

Workplan

1. Overall Project Summary and Approach

A. Description of GHG Reduction Measures

The Port Authority of New York and New Jersey (“Port Authority”) requests \$87,028,051 of Climate Pollution Reduction Grant (CPRG) funding for Electric Vehicle Charging Infrastructure for Taxis and Rideshare Vehicles and Zero-Emission Ground Support Equipment Voucher Program. This application includes two measures to significantly reduce particulate and GHG emissions at some of the largest airports in the United States:

- **Measure 1 EV Charging Infrastructure** implements electrical infrastructure to expand access to charging stations at Port Authority operated airports for taxi and ride-hailing services. Taxis and rideshare/For Hire Vehicles (FHVs) currently provide service to all Port Authority commercial airports and facilities in the region and are a critical part of the transportation network to deliver customers to their destinations. This infrastructure will address a lack of EV charging as a stated barrier to accelerating the regional transition to electric passenger vehicle adoption.
- **Measure 2 GSE Voucher Program** funds a voucher program to replace approximately 800 eligible GSE with zero-emission equivalents at Port Authority’s five airports. GSE are critical to day-to-day airport operations and enable millions of air passenger journeys each year. GSE are used to tow airplanes, transport luggage, de-ice planes, shuttle passengers from the plane to the terminal, and provide other important services. Overall advancements in technology, battery size, efficiency, and industry demand have resulted in a surge of development of zero-emission GSE, but the upfront cost remains a barrier to widespread adoption. The voucher program is intended to be used to cover this cost differential between combustion-fueled equipment and its zero-emission model equivalents.

In 2021, the Port Authority announced a goal to reach net zero emissions by 2050. Since then, the Port Authority has made strides to meet its ambitious target, including through the Clean Dozen 2.0 (a set of 12 new initiatives to reduce emissions), and its 2023 Net Zero Roadmap. The Net Zero Roadmap outlines 40 actions that will achieve net zero emissions by 2050, in addition to reducing emissions under its direct operational control by 50% by 2030.¹ Both measures in this application are identified as actions in the Net Zero Roadmap under Strategy 9: Zero Emission Airport Operations, which targets the reduction of emissions at airports by accelerating the adoption of third-party zero-emission vehicles that are stationed at and travel to and from our airports and reducing emissions from aircraft operations. The measures in this application were selected based on feedback from stakeholders and at-risk communities. The measures were developed to address the underlying barriers to adoption that were identified through stakeholder engagement around accelerating the transition to zero-emission vehicles and equipment servicing airports, including a lack of convenient charging infrastructure for taxis and rideshare and high upfront purchasing costs for zero-emission models of GSE. Through the community engagement process, airport noise and pollution were indicated as major concerns to be addressed.

The Port Authority’s Scope 1, 2, and 3 emissions are responsible for 4% of the NY-NJ MSA’s total transportation emissions, according to the NY-NJ MSA PCAP, as it is a hub for international travel of both people and goods globally. The Port Authority has made strides in implementing emissions reductions measures to improve air quality. Between 2006 and 2019, the Port Authority achieved a 19.7% emissions reduction from activities under its operational

¹ <https://www.panynj.gov/port-authority/en/about/Environmental-Initiatives.html><https://www.panynj.gov/port-authority/en/about/Environmental-Initiatives.html>

control (Scopes 1 and 2) through changes in operations and implementation of numerous sustainability initiatives, as well as continued decarbonization of the electricity grid. The Port Authority will continue reducing its Scope 1 and 2 emissions, while also working with stakeholders to accelerate Scope 3 emissions reductions (indirect emissions that occur upstream or downstream of Port Authority's value chain), including emissions from third-party vehicles such as taxis and rideshare and Aviation-related emissions – which are the focus of this application.

Alignment with CPRG Goals

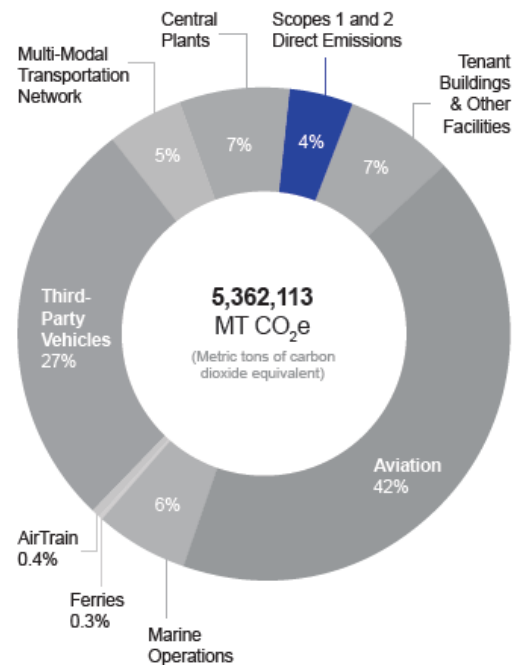
The transportation sector is the largest contributor of greenhouse gas emissions in the U.S., according to the Environmental Protection Agency (EPA). The Priority Climate Action Plan for the NY-NJ MSA identifies that transportation and stationary energy sectors are the largest sources of emissions in the MSA, representing 36% and 57% of emissions in the PCAP's simplified GHG inventory.² The program supports the CPRG goals by reducing GHG emissions from combustion engine vehicles traveling to and from Port Authority operated airports and from GSE. The measures will realize air quality improvement benefits for low income/disadvantaged communities located adjacent to the airports as well as across the region, particularly for communities located along routes between the airports and New York City. The proposed measures will position the Port Authority and the NY-NJ MSA as leaders in GHG emission reduction initiatives from the aviation and vehicle sectors by:

- Catalyzing adoption of zero-emission GSE at Port Authority airports
- Facilitating expanded electric vehicle charging for rideshares and taxis
- Signaling to the market that the technology exists and can be implemented at scale

Measure 1 EV Charging Infrastructure is aligned with policies and commitments made federally, statewide, locally, and by the private sector:

- New York City's 2023 update to its long-standing climate action plan, PlaNYC, lays out the goal of building out a network ensuring every New Yorker lives within 2.5 miles of an EV fast-charging hub by 2035.³
- New York City is pursuing new incentives and programs to enable taxis and rideshare fleets to be fully electrified by 2030 and recognizes the critical need for charging infrastructure to accomplish the 2030 goal.
- Regionally, communities across the MSA have developed plans for introducing publicly accessible charging infrastructure on main streets, in town centers, and in municipal parking lots.⁴
- EPA's Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light- and Medium-Duty Vehicles establishes more stringent standards for greenhouse gases emitted by passenger cars and light-duty trucks.⁵

Scopes 1, 2, and 3 Emissions



² "New York-New Jersey MSA: Priority Climate Action Plan" (March 2024). Page 3.

³ <https://www.nyc.gov/html/dot/html/pr2023/fastcharging-hubs.shtml>

⁴ Examples include Woodbridge Township, NJ's municipal charging lots, EV charging stations in Hempstead, and the Union County Electric Vehicles Infrastructure Study.

⁵ <https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-multi-pollutant-emissions-standards-model>

- Uber has committed that 100% of rides and deliveries globally be in zero-emission vehicles or through micromobility or public transit by 2040. Uber has committed to having a 100% zero-emission vehicle fleet in the US by 2030.
- Lyft has committed to 100% electric vehicles by 2030.
- Revel operates as a fully electric ride-sharing service, with a fleet of all-electric vehicles.
- The Taxi and Limousine Commission released their Charged Up! Report which commits to transitioning the vast majority of its licensed fleet to electric vehicles (EVs) by 2030.

Measure 2 GSE Voucher Program is also aligned with policies and commitments made federally, statewide, locally, and by the private sector:

- In 2022, PANYNJ implemented the Zero-Emission Airside Vehicle Rule at LGA, JFK, and EWR to accelerate the transition to zero-emission fleets by 2030.
- In November 2021, the FAA released its Climate Action Plan achieving net zero emissions from the U.S. aviation sector by 2050.
- In New York, manufacturers are required to sell zero-emission trucks as an increasing percentage of annual sales for Class 2b to Class 8 vehicles, beginning with model year 2025.
- All sales or leases of light-duty vehicles in New York must be zero-emission by 2035. All sales or leases of medium- and heavy-duty vehicles must be zero-emission by 2045. All new off-road vehicle and equipment purchases must be zero-emission by 2035. NYSERDA will develop regulations, strategies, and near-term actions to meet the 2035 and 2045 goals.
- New York requires zero-emission vehicle sales to reduce pollution and combat climate change, a significant milestone in the reduction of harmful truck emissions with the final adoption of New York's Advanced Clean Truck Rule.
- The New Jersey Advanced Clean Trucks Rule requires manufacturers of medium- and heavy-duty vehicles to increase the percentage of zero-emission vehicles sold in New Jersey. Fleets over 8,500 pounds are also required to fulfill a reporting requirement. The rule requires automakers to ensure 7-8% of model year 2025 vehicles sold are zero-emission vehicles.
- The Advanced Clean Cars II (ACC II) rule was adopted in 2023 in New Jersey, and it requires vehicle manufacturers to make zero-emission vehicles an increasing percentage of light-duty vehicle sales, ramping up to 100% zero-emission vehicles by 2035. New York adopted the ACC II rule in Dec 2022.
- Both the International Air Transport Association (IATA) and Airports Council International (ACI) passed a resolution in 2021 committing to achieve net-zero carbon emissions from their operations by 2050. IATA also noted the need to transition to electric GSE.

[Program and Risk Overview](#)

Measure 1

Program Description, Need, and Prior Successes

This measure targets the approximately 100,000 taxi and rideshare trips made to and from the Port Authority's airports every day. The measure will bring 2 to 4MW of power to each selected site for the installation of 20 to 30 direct current fast chargers (DCFC) per site at each of its three main airports. Six or more possible locations will be evaluated for feasibility and suitability for this measure. Installation of chargers at these sites will address the needs of taxi and rideshare drivers who often make multiple trips per day to the airports and spend extended periods of time waiting at the airports before picking up a passenger, so opportunities exist to utilize this time charging.⁶

⁶ On average, for-hire vehicles spend 21 minutes at EWR, 22 minutes at JFK, and 17 minutes at LGA waiting to pick up customers. Meanwhile, taxis average 83 minutes at EWR, 22 minutes at JFK, and 40 minutes at LGA.

The Port Authority is a coalition partner with the New York City Taxi and Limousine Commission (TLC), the agency responsible for licensing and regulating New York City's taxis, rideshare, commuter vans, and paratransit vehicles, the Newark and Elizabeth Taxi companies, and rideshare companies, to coordinate and provide accommodations to drivers. This coalition will ensure that the voices and needs of taxi/rideshare drivers are engaged throughout the implementation process. In 2023, the TLC lifted its pause on new licenses for electric for-hire vehicles to support its "Green Rides" program which requires the city's rideshare fleet to be either zero-emission or wheelchair accessible by 2030. The TLC also indicated in their Charged Up! EV report that there is a gap between the existing charging infrastructure and drivers' charging needs to meet their stated 2030 goals, and specifically call out the need for more charging at the Port Authority's airports. The main rideshare companies that service Port Authority airports, including Uber and Lyft, have set public targets to transition to 100% zero-emission vehicles by 2030, and Revel already provides 100% electric ride share trips.

The Port Authority plays a key role in supporting the transition to electric taxis and rideshares by enabling the installation of charging infrastructure to meet demand. While airports are not expected to be the sole location for charging these vehicles, during focus group conversations the rideshare and taxi community expressed that airports are an *essential* part of their charging ecosystem, especially given limited at home charging for many drivers, time spent at the airports, and limited fast charging currently available near the airports. This measure will build on the Port Authority's existing success with enabling installation of EV charging infrastructure at other airport locations, including 22 DCFCs at JFK and 8 DCFCs at EWR for use by the public rideshare drivers, and taxis. An additional 8 charging ports are planned for EWR and 12 charging ports at LGA. However, those installations still cannot support the vast increase in electric rideshare that service the airports each day, in line with rideshare and TLC EV transition commitments. Already, with only about 10% of electric rideshares on the road, wait times for airport DCFCs are approximately 30-45 mins during typical peak times. Charging providers already at the airports have shared anecdotally that the chargers currently at JFK are some of the highest used stations in the state and around the world.

Program Funding Request

Below outlines the funding request for this measure. The exact cost distributions per airport site will be determined based on the results of conceptual design site evaluations and works.

- **Total: \$35,999,997**
- **Estimate per Airport: \$12m**

Program Design: Features, Tasks, and Milestones

The Port Authority will conduct conceptual design and site evaluation, considering approximately six possible locations suitable for charging, including rideshare staging lots, taxi wait areas, and cell phone lots, across the three main Port Authority airports. The measure will seek to identify three locations, one per airport. Depending on the location of the selected sites, the DCFCs may also be available to the general public accessing the airport. A range of factors will be considered in the decision-making process, including site suitability, charging need, existing capacity, and cost to provide necessary infrastructure to support charging hubs.

The measure features, tasks, and milestones include:

- **Complete site selection criteria for electrical infrastructure installation for EV charging:** To ensure the electrical infrastructure is properly sited, the Port Authority will consider the following criteria: 1. Operational feasibility for taxi and rideshare staging and proximity to the pick-up and drop locations; 2. Operational feasibility and impact on other airport functions (e.g., traffic and queuing); 3. Airport redevelopment and long-term plans for site location (e.g., is there another plan for that site the near future); 4. Electrical feasibility and ability to bring power to site; and 5. Cost of the project.
- **Installation of electrical infrastructure:** A conceptual design and site evaluation will be completed considering approximately six possible locations suitable for charging across the three main Port Authority airports. The three most optimal sites will be selected, and final design will be finalized by the end of year one. The

construction of the electrical infrastructure will be completed over the following 18 months. The electrical work to deliver 2 to 4MW of power will be completed using existing contracting and procurement mechanisms to engage with contractors and conduct the required electrical infrastructure construction and site readiness at the three chosen sites.

- **Completion of procurement for EV charging installation and operation:** To complete the installation of the EV chargers, the Port Authority will conduct a competitive charging installation and operation Request for Proposals (RFP) process, to identify the most suitable and cost-effective charging operators. The Port Authority does not intend to use CPRG grant funding to pay for the charging hardware, the measure will mirror other successfully installed and operated charging stations, which are paid for and operated by the charging station providers. The procurement process will begin during year one and will be completed within 15 months by the end of year 2.
- **Installation and operation of chargers:** Once the operator RFP is completed, 20 to 30 DCFCs per site will be installed at each of its three main airports starting in year three and lasting approximately 12 months. Operation of the chargers is anticipated to start at the beginning of year four.
- **Assessment, evaluation, and ongoing reporting:** The Port Authority will use existing partnerships, such as those with the TLC, Newark and Elizabeth taxi companies, and rideshare companies to promote use of the fast chargers for vehicles servicing the airports. Selected charging providers will be required to share data with the Port Authority so it can monitor use of the stations to ensure up time and anticipated utilization of the site. The Port Authority will also continue to track emissions reductions associated with airport attracted travel as a measure of success.

To expedite the schedule, the infrastructure work and operator RFP will happen simultaneously. The Port Authority has existing successes with EV charging installations at other sites and will leverage lessons learned to ensure a successful infrastructure upgrade and operator procurement process. A full schedule is provided in the Timeline Implementation section.

Measure 1 EV Charging Infrastructure Program Risks

The implementation of these GHG-reducing measures includes operational risks, performance risks, and technical risks. These risks can be minimized through thorough planning, stakeholder engagement and communication, and mitigation strategies tailored to the specifics of each site and the work being completed. Example risks and mitigation strategies are outlined below:

Risk Type	Risk	Mitigation
Operational	Lower than expected uptake of charging infrastructure provided.	Conduct outreach and education to target users, in partnership with organizations such as the New York Taxi and Limousine Commission. Coordinate with facility operations so charging time can fit into driver on-airport pick up wait time.
Performance	Improper installation or inadequate maintenance and operation of infrastructure resulting in lower GHG reductions	Contractor and equipment procurement processes should be conducted in a thorough manner, with consideration of past performance and ability to complete the required works. Charging station minimum uptime requirements to be included in contracts and require data sharing.
Technical	The measure may incur risks in the design process, especially in more complex projects that require more substantive construction or equipment upgrades.	Integrate appropriate Port Authority regulations and QAQC and verification processes into design and implementation processes.

Measure 2

Program Description, Need, and Prior Successes

This measure targets the approximately 10,000 pieces of GSE at the Port Authority's airports owned by approximately 500 different organizational groups, which currently release a significant amount of greenhouse gas emissions each year, by introducing a voucher program which allows GSE operators to receive point of sale funding for the purchase of qualifying zero-emission vehicles and equipment. It is estimated that around 800 pieces of equipment could be covered through the program if the grant funds are awarded. The measure supports the much-needed transition to zero-emissions vehicles outlined in the Port Authority's 2022 Zero-Emission Airside Vehicle (ZEAV) Rule at LGA, JFK, and EWR Airports. The ZEAV rule requires airside vehicles of specific types, determined to be commercially available, to transition to zero-emission at the three major airports. Commercial availability considers cost, availability in the marketplace, and ability to be operationally on par with the traditional internal combustion equivalent model. The Measure 2 voucher program incentivizes earlier adoption ahead of ZEAV rule deadlines and more rapid removal of internal combustion engine (ICE) vehicles from the airports that would otherwise remain beyond 2030. The voucher program will help alleviate significant obstacles to meeting zero-emission vehicle transition targets.

It is important to note that the vouchers would not apply to vehicles that would be required to be removed within a year under the existing ZEAV Rule. The program would cover eligible vehicles at Port Authority's other smaller airports, Teterboro and Stewart International Airports, to expand the impact of the program. The voucher program encourages eligible applicants across the MSA to evaluate and prioritize their individual GSE needs and understand opportunities for reductions through zero-emission technologies. The program addresses the higher upfront purchasing costs that operators indicated as a primary barrier to adoption to zero-emission GSE.

Since GSE is typically powered by diesel or gasoline engines, it is a significant source of GHG emissions and criteria air pollutants at the airports. In 2019, GSE contributed 4% of the Port Authority's Scope 3 emissions.⁷ Overall advancements in technology, battery size, efficiency, and industry demand have resulted in a surge of development of zero-emission GSE, but the cost differential still poses a barrier to accelerated adoption. The voucher program will accelerate zero-emission GSE adoption and reduce GHG emissions, harmful air pollution, soil and water pollution, and noise impacts.

Measure 2 builds upon prior GSE zero-emission efforts while accelerating Port Authority towards meeting its commitments, including its Zero Emissions Airside Vehicle (ZEAV) Rule and 2050 net zero emissions goal. Examples of implemented zero-emission GSE include over 680 zero-emission GSE charger ports installed across the three major airports and over 1000 pieces of zero-emission GSE in service already. The Port Authority also created a Zero-Emission Technology Workgroup to evaluate commercial availability of zero-emission GSE in line with the ZEAV rule and share best practices among stakeholders.

Program Funding Request

Below outlines expected distribution of funds under this measure. The exact cost distributions may be adjusted based on the final procurement cost of the program administrator and allocations resulting from the voucher program competitive application process.

- **Total: \$51,028,054**
- **Program Administrator costs: \$3.29m (7% of voucher program costs)**

⁷ "PANYNJ-Net Zero Roadmap." Page 51.

- **Voucher Program Disbursements: \$47m**
- **Other program costs: \$738,054**

Voucher Program Design: Features, Tasks, and Milestones

The measure will disburse funds through a competitive application program, to support equitable distribution of this funding opportunity across operators and Port Authority airports, prioritization of high impact GHG emission reduction purchases, and prioritization of proposals that most closely align to the goals of the CPRG program. The voucher program is intended to be used for the cost differential between equivalent combustion fueled equipment and vehicles and zero-emission versions.

Measure features, tasks, and milestones include:

- **Procure a Program Administrator** to administer the application process, review and select winning proposals, and disburse vouchers. The cost of the Program Administrator is estimated to be 7% of the total cost of the voucher program. Any funds remaining from this set aside will be reallocated to additional vouchers.
- **Host Competitive Award Process (3 Rounds):** The measure proposes an open competition period of three months for applicants to submit proposals, with a review period of three months for the Program Administrator to evaluate proposals against the eligibility and selection criteria. The Port Authority will conduct outreach and education activities with eligible operators to inform them of the program, the required process, and the timeline for implementation. The Port Authority will leverage the existing Technology Working Group, the General Managers Bulletin, and existing points of contact on the operator side. In addition, the Port Authority and the Program Administrator will host an application information session, create an online application portal, and link to appropriate operator resources. The operator application process is intended to be conducted in three rolling application periods lasting three months each, with applications expected to be closed by the end of 2027. The voucher program is intended to prioritize the proposals that result in the highest reduction in CO₂e per voucher value in US dollars. It will run in three cycles beginning in Q4 2026. The first voucher submission period will be open from October to December 2026. From January-March 2027, the second voucher submissions period will be open and the previous round's submissions will be awarded. A third and final voucher submission period will run from June to August 2027. While not expected, if funds are not exhausted, additional rounds will be held until funds are exhausted following the same period. Eligibility can also be expanded to land-side airport shuttle buses, in addition to those shuttle buses operating on the airside which are currently included.
- **Implement and operate zero-emission GSE:** Successful applicants will receive the applied for voucher value at the point-of-sale for the corresponding vehicles and equipment being purchased under this program. Individual applicants will be able to procure the equipment that best suits their needs, in compliance with the approved application. It is expected that it will take approximately 9 months from ordering to receive the vehicles and equipment, but upon receipt, the new equipment will be functional and in-use at Port Authority airports immediately. The Port Authority expects to begin GHG emission reduction benefits at the end 2027 or beginning of 2028. There is no requirement for successful applicants to scrap current GSE.
- **Evaluate program performance and provide ongoing industry support:** The Port Authority will evaluate the program performance as the program advances and will continue to support the adoption of new zero-emission GSE vehicles and equipment. The Port Authority will continue to coordinate with tenants and operators to understand barriers to adoption and offer resources such as mechanic electric vehicle training sessions or other workforce development opportunities. The Port Authority will prepare and submit a final performance report.

Voucher applicants must submit:

- Cost difference for equivalent internal combustion engine and purchase price for the zero-emission vehicle.
- Provide documentation that the proposed equipment is replacing existing ICE GSE at a Port Authority airport.
- Demonstrate that the proposed equipment is not already required for replacement under existing Port Authority policy. Calculations and assumptions for CO₂e reduction per voucher amount (ADET emission factor/voucher amount)

- Operators must commit to provide annual information on mileage/usage of new equipment.
- Demonstration of and assurance that charging infrastructure is or will be available for the proposed equipment. Applicants should identify vehicle primary charging/refueling location.

Measure 2 Eligible Vehicles and Equipment

Any GSE operator at one of the Port Authority operated airports is eligible to apply for point-of-purchase voucher support from the CPRG grant funding. Eligible vehicles and equipment will include, but are not limited to, the following:

- GPU
- Cargo Loader
- Forklift
- Lavatory Truck/Cart
- Potable Water Truck/Cart
- Cargo Tractor
- Widebody Aircraft Tractor
- Fuel Tank Truck
- Catering Truck
- Hydrant cart/truck
- Bobtail
- De-icer
- Shuttle buses (airside)
- Baggage Tractor (TEB and SWF only)
- Belt Loader (TEB and SWF only)
- Narrowbody Aircraft Tractor (TEB and SWF only)
- Highspeed Maintenance Tractor

The voucher program will prioritize equipment based on GHG reduction cost effectiveness. Vehicles required to be transitioned to zero-emission models may not be eligible for vouchers; therefore, baggage tractors, belt loaders and Narrowbody Aircraft Tractors would not be eligible at EWR, JFK or LGA as they are being phased out by 2027 at these locations under the ZEAV rule.

Measure 2 Proposal Selection Criteria

As part of the competitive application process, the following criteria will be used by the Program Administrator to review and select purchases to be made under this CPRG grant program. Selection criteria include:

- GSE and airside vehicles at Port Authority airports
- Voucher amount divided by AEDT CO₂e factor ranking – prioritization for proposals that result in the highest GHG emission reductions per dollar spent.
- An individual operator can only receive less than 25% of the total voucher disbursements unless there are no other qualifying applicants.
- New vehicle purchases must replace an existing internal combustion vehicle in use at Port Authority property.
- New vehicle purchases must be in operation for at least a year prior to complete phaseout in the ZEAV Rule requirements for the given vehicle type.
- New zero-emission GSE shall have charging/refueling infrastructure available at the corresponding Port Authority airport.
- New vehicle must be operated at the current Port Authority airport for at least 5 years after purchase.

Measure 2 GSE Voucher Program Risks

Risk Type	Risk	Mitigation
Participation	Lower than expected participation in the Voucher Program	Conduct outreach and education to target users. Potentially run additional rounds of submissions and awards until funds are exhausted prior to 2030. Expand shuttle bus category to include landside shuttle buses in addition to airside shuttle buses.
Performance	Inadequate maintenance and operation of infrastructure resulting in unexpected GHG reductions	Port Authority requires charging and refueling infrastructure as part of voucher award and includes provision for the infrastructure to be provided in new leases. In addition, mechanic training will be part of the program.
Technical	Equipment not available in zero-emission models	PA has been following zero-emission vehicles developments through its Technology Workgroup since 2022 and includes a wide range of GSE and shuttle buses to protect against lack of development in one area or another.
Operational	Inadequate EV charging for zero-emission GSE	Port Authority has more charging available than current zero-emission GSE with more charging planned. Additionally, PA has identified mobile and intelligent power management systems that can be leveraged to meet demand. Voucher submission must also identify where/how the vehicle will be refueled.

B. Demonstration of Funding Need

The GSE Voucher Program and EV Charging Infrastructure Program require substantial short-term funding, which cannot currently be met by the Port Authority's capital and operating budgets or external funding programs. The CPRG program is uniquely positioned to provide the necessary financial support due to its focus on large-scale, high-impact projects aimed at reducing climate pollution. Other funding programs, while valuable, are not designed to scale to the size and scope required by the Port Authority's comprehensive electrification efforts, and the partial funding they would provide would not be sufficient to execute the project successfully.

The Port Authority is financially self-sustaining and must raise the funding to operate its facilities and provide services to the public through tolls, fares, rentals and other user fees. Funds needed for capital improvements, construction and acquisition of facilities are raised on the basis of the Agency's own credit rating. The Agency cannot pledge the credit of either of the states of New York and New Jersey or any municipality, nor can it levy taxes or assessments. Traditionally, the Port Authority has utilized its revenue for reinvestment in infrastructure to move people and goods more efficiently throughout the region, while bolstering the regional economy. At the same time, it has largely absorbed the deficit in cost of running the interstate PATH mass transit rail system between New Jersey and New York City, without the state and federal funding whereas most other transit agencies long have received funding to offset costs. Given the challenging financial and supply chain impacts the Agency has endured for over three years, the Port Authority has continued to look for alternative sources of funding to continue the development and maintain the schedule of valued community projects, EV charging infrastructure, which otherwise might be delayed for years until the Agency's revenues solidify.

Measure 1 EV Charging Infrastructure is not well-suited to receive funding from existing programs:

- Although the Department of Transportation’s Charging and Fueling Infrastructure (CFI) Grant Program⁸ is a potential funding source for charging infrastructure, it is targeted toward publicly-accessible fueling infrastructure for communities and along major corridors. To provide the necessary infrastructure for electric taxi and rideshare vehicles, the Port Authority needs to look at potential sites that may not be publicly accessible. Furthermore, the bulk of the funding would be used to fund the electrical infrastructure required to bring power to charging site, which does not appear to be the focus of the CFI Grant Program.
- While the NY-NJ PCAP does acknowledge that electric charging projects may be funded by the National Electric Vehicle Infrastructure (NEVI) program, NEVI requires that all projects be located along a state-designated Alternative Fuel Corridor (AFC) – unless the state cites that all AFCs have reached capacity. Because the Port Authority requires flexibility of charger placement to ensure that taxis/rideshares have the most efficient access possible, the constraints posed by NEVI pose too significant of a barrier and can’t meet the scale of the program.

Measure 2 GSE Voucher Program is also not well-suited to receive funding from existing programs. Multiple funding initiatives at the federal, state, and local level are available to decarbonize airport operations and support the transition to zero-emission GSE and other airport vehicles. However, these programs only cover a fraction of the need and are often hard to assess or carry burdensome requirements. Currently, large-scale grant opportunities funded by the FAA have historically gone to the Port Authority’s myriad of aviation-specific projects. Aviation-specific needs have taken priority for funding. Other grants, such as DERA, are too small to fund the full GSE Voucher Program as intended, so the Port Authority’s has requested they fund smaller-scale, one-off projects.

Federal

- The Federal Aviation Administration (FAA)’s Voluntary Airport Low Emissions Program (VALE) funds projects to help airports meet air quality responsibilities; however, this funding opportunity has a limit of \$2 million, which is not sufficient to implement the level of zero-emission GSE required to transition to net zero emissions.⁹ VALE maintains strict requirements which are time and cost-prohibitive for many GSE and shuttle bus operators.
- The FAA’s Airport Zero Emissions Vehicle and Infrastructure Pilot Program only focuses on airport owned vehicles and requires vehicles stay on airport for their useful life.
- EPA’s Diesel Emissions Reduction Act (DERA) has not typically been used for airports and only one tenant was selected to receive funding.¹⁰ DERA has strict scrappage requirements that make compliance difficult.
- DOT’s Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant sponsors “critical freight and passenger transportation infrastructure projects” and is designed to benefit large-scale public-oriented transportation projects and is not targeted for GSE which operate with specific, qualified personnel.
- FEMA’s Building Resilient Infrastructure and Communities (BRIC) program supports hazard mitigation projects. Similar to BRIC, DOT’s Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation Program (PROTECT) program provides funding to increase transportation resilience to natural hazards. But because Measures 1 and 2 are focused on ensuring emissions reductions rather than building resiliency, the Project is not well-suited to meet the needs of the BRIC or PROTECT programs.

State

- The NYSDERDA Clean Transportation Program has strict categories that limit the overlap with the voucher program. Additionally, it competes across the whole state with limited resources available to Port Authority tenants. Additionally, it carries scrappage requirements which discourage some tenants from accessing it. The NYSDERDA NY Truck Voucher Incentive Program (NYTVIP) does not cover GSE.

⁸ <https://www.transportation.gov/rural/grant-toolkit/charging-and-fueling-infrastructure-grant-program>

⁹ <https://www.faa.gov/airports/environmental/vale>

¹⁰ <https://www.epa.gov/dera/national>

- The New Jersey Zero-Emission Incentive Program is a voucher pilot launched by the New Jersey Economic Development Authority for medium- and heavy-duty zero-emission vehicles. The program provides vouchers in targeted communities and for specific vehicle classes. It doesn't require scrappage but it is limited to FHW class vehicles and vehicles operating in New Jersey so it limits who is eligible to apply to a large portion of the GSE applicants and demand outweighs the available funds.
- In addition to being non-eligible for GSE, NJEDA and NYSEDA only fund programs in their respective states, which would require the Voucher Program to have to adopt a piecemeal approach to funding which would not allow for the scale needed to realize meaningful GHG emissions reductions.

C. Transformative Impact

Created in 1921 through an Act of Congress, the Port Authority was created as a unique governmental entity to address the complex transportation issues of the New York City metropolitan region, spanning a 1,500 square mile port region covering parts of New York and New Jersey. It is neither a city or state agency and acts as an independent entity financed through tolls and not taxes. Confirmation from the EPA confirming eligibility to participate in this grant funding opportunity was received on February 16, 2024.

Both Measure 1 EV Charging Infrastructure and Measure 2 GSE Voucher Program offer a transformative impact to the airports they serve, local and regional communities, and the aviation/transportation industries more broadly.

Significant GHG reduction opportunities for Metropolitan region and target communities

As the operator of some of the nation's largest airports, the Port Authority has the potential for its investments in emissions reductions to have a significant impact locally and as a model nationwide. The potential for impact is high given that the NY-NJ MSA is the nation's largest metropolitan area by population, home to more than 19 million people across 22 counties.¹¹ Notably, about 35% of the population of the MSA – nearly seven million people – reside in low-income or disadvantaged communities (LIDACs) and are both overexposed to pollution and more vulnerable to the long-term impacts of climate change. For JFK Airport, 51.9% of census tracts within 0.5 miles of the airport and fall within 1,000 feet of roadways served by at least 5% of JFK taxi and rideshare trips are Disadvantaged Areas according to the Climate and Economic Justice Screening Tool. For LGA and EWR, that number is 44% and 77%, respectively.

Leveraging Port Authority's role as industry leader to accelerate impact

Historically, the Port Authority has been a leader in both setting and achieving ambitious climate goals. The Port Authority has received Airport Carbon Accreditation (ACI) for its efforts to reduce carbon emissions at all five of its airports. The Port Authority maintains a position as a regional and industry sustainability leader through active participation in industry alliances and partnerships. These platforms can be used to share successes from CPRG-funded measures. As the Port Authority is a major leader in the transportation and aviation industry, the success of its emissions reductions efforts is essential as a national model for airport emission reductions efforts nationwide and even globally.

Cross agency coordination and adoption

The region needs substantial intrastate and interstate coordination and investment. To this end, all climate action policy in the region is influenced by cross-jurisdictional organizations, including the Port Authority, Metropolitan Transportation Authority (MTA), and New Jersey Transit Authority (NJ Transit). These organizations have intersecting and ambitious climate commitments to amplify efforts as the regional transportation network hinges on the airports as a hub. All Port Authority work is multi-jurisdictional in nature with implications for the northeast region.

¹¹ Climate and Economic Justice Screening Tool. 2023. Communities List Data. <https://screeningtool.geoplatform.gov/en/downloads>

Measure 1 EV Charging Infrastructure

Early adoption leadership for airports nationally

As some of the nation's largest airports, Port Authority's airports experience some of the highest rates of taxi/rideshare traffic in the country. By building out EV charging stations at its airports, the Port Authority can serve as a national model for supporting and accelerating taxi/rideshare electrification.

Facilitation of Taxi and Limousine Commission and rideshare EV commitments

The Taxi and Limousine Commission's commitment to expanding the number of new EV licenses cannot be implemented effectively without the addition of EV charging stations to meet the increased demand.

Test bed for potential pilots on virtual queueing

Depending on the placement of the EV chargers, the airports could serve as potential test cases for expanding existing pilots of taxi queueing, potentially making the lag time of taxis waiting to serve passengers more efficient by offering them the ability to charge their vehicles while they wait.

Measure 2 GSE Voucher Program

Scalable approach to transition zero-emission GSE

Many forms of GSE are already commercially available in zero-emission alternatives. Some GSE, especially those with specialized requirements, are still being developed. Pairing the GSE Voucher program with the Port Authority's ZEAV Airport Rules and Regulations requiring the transition of airside vehicles to zero-emission by 2030, has the potential to drive transformative change in the sector. The holistic approach of combining regulatory mandates, scaling up charging infrastructure, and providing Voucher's to offset higher upfront costs is a replicable model for airports nationwide. As GSE operators transition their fleets for Port Authority airports, their operational learnings and procurements can be leveraged to transition vehicles and equipment at other airports around the country. Guaranteed investment in the field will allow manufactures to scale up manufacturing processes, operators to commit to infrastructure investments, and an operational shift towards zero-emission GSE fleet management.

Addressing industry stakeholder key concerns

Through the stakeholder engagement process conducted from the Summer 2022 through to the present, key barriers to adoption for zero-emission GSE were identified by airport tenants and operators of GSE. A major identified barrier included high-upfront costs for zero-emission GSE. The Port Authority is working to address other identified concerns, including the need for charging infrastructure, accommodations for technology maturation, and educational needs for new equipment operation. Novel charging solutions such as portable chargers and intelligent power management system are being leveraged to continue to supply the needed charging infrastructure. The Port Authority created a Zero-Emission Technology Workgroup to evaluate commercial availability of zero-emission GSE, in line with ZEAV rule and share best practices among stakeholders. The voucher program was the key tool identified to address the need for price parity with fossil-fuel equivalent models. The magnitude of the program hopes to also secure supply chain and manufacturing commitment from the industry easing concerns on technology maturation and availability.

Market transformation and accelerating adoption of emerging technologies

The implementation of the voucher program will signal to equipment manufacturers that both funding and mandates are available to help accelerate the market adoption of new technologies that are currently only in the demonstration phase, such as electric fueling trucks, deicers, and wide-body aircraft tractors. For passenger vehicles, offering monetary incentives and subsidies for the purchase of electric vehicle models was shown to increase adoption by double-digit percentages and is used as a strategy to accelerate adoption globally.¹²

¹² <https://www.iea.org/reports/global-ev-outlook-2021/policies-to-promote-electric-vehicle-deployment>

2. Impact Of GHG Reduction Measures

The Port Authority's ZEAV Rule places mandates on phasing out commercially-available models of airside vehicles, but most vehicle types will not be mandatorily phased out until after 2030. The voucher program will accelerate this transition in a significant way. It will target vehicle types that have seen less electrification and provide a solid foundation for the industry to rely on as efforts scale nationally. Without these incentives, fossil-fuel powered vehicles could linger in the fleet until after 2030. The voucher program stands to transition close to 800 pieces of equipment in two years. This will have near-term and long-term impacts. Not included in the direct GHG reductions but a significant impact of the program is that it will spur the industry and allow tenants to free up capital to invest in additional charging infrastructure, setting the stage for 100% zero-emission fleets by 2050. These successes have been seen with other voucher programs that target other vehicle types and have been proven as a replicable model.

A. Magnitude of GHG Reductions from 2025 through 2030

The magnitude of GHG emissions reductions from 2025 to 2030 sum to **54,561 metric tons** combining both measures. For Measure 1 EV Charging Infrastructure, savings are 12,286 tCO₂e per year for three sites. Attracted travel emissions from taxis and Uber/Lyft in 2022 were 177,211 tCO₂e in 2022 across the five airports. This would represent a 7% reduction in attracted travel emissions from those two categories. The savings from 2025-2030 are 36,858 metric tons.

For Measure 2 GSE Voucher Program, program aims to cover the incremental cost of converting to zero-emission equipment. On average this equates to 30% of the cost of the equipment. The value of the program is designed to cover approximately 800 pieces of equipment. This would have a total reduction of 60,927 metric tons CO₂e in 2025-2030 with 17,703 metric tons (30%) directly attributed to the program.

B. Magnitude of GHG Reductions from 2025 through 2050

The magnitude of GHG emissions reductions from 2025 to 2050 sum to **203,203 metric tons** combining both measures. For Measure 1 EV Charging Infrastructure, savings are 122,859 metric tons from 2025-2050.

For Measure 2 GSE Voucher Program, as the vehicles are used, they will have a direct attribution of 84,904 metric tons CO₂e (30%) to the voucher program. The annual emissions savings of the zero-emission GSE in this analysis is 7,319 tons of CO₂. This represents a 3% reduction of Port Authority's entire GSE fleet emissions per year (251,000 tons CO₂e in 2022). While most models attribute vehicle life to 7-13 years, the Port Authority consistently sees vehicles over 20 years of age in the vehicle inventory. The program will also accelerate the large-scale transition to a full zero-emission airport fleet reshaping fueling operations away from fossil fuels.

C. Cost Effectiveness of GHG Reductions

Both measures are cost effective. See below chart for their quantified metric ton of GHG reductions 2025-2030 and 2025-2050 per dollar spent by CPRG funding.

Category	Measure 1	Measure 2	Total
Funding Requested	\$35,999,997	\$51,028,054	\$87,028,051
GHG Reductions 2025-2030 (mt)	36,858	17,703	54,561
Cost effectiveness	\$976.72	\$2,882.45	\$1,595.06

Category	Measure 1	Measure 2	Total
Funding Requested	\$35,999,997	\$51,028,054	\$87,028,051
GHG Reductions 2025-2050 (mt)	122,859	80,344	203,203
Cost effectiveness	\$293.02	\$635.12	\$428.28

Note that Measure 2 GSE Voucher Program only reflects 30% of the measure's emissions, so it is commensurate with

the amount of emissions directly reduced by CPRG funding. Additionally, other qualitative factors impact cost effectiveness include the pace of implementation, the uptake of voucher incentives, and the uptake of EV charging stations. Transitions to cleaner vehicular combustion fuel types and the future decarbonization of the electricity grid will also impact the cost effectiveness of both measures.

D. Documentation of GHG Reduction Assumptions

For the complete GHG emission reduction methodology, assumptions, tool, and data sources, and identified uncertainties are provided in the corresponding Technical Appendix.

3. Environmental Results – Outputs, Outcomes, And Performance Measures

A. Expected Outputs and Outcomes

The expected outputs and outcomes of both measures are detailed below.

Expected Outputs by Measure

Measure 1 EV Charging Infrastructure	Measure 2 GSE Voucher Program
Electrical capacity increase per site	Number of applications received
Number of additional chargers able to be accommodated	Number of applications awarded
Number of EV chargers installed	Total dollar amount of vouchers distributed
Number of vehicles charging/Amount of electricity used at charger site	Number of GSE transitioned to zero-emission GSE
	Capacity increase projects completed

Expected Outcomes by Measure

Measure 1 EV Charging Infrastructure	Measure 2 GSE Voucher Program
Total amount of greenhouse gas emissions reduction	Total amount of greenhouse gas emissions reduction
Improved air quality (co-pollutant), calculated by Port Authority	Improved air quality (co-pollutant), calculated by Port Authority
Average distance to publicly-accessible EV chargers	Zero-emission GSE usage at Port Authority facilities
Number of EV rideshare and taxis traveling to and from Port Authority facilities	
Number of EVs and other zero-emission vehicles (hydrogen, etc.) used by rideshares and taxis	

Cross-Cutting Outcomes

Combined Outcomes of Measure 1 EV Charging Infrastructure and Measure 2 GSE Voucher Program

Lower energy demand and residential/commercial energy expenditures
Reduced energy bills for residents in low-income and disadvantaged communities, and throughout the applicant's jurisdiction
Reduced exposure to hazardous air pollution or unhealthy ambient air quality

Combined Outcomes of Measure 1 EV Charging Infrastructure and Measure 2 GSE Voucher Program

Increased staff capacity to implement GHG reduction measures

Enhanced level of community engagement, as measured by an increased number of ongoing actions to engage with organizations and residents of disadvantaged communities, and other interested parties

Number of high-quality jobs created throughout the applicant's jurisdiction and in low-income and disadvantaged communities

Increased resilience to climate change impacts as measured by the number of buildings or Census tracts that meet certain resiliency standards

B. Performance Measures and Plan

To ensure the effectiveness of the Project's implementation, a series of performance measures will be employed to track, measure, and report on progress. These will include the following:

Key Performance Measures

Measure 1 EV Charging Infrastructure	Measure 2 GSE Voucher Program
Total number of charging sessions	Total number of GSE/Shuttle vouchers distributed
Average length of charging sessions	Estimated GHG savings of vouchers distributed
Total amount of electricity usage at charging stations	Annual mileage and/or usage of zero-emission GSE purchased with vouchers
Estimate of number of taxis/rideshares served by the charging stations based on annual sampling	Existing ICE vehicle replaced
	Registration of vehicle into Port Authority's vehicle plating system for at least 5 years

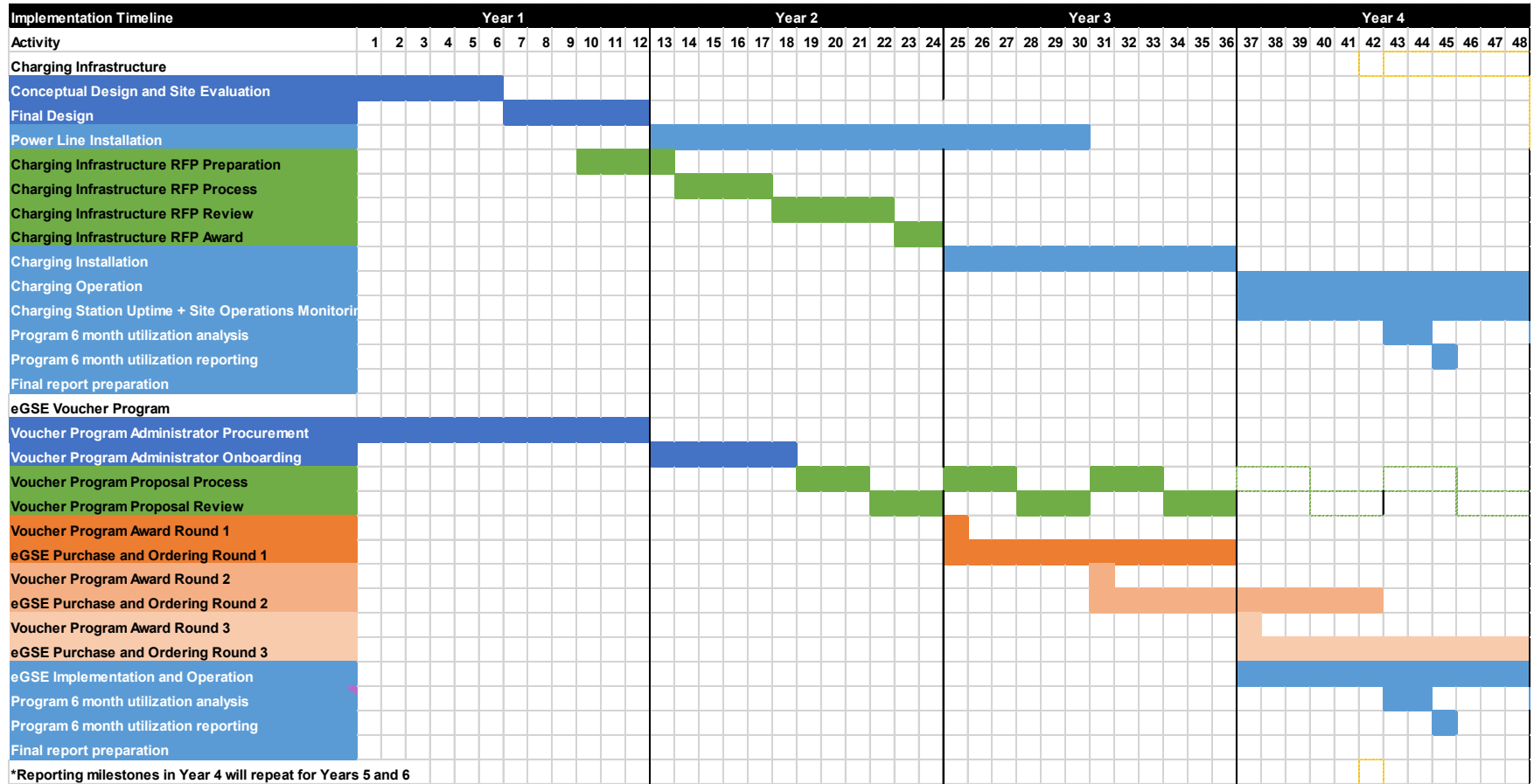
C. Authorities, Implementation Timeline, and Milestones

Measure 1 EV Charging Infrastructure: The Port Authority Aviation Project Management team will initiate capital projects and enlist the Port Authority Engineering Department to conduct conceptual design for up to 6 sites to evaluate the most viable site per airport based on the evaluation criteria. Once one site per airport is selected, final design will be conducted by Port Authority Engineering Department, and PSE&G or ConEd will be engaged as needed. The Port Authority Aviation Project Management team will then manage construction to bring electrical infrastructure to the respective sites. In parallel, the Commercial Aviation Department will put out a solicitation for a 3rd party vendor to install DC fast chargers once power is available at the site. The Office of Sustainability will support the program, especially for GHG emission calculations. The Port Authority's SMRO will also assist in ensuring the contracted administrator complies with grant terms and complies with the grant reporting requirements.

Measure 2 GSE Voucher Program: The Port Authority Aviation Environmental Department will oversee the implementation of the voucher program through a project manager. The administration of the program will be carried out by a contractor. The Office of Sustainability will support the program, especially for GHG emission calculations. The Port Authority's SMRO will also assist in ensuring the contracted administrator complies with grant terms and complies with the grant reporting requirements. Port Authority tenants will be the recipients of the funds and will sign commitments to follow grant and voucher program requirements when accepting funds. The Port Authority will continue outreach and coordination through Port Authority Airport General Manager Offices and outside partners such as NJ and Empire Clean Cities programs.

Implementation Timeline: The figure below depicts the implementation timeline of both measures. *The reporting milestones in Year 4 will repeat in Years 5 and 6.*

Implementation Timeline by Measure



4. Low-Income and Disadvantaged Communities

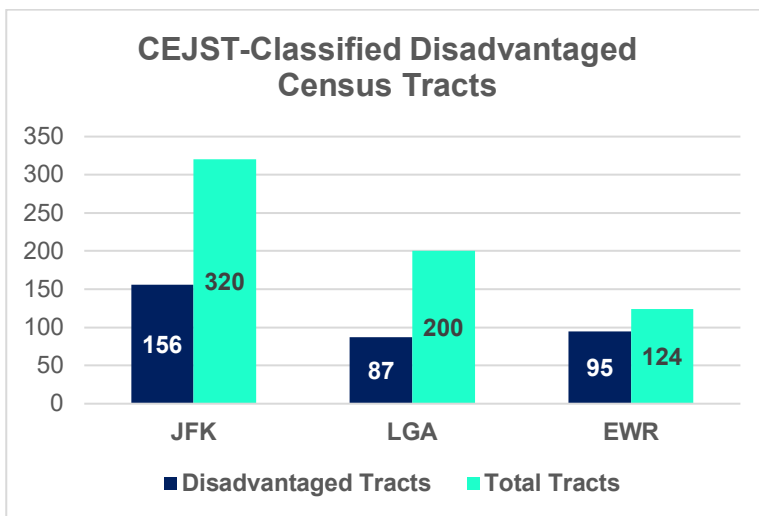
A. Community Benefits

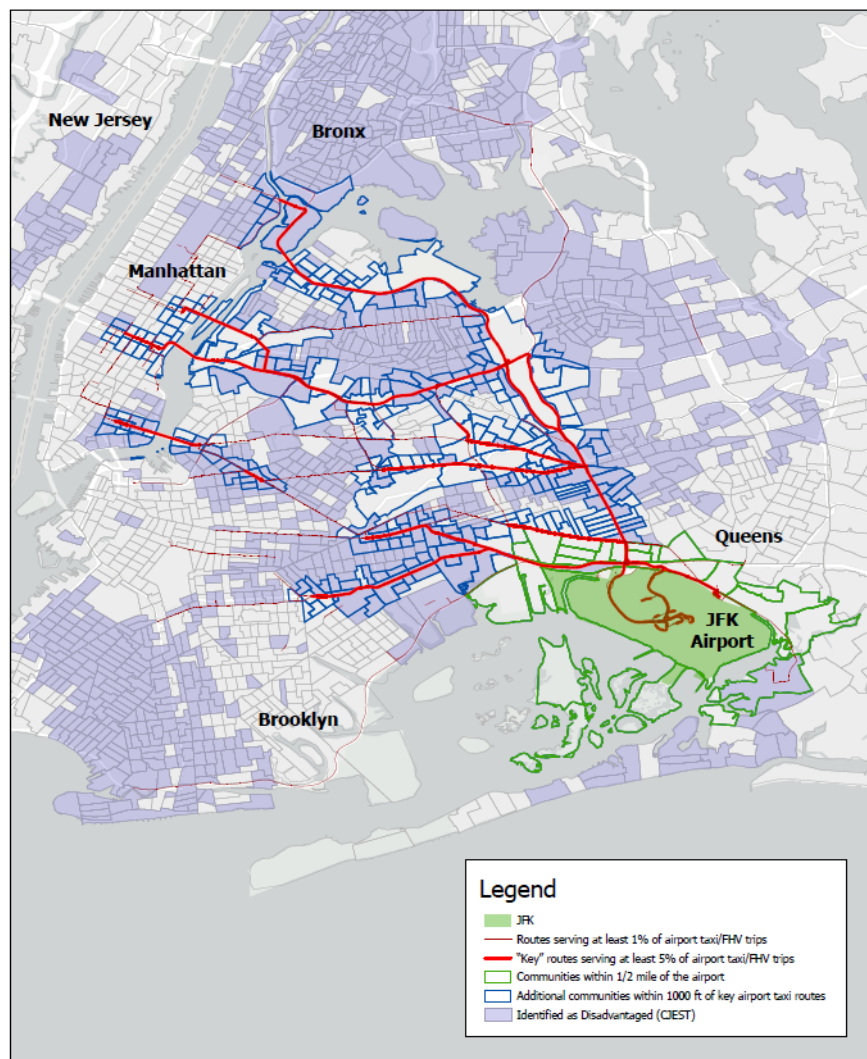
The project's measurable emissions reductions will improve the quality of life for people in the communities surrounding Port Authority airports and along key routes. These benefits include noise reduction, improved air quality, reduced healthcare costs, increased productivity, and enhanced quality of life.

To measure the magnitude of these benefits, U.S. Census tracts within 0.5 miles of a Project Airport were evaluated, along with tracts in the surrounding 1000 feet of roadways that serve at least 5% of taxi and rideshare trips. Many of these communities are designated by Climate and Economic Justice Screening Tool (CEJST) as "Disadvantaged Communities." (A list of CEJST Census Tract IDs is provided in the Appendix.) The figure below depicts the number of U.S. Census tracts within 0.5 miles of a Project Airport and within 1000 feet of roadways served by at least 5% of taxi and rideshare trips that are categorized as "Disadvantaged" by CEJST.

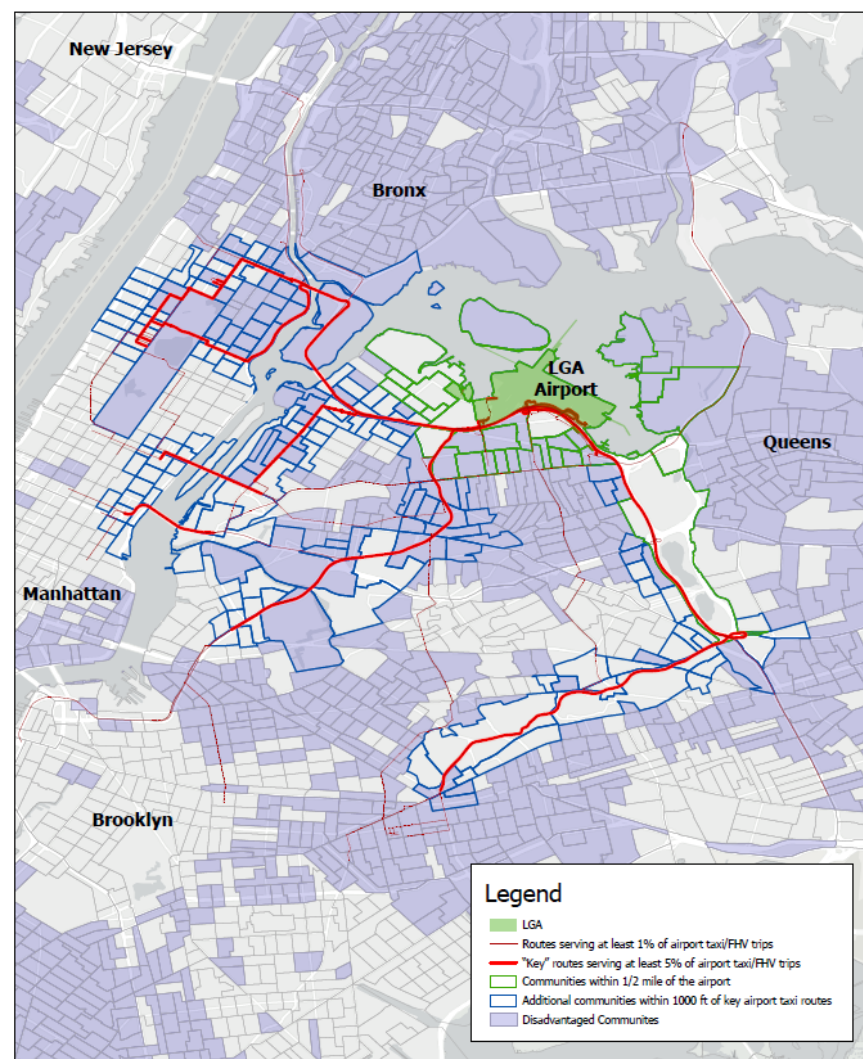
The greatest direct health benefit will be to the ground support crews that work around the equipment that will no longer be emitting harmful emissions. Many of these airport employees live in the communities surrounding the airport. The plan and process for continuing to assess, quantify, and report benefits to the community include sharing the project implementation plan, proposed GHG remission reductions, noise mitigation impacts, and air quality improvements upon grant award and throughout implementation through the Port Authority's established engagement programming with Outreach Offices, Community Councils and Environmental Justice sub-committees, outlined within the next section. As part of its implementation plan, the Port Authority has included regular performance assessment steps and reporting to track the outcomes of the program and impacts to stakeholders and community members. No negative impacts to low-income and disadvantaged communities are anticipated from these proposed measures.

Number of Disadvantaged Census Tracts Per Airport



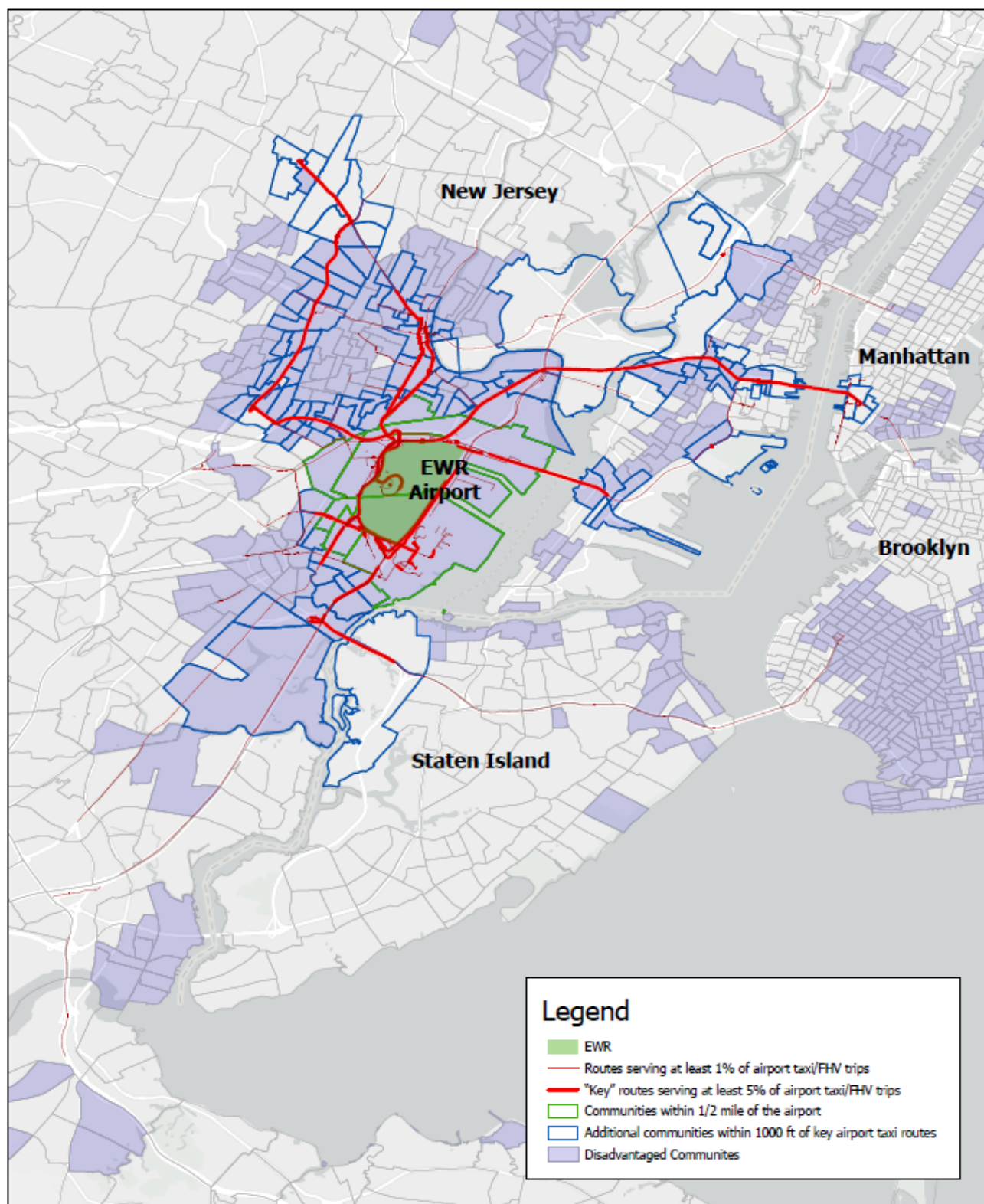


NYC OpenData, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS



NYC OpenData, New Jersey Office of GIS, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

Communities Benefiting from JFK Electrification Projects Communities Benefiting from LGA Electrification Projects



NYC OpenData, New Jersey Office of GIS, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS

Communities Benefiting from EWR Electrification Projects

B. Community Engagement

Due to the significant environmental and quality of life impacts of airport operations on neighboring communities, the Port Authority has developed robust community engagement programming and has built a working relationship with low-income and disadvantaged communities. The priority GHG-reducing measures applied for within this grant application are designed to address long-standing community concerns regarding air pollution and noise in these communities. The Port Authority overcomes linguistic, cultural, institutional, and geographic barriers to engagement by ensuring engagement staff and resources are multi-lingual, hiring staff that are living in directly impacted areas and which represent community demographics, and by ensuring that offices and events are located directly within impacted communities for ease of access.

Engagement and application development: Community concerns were considered throughout the application development process, including in deciding the specific locations of Measure 1's electric vehicle charger siting and in selecting measures that address air pollution concerns and noise complaints from airport operations, and Measure 2's replacement of diesel-operated ground support equipment. The award of EPA grant funds, timing of project implementation, and estimated environmental and quality of life improvements will be communicated to the residents as part of the ongoing Community Councils and Environmental Justice sub-committees. The execution of strategies and actions within the Net Zero Roadmap, from which this application is based, are part of the Port Authority's public commitment to address the environmental burdens placed on neighboring low-income and disadvantaged communities. Specific community feedback was also received through the Newark Airport Vision Plan, with engagement results from three meetings and an online comment form obtained between 1/31/2023 and 10/15/2023, with feedback on emissions reductions, sustainability prioritization, air quality concerns, and noise mitigation.

Community Outreach Offices: The Port Authority's Community Outreach Offices engage local communities around the ongoing redevelopment and modernization of Port Authority facilities across the region. They are staffed by people from the communities they serve, they provide a physical location for community members to ask questions, lodge complaints, and receive project information and educational programming. They serve as a tool to advance environmental justice, and act as the primary outlet for community engagement in the host communities of Newark, JFK, and LaGuardia airports. Each Community Outreach Office receives approximately 600-700 visitors each year. The Offices also conduct outreach at community events and other external settings to reach community members.

Community councils to hear concerns and share ongoing project updates: Port Authority organizes several Community Councils which serve as advisory bodies where the agency can hear concerns, share updates, and generate and test ideas for community initiatives and programs. The Port Authority also supports Aviation Roundtables, which are Community Councils that focus on airplane noise. The groups typically convene on a bimonthly, quarterly, or semiannual basis. Some of the Councils include environmental stewardship committees that weigh in specifically on EJ concerns. The Port Authority discussed both application measures with the Environmental Stewardship Committee of the JFK Redevelopment Community Advisory Council and the NY Community Aviation Roundtable and obtained feedback. Feedback included a request to minimize air pollution and noise in the local community and facilitate the transition through to greener aircraft technologies.

Engagement and contracting goals for businesses located in airport-adjacent neighborhoods: The Port Authority's Redevelopment Programs established a 30% contracting goal for businesses that are owned by women and people of color, and a strong emphasis on businesses located in the areas surrounding the airport.

5. Job Quality

The Port Authority is committed to ensuring the jobs it provides adhere to strong labor standards for all employees, including contractors, sub-contractors, and sub-awardees. The Port Authority contractors shall pay or provide

workers, laborers, and mechanics at least the prevailing rate of wage and supplements for others engaged in the same trade or occupation. For federal contracts the Port Authority requires prevailing rates of wage and supplements as established by the Secretary of Labor of the United States pursuant to the Davis-Bacon Act (40 U.S.C. 276a). Finally, the Port Authority has experience making procurements under Buy America and Buy American regulations and will monitor those policies for applicability and potential waiver needs as procurement proceeds. The Port Authority remains committed to being an exceptional steward of Federal funds and will adhere to these and other applicable standards for Measures 1 and 2 of this application. The Port Authority is in compliance with Title VI of the Civil Rights Act, American Disabilities Act, and Age Discrimination Act. The Agency includes language in its procurement documents to ensure prospective contractors do not discriminate against any employee or applicant for employment because of race, color, religion, or sex.

Required participation in registered apprenticeship programs:¹³ The Port Authority encourages contractors and their subcontractors to maximize the use of apprentices under the applicable collective bargaining agreements or as contained in the applicable program approved by the New York State Department of Labor and United States Department of Labor. Each subcontractor proposed for approval under a contract whose total amount of subcontracts under a specific contract is greater than \$1 million will also be required to certify as to its participation in a New York State registered apprenticeship program.

The Edward J. Malloy Initiative for Construction Skills Pre-Apprenticeship Program and New Jersey Pre-Apprenticeship Program: The Port Authority is a participant in the Edward J. Malloy Initiative for Construction Skills, a cooperative pre-apprenticeship program among New York City schools, unions, and public agencies. The Authority is also a participant in a cooperative program among New Jersey county vocational schools.

Participation goals for supplier and workforce diversity: Participation goals of 20% for Minority-owned Business Enterprises (MBE), 10% for Woman-owned Business Enterprises (WBE) and 3% for Service-disabled Veteran-owned Small Businesses (SDVOB) enable the Port Authority to better reflect the diversity of the region and help these enterprises access business opportunities with the agency.

GSE Electrical Vehicle Maintenance Training: The Port Authority requires training for its own mechanics on how to work safely of electric vehicles. Measure 2 plans to expand this training to any of the fleet mechanics associated with the approximately 500 companies eligible for the GSE voucher program.

6. Programmatic Capability and Past Performance

A. Past Performance

The Port Authority has demonstrated the ability to plan and successfully complete and manage federally funded assistance agreements that are similar in size, scope and relevance to the proposed project.

- Over the past 14 years, the Port Authority has been awarded \$18.445 million in grant funding from the EPA for the Truck Replacement Program. These grants have provided licensed motor carriers (LMC) and independent owner operators (IOO) with the opportunity to replace their trucks with newer, cleaner trucks thereby reducing diesel emissions in our region.
- The Port Authority also completed the “Port Authority Regional Truck Replacement, Supplemental Port Authority Regional Truck Replacement Programs”, replacing 429 drayage trucks, resulting in lifetime emission reductions of 4,831 tons of NOx; 230 tons of PM; 241 tons of HC; and 1607 tons of CO. This is the first phase of the TRP.

¹³ [Construction Program](#)

- Since 2015, EPA Region 2 has awarded the Port Authority \$9.875 million through DERA for additional phases of the Program for the replacement of EMY 2006 or older short-haul drayage trucks. During the most recent phase of the Program, which began in July 2019, the Port Authority focused on 1995 EMY through 2003 EMY trucks in our outreach efforts and, as of October 2023, we have successfully replaced 243 trucks, equipped on average with 1999 EMYs, with trucks equipped on average with 2015 EMYs, leading to an annual reduction of 147 short tons of NOx, 6.2 short tons of PM 2.5, 7 short tons of HC, and 31 short tons of CO. The Program is currently funded by \$1.025 Million in FY 2021 DERA No. 96238621-01 and \$3,198,584 Volkswagen Trust Agreement funds awarded by the New York State Department of Environmental Conservation (\$1,322,731 V & SCDGP \$1,875,853).
- In 2017, Port Authority's Aviation Department has also successfully utilized Federal Aviation Administration (FAA) funding through the Voluntary Airport Low Emissions (VALE) Program in addition its "Airport Improvement Program (AIP)", which provided \$3.98M for the installation of 120 electric vehicle charger ports in coordination with tenants' procurement of 116 pieces of eGSE. Per VALE requirements, the hourly usage of the chargers is monitored and reported annually. The installations of vehicles and chargers have been completed but Port Authority continues to monitor the usage and emission reductions from the program through the life of the project (13 years) in coordination with the grant partner Jet Blue.
- In 2021, Port Authority received a \$2.2M "VW Funding For Diesel Replacement and EVSE Projects" grant from the New Jersey Department of Environmental Protection to support the installation of 64 electric charging stations and 100 new eGSE at EWR Terminal A. The project EV charger installation is over 90% complete with final completion slated for July 2024. Reporting associated with this project is from the total annual usage from the EV chargers themselves.
- In 2023, the Port Authority also received a \$3.5M VW grant for 16 pieces of eGSE and 8 dual-port EV chargers to support the eGSE transition at JFK Terminal 4 from the New York Department of Environmental Conservation. The charger installation and vehicle replacements are underway and are expected to be completed before the end of 2024.

B. Reporting Requirements

The Port Authority has a proven track record of successfully meeting all reporting requirements, such as properly and timely filing final "closeout" reports for the above-mentioned federally funded assistance agreements, providing detailed reports on a quarterly basis that include updated Vehicle Description Sheets highlighting changes in the replacement vehicle fleet and that show progress in achieving the expected short-term outcomes and outputs.

The Port Authority has demonstrated a solid record of successful grant management using a systematic process in which verification documentation is used for every step from participant applications, dealership registrations, replacement truck acquisition, and scrapping of the old vehicle. Under Port Authority guidelines vehicles with a history of operating frequently as a drayage truck would be scrapped, and trucks purchased with grant funds are required to continue operating as drayage trucks. The New York County District Attorney's Office commended the Port Authority for its careful screening and investigation of program applicants. For example, due to the diligent way this program is administered the Port Authority was able to identify fraudulent Insurance Certificates for a Dealership and Scrapyard that not only prevented them from participating in the program, but also led to indictments of both parties involved.

C. Staff Expertise

The Port Authority has the knowledge, expertise, and resources to implement large-scale, impactful climate reduction projects. To date, agency staff have overseen the reduction of the agency's direct emissions by over 20 percent from 2006 baseline levels through the implementation of on-site solar projects, the ongoing transition of its fleet to zero-emission vehicles, and energy efficiency and decarbonization initiatives at its buildings.

Some of the many examples of recent achievements include:

- a 5 MWdc solar array at Newark Liberty International Airport - the largest solar rooftop installation at any U.S. airport

- 46 new airport electric buses in operation, the largest electric bus fleet of any U.S. airport system
- 375 new EV charging ports installed with 600 more in progress

The Port Authority is in the process of fully decarbonizing the historic Building One at Newark Liberty International Airport. All current natural gas-burning equipment is being replaced as part of the work. This project will help inform future decarbonization projects across Port Authority properties. The implementation of the measures in this application and oversight of the grant award will be managed by a team of Port Authority employees with extensive experience with project delivery, sustainability and net zero programming, and grants management. The Office of Sustainability of the Port Authority of New York and New Jersey will provide overall project oversight, implementation support and related GHG tracking. Kate Lawrence-Shetty, Net Zero Planning and Policy Lead of the Port Authority's Office of Sustainability, will serve as grant strategy lead and oversight. Kate manages the agency's annual GHG inventory and leads the planning efforts for how to meet the agency's Net Zero goal for scopes 1, 2, and 3 by 2050 and recently oversaw the creation of the agency's Net Zero Roadmap. She has 12 years of experience in sustainability planning and project management within government organizations. Christopher Diamond, Director of the Office of Sustainability, will provide strategic support for the grant projects. Chris has more than 30 years of multi-faceted experience in civil and structural engineering, architecture, consulting, finance, and government with a focus on energy efficiency, sustainability, decarbonization, and climate resilience. Lauren Filler, the Zero Emission Vehicle Program Manager for the agency, will provide strategic support for Measure 1 EV Charging Infrastructure. Lauren has experience managing a \$50M budget for EV charging infrastructure, including installation of over 200 Level 2 charging ports and coordination with three publicly accessible DC Fast Charging hubs.

Ray Soya, General Manager of the Port Authority's Storm Mitigation and Resilience Office will oversee grant reporting and compliance for the life of the grant award. Ray has over 30 years of experience and has led a cross-functional team of more than 100 engineering, project management, and facility professionals. As General Manager for the SMRO, Ray provides oversight for ensuring strategic, operational, and capital alignment for the delivery of grant funded projects and initiatives to meet the Agency's need. He is the manager for the reimbursement of over \$350M in Sandy recovery and served as the Accountability Officer in the delivery of more than \$25M of FEMA funding for the COVID-19 pandemic. Currently he is responsible for the compilation and submission of over 100 grant closeout packages.

The Aviation Department, which operates one of the world's busiest airport systems, will serve as the lead Department for project implementation. Aviation Project Management Division has over 25 project and program managers with technical capabilities and project management expertise to ensure proper scoping and on-time and on budget delivery. This Division is led by Dipak Mehta, P.E., PMP who has over 34 years of experience in leading and managing complex infrastructure projects including sustainability projects. Examples include – Building Decarbonization, EV Infrastructure including fleet/Ground Support Equipment.

The Aviation Department implementation lead for Measure 1 - EV Charging Infrastructure is Dipak Mehta. Dipak and his team of project managers will oversee the electrical upgrades and installation of the EV chargers. Additional agency resources available for Measure 1 include existing contracting mechanisms that can be leveraged for the execution of electrical upgrades. Port Authority's capable in-house Engineering staff supplemented by consultants as necessary will lead the design and construction supervision efforts.

The Aviation Department implementation lead for Measure 2 – GSE Voucher Program is Calder Orr. Calder oversees the implementation of the Port Authority's Zero-Emission Airside Vehicle Rule across the 3 major airports impacting nearly 20,000 pieces of equipment and vehicles. The ZEAV rule implementation includes managing the Technology Workgroup and evaluation of the Commercial Availability of airside vehicles in Zero-emission. Calder also has experience in managing the implementation of FAA VALE and state distributed VW grants to support airport vehicle electrification efforts.

Detailed staff bios, roles and resumes are included as an attachment.

7. Budget

A. Budget Categories

As lead applicant, the Port Authority will receive funding and distribute it based on the tasks outlined in this application and in adherence to the requirements of this grant program. The budget detail indicates the specific budget categories associated with each measure as part of the Electric Vehicle Charging Infrastructure for Taxis and Rideshare Vehicles and Zero-Emission Ground Support Equipment Voucher Program.

The total requested amount for funding is \$87,028,051. Specifically, \$35,999,997 (41%) will fund Measure 1: EV charging infrastructure and \$51,028,054 (59%) will fund Measure 2 zero-emission GSE Voucher program.

- I. Personnel: \$2,244,106
- II. Fringe Benefits: \$1,526,216
- III. Travel: \$1,440
- IV. Equipment: \$0 – there no budgeted costs for this category.
- V. Supplies: \$5,700
- VI. Contractual: \$83,250,589
- VII. Other: \$0 – there no budgeted costs for this category.
- VIII. Indirect Charges: \$0 – there no budgeted costs for this category.

Further details of the budget breakdown are provided in the budget narrative attachment and the budget calculations sheet, both have been provided as part of this application.

B. Expenditure of Awarded Funds

In recent years the Agency has gained substantial experience utilizing federal funding to support its mission and projects. The Port Authority currently manages more than \$2.8 billion in Federally funded projects. This notably includes ongoing federal Superstorm Sandy funding to help the Agency repair significant storm-related damage to its PATH rail system infrastructure and other facilities.

The Port Authority will continue its practices to ensure that a comprehensive approach supports the efficient expenditure of awarded grant funds for the Project. Our approach includes the following procedures and controls:

- **Thorough planning and budgeting, with clear objectives, milestones, and resources allocations aligned with the goals of both measures.** This includes a detailed expenditure plan, with cost estimates for infrastructure upgrades, outreach campaigns, and administrative expenses.
- **Clearly-defined oversight mechanisms to track fund utilization.** This includes financial reports, budget reviews, and performance evaluations to ensure compliance with federal regulations and grant requirements. The Port Authority team will conduct periodic audits and assessments to identify any discrepancies efficiently.
- **Robust controls and procedures for procurements, contract management, and vendor selection.** The Port Authority's existing procurement process aligns with all CPRG requirements, so the process will emphasize the importance of equitable and competitive practices.
- **Internal and external reporting.** The Port Authority will compile and submit grant status reports throughout the grant life cycle. The required reporting is prepared utilizing the applied Port Authority internal accounting and audit processes and in accordance with established federal requirements.
- **Prioritization of effective, routine communication between project stakeholders.** Collaboration between local government departments, community partners, Taxi and Limousine Commission, EPA, and other bodies is essential for the success of the Project. By soliciting and receiving regular feedback from these stakeholders, we can ensure the project addresses its challenges and ensures its success.

- **Maximize existing contracts and parallel-track execution.** To support the execution of the measures in a timely manner, the Port Authority is leveraging existing contracting mechanisms where possible, such as using existing contracts to procure electrical services for EV charging and leveraging parallel track execution of the infrastructure work and EV charging operator procurement. The Voucher program will overlap award processes with application submission periods, while prioritizing the highest-GHG emissions reducing equipment.

The implementation of the identified practices will ensure compliance and administer the grant funds and provide the Port Authority with direct management, accountability, and oversight of federal funds in accordance with 2 CFR 200.

C. Reasonableness of Costs

To realize the Port Authority's transition to zero-emission GSE and adequate EV charging stations for taxi/rideshare vehicles, every item in the project budget is necessary and is in line with Port Authority cost benchmarks for other projects that are similar in scope. Each expenditure item is strategically targeted to achieve these transitions at the lowest cost possible to the Port Authority and EPA. Given that this project anticipates significant GHG emission reductions at the country's largest airports, the project has been finely tuned to meet necessary climate commitments while integrating existing workstreams and making the best use of the Port Authority's existing tools and resources. Further detail on each Measure can be found in Budget Detail section above, as described in SF-424A. Both Measures are also discussed in relation to their reasonable of cost here:

- **Measure 1 EV Charging Infrastructure (\$35,999,997):** The budget is necessary to provide critical infrastructure for EV charging stations at three priority airports, which is necessary to meet the demands of the increasing supply of electric FHV/rideshare vehicles. The budget is reasonable to provide the number of EV chargers and promoting air quality in surrounding areas, each of which includes a significant number of LIDACS. It includes project management for each airport, all facility staff time (including anticipated annual salary increases), complete engineering review, and contractors to fully design and complete construction of the charging infrastructure, which is necessary to develop EV charging stations used by taxis/FHV at Port Authority's airports.
- **Measure 2 GSE Voucher Program (\$51,028,054):** The budget is necessary to enact the planned transition from internal combustion GSE to zero-emission GSE at the Port Authority's airports. The budget is reasonable to provide approximately 800 vouchers that fund the difference between zero-emission and internal combustion vehicles and serve the population of over 500 Port Authority employees who drive GSE each day. It includes a project manager who is essential to implementation of the measure, necessary travel and equipment for staff, and funds which will directly support GSE vouchers.