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CONTACT INFORMATION

Organization Name	County of Burlington
Organization Address	1900 Briggs Road
City, State Zip Code	Mt. Laurel, NJ 08054
Contact Person	Joseph Brickely, P.E.
Title/Position	County Engineer
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PROJECT NAME	Burlington County NOx Reduction Project

PROJECT CATEGORY OR CATEGORIES (choose from 1-9 in "Eligible Projects" section above)

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☒ 9 ☒

PROJECT PRIORITY Priority # 1 of 1 proposals

If submitting more than one proposal, what is the sponsor's priority of this proposal?

PROJECT BUDGET

Provide total estimated project budget, include source and amount of cost share if applicable.

Grant Funds Requested: $170,601.40; Matching Funds: $52,000.00

PROJECT DESCRIPTION (Briefly describe the project by completing the following questions)

Geographic area where emissions reductions will occur? Burlington County

Estimated size of population benefitting from the emission reductions? 449,284

Estimated useful life of the project? 25 years

Number of engines/vehicles/vessels/equipment included in the project? Four

Estimated emission benefits should be expressed in tons per year (TPY) of emission reduced for NOx and for PM 2.5 over the lifetime of the project. Identify methodology used.

Estimated NOx benefits? TPY See Supplemental Pages

Methodology Used?

Particulate matter (PM 2.5) benefits? TPY

Methodology Used?

Will the project benefit one or more communities that are disproportionately impacted by air pollution? If so, please describe.

See Supplemental Pages

Project partners, if any? N/A
Explain how the project will provide cost effective and technically feasible emission reductions. Cost effectiveness should be expressed in dollars per ton per year of emissions reduced for NOx and for PM 2.5. See Supplemental Pages
Estimated timeframe for implementation? Include a project timeline that identifies start and end dates, as well as the timeframe for key milestones. See Attached Project Schedule
Demonstrated success in implementing similar projects? See Supplemental Pages
If your proposed project involves alternative fuels, provide a demonstration of current or future plans to provide adequate refueling infrastructure. See Supplemental Pages
Has your organization been approved to receive and expend any other grant funds related to this project? If so, please provide details. No
Please provide any additional information that supports this project.

Two additional pages have been provided as supplemental space to answer any of the questions above.

Number of engines/vehicles/vessels/equipment included in the project?
Four. The Project proposes the elimination of the entire fleet of propane-fueled forklifts currently in use by Burlington County departments and proposes to replace them with electric models. In addition, six (6) charging stations will be installed at three (3) locations within Burlington County. These new stations will be available to the public.

Estimated emission benefits should be expressed in tons per year (TPY) of emission reduced for NOx and for PM 2.5 over the lifetime of the project. Identify methodology used.
Estimated NOx benefits? 2.33 TPY
Methodology Used? EPA Non-Road Compression-Ignition Engines: Exhaust Emission Standards for NOx g/KW-hr for the existing four forklift engines operating at 20 hrs/wk.
Particulate matter (PM 2.5) benefits? .11 TPY
Methodology Used? EPA Non-Road Compression-Ignition Engines: Exhaust Emission Standards for PM g/KW-hr for the existing four forklift engines operating at 20 hrs/wk.

Will the project benefit one or more communities that are disproportionately impacted by air pollution? If so, please describe.
Yes. Burlington County is in the Philadelphia-Wilmington-Trenton, PA-NJ-DE-MD nonattainment area for failing to meet the national ambient air quality standard for a number of air pollutants, including NOx pollutants. Additionally, New Jersey and other states residents upwind of Burlington County will also benefit.

Explain how the project will provide cost effective and technically feasible emission reductions. Cost effectiveness should be expressed in dollars per ton per year of emissions reduced for NOx and for PM 2.5.
Cost effectiveness as determined by the life of the new electric forklifts to be 25 years is a total of 58.3 tons of NOx reduction and 2.7 tons of Particulate matter reduced by converting to the electric forklifts. Each forklift costs $33,910.00. Total project cost is $135,640.00. The cost is $2,326.6 per ton of NOx removed and $50,401.69 per ton of PM removed over the life of the project. This value divided by 25 years is $93.06 per ton per year for 25 years for NOx and $2,016.17 per ton per year for 25 years for PM.

The project is technically feasible because electric forklifts are available. The project proposes replacing the existing forklifts with Yale Model ERC060VG electric forklifts.

Demonstrated success in implementing similar projects?

The projects will be administered by the Department of Public Works/Division of Construction Services. The Department has significant experience in implementing projects similar in scope as well as much larger projects. The Office annually administers over $30 million in U.S.D.O.T. funding for various transportation infrastructure project within Burlington County. In addition, they oversee constructions projects ranging from $20-$60M a year funded by the County and grants. Most notable improvements are related to energy usage reduction and gas consumption.

Over the past 10 years the Department has replaced multiple boiler and chiller plants with more efficient equipment, installed three solar arrays, a cogeneration plant at Buttonwood Hospital (which has since been sold), and upgraded multiple facilities to LED lighting.

If your proposed project involves alternative fuels, provide a demonstration of current or future plans to provide adequate refueling infrastructure.

In addition to the reduction in NOx and particulate matter, the proposed project will also result in the installation of six (6) new charging stations in Burlington County, all of which will be made available to the public. This will increase the charging capacity in Burlington County by 60%. Currently there are 10 vehicle charging stations in Burlington County and the demand is only expected to grow. Based on 2015 data approximately 209-382 electric vehicles are registered in Burlington County, according to the New Jersey Department of Environmental Protection-Bureau of Clean Vehicles. The new charging stations will be centrally located in Mt. Holly and Westampton; both of which are in close proximity to the New Jersey Turnpike, Interstate 295 and other New Jersey State Highways.

BURLINGTON COUNTY NOx REDUCTION PROJECT BUDGET AND NARRATIVE

NJDEP Funds Requested:	$170,601.40
Burlington County Funds (Local Match):	$52,000.00
Total Project Cost:	**$222,601.40**

NJDEP Funds Requested Details:

Four (3) Yale Electric Forklifts with Chargers (Model # ERC060VG):	$36,910.00 x 4 units = $147,640.00
Six (6) Galaxy Pole-Mounted J1772 EVSEE Chargers with Automatic Cable Manager (Model #3722-001-28-xx-4150):	$2,729.30 per unit x 6 units = $16,375.80
Three (3) Zigbee Payment Modules with Pole & 24VDC Power Supply (Model # 3725-104-V-09-Z-PI):	$2,195.20 per unit x 3 units = $6,585.60
TOTAL NJDEP FUNDS REQUESTED	***$170,601.40***

Burlington County Funds (Local Match) Details:

Installation of three (3) Galaxy Pole-Mounted Chargers and three (3) Zigbee Pole-Mounted Payment Modules:	$52,000.00 Lump Sum

County of Burlington – NOx Reduction Grant

NOx Reduction Project Schedule

MONTHS									
TASK	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Grant Monitoring									
Design Specs & Bid Package									
Bid Period									
Bid Award									
Engineer Contracting									
Construction Phase									
Work Progress Inspections									
Project Close-Out									