overall greenhouse gas emissions 80 percent by 2050 (80x50), specifically reducing emissions from City government operations 35 percent by 2025. Emissions from the water and wastewater systems are responsible for nearly 20 percent of City government emissions and wastewater treatment accounts for 90 percent of that. DEP has already achieved a 23% percent reduction in greenhouse gas emissions between 2006 and 2018. In fact, emissions have reduced each year since 2008, and DEP is on track to meet the OneNYC goal of a 40 percent reduction by 2030.

Improving the efficiency of wastewater treatment, capturing and beneficially using all biogas, along with increasing the production of biogas, a valuable renewable energy source, significantly reduces carbon emissions. These actions also create offsets against energy originating from traditional fossil-fuel sources, and can create financial benefits through the creation of marketable environmental credits. DEP is embarking on a comprehensive energy and carbon neutrality plan to reduce energy consumption agency-wide through operational optimization, completing facility upgrades, targeting capital investments, integrating energy conservation measures in capital planning, and purchasing more efficient vehicles.

Under our demand-side solutions, DEP invests in more energy-efficient equipment and trains our staff to operate facilities more efficiently, thereby reducing our energy needs. For example, we have identified over 500 energy conservation measures (ECM) across all our industrial systems, and we are in the process of integrating these ECMs into our state of good repair plan.

Under our supply-side solutions, DEP targets the suppliers of our energy, changing to less carbon-intensive energy sources. For example, DEP produces 3.6 billion cubic feet of green-energy rich anaerobic digester gas annually and beneficially uses some of this gas for power and heating purposes on site. We also are incorporating New York City's food waste into digesters for additional biogas generation. DEP is becoming a national leader in the area of food-waste-to-energy and is taking it a step further. We have partnered with National Grid to construct a biogas conditioning system on-site at Newtown Creek, which will send DEP's biogas, generated by the public's wastewater and waste food, back to residences and businesses in the area, providing a perfect example of a local circular economy.

Environmental Protection

Under our traditional renewable energy systems, DEP deploys solar photovoltaic, hydroelectric, wind, geothermal, and other zero-emissions systems. For example, the largest installation (1.3 MW) on a city-owned property is on a DEP WRRF on Staten Island and we plan to install more solar at other WRRFs across the city. DEP has deployed some small-scale wind turbines and we are planning to install more as we continue to investigate the feasibility of installing larger-scale wind power.

Hydropower is another piece of our clean power portfolio, while also supporting economic development in the host municipality and generating revenue for New York City. In addition to the upcoming Cannonsville Hydropower Plant, DEP already owns several hydroelectric facilities and is studying the feasibility of building more full-scale, micro-hydro, and tidal systems. Our upstate water supply is actually "energy positive" in that the amount of hydroelectric power exceeds the amount of electricity purchased from the grid for water supply operations.

On the BWT side, it is important to recognize the scale of our most valuable strategies for carbon and energy neutrality goals and power resiliency efforts: biogas and biosolids. There is an extreme value in biogas for heat and electricity generation and biosolids for carbon sequestration. There is no argument that maximizing the production and beneficial use of biogas presents more opportunity to advance us towards energy neutrality than any other traditional renewable energy investment alone. Today, we have achieved 30% beneficial use of our digester gas, and with Newtown Creek's gas handling system completion this month and North River's cogeneration system nearing completion, that number will jump to 56%. This continues to be our priority, and we are guiding our investments accordingly.

Under our energy and carbon offset strategies, DEP pursues offsite beneficial use of its wastewater treatment biogas and biosolids products, deploys green infrastructure, manages water demand to reduce our own power needs, and manages wetlands and upstate forested lands that are sequestering atmospheric carbon.

Operating and maintaining a complex system processing 1.3 billion gallons of sewage every day is no small feat, and we take our responsibility of being a good neighbor at each facility very seriously. DEP has already taken many steps to improve odor control by proactively identifying and mitigating odor sources through operational changes and investing in new capital equipment. I was also proud to institute Odor Control Task Forces for all BWT and focused our early efforts at our Rockaway, Hunts Point and Owls Head facilities in 2018, resulting in a number of odor mitigation action items. While, Hunts Point's near term action items were completed and Rockaway's items are near completion, we will continue to look for ways to improve. As an example, we have improved our response and tracking for all 311 nuisance complaints, where onsite investigations are documented and monthly summary reports are issued and shared with local elected officials and stakeholders.

That being said, we know that there's always more that can be done to be a good neighbor, and this has been identified as an important strategic initiative in DEP's new strategic plan.

DEP supports the goals of Council Member Salamanca's proposed legislation and looks forward to working with the Council to ensure these laws achieve our shared goals.

Intro. 984 institutes new requirements related to transporting digested biosolids (or sludge) from DEP facilities. Each of our facilities face different challenges, and we want to make sure that a one-size-fits-

all approach doesn't drain resources where unnecessary. In addition, there continues to be new technologies or processes that could have a more positive impact locally that we don't want to miss out on. We have and will continue to work with local leaders to ensure we are doing everything we can to reduce odor complaints that result from our facility operations. DEP will continue to work with our sister agencies to identify and enforce against commercial odor sources, like solid waste trucks parked overnight on city streets.

Intro. 1165 requires specific air quality monitoring outside of DEP's resource recovery facilities. We whole-heartedly share the goal of ensuring safe air quality and protecting public health. We believe that some of the suggested testing already takes place and some proposed monitoring should be modified, and but believe we can agree on shared monitoring requirements.

We look forward to working with elected officials, environmental advocates and all New Yorkers in meeting DEP's mission of enriching our environment and protecting public health by providing high quality drinking water, expertly managing wastewater and stormwater, and growing our utility's resiliency, sustainability and resource recovery.

Statement of Adriana Espinoza, NYC Program Director
New York League of Conservation Voters

City Council Committee on Environmental Protection
February 25, 2019

Good afternoon. My name is Adriana Espinoza, Director of the NYC Program at the New York League of Conservation Voters (NYLCV). NYLCV represents over 31,000 members in New York City and we are committed to advancing a sustainability agenda that will make our people, our neighborhoods, and our economy healthier and more resilient. I would like to thank Chair Constantinides and members of the Environmental Protection Committee for holding this important hearing on the sustainability and resiliency of the City's wastewater treatment plants (WWTP).

New York City's fourteen WWTPs treat 1.3 billion gallons of wastewater per day. The intricate network between our drains and these treatment plants consists of 7,400 miles of sewer pipes, 135,000 catch basins, and 95 wastewater pumping stations.

On an individual level, there is plenty we can do to promote clean waterways and protect the sustainability of our WWTPs. Properly disposing of garbage and household chemicals, conserving water, and limiting use of water during heavy precipitation events, are all behaviors New Yorkers can adopt to promote clean water.

We must do all we can in the fight against climate change. That's why today, I want to highlight an opportunity New York City has to enhance the sustainability not only of our WWTPs, but also meet two One NYC goals; first, to reduce greenhouse gas emissions 80 percent by 2050 and, second, to achieve zero waste by 2030. And there are things entirely in control of the City that can and must be done. In this case, NYLCV strongly recommends that the City upgrade DEP's existing digesters which manage sewer sludge to be more efficient. The energy used at modernized digesters could be used to offset or eliminate the need for demand response generators at those locations. This would reduce air pollution, and cut down on methane emissions, a greenhouse gas 30 times more potent than carbon dioxide. We urge the Mayor and Council to invest the funds necessary to modernize the DEP's network of digesters.

But those digesters can do more that just manage waste created by the WWTPs. In 2015, NYLCV's Education Fund released a series of policy recommendations for an effective organic waste program in NYC.[1] These recommendations asked the City to maximize the use of anaerobic digestion at the Department of Environmental Protection's (DEP) Wastewater Treatment Plants. While the Newtown Creek WWTP is authorized to accept up to 500 tons per day of organic waste and has a contract with Waste Management to receive waste, none of DEP's other digesters do.

[1] http://nylcvef.org/wp-content/uploads/2017/08/Organic-Waste-Recommendations-for-NYC-2014.pdf

Statement of Adriana Espinoza, NYC Program Director
New York League of Conservation Voters

In addition, we support a collaboration between DEP and the Department of Sanitation to make provisions for high-quality organic waste, similar to capacity at the Newtown Creek plant, at other WWTPs. This investment could contribute to the City's Zero Waste goal and support the struggling residential organic waste program by stimulating demand for organic waste.

Converting this waste into renewable energy contributes to better air quality, lower emissions, and can potentially save the City money over time as the energy generated is used to power the WWTPs.

I would like to thank Chair Constantinides and the entire Committee for your leadership on environmental issues, and I look forward to working with you all closely moving forward.

The North Shore Waterfront Conservancy of Staten Island, Inc.
P.O. Box 140502
Staten Island, New York 10314

February 19, 2019

To: Chairperson, Costa G. Constantinides, and Donovan Richards, Eric A. Ulrich, Stephen T. Levin, Rafael L. Espinal, Jr., Carlos Menchaca, Kalman Yeger, of the NYC City Council Environmental Protection Committee

Reference: Int. No.984, Amendment 24-154.1 Transportation of sewage sludge, and minimum and maximum penalties for violation of 24-153:

On behalf of the North Shore Waterfront Conservancy of Staten Island, Inc., (NSWC or NSWCSI) we are in favor of the amendment on the transportation of sewage sludge and it being properly contained and covered in order that it will not emit noxious odors.

However, we do have questions concerning the enforcement of this law, we are not sure what agency is going to enforce it? Our experience has been that the average police officers patrolling in Environmental Justice Communities don't have the training concerning what trucks are permitted on residential streets. Nor do they know for that matter how many axles are permitted on residential streets that are near designated truck routes. There are no signs posted to tell them, so what would make these trucks any different from the vehicles that they are currently seeing and not issuing violations to?

We have a chronic problem of truck traffic rerouting itself onto neighboring residential streets in Environmental Justice Communities.

And in terms of an industrial waterfront such as what we have on the North Shore of Staten Island, we have never seen a NYPD pull over a vehicle for an environmental violation of any kind. In addition, by the time a resident could call in a 311 or 911 complaint about a vehicle violating this law and perhaps DEP's Enforcement would show up? That vehicle will be long gone before a summons could be issued. If enforcement personnel can't find the alleged offending violator then the complaint is dismissed and regardless of the number times this occurs no record is kept so each time is like the first time. And this no action can go on for years, we've experienced it.

We also feel that the penalties are too low and would fall under the category of the cost of doing business. This has been an ongoing way of handling violations for many businesses/contractors that are repeat offenders. And we believe that if these violations/cost of doing business is properly worded they can be considered a tax write off for them.

Once again, we support the law, but we are asking who will enforce it and how will it be enforced specifically in Environmental Justice Communities?

Sincerely,

Beryl A. Thurman

Beryl A. Thurman, Executive Director
NSWCSI

Creating Livable Communities

The North Shore Waterfront Conservancy of Staten Island, Inc.
P.O. Box 140502
Staten Island, New York 10314

February 19, 2019

To: Council Members Salamanca, Kallos Rosenthal and Levin
To: Chairperson, Costa G. Constantinides, and Donovan Richards, Eric A. Ulrich, Stephen T. Levin, Rafael L. Espinal, Jr., Carlos Menchaca, Kalman Yeger, of the NYC City Council Environmental Protection Committee:

Reference: Int. No 1165, 24-531 Wastewater Treatment Plant Air Quality Monitoring.

On behalf of the North Shore Waterfront Conservancy of Staten Island, Inc. (NSWCSI or NSWC) and the Environmental justice and Waterfront communities that we advocate on behalf of. We are in favor of the above Intro. For decades we have complained about the noxious odors from the NYC Department of Environmental Protection's Port Richmond Sewer Treatment Plant and gotten little in terms of any improvements in odor reduction or odor elimination from the sewer treatment plant.

Complaints about the plant go to the plant and their response has been everything from they work there so they can't smell anything. To them saying for years that it wasn't them emitting the odors, to them showing up at our homes as if we are the source of the noxious odors. We have endured years of dealing with a system that allows its offenders to monitor themselves under the disguise of best management practices, when clearly there aren't any. We have repeatedly asked where are the environmental laws that are supposed to protect the nearby Environmental Justice Communities? And received no answers.

We are not engineers, but even we know that the Port Richmond Sewer Treatment is too small and cannot properly handle the amount of waste that is being produced on the North Shore of Staten Island, which includes the East Shores and the West Shores. Nothing that smells this bad all of the time could possibly be functioning up to par with what we need. Our nearby rivers are all on the NYS Department of Environmental Conservation's Impaired Waterway's list and have been for decades with good reason, lots of floatables (untreated raw sewage) every time it rains or the snow melts. And it doesn't matter how little or how much it rains the sewer treatment cannot handle wet weather events effectively. To add to insult to injury NYC DEP will not issue a public report on their wet weather capacity for the Port Richmond Sewer Treatment Plant.

We would like to once again go on record in stating that the Port Richmond Sewer Treatment Plant needs to not only be properly monitored for its emissions into the air that have negatively impacted the Environmental Justice Communities that surround it. We are also stating that just monitoring the air quality is not enough. We believe that this monitoring must include mitigations that will drastically improve the air quality for the surrounding Environmental Justice Communities. https://www1.nyc.gov/html/dep/html/wastewater/wwsystem-plants.shtml

We are further asking that action be taken to expand the Port Richmond Sewer Treatment Plant so that it can handle the current needs of the North Shore population and have room to address future needs. It is time that the City of New York purchase nearby adjoining properties for this expansion. As for those property owners whose properties are needed for the expansion but refuse to sell. Then that is what the use of Eminent Domain is for, providing difficult property owners with market value for their properties that are to be used for the Public Good.

The expansion of the Port Richmond Sewer Treatment is crucial to Staten Island's North Shore's infrastructure, as well as to address the U.S. EPA's Clean Water Act - that we are in violation of and have been for decades and in helping to reduce the effects of Climate Change.

Sincerely,

Beryl A. Thurman

Beryl A. Thurman, Executive Director
NSWC

Creating Livable Communities

ENERGY VISION TESTIMONY, February 25, 2019
NY City Council Committee on Environmental Protection
Hearing on Ints. 0984 and 1165 of 2018

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I'd like to thank the Committee and the Chair for the opportunity to testify. My name is Phil Vos, and I am Program Director at Energy Vision, a New York City-based national environmental non-profit focused on commercial and cost-effective options for decarbonizing our economy.

Wastewater treatment infrastructure is essential to the overall health and safety of New York City. In addition to ensuring our waterways are clean, this infrastructure offers other benefits that do not receive the attention they deserve.

Further to the legislation under discussion, systems to help address the issues of sludge and biosolids odor, and of air quality— including greenhouse gas emissions—are already in place at New York's 14 wastewater treatment plants. In many cases, though, these systems are in need of repair or upgrading. These are the plants' "anaerobic digesters"— infrastructure that also helps address the City's larger sustainability goals.

Anaerobic digestion is the decomposition of organic materials in the absence of oxygen. At wastewater plants, sewage sludge is anaerobically digested in sealed vessels over a period of weeks. By the end of the process, the organic matter has been reduced in volume, its odor has been greatly reduced and it contains much lower levels of pathogens. The process also captures "biogas," a methane-rich and versatile renewable energy resource.

When it comes to air quality and greenhouse gas reduction, biogas capture is critically important. Biogas from anaerobic digestion of sewage is 55-60 percent methane—a GHG with 86 times the global warming potential of carbon dioxide in the near term, and as much as 30 times in the longer term. Uncaptured, this methane would escape into the atmosphere, accelerating the process of climate change.

Wastewater treatment plants that capture biogas generally burn it onsite to produce heat and/or electricity; surplus gas is "flared," or burned off. Unfortunately, 70% of the biogas produced by NYC's 14 facilities is currently flared. This is partly because digesters at many of our plants are old and in varying degrees of disrepair, limiting the efficiency of biogas collection. In addition, beyond on-site combustion for electricity and heat, there are few uses for this "raw" biogas.

With appropriate funding, however, there is a better option and significant opportunity for using New York City's wastewater biogas resource: upgrade it to pipeline quality "biomethane." Biomethane can be used for all the same things as conventional natural gas—heating and cooling, electricity generation, and vehicle fuel. But its GHG emissions are at least 50% lower on a lifecycle basis, and no drilling or fracking is involved.

Biomethane made from NYC's wastewater could be used to heat City buildings, or to fuel City or MTA fleets, greatly reducing GHG emissions from those sources, in support of our 80x50 sustainability goals. It could also be sold to generate revenue for the City—as recommended in a 2018 analysis by the Independent Budget Office.

The Newtown Creek facility is a great example of what can be done. First, commercial food waste is being added to the digesters, which increases biogas production. Using excess digester capacity at our wastewater plants to "co-digest" City-generated food scraps is a path toward the City's "0x30" goal of reducing waste sent to landfills. Second, equipment to upgrade biogas is now being installed at Newtown Creek; once completed, biomethane from the facility will be injected into National Grid's network for use by businesses, residents and vehicle fleets.

Improving anaerobic digestion systems at our wastewater plants offers multiple benefits and opportunities: improving odor control; reducing GHG emissions by capturing methane; and reducing solid waste going to landfill. Upgrading the biogas captured by the digesters would provide a renewable source of clean energy that the City could use or turn into revenue. Revenue generated from the sale of biomethane could be redeployed to fund both "state of good repair," as well as innovative wastewater infrastructure upgrades.

To help meet the goals of the legislation under discussion and achieve other sustainability goals, we encourage the Committee to recognize the importance of upgrades to anaerobic digestion infrastructure at our wastewater plants, and to evaluate increased production of biomethane from captured biogas.

Thank you,

Phil Vos

Program Director, Energy Vision
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Appearance Card

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Name: Pam Elardo, Dep Commissioner

Address: (Queens)

I represent: NYC DEP

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Name: Michael DeLinch

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Date: _____

(PLEASE PRINT)

Name: PHIL VOS

Address: 488 7TH STREET, BROOKLYN 11215

I represent: ENERGY VISION

Address: 138 E. 13 ST., NYC, 10003

Please complete this card and return to the Sergeant-at-Arms