



**New York City Department of Emergency Management  
Before the New York City Council  
November 20, 2023**

Good morning members of the New York City Council. I am Christina Farrell, First Deputy Commissioner of New York City Emergency Management, and I am here to discuss the weather impacts to New York City on September 29, 2023, inclusive of our preparedness and response to that emergency event. I am joined today by Deputy Chief Operating Officer Kim Cipriano from the New York City Department of Environmental Protection and Chief Esposito from the New York City Fire Department.

First, I want to briefly discuss the naming of this storm. There have been various entities who, in the days following the event, called this storm the remnants of Ophelia. However, this weather pattern did not meet the National Weather Service definition of a remnant storm. In fact, the remnants of Ophelia had entirely dissipated several days beforehand, and the NWS has stated that they will not be calling this a remnant system in their storm reporting. This is important because, as the city's official weather partner, we should endeavor to ensure our messaging is aligned with the NWS. Additionally, although storm names can be helpful for warning the public, they can also be a detriment if used incorrectly because it gives the false impression that it takes a named storm to produce significant impacts. This is patently false, and the public should know that not every storm in the future will come with a name. Stated correctly, this was a flash flood event.

Second, to understand how the city responds to flash flood emergencies, it's important to understand the science behind it and the challenges with respect to flash flood prediction. The first challenge is meteorological and includes factors such as the speed, strength, and evolution of the parent storm system; the intensity and motion of individual storm cells and bands that are producing heavy rain; and whether new cells are developing and impacting the same area or neighborhood multiple times. Due to the chaotic nature of weather modeling, it is not always possible to predict these factors far in advance, as there is an inherent uncertainty with respect to heavy rainfall prediction. There is very little lead time, perhaps only an hour or so, to accurately identify the precise location and intensity of rainfall. This means the NWS might be able to identify a flash flood threat for the tri-state area, or for the city as a whole, with enough lead time to activate the emergency plan and warn the public, but predicting rainfall at smaller scales, such as by borough or neighborhood or street level, isn't possible until the storm is bearing down on the city.

This correlates to a distribution dilemma. I'm sure you've observed this phenomenon yourself, when you've seen some portions of the city experiencing very heavy rainfall while other areas are entirely dry. By contrast, snow tends to fall much more uniformly across a given geographical area, which is why winter weather advisories and warnings are issued up to 48 hours in advance. The high variability in the distribution of rainfall, however, means flood advisories and flash flood warnings are issued only an hour or so in advance, or, in some cases, as a storm is on-going. This is compounded by the fact that small changes in the intensity, movement, and development of a storm can result in large changes to the forecast. A shift of only a few miles can be the difference between minimal and major, potentially catastrophic impact.

There have been major advancements in weather forecasting over the past several decades, but even if the most skilled meteorologist, using the most advanced supercomputers and weather models in the world, were able to provide an accurate and precise rainfall forecast, that does not mean we can perfectly locate the extent and depth of flooding. This is the second primary challenge of flash flood prediction. It is a hydrological issue, that is, an ability to identify the movement, circulation, and dispersion of stormwater runoff across the city's watershed.

Imagine, for example, taking one gallon of water and pouring it out over the intersection of Broadway and Park Place. We might be able to estimate where the water would go, how much of it might flow across the



concrete toward low-lying areas, or seep through cracks and into the soil, but it would only be an educated guess. Now consider that one inch of rain falling over an acre of land equates to about 27,000 gallons of water. When you take into account a storm producing three to four inches of rain over the city's nearly 200,000 acres of land, that is nearly 20 billion gallons of stormwater runoff. Other influences also determine where flooding will occur, such as the extent of porous and non-porous surfaces, extant soil moisture content, tidal levels, the steepness of the terrain, etcetera, etcetera.

When we consider these factors and layer them onto the vast and varied landscape of NYC, in addition to the forecast challenges and variability of heavy rainfall, you begin to understand all that we take into account as we plan and respond to these storms. We combat these challenges in numerous ways. First, we maintain an extremely close relationship with the NWS NY forecast office. Our Watch Command and in-house meteorologist monitor NWS discussions, products, and data 24/7/365, and distribute forecast information to a list of over 3200 partner contacts when inclement weather is predicted. We also communicate directly with the NWS through their online chat service and through consultations we hold both internally and with our city partners. Additionally, we have a third-party vendor, which provides supplemental data and support before, during and after significant weather events. We are also working toward bringing in additional outside-party modeling and mapping of rainfall flood inundation, which is a new and emerging field of technology and data.

I want to note that no two storms will ever be the same. Each will leave its own unique impact on the city, even if the weather patterns between storms are similar. This is to say that future storms will produce flooding in areas that perhaps haven't seen significant flooding in the past.

All that said, we hope you see that New York City knows a great deal about our vulnerability to rain-induced flooding and has given its impacts and consequences significant thought and time when planning for these emergencies. The City first released its *Flash Flood Emergency Plan* in 2009, which is the most activated of all emergency plans. Throughout the years, Emergency Management has made improvements in our response strategies and addressing of flood risk, especially following the catastrophic events of Post-Tropical Cyclone Ida in 2021. This includes: an embedded meteorologist within the agency, the hiring of a third-party weather vendor to supplement our coordination with the National Weather Service, the revamping of the *Flash Flood Emergency Plan* to have a risk-based and scaled approach with expanded strategies and utilizing and supporting the advancement of the City's flood sensor network, FloodNet, to give us real time flooding information.

The City's Notify NYC alert system is a critical tool, especially for residents living in basement apartments, because these units are often more susceptible to flooding and other emergency situations. Receiving real-time weather and emergency alerts enables these residents to make timely and informed decisions, such as evacuating before floodwaters reach dangerous levels. The system's multilingual support, offering alerts in 14 languages, including American Sign Language, ensures that crucial information is accessible to the diverse communities that make up our city. This City service serves as a lifeline for basement dwellers, giving them the crucial seconds or minutes needed to protect themselves and their property in the face of an emergency.

Since 2021, Emergency Management has also enhanced its public warning capabilities via Notify NYC, including the creation of new message types encouraging rain preparedness (even if NWS products have not yet been issued), such as a notification asking New Yorkers to help clear catch basins. In addition to these new messages, we have also increased our focus on basement apartment notifications and risk – including the development of a new Notify NYC subscription group that offers targeted messaging regarding flooding in basement apartments. New Yorkers interested in this information can enroll in this group and, unlike other groups, will receive phone calls all times of day, including during overnight hours, to alert them of a risk for basement flooding. All of the enhancements to Notify NYC, including the new basement notifications, are offered in multiple languages. As always, we would appreciate any support from the Council in getting the





word out about these new capabilities and encouraging enrollment in Notify NYC, especially for our new basement alerts group, as increased enrollment will assist us in reaching even more vulnerable New Yorkers. We've also added flood alarms as a response tool – similar to smoke alarms and backed by our FEMA-led post-Ida mitigation study. We have distributed alarms to New Yorkers, which they can place in their basements to alert them when flooding is occurring in their residence, so they know when to evacuate.

Finally, a pivotal moment in the City of New York's commitment to proactive preparedness and fostering resilient communities was our recent "Rising Above: Citywide Flood Preparedness Day of Action & Resource Fair." Organized by Emergency Management, this event took place at Diversity Plaza in the heart of Queens and was focused on providing the tools and information needed to combat flooding across all five boroughs, with a focus on basement apartments. CERT volunteers played an invaluable role, spanning communities from Throggs Neck in the Bronx to South Street Seaport in Manhattan to canvass flood-vulnerable neighborhoods. These dedicated individuals were not just distributing information, flood alarms and barriers but were demonstrating their use, visiting local businesses, and engaging in meaningful dialogues about flood preparedness, exemplifying what Commissioner Iscol refers to as a "culture of resilience." This event was more than symbolic; it provided actionable steps for immediate implementation, thereby reflecting the urgency of the situation.

Collaboration was a central theme of the event. Various offices and agencies, including the Mayor's Office of Climate & Environmental Justice and the NYC Public Engagement Unit, came together to advance our shared mission. Council Members, Borough Presidents, and the NYC Chief Climate Officer emphasized the acute need for flood preparedness and climate resilience, especially as we've seen the toll taken by events like Ida and Superstorm Sandy.

Returning to the emergency of September 29<sup>th</sup>, though it may appear to the public and the media that a press conference is our first step, it's part of a larger, ongoing effort of substantial preparation well in advance of a weather event. This includes identifying the key partners for operational coordination, holding interagency calls to provide situational awareness, monitoring and tracking impacts critical services and infrastructure, identifying key decisions and resources needed to reduce impacts from the event, and tracking key actions to support the response by agency partners. For the flash flood event in September, we pulled response operations and capabilities from a wide range of pre-existing plans based on the needs of the emergency at hand. We began monitoring the potential storm the previous Friday, September 22, and began consultations with the National Weather Service on Wednesday afternoon at first indication of a flood risk. Although the plan trigger had not yet been met, we activated the Flash Flood Plan at 8:30 a.m., Thursday morning out of an abundance of caution, and the Emergency Operations Center was opened on Friday, September 29 at 6 a.m. with involvement from key city agencies, including the Community Affairs Unit, Con Ed, Environmental Protection, State Homeland Security and Emergency Services, Transportation, Sanitation, FDNY, MTA, National Weather Service, NYPD, Port Authority, Parks, American Red Cross, and PSEG.

Our approach to communication leverages a multitude of platforms, activated by both Emergency Management and our network of partners, to relay crucial information promptly and efficiently. These platforms range from Notify NYC to social media outlets like Twitter and Instagram, and additional systems like the Advance Warning System, which disseminates information to people with disabilities, and other access and functional needs. In urgent situations, a unified command structure is activated, comprised of lead agencies and City Hall. This structure enables us to amplify and coordinate messaging across a wide array of agency partners, including those in the private and non-profit sectors, ensuring a comprehensive and effective public response. The first Notify NYC message about this event went out at 5:05 a.m. on Wednesday and, throughout the duration of this emergency, we issued 71 Notify NYC messages, made 64 social media posts, held two press conferences with Mayor Adam and responded to dozens of press inquiries.



The largest operation from the flooding was the full evacuation of Woodhull Hospital in Brooklyn. This required the phased transfer of 116 patients to other Health and Hospital sites which started Friday night and was completed by Saturday evening. This was necessary for patient and staff safety because the hospital needed to be taken off its backup generators so that Con Ed could assess damage to the feeder lines and make necessary repairs in addition to assessing damage to their electrical and mechanical equipment. The hospital was able to fully reopen on October 7<sup>th</sup>. The coordination and collaboration through that weekend speaks the capabilities we have in the city. Not since Sandy has there been a full hospital evacuation, let alone in short notice such as this experience, and we are thankful for the safe transfer of every patient through the process.

In the aftermath of the event, we transitioned into the recovery phase, rigorously working to ensure services were restored where needed and evaluated the full scope of the damage to infrastructure and buildings. We coordinated with our partners to execute operations like damage assessment and community outreach while tracking restorations. The Report Damage tool was newly launched this hurricane season along with a revamped 311 Severe Damage Tool, which links callers directly to service requests when reporting damage from the event. These tools collected information such as building damages that could be used to request state and federal recovery aid or 311 service requests related to the storm, such as sewer backups, structural damage to buildings, and heat/hot water complaints. Both tools were activated in the evening of Thursday, September 28<sup>th</sup> in anticipation of the incoming weather. It was amplified through all our social media channels, Strengthening Community networks, elected officials and community boards, and further amplified by City Hall and other agency partners. A citywide Notify NYC message was also issued to amplify the 311 Severe Damage Tool, encouraging people to submit reports.

The numbers received from this tool along with reports to the EOC were ultimately fairly low and did not trigger recovery operations such as activation of our Damage Assessment Working Group, muck-out, or debris clean up. In addition, the City did not stand-up hotels or shelters, nor did we set up service centers. The impacts were also not as severe as past events in New York City that met the threshold to request FEMA Individual Assistance for residents. Reports received were in the hundreds compared to thousands during PTC Ida. However, the numbers were high enough to request the NYS DHSES for a SBA declaration that would provide low-interest loans to renters, homeowners, and business owners for recovery, repair, or other losses. NYS DHSES and SBA sent representatives to tour damages across Brooklyn and Queens to see if the boroughs met the threshold for a declaration. For three days, NYCCEM escorted NYS DHSES and SBA representatives along with community organizations and Business Improvement Districts (BIDs) to assess the impact. Queens did not meet the thresholds, but Brooklyn did. We are still awaiting a final decision for the declaration.

As we have seen with other aspects of severe weather, climate change and its impacts continue to pose new challenges to New York City, and City agencies are working to adjust our plans and outreach to New Yorkers to address this hazard. As we did for this incident, we continue to pursue giving New Yorkers the most up-to-date information on the potential dangers from flash flooding so they can make any adjustments to their activities as needed. We are already in the process of reviewing our *Flash Flood Emergency Plan* and making modifications and improvements based on lessons learned from this event; for example, school closures and leave policy for city employees are two key decisions we are working to incorporate using experience from other emergency plans where we can leverage language and impacts.

Thank you for this opportunity to testify today. We will now take your questions.





**JUMAANE D. WILLIAMS**

**TESTIMONY OF PUBLIC ADVOCATE JUMAANE D. WILLIAMS  
TO THE NEW YORK CITY COUNCIL COMMITTEES ON FIRE & EMERGENCY  
MANAGEMENT AND OVERSIGHT & INVESTIGATIONS  
NOVEMBER 20, 2023**

Good morning,

My name is Jumaane D. Williams, and I am the Public Advocate for the City of New York. I would like to thank Chairs Brewer and Ariola, and the members of the committees on Fire and Emergency Management, and Oversight and Investigations for holding this important hearing.

In the past year, we have seen the devastating effects of extreme weather events with persistent flash floods, worsening air quality, and sweltering heat waves. Following the destruction and flooding caused by Hurricane Ida in 2021, which took the lives of 13 New Yorkers, my office introduced a number of bills aimed at establishing flash flood emergency evacuation plans and the cleaning and maintenance of catch basins to prevent flooding. [Intro 1185](#), previously Intro 1845 in the last session, would renew Local Law 45 of 2015 that would mandate the cleaning, and maintenance of catch basins.

This bill is a necessary first step in mitigating excess flooding as extreme weather events grow more frequent and more severe and I urge the Council to bring this bill to a vote before the end of session. Still, it is not enough to merely mitigate the impact of climate change. From orange skies to flooded streets, the pattern is clear – this administration has failed to use the most effective tools available when it comes to notifying New Yorkers about extreme weather emergencies. This administration has been quick to dismiss and deflect criticism but when schoolchildren are forced to shelter in place and find higher ground in flooded school buildings, it is clear that our city's infrastructure - both physical and communications-based - is failing to keep pace with the climate crisis.

My office has repeatedly advocated for a clear, tiered system of ranking emergency threats. Under the previous administration, we succeeded in getting such a system for COVID risk but this system was discontinued under the current administration. Similarly, our recent report on the air quality emergency this summer also proposes a series of recommendations relevant to air quality concerns, the focus of many bills being considered today. I look forward to being a partner on these issues and I applaud the City Council for their initiative today. Thank you.





OFFICE OF THE BROOKLYN BOROUGH PRESIDENT

**ANTONIO REYNOSO**

Brooklyn Borough President

## **City Council Committees on Oversight and Investigations and Fire and Emergency Management**

### **Oversight: Emergency Planning, Notifications, and Response to Citywide Flooding Events November 20, 2023**

Good morning Chairs Brewer and Ariola and thank you for the opportunity to testify today. My name is Brit Byrd, and I am a Senior Planner in the office of Brooklyn Borough President Antonio Reynoso.

On September 29, a life-threatening rainstorm dropped up to 7+ inches of rain on Brooklyn. To put this in perspective, according to the Weather Channel, the city on average gets about 4.3 inches for the entire month of September. The storm left commuters stranded as subways shut down, flooded schools, trapped people in basement apartments, caused damage to homes and vehicles, and generally created dangerous conditions across the city.

Extreme weather events like this are becoming more common due to climate change. As outlined in the Borough President's recently released Comprehensive Plan for Brooklyn, we are facing increased threats from both coastal inundation and stormwater flooding. As you can see in the attached maps, this impacts every neighborhood in the borough.

The chaos on September 29 was a cautionary tale that underscores the importance of preparation for these weather events and clear communication with the public about them. We have the tools to achieve this, including a 2021 report from the de Blasio administration's Extreme Weather Response Task Force that called for strengthening inter-agency coordination; improving communication with vulnerable communities, property owners, and the public; and utilizing data to inform decision-making; in addition to preventative measures such as infrastructure upgrades.

It is critical that the administration develop data-driven protocols for communicating risk to the public. According to FEMA's [best practices for issuing emergency alerts](#), an effective alert "includes sufficient information for the public to understand the incident and risk and to guide and urge the public to take appropriate protective action(s)." Right now, NotifyNYC's alerts are brief, and the content users received in advance of September 29 was very similar to what they received in advance of a much less extreme storm only a few days later. This inconsistency can leave users unsure whether to take these warnings seriously. MOCEJ's upcoming study on Climate Vulnerability, Impact, and Adaptation is engaging the private sector in developing climate projections, characterizing rainfall events, and creating a Coastal Flooding Vulnerability



Index. Using this type of information to inform who receives alerts, when, and what actions are suggested will create a clear and trustworthy system that New Yorkers can rely on.

Yet clear and consistent information only goes so far if it doesn't reach its intended audience. While NotifyNYC's 1.1 million subscriber number and available language options are impressive, this leaves more than 5.5 million New York City adults who don't subscribe. The need for users to have an NYCID or existing social media account (not to mention remembering their password) to access this system seems unnecessary and prohibitive and creates concerns about data privacy.

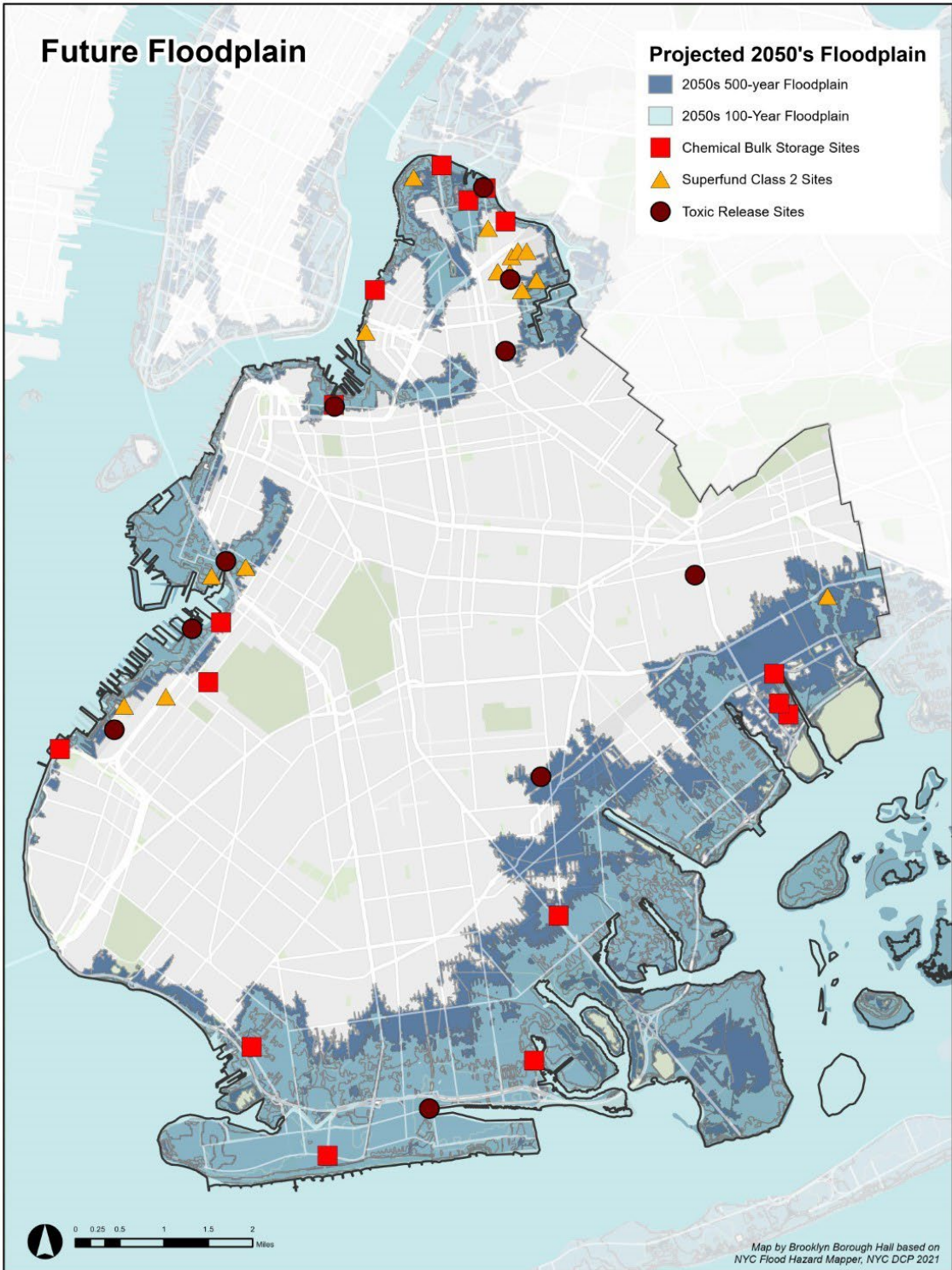
The Comprehensive Plan for Brooklyn makes additional recommendations for addressing storm impacts in the borough, and we look forward to the Council's partnership as we develop more specific proposals. These include:

- Through a Zoning Text Amendment, require evacuation plans for new construction in floodplains;
- Require new construction projects to follow the City's Climate Resiliency Design Guidelines;
- Encourage the Department of Environmental Protection (DEP) to upgrade sewer infrastructure in areas that experience persistent stormwater flooding; and
- Identify opportunities for nature-based solutions for stormwater capture in the public realm to mitigate flooding.

Borough President Reynoso also supports the three proposals from Council Member Restler being heard today regarding preparedness for air quality emergencies. We submitted testimony to the Council on this issue generally in September, and the BP wants to commend Council Member Restler for developing thoughtful, comprehensive, and data-driven solutions.

Thank you for the opportunity to speak today, we look forward to working with the Council to create a safer and greener city.



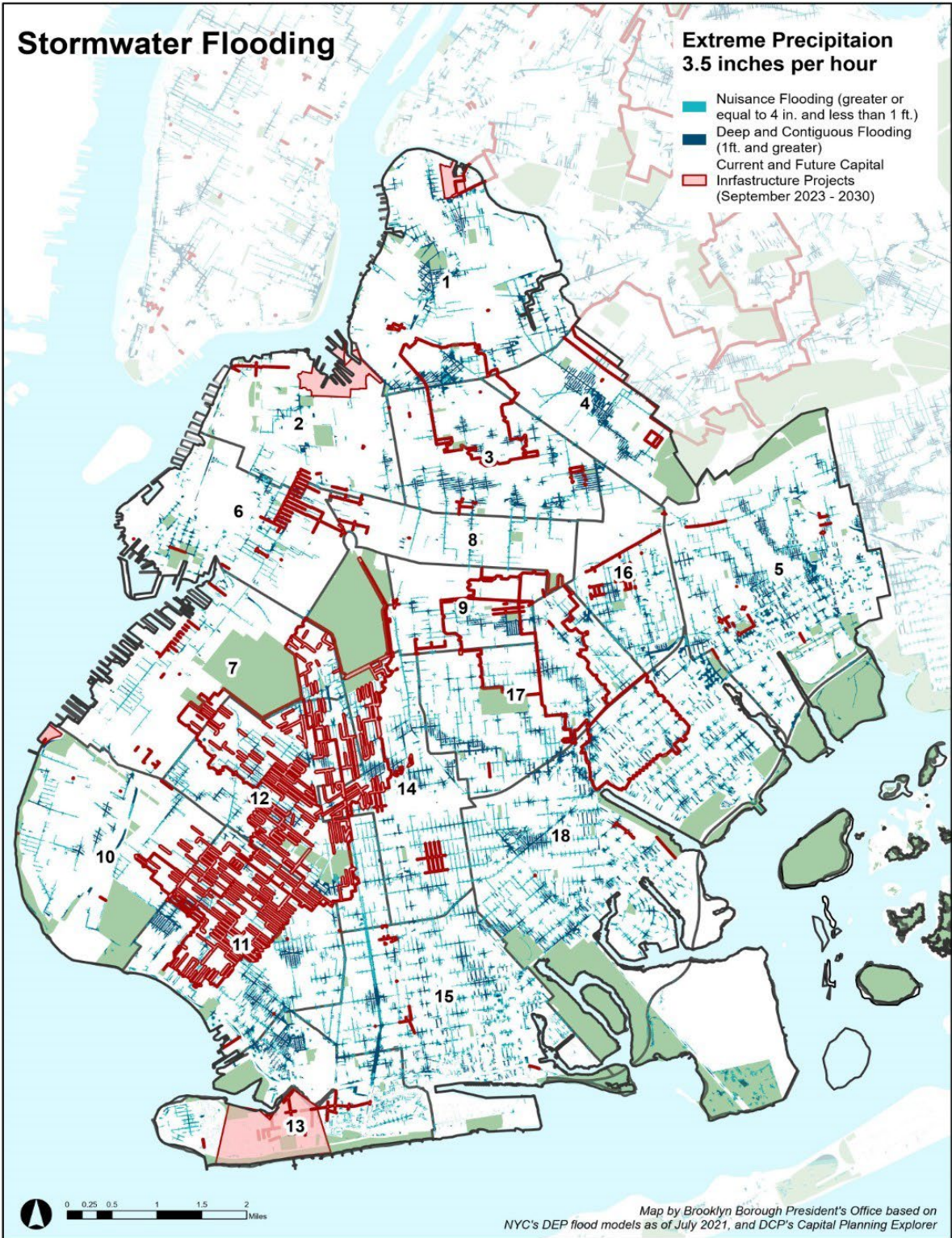




# Stormwater Flooding

## Extreme Precipitation 3.5 inches per hour

- Nuisance Flooding (greater or equal to 4 in. and less than 1 ft.)
- Deep and Contiguous Flooding (1ft. and greater)
- Current and Future Capital Infrastructure Projects (September 2023 - 2030)







November 20, 2023

## **Community Housing Improvement Program Testimony on Flooding Notifications**

Thank you for holding this hearing today. I am Adam Roberts, Policy Director for the Community Housing Improvement Program, also known as CHIP. We represent New York's housing providers, including apartment building owners and managers. We are here to express concerns about the city's policies regarding the notification of flooding and other hazards for tenants.

In the last few years, the City has focused on addressing safety risks to tenants through notifications in leases. This has left tenants overwhelmed with information, preventing them from having an understanding of how to stay safe in their homes.

Examining my own lease, 32 out of 49 pages, which is 65% of my lease, is composed of legally mandated notifications. There are two pages for bed bugs; seven pages for a fire safety plan; one page for gas leaks; two separate indoor allergen notifications, one is one page and the other is two pages; fourteen pages of an emergency preparedness guide; one page for sprinkler disclosure; one page for stove knob covers; one page for window guards; and two pages for lead paint. Since I signed my lease, an additional one page flood plain notification is now required.

Yet, the City is requiring more notifications in leases. Last month, Int 1229-2023 was introduced, requiring leases to include flood evacuation plans. This flood evacuation plan would join the already mandated emergency preparedness guide and flood plain notification, both of which already cover flooding.

Rather than overwhelming tenants with information, much of which requires technical expertise to understand, the Council should push for policies that eliminate these various risks. While removing hazards is expensive, doing so will be much more impactful than notifications.

Rather than mandating more notifications for flooding, the Council should be examining how to make floods less deadly, such as funding the replacement of gas boilers in flood-prone basements with heat pumps on roofs. The City is already pursuing this policy in NYCHA, yet has provided no funding to its struggling rent-stabilized housing, much of which is located in flood plains.

We hope that the Council will work to ensure only the most critical information is provided to tenants, that the information provided is brief and comprehensible, and that eliminating hazards is prioritized first and foremost.

Again, thank you for holding this hearing today.



**TESTIMONY**  
**New York City Council Committees on Fire & Emergency Management and Oversight & Investigations**

**“Oversight - Emergency Planning, Notifications, and Response to Citywide Flooding Events” and  
“Emergency Response Protocols on Days of Air Quality Emergency”**

November 20, 2023

Submitted by: Human Services Council (HSC)

**INTRODUCTION**

The City of New York should expand partnerships and procurement with human services providers in preparedness and response to climate crises like flash flooding and smoke-impacted air quality. We need every facet of our City and community infrastructures to serve New Yorkers living in an urban archipelago in the age of climate catastrophe. We need a citywide movement for more equitable, funded partnerships prioritizing community-based organizations and networks.

HSC is a membership organization representing 170 nonprofit human services providers in NYC, serving as a coordinating body, advocate, and intermediary between the sector and government. Our portfolio includes support for members during crisis events, including through over two decades of [preparedness and resilience resources and advocacy](#). Through our human services resilience policy agenda, HSC aims to integrate just pay, policy, and procurement strategies into the crisis cycles of everyday emergencies and large-scale disasters.

The sequential flash flood events of Summer-Autumn 2023 followed years of increased severe weather events in which flooding disproportionately impacted communities already fighting to survive racism, classism, and other forms of oppression in NYC. This summer’s wildfire smoke-impacted air quality incidents also follow decades of communities battling to address air quality disparities in NYC. The inequitable impacts of the June incidents are somewhat reflected in data—such as in mapping of [asthma-related emergency room visits](#). However, these data don’t capture the full scope of New Yorkers who cannot fully protect themselves due to lack of a home, poor housing quality, essential work, location in neighborhoods with chronic air quality injustices, and more.

We may like to call these events unprecedented, but their impacts are not. We witness the same communities impacted by every crisis in NYC—as was especially clear throughout the COVID-19 pandemic. One major reason for those impacts is sustained disinvestment in the social infrastructure and leadership within the most impacted communities. Many community-based networks, organizations, and other sources of human services are a critical ecosystem that we must prioritize for these and any other crises that threaten NYC.

**ADVOCACY**

1. Expand funding and coordination with community resilience networks for flood planning and response

The City must protect and build on the progress made in supporting citywide and community networks to provide crisis resilience. Since Superstorm Sandy, many communities have already formed climate crisis specific resilience efforts. The City has accordingly built partnerships and funding in this area, notably through the NYC Department of Health and Mental Hygiene, NYC Emergency Management, and the Civic Engagement



Commission, among other agencies. As noted by other partners, there have also been a series of plans and proposals over the last two decades relating to crisis resilience that recommend a strategic and funded lattice of connected community networks serving across neighborhoods and identity communities.<sup>1</sup> One way the City can immediately expand these networks is by better coordinating across those agencies hosting these programs. They can also expand by integrating the thousands of community partners and contacts that City agencies already engage in silos in their respective agency contracts, listservs, and other communication channels.

Better coordination and funding for these initiatives can help improve the reach of Notify NYC, the Advance Warning System (AWS), and City run social media—notably helping the City meet the ~5.5 million adults not signed up for Notify NYC. This would also help the City in its submissions for self-reporting damage assessment tools (like the [HRO damage report portal](#)), and dispersal of resources for safe flood cleanup, mitigation, rehabilitation, and other recovery needs.

Through more funding, training, and partner expansion, these networks can assist in getting out critical information pre and post storm to communities that currently are not reached by Notify NYC due to any number of factors—notably language and disability access, distrust of government, cultural gaps, and more. To sustainably do so, their roles should be codified into the City’s Coastal Storm and Flash Flood Emergency Plans.

## 2. Initiate equitable, community-driven planning and response for dangerous air quality events

The City is starting from a slightly different community engagement baseline for air quality crises, like this summer’s wildfire smoke incidents, than for flood events. We support the proposed [Int 1199-2023](#) establishing “emergency response protocols on days of an air quality emergency”; [Int 1200-2023](#), “requiring the commissioner of emergency management to develop and implement a plan regarding public notification during air quality emergencies”; and [Int 1201-2023](#), “requiring the commissioner of emergency management to develop and implement a comprehensive plan for air quality emergencies.”

The Council’s legislative proposals for the City are a good start in addressing better plans for outreach, distribution of resources, and securing of safe spaces for people to shelter when indoor and outdoor air becomes toxic. It is critical, however, that these approaches include funding for the human services infrastructure that makes that outreach possible and equitable, and is key in the setup of safe air shelters and mask distribution.

## 3. Design more flexible deliverables/budgets for human services organizations with City contracts

During COVID-19, the Mayor’s Office of Contracts Services released a memo and associated guidance on how to allow for flexible deliverables and budgeting during an emergency declaration. Unclear language around this also technically already exists in the Human Services Standard Contract boilerplate. This was an important first step in allowing for contract flexibility that could help organizations (1) sustain critical services if impacted and (2) adjust services to meet new and/or expanding crisis needs.

Flash flood incidents have prompted emergency declarations for NYC, but have not prompted flexibility in contracts. Response to emergencies that occur with little to no warning, such as flash floods, make it difficult for

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<sup>1</sup> Examples of plans/reports include: [Adapt NYC](#), [New Normal Report](#), [Hurricane Sandy Recovery House of Worship Task Force Report](#); localized roadmaps include: [Climate Action Roadmap \(CM Restler\)](#), [Comprehensive Plan for Brooklyn \(BP Reynoso\)](#)

organizations to respond effectively without flexible deliverables and budgets. The City should work with human services organizations to explore pathways for flexibility in existing contracts during crises.

4. Ensure just labor practices are included in all City contracts to help nongovernmental partners build resilience

The City can build resilience in nonprofit partnerships by implementing just pay and labor practices into both everyday contracts and emergency contracts—notably by ensuring alignment with the #JustPay campaign by implementing the following FY 2024 asks:

- a. An automatic annual cost-of-living adjustment (COLA) of 3.2% for Fiscal Year 2024-2025
- b. A public commitment of funding for the next three years for a 3% COLA each year
- c. To pass prevailing wage legislation to lift human services salaries

## **CONCLUSION**

Human services organizations are systemically underfunded, frequently left out of key City decisionmaking around crises, and largely respond on their own when crises hit. These are only a few of several factors which make it difficult for key community partners to disseminate critical emergency information prior to and after an event. The recently released [November 2023 Financial Plan Update](#) contains harmful cuts to City services that will only make these issues worse (including cuts to flood protection measures and resilience programs). It is critical for our City leaders to join our advocacy against harmful funding decisions that will ultimately weaken the critical human services lifelines that keep people safe everyday. It is especially cruel to cut those lifelines in an era of increased hazardous air quality and flash flood crises—when New Yorkers can wake up on any given morning to unwalkable streets and unbreathable air.

## **CONTACT**

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Friday November 17, 2023

Re: Int. No.1199

**A Local Law to amend the administrative code of the city of New York, in relation to emergency response protocols on days of air quality emergency.**

Dear Councilmember Restler,

CerroZone is proud to provide the following testimony in support of your legislation Int. 1199, 1200 and 1201.

It is well documented and scientifically validated that outdoor air quality directly effects the health and safety of the public. The recent exposure to Canadian wildfires, puts New Yorker's in harm's way especially those who suffer from preexisting health conditions.

**According to the EPA: "Wildfire smoke is comprised of a mixture of gaseous pollutants, hazardous air pollutants, water vapor, and particle pollution."**

<https://www.epa.gov/wildfire-smoke-course/why-wildfire-smoke-health-concern>

**"Wildfire smoke is a complex mixture of gases, particles, and water vapor that contains ozone, Sulphur dioxide, nitrogen dioxide, carbon monoxide, volatile organic compounds, and fine particulate matter (PM2.5)"**

<https://www.canada.ca/en/health-canada/services/publications/healthy-living/wildfire-smoke-health.html>

**"People in areas of the United States with high levels of a certain kind of air pollution have a greater risk of dementia, a new study found."**

<https://www.cnn.com/2023/08/14/health/particle-air-pollution-dementia/index.html>

"There is no evidence of a safe level of exposure for most of these pollutants. This means that smoke can impact your health even at very low levels. As smoke levels increase, your health risks increase. Air quality may be decreased even if you can't see or smell smoke."

In general, on any given day, New Yorker's are exposed to high levels of VOC's due to automobile exhaust gasses, construction activities, density of people on the street and many other off-gassing products. This mixture and toxicity also directly effects our indoor environments through outdoor air being brought into buildings via HVAC systems.

This knowledge provides the unprecedented opportunity for the City Council to establish "guide rails" and emergency response protocols for public safety for the exposure to harmful airborne contaminates.

The Air Quality Index (AQI) established by the United States EPA is an important tool for the measurement of air quality and should be utilized to benchmark the level of hazard in New York City's air. This index is critical for messaging to the public the state of air quality within the city. This index is also critical for determining the timing of emergency steps that must be taken by the Office of Emergency Management to ensure public safety.

New York City has a one of the largest numbers of critical operation centers in the country. These command-and-control centers must be manned 24/7 without fail. Hardening these facilities against dangerous airborne contaminates to ensure full operational capability is mission critical. Without the ability to fully staff and deploy resources to respond to crisis situations, leaves the city vulnerable. Through technology advancements and expert knowledge of air quality management, we now have the tools to protect critical infrastructure and the lives of New Yorkers.

CerroZone is working with the Department of Defense (DOD) and the Defense Threat Reduction Agency (DRTA) on very similar projects. Resiliency and the ability to deploy our troops is mission critical, just as keeping New York's critical infrastructure operating 24/7 is fundamental to maintaining public safety.

### Clean Air Centers

Deploying "Clean Air Centers" or as we call it "Cerro 'Safe' Zones" is a practical and effective method of protecting and providing relief to the public.

It is imperative that these centers meet very stringent criteria with regards to the ventilation technology and air quality testing protocols that are put in place.



Here are a few baseline standards for any ventilation technology:

- Must be an approved FDA 510(k) Class II Medical Device
- Must be compliant with ASHRAE Standard 241
- Must have a UL 2998 "Zero Ozone" designation
- Must be a "CARB" compliant device

## Measurement and Testing Technology

There are two specific protocols that need to be in place to validate any ventilation technology and compliance.

1. Tracer based testing via Poppy. This testing proves if a facility is compliant with ASHRAE Standard 241 "Clean Air Flow" requirements. It also will provide data to determine if the ventilation technology is providing the correct efficacy.

2. Sensor technology via WellStat. This real-time testing device provides data on several critical components of indoor air quality. The results are provided via their digital dashboard.

## CerroZone Technology

Our products and technology were specifically created to address the issues that this piece of legislation defines. CerroZone can be an effective tool in deploying "Clean Air Zones" across the city.

Our CerroZone Mobile Units can be stored and staged for easy deployment during periods of elevated poor air quality. Flexibility to turn any space into a "Clean Air Zone" via our technology is unique to CerroZone. Having achieved FDA clearance, ASHRAE Standard 241 Compliance, Zero Ozone designation and CARB certification, to mention a just a few safety and efficacy standards, put us in an immediate position to help the City Council of NYC better serve the public.

Being a part of the Berkshire Hathaway family and manufactured here in the USA, will also give the city a strong sense of security that CerroZone will be here long into the future.

CerroZone enthusiastically supports these important pieces of legislation.

We offer our advice and help in any way that will help this body move this legislation into law.

Attached are some pieces of information that we have put together that will help you further understand this technology and its ability to protect the City of New York.

Sincerely,

A handwritten signature in black ink, appearing to read 'Alan Watts', with a large initial 'A' and a wavy tail.

Alan Watts

CerroZone, LLC

[awatts@cerrozone.com](mailto:awatts@cerrozone.com)



# CERR<sup>®</sup>ZONE<sup>™</sup>

For Fire & Emergency Response

## Delivering the Future of Air Quality and Safety

### Engineered for Mission Critical Environments

- ✓ FDA 510(k) Class II Medical Device Clearance
- ✓ UL 2998 "Zero Ozone" Designation
- ✓ California CARB Standard Compliant
- ✓ 3<sup>rd</sup> Party Clinical Validation
- ✓ A Berkshire Hathaway Company



# CERR ZONE™

EMERGENCY RESPONSE

**New research from the University of Michigan emphasizes that NO level of smoke is safe for the brain and has been repeatedly linked to dementia.**

“We saw in our research that all airborne particles increased the risk of dementia but those generated by agricultural settings and wildfires seemed to be especially toxic for the brain”

Dr. Sara Adar, University of Michigan’s School of Public Health, Associate Chair of Epidemiology

## Cerro ‘Safe’ Zones

CerroZone Mobile Technology can be used to create field-ready ‘Safe-Zones’ for first responders and victims of disasters.





# VOCs & Human Health

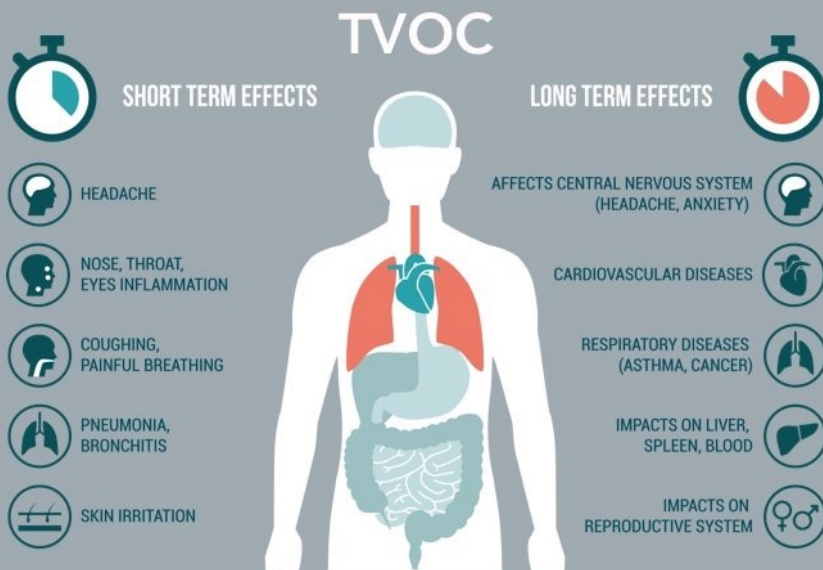
Volatile organic compounds (VOCs) are chemicals that are released into indoor air from products such as paints, cleaning liquids, and furnishings.

The human body also emits VOCs from many sources, including breath, sweat, skin, urine, feces, and other bodily secretions.

***Smoke from Fires contain many toxic VOCs that are harmful and deadly to humans.***

**Protection Against These Harmful And Deadly Airborne Particles and VOCs is What CerroZone Delivers**

**CerroZone Technology Eliminates These Harmful VOCs - Including Bad Odors**



Exposure to VOCs can cause irritation, headaches, nausea, and damage to the liver, kidneys, or central nervous system

Some VOCs are suspected or known to cause cancer

# Don't Simply Take Our Word For It

## Proof of Efficacy – 3<sup>rd</sup> Party Testing

**Aspergillus brasiliensis** – 99.99% eradication in under 60 minutes, 95.44% single-pass destruction

**Bacteriophage MS2** – over 99.998% per pass, 99.9999% removal in a room.

**SARS-CoV-2** (original and Delta strains) – over 99.998% per pass, 99.9999% removal in a room.

**Gram-Positive** (Staphylococcus) and **Gram-Negative** (Pseudomonas) **bacteria** - over 99% removal per/pass with both.

**Ammonia** (NH<sub>4</sub>) – 100% removal (hit limits of detection) per/pass.

**Hydrogen Sulfide** (H<sub>2</sub>S) – 100% removal (hit limits of detection) per/pass.

**Ozone** (O<sub>3</sub>) – "Zero Ozone" testing and certification at Intertek.

## SAFETY VALIDATION

Organization/Third Party	Test	Results
FDA	510(k) Class II Medical Device Clearance	✓
Intertek	UL 867	✓
Intertek	CSA C22.2	✓
Intertek	UL 2998 ("Zero Ozone" designation)	✓
Intertek	IEC 60601-1-2	✓
Intertek	AIM 7351731	✓
Intertek	AHAM AC-2 Sound Testing	50 Decibels (dB), 4.64 Sones
CARB	Clearance to sell air cleaning device	✓



**CerroZone does NOT create any harmful byproducts or Add any dangerous chemicals to the air.**



# ASHRAE Standard 241

Control of Infectious Aerosols



**Requirements For Filtration And Air Cleaning  
Technology**



**Infection Risk Management Mode (IRMM)**



**Planning And Commissioning**



**Testing Standards And Reporting**

**CerroZone has met and  
exceeded the requirements of  
Standard 241 as a manufacturer  
of pathogen control technology**



# CERROZONE™

For Fire & Emergency Response

## Delivering the Future of Air Quality and Safety



CerroZone Mobile  
(220 CFM)  
28.75" wide x 54" high



CerroZone Mini  
(110 CFM)  
21" wide x 36" high



A Berkshire Hathaway Company

Engineered for Mission Critical Environments

CerroZone, LLC

A Berkshire Hathaway Company

[www.CerroZone.com](http://www.CerroZone.com)



**November 20, 2023 - Delos Testimony - Committee on Fire and Emergency Management jointly with the Committee on Oversight and Investigations**

We spend up to 90% of our lives indoors. These indoor spaces, especially our homes, offices and schools, have a profound impact on our acute and chronic health and play a significant role in overall health care costs. A key contributing factor to health outcomes in indoor spaces is air quality. Indoor air quality can be two to five times worse than outdoor air quality; pathogen transmission concerns, particulate concerns from increased traffic and industrial equipment emissions, particulate concerns from wildfire smoke, or even particulate and volatile compound related concerns caused by human activities like cooking and smoking indoors, all contribute to indoor air quality issues. The short and long-term health impacts of these environmental challenges are clear and many studies have tied the cost of human exposure to indoor air pollutants to significant economic related productivity loss as well as increased health care costs.

The pandemic has dramatically shifted the public mindset on the importance of indoor environments to our health. While our response to public health crises continues to improve, many experts recognize that another pandemic is inevitable. Also, extreme weather events, as we saw earlier this year with the Canadian wildfires, are becoming more common due to climate change, furthering the importance of ensuring our indoor spaces are a safe haven from outdoor pollution. Areas of northern Manhattan and the Bronx suffer from some of the highest rates of asthma in the country, leading to a large portion of emergency room visits and hospitalizations for children and young adults.

Delos has recently worked with the State of Kansas Department of Health to implement air quality sensors at schools statewide to quantify air quality metrics and better inform infrastructure improvements, funding allocation and policy decisions, notably when facing air quality emergencies.. Delos has utilized its building science research team to evaluate Kansas schools, work closely with the Kansas Department of Health to identify program goals and outcomes, and subsequently design and implement a sensor program to collect accurate and representative data across schools, both indoors and out. Delos is deploying over 2,500 sensors across more than 400 Kansas schools, a process that first started with a pilot program at a limited set of schools to prove the value of deployed sensors and data collected. Delos has submitted a proposal for a pilot program to be performed in collaboration with the New York City Department of Education and with the New York City Housing Authority and stands ready to support the City of New York in identifying, and appropriately addressing indoor air quality concerns, which may be driven from outdoor pollution emergencies.

Delos is the pioneer of the healthy buildings movement, having researched the health impacts of indoor environments for over a decade. Delos has reviewed hundreds of health and wellness products in the market utilizing a science-based approach to evaluate the performance and impact on human health outcomes. Through testing and data collection, insights evaluation and the deployment of scientifically proven health and wellness technologies, Delos offers its experience and expertise and encourages a collaboration with New York City to implement air quality monitor pilot programs in an effort to inform and create healthier spaces.

Sincerely,  
Paul Scialla



## **New York City Environmental Justice Alliance Oversight Hearing Testimony on NYC's Climate Resiliency Efforts To NYC Council Committee on Fire and Emergency Management, Jointly with the Committee on Oversight and Investigations**

**November 20, 2023**

Thank you Chair Ariola, Chair Brewer, and members of the Council for taking the time to hold this oversight hearing on emergency planning, notifications, and response to citywide flooding events and air quality emergencies. Founded in 1991, the New York City Environmental Justice Alliance (NYC-EJA) is a non-profit, 501(c)3 citywide membership network linking grassroots organizations from low-income communities of color in their struggle for environmental justice. NYC-EJA empowers its member organizations to advocate for improved environmental conditions and against inequitable environmental burdens by the coordination of campaigns to inform City and State policies. Through our efforts, member organizations coalesce around specific common issues that threaten the ability for low-income communities of color to thrive.

Over the last several years, the realities of climate change have been impossible to ignore as we are more and more frequently confronted with them in our daily lives. To anyone paying attention, it's become clear that climate change can no longer be considered a problem we will face in the future, but rather a present reality that has and will continue to greatly impact us, probably for the rest of our lives. As time passes, and government action at every level is slow to progress, we can only expect for these challenges to continue and worsen. In addition, as we know, these impacts are not felt equally, with people of color and low-income communities facing the worst impacts and outcomes caused by climate change, even as they remain the smallest contributors to the problem. This is a historic problem that will continue to persist unless progressive action is taken now to implement solutions that have already been identified to mitigate and adapt to our new reality. Some of these solutions have been enacted to law, but aren't yet fully funded or implemented. Some are still being drafted. Some have significant support, but lack political will to carry forward in spite of their life or death importance.

What we at NYC-EJA do know is that we have to continue to expect and demand more. Too many lives are at stake for us to continue allowing the City government to make excuses and seek approval for projects that are incomplete and insufficient.

On September 29th, Tropical Storm Ophelia caught New Yorkers uninformed and unprepared to protect themselves as streets, homes, subway stations, and buses filled with dangerous flood waters. Devastating flooding has become commonplace in New York City, and the Mayor's office and City agencies have had ample practice to learn how to respond to these events. Yet, the response from our Mayor was that residents of NYC must be "living under a rock" not to



have been prepared - and rather than address the city to help protect New Yorkers from harm, the Mayor chose to attend a private re-election fundraiser as the storm approached. Only after the worst of the flooding had passed did the Mayor declare a state of emergency and tell New Yorkers not to travel when many were already at work, in school, or stranded in traffic (in the storm and unable to get to their destination). How is this an acceptable response? In addition, when flooding was discussed at the October 11th Council oversight hearing, DEP's response to the flooding issue was to highlight the City's barely launched FloodNet program and sensors and other flood mitigation measures that have slowly been rolling out. While these are important steps forward, they are insufficient on their own and are being implemented too slowly for the protection of our most vulnerable communities. New Yorkers' homes, workplaces, schools, and communities are being severely affected by extreme weather events like Tropical Storm Ophelia, and storms of the recent past like Ida and Henri. We have huge weaknesses in our city's infrastructure in relation to flood risk that will be expensive and time-consuming to resolve. Meanwhile, the funding cuts in the Adams administration's November financial plan will devastate many key resiliency programs, including reductions to the Interim Flood Protection Measures program and programs and reports within the Mayor's Office of Climate and Environmental Justice. We need to not only take a more active approach in responding to those challenges than we are currently seeing from the Mayor's office and City agencies, but also ensure that the plans aren't handicapped by poorly justified austerity measures.

Looking further back, in June and July of this year, New York suffered some of the worst air quality in its history, with orange skies highlighting catastrophes from other countries. In these incidents, too, the City and Mayor did too little, too late to inform, educate, prepare, and protect the residents of New York City. In response to criticism, we heard defensiveness instead of reconciliation and promises for improvement in the future. However, CM Restler took a more active approach, presenting Intros 1199, 1200, and 1201, all of which we are in support of. These three bills will help the City take a more active, intentional approach to protecting our most vulnerable residents from air quality emergencies, and we look forward to seeing them passed and implemented. Consistent with many of the recommendations and policy requests NYC-EJA has and continues to make, these bills place an emphasis on a variety of key elements of emergency preparedness and response. Intro 1199 outlines clear guidelines for "Spare the Air Days" including what should trigger these warnings, how they should be disseminated, and what resources and information the City should make available for residents. We have also been actively working on improving the expectations regarding notification during a variety of emergencies, including air quality emergencies, and Intro 1200 supports this goal, placing clear expectations and requirements of relevant City agencies. Intro 1201's intent to ensure that Emergency Management creates and implements a comprehensive air quality emergency plan is also a key element of the types of improvements we want to see across all types of emergencies that NYC faces. Combined, these three bills are timely and relevant to the needs of New Yorkers, particularly those that are most vulnerable, such as environmental justice communities.

Additionally, we think that the ideas Restler's bill package presents are an excellent starting point for crafting plans to address other climate emergencies like extreme heat events and severe flooding. If we are intentional and targeted in our efforts to plan for, notify residents of, and respond to the variety of climate and environmental emergencies that NYC is vulnerable to, we will be able to effectively learn from and avoid the mistakes of the past.

Finally, in regards to the US Army Corps of Engineers NY/NJ Harbor and Tributaries Study, we urge the City to remain vigilant and engaged in the process to protect the city and its most vulnerable residents from the threats of climate change. This study may be our last good chance to protect coastal communities throughout the New York-New Jersey metro area, bringing a possible \$52B into the region for coastal resilience measures. The study is said to be the largest of its kind, done in partnership with the states of NY and NJ and NYC, covering 900+ miles of affected shoreline and 25 counties in New York & New Jersey. The affected population is roughly 16 million people, including New York City and the six most populated cities in New Jersey.

This study needs to move forward with appropriate improvements to ensure that it protects the city's most vulnerable residents with resilience solutions that match the visions of the communities in question. They need to ensure that the infrastructure they plan to build for storm surge doesn't put communities at risk with other types of storm and flooding risks, particularly three distinct problems, which our communities simply were not built for: storm surge like we saw with Hurricane Sandy ten years ago, heavy downpours like Irene and Lee brought us last year, and seas that will rise by a foot or more over the first half of this century. DEP's Commissioner claims that the agency has had open communication with the Army Corps team and that they are working to ensure New Yorkers receive the best possible protection. However, as advocates that have been deeply involved with the process for over two years, we can say that this supposed transparency is not at all apparent to us. We are concerned that both USACE and DEP have failed to show proper urgency and transparency in this process and this apparent complacency has a high risk of poor outcomes for our most vulnerable residents. We hope the City Council will stay alert and engaged in the HATS study and lend its own support to the needs of the most vulnerable communities.

In addition, the plan leaves out key communities such as Hunts Point, which has been continually underinvested in through a variety of plans over the past several years. Let us not forget that while there have been past promises to protect Hunts Point and build coastal resiliency there, the City has abandoned them all, leaving residents unsafe and frustrated by broken agreements and revoked investment. An example is the Rebuild by Design project following Superstorm Sandy which was supposed to build coastal resilience and energy infrastructure but the coastal protection elements have been left off.

We can and should be doing so much more to protect the most vulnerable in our city and we ask the City Council to continue pressing for more, to continue demanding better for your

constituents. So many plans and programs and promises have been released and lauded, but so little has actually come to fruition. Hold the City accountable for these promises and the effectiveness of those promises. We need more than theoretical unfunded plans like PlaNYC, which have good ideas but no clear approach to follow through. There is so much planning and work that has already been done during this and previous administrations that we could draw from, including but not limited to AdaptNYC, PlaNYC, Rainfall Ready NYC, The New Normal Report, and more). Where are we on these plans? How much progress has been made and what can the City show us to prove that these actions have been effective? We need to stop restarting the process from zero, when we could instead be starting off from previous City and community developed plans and ideas. There is so much work and knowledge that has already been gathered and we need to work smarter to meet the undeniable realities of today.

It is ever clearer from the orange skies to flooded streets we have experienced this year that New York City cannot solely rely on our Mayor to provide sufficient leadership and safety under increasingly frequent environmental disasters. At the same time, successful policies and protocols can be developed to save lives in times of crisis. The City Council can and must provide critical legislation and oversight in lieu of inconsistent leadership from the Mayor. Thank you.



**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

[ ]

I intend to appear and speak on Int. No. \_\_\_\_\_ Res. No. \_\_\_\_\_

in favor  in opposition

Date: \_\_\_\_\_

(PLEASE PRINT)

Name: Chief John Esposito - Chief of fire

Address: operations

I represent: FDNY

Address: \_\_\_\_\_

**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

[ ]

I intend to appear and speak on Int. No. \_\_\_\_\_ Res. No. \_\_\_\_\_

in favor  in opposition

Date: \_\_\_\_\_

(PLEASE PRINT)

Name: Kim C. Prigano

Address: \_\_\_\_\_

I represent: DEP

Address: \_\_\_\_\_

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in favor  in opposition

Date: \_\_\_\_\_

(PLEASE PRINT)

Name: John Shea

Address: \_\_\_\_\_

I represent: DOE

Address: \_\_\_\_\_



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 in favor  in opposition  
Date: \_\_\_\_\_

Name: Christina Farrel (PLEASE PRINT)

Address: \_\_\_\_\_

I represent: NYCEM

Address: \_\_\_\_\_

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 in favor  in opposition  
Date: 4/20/2023

Name: Raul Rivers (PLEASE PRINT)

Address: \_\_\_\_\_

I represent: \_\_\_\_\_

Address: \_\_\_\_\_

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