

On February 11th, we held a Candidate School session on Infrastructure and Transportation. NYLCV's Candidate Schools aim to educate candidates for public office in New York City and their campaigns on key environmental and public health issues in the city. A recording of the session can be watched [here](#). The first part of the session featured presentations focused on transportation, while the second part brought more presentations from experts in the area of infrastructure. Each part was followed by a Q&A session.

Danny Pearlstein is the Policy and Communications Director of the Riders Alliance, a grassroots organization of bus and subway riders. Kate Slevin is the Senior Vice President of the Regional Plan Association, where she works to implement policies and projects which lead to improved mobility, equitable economic growth, and environmental resilience. She also helped advocate for the congestion pricing program. Together, Pearlstein and Slevin gave a presentation on Transit Equity and Economic Recovery. Slevin emphasized the need for a safe, reliable, and affordable transit system for all New Yorkers. She then mentioned what is currently being done to improve our transit system, including the MTA's capital program to improve infrastructure and the Streets Master Plan Law which requires the addition of 30 miles of additional bus and 50 miles of additional bike lanes each year.

Pearlstein added that transit still plays an important role in the city even during the pandemic, carrying over 3 million riders daily. He then mentioned an agenda laid out for city leaders at the end of 2020. This agenda included funding public transportation, improving and expanding bus service, addressing climate goals through changes in transit, increasing affordability, achieving vision zero, and expanding opportunities for safe biking. He said that we have the slowest bus network in the nation but the most bus riders, and that we can improve the situation through prioritizing buses on city streets through adding more bus lanes. He then stressed the need to cut down on carbon emissions in the city's transportation sector, which have remained largely flat. Pearlstein mentioned the Freedom Ticket initiative, which would make commuter rail affordable to more riders within the city. He then stressed the need to prioritize accessibility in the transit system, whether through speeding up accessibility efforts on the subway system or hastening snow removal on bus stops.

Slevin said that city leaders in particular can help by advancing interagency cooperation on implementing congestion pricing and advocating for federal transit funding. Pearlstein then elaborated on how city elected officials can use their bully pulpit to advocate for riders and lead by example to encourage ridership. He also mentioned that the Mayor gets four seats on the MTA board. Slevin then talked about the problem of transit deserts, with 40% of people in the city unable to walk to subway or rail stations and the city having the slowest bus system in the country. She touted the improvements brought on by the 14th street busway before the start of the pandemic: an increase in bus and bike ridership and a decrease in pedestrian injuries. Pearlstein added that the improvements are not relegated to Manhattan, talking about the bus lanes on the Edward L. Grant Highway in the Bronx. He said that there is a great opportunity to expand on this work, with restrictions on bus lane enforcement cameras lifted and the mayor mandated to add 30 more miles of bus lanes this year.

Slevin then moved on to talk about a proposed transit line called The Triboro, which would extend from Co-op City in the Bronx to Bay Ridge in Brooklyn. The Triboro would use existing freight tracks, drastically decreasing the price of the project. She then talked about the opportunities for city officials to lead in reprioritizing the use of city streets, including repurposing streets to decrease traffic and increase the amount of local space, increased enforcement of bus lanes, and opening streets to become dining, retail, and cultural spaces.

The next presentation was by Jenny Veloz is a Committee Organizer in the Environmental Justice program for the New York Lawyers for the Public Interest (NYLPI). She understands the environmental burden that low income communities and communities of color face on a daily basis, and makes sure that their voices are heard in developing a safer, more sustainable, and more equitable city. She has prioritized the safety of health of children and communities through advocating for the electrification of school buses. She mentioned how our current fleet of school buses runs on diesel and gasoline, emitting noxious pollutants such as CO₂ and NO_x. NYC students spend hours a day riding on these buses, breathing in the harmful fumes. Students with disabilities and respiratory conditions are affected the worst, resulting in increased absenteeism and even hospital visits.

Electric school buses are better for the environment, as they have zero tailpipe emissions. Since many school bus depots are in environmental justice communities, these historically underserved areas would stand to benefit the most from a transition to electric buses. The improvement in air quality would improve the health of children and adults alike. Veloz then discussed the inefficiency of many school bus routes, with buses needing to travel long distances from depot to school. This inefficiency is due to the company with the depot closest to the school not necessarily having the operating contract for the routes which serve that school. Veloz also mentioned that Access-A-Ride also has inefficient routes, emitting and exposing the disabled to extra fumes. NYLPI hopes to make Access A Ride a cleaner transportation system through working with community partners and elected officials.

During the Q&A portion of the session, Slevin explained that the Eastern Queens Greenway is a proposal to give safer pedestrian access to the parks in the area, and that it serves as a good example of interagency cooperation and civic engagement. Pearlstein then clarified that the count of cars in NYC includes cars registered in the city and census data about which households have cars. Veloz said that the City Council bill to electrify the city's entire school bus fleet by 2040 has stalled despite having over 30 sponsors. She said that the bill would also make sure that the infrastructure to support the electric school buses is in place. Veloz mentioned that the maintenance of the electric buses is a good opportunity for job creation.

Pearlstein talked about the MTA's conversion to an electric bus fleet, with a commitment to have 500 electric buses in the current Capital Program, which is on hold due to COVID. NYLPI President Julie Tighe added that the agency has committed to a 100% electric bus fleet by 2040. When asked about how bike lanes and delivery drop locations can coexist, Slevin said that NACTO has some great images about how that can work. Pearlstein also added that bus and truckways are much safer for bicycling on than regular roads because buses and trucks are

operated by professional drivers. Tighe then responded to a question about EV battery disposal, saying that battery technology is continuing to evolve, with modern batteries lasting longer and using more recyclable materials. Fielding a question about the cost of EV school buses, Veloz said that although they have a high upfront cost, costs will decrease over time, the transition will be gradual, and the societal benefits will outweigh the costs.

The second set of presentations focused on ways in which the city's infrastructure can be updated to benefit the environment. Julie Welch is an ecological landscape design professional who has worked to plant street trees and advocated for clean waterways. Since 2015, she has also worked with the SWIM (Stormwater Infrastructure Matters) coalition, where she has fought to improve the water quality in our local waterways. Welch began by introducing the SWIM coalition, which is composed of over 70 organizations throughout the city. She said that 72% of NYC's land mass is impervious, meaning that we do not have the capacity to absorb all of our stormwater. As a result, nearly 20 billion gallons of stormwater are released into our waterways annually, making them unsafe.

Welch then discussed the combined sewer system, which is the primary way the city deals with wastewater. However, this system sometimes becomes overwhelmed. To avoid backups into our homes, the extra sewage and stormwater is dumped into our city's waterways. A separate storm sewer system is used in parts of Queens, Brooklyn, and most of Staten Island. To keep these two systems from becoming overwhelmed, the city and the state are working to shore up the combined sewer system and install more green infrastructure, which prevents stormwater from entering the sewers in the first place. Welch then presented a map showing where the combined sewer overflow outfall points are by city council district. Each outfall point represents a location in which combined sewage and stormwater is released into the ecosystem during overflows. In addition to the green infrastructure plan, there are 11 combined sewer overflow long term control plans, which aim to reduce CSO pollution in local waterways to meet state and federal water quality standards by 2030, and a stormwater management plan for our other (MSP4) sewer system, which would decrease pollutants in stormwater through improved on-site management by 2030.

However, these plans do not go far enough, said Welch. Even when the 11 combined sewer overflow plans are completed, 18 billion gallons of stormwater annually will wind up in our waterways. As for the green infrastructure plan, Welch said that important milestones have not been reached on time and cited that 50% of areas earmarked for green infrastructure are on private property. Welch also mentioned that there isn't any green infrastructure in areas served by the MS4 sewer system yet and that illicit MS4 discharges are not easy to track. She then gave an update on the presence of Green Infrastructure in the combined sewer overflow area. 1230 out of the goal of 8000 acres have been greened to date, and the Department of Environmental Protection recognizes that it must have a plan to systematically site green infrastructure on private property to achieve its goal. This plan will make use of the several green infrastructure installation incentives in place for property owners.

Some legislation which has been introduced is Intro 1618, which calls for quarterly updates for stakeholder advisory groups in every borough, a series of annual reports on conditions in each waterway, and an inventory of the potential for green infrastructure on public and private property. Further legislation, namely the 2021 Unified Stormwater Rule, would mandate that new and re-developments on parcels of land 25,000 sq ft or greater in area are equipped to manage 1.5 inches of rainfall. Developers will follow a hierarchy of options from bioretention and green roof down to slow release detention.

Emily Maxwell is the Director of The Nature Conservancy's Cities Program in New York, and currently serves on the Advisory Board of OneNYC. She worked to launch the Nature Conservancy's North America Cities Network, and is an author of "Building Capacity Through Diversity." She began her presentation by talking about The Nature Conservancy and its mission "to conserve the lands and waters on which all life depends." She then went through and showed illustrations of the various types of Green Infrastructure which is used in New York City: rain gardens, green roofs, blue roofs, stormwater gardens, permeable pavers, subsurface detention, cisterns, rain barrels, and infiltration basins. Maxwell showed a map of the city's vegetation, and compared it with a map of temperatures in the city. She emphasized that the denser patches of vegetation were associated with cooler temperatures, evidence of vegetation's value in combating heat waves.

Maxwell then talked about the potential of the city's rooftops, which together cover around 40,000 acres, which is roughly the area of a borough. Green roofs come with numerous benefits, including reducing the energy use of a building by 21-26%, absorbing stormwater, lowering air temperatures and pollution, and even extending the roof's lifespan. Maxwell presented the findings of an initial investment of green roofs in the city, which found that there were only 736 green roofs, representing only .07% of the city's rooftops and primarily located in midtown and downtown Manhattan. She then mentioned that the most heat vulnerable communities have the lowest number of green roofs, highlighting the lack of equity. There are some new policies on the books, including a retrofit mandate, new construction standards, requirements for the city to share green roof information, and a renewed tax abatement. Maxwell then presented some of The Nature Conservancy's policy recommendations, including a Green Roof Tax Abatement, an improved Green Infrastructure Grant Program, the institutionalization of green roof tracking, and legislation making sure that municipal buildings directly benefit from green roofs.

She also talked about trees in NYC. There are about 7 million trees in the city, over 666,000 of which are street trees. Trees cover 22% of the city's land, and are critical natural infrastructure. Our city's trees provide over \$100 million in services every year through carbon sequestration, carbon absorption, pollution removal, and numerous other benefits. Maxwell showed a map of the city's canopy and canopy growth by borough, again stressing equity issues. Additionally, there is a new Urban Forest Task Force launched by The Nature Conservancy, which will release an urban forest agenda this May, as well as a Just Nature NYC Partnership which advocates for nature-based solutions to support climate justice and equity in the city.

Lisa Bloodgood the the Director of Advocacy and Education at the Newtown Creek Alliance, where she works on restoration efforts at the intersection of urban ecology and industry and expanding opportunities for environmental education in Brooklyn and Queens. She introduced herself, mentioning that she worked in City Council herself. Bloodgood talked about NYC being a built environment, meaning that most surfaces are covered, leading to poor air and water quality, extreme heat, and little room for ecosystems and access to nature. She said that sewer overflow is composed of pathogens, chemicals, plastics, and petroleum products, among other undesirable pollutants.

Following this, Bloodgood discussed green infrastructure and green roofs. The current green infrastructure plan was launched in 2010, but has only been 15.5% of the 2030 goal has been completed to date. She also showed a map of the city's environmental justice communities, as well as maps of asthma and PM2.5 emergency room visits, which showed a strong positive correlation with the heat vulnerability map and negative correlation with the vegetation map. The COVID death count and death rate maps she presented also showed an unfortunate correlation with a lack of vegetation. Bloodgood also said that the worst effects of commercial sewer overflows (CSOs) are exhibited in the city's shared waters. Many people would like to see CEQR (City Environmental Quality Review) reform to mandate net zero combined sewer overflow impact as opposed to the 90% on-site stormwater management currently required. To this end, Bloodgood provided a policy recommendation, which included a Pre-Development CSO Assessment, a Post-Development Impact Assessment, Determination of CSO Mitigated Requirement, and Determination of a 100% CSO mitigation strategy. She ended her presentation by discussing wastewater treatment and its impact on the community.

A Q&A session followed the second panel. Bloodgood started by saying that the city has yet to mandate any green infrastructure except for green roofs. Welch added that vegetation on a roof isn't required if the owner opts to install wind or solar energy instead. Maxwell shared a [link](#) to a policy brief explaining the sustainable roof laws. Bloodgood talked about the state Environmental Protection Fund as a possible source of green infrastructure funding. Maxwell added that the Bond Act has a number of important funding streams in it, including a significant amount of money for urban forestry. Bloodgood clarified that the funding for the Department of Environmental Protection's water management efforts comes from our water bills, and advocated for that burden to fall more on property owners with large impervious surfaces. Welch described a study being done by the DEP on restructuring water rates and encouraged everyone to get involved in it. NYLCV President Julie Tighe ended the forum by talking about a proposed state environmental Bond Act which is currently on hold due to COVID but will likely see the ballot within the next couple of years.