

**STATE OF NEW JERSEY**  
**Department of Environmental Protection**



**PROJECT SOLICITATION**

**LION6**

**Stake-Bed Truck**



# Township of Lakewood

DEPARTMENT OF PUBLIC WORKS  
LAKEWOOD, NEW JERSEY 08701  
732.905.3405 • FAX: 732.367.5401



Phil Roux  
*Director*

New Jersey Volkswagen Environmental Mitigation Trust Program  
STATE OF NEW JERSEY  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
Project Solicitation

RE: Lakewood Township – Electric Refuse Vehicle Project

To Whom It May Concern,

The Township of Lakewood appreciates the opportunity to present our response for the grant funding opportunity with the New Jersey Volkswagen Environmental Mitigation Trust Program. We are looking forward to being selected for one (1) all-electric Stake-Bed Truck. Lakewood Township is responding to this Project Solicitation with the hope to accelerate adoption and deployments of zero-emissions vehicles in New Jersey; thus, improving the lives of the citizens of Lakewood, Ocean County and within the State of New Jersey.

Lakewood is a vibrant, exciting place – a natural beauty set amidst parks, lakes and a quaint Victorian downtown. The town offers old-world charm, a hometown feeling and solid values along with 21st Century amenities. Lakewood, an area of 26 square miles, has 217 miles of Township streets. The Public Works Department is responsible for the maintenance and repair of Township roads and sewers, Township parks and open space, snowplowing of Township streets, leaf and brush collection, garbage and recycling collection and tire, refrigerator and appliances that contain refrigerants collection.

For the deployment of our all-electric Stake-Bed Truck, the Township of Lakewood will be partnering with The Lion Electric Co. (Lion), Lion's authorized dealer and Clipper Creek – charging infrastructure vendor, to supply our region with all our fleet electrification needs. Our new all-electric Stake-Bed Truck will be used for various Public Works duties including delivering our trash/recycle bins to homes throughout the community of Lakewood (the new truck will hold twice as many cans for delivery thus taking another delivery truck off the road), picking up bulk items, transporting trash bags from our volunteer clean ups, and other various daily tasks. Currently, the truck we use for these tasks needs to idle to run the tail-gate. With the new all-electric Stake-Bed Truck, we will eliminate the wasted fuel and emissions caused by running the vehicle.

To date, our equipment manufacturing partner, The Lion Electric Co. has over 300 electric heavy-duty vehicles deployed in North America with 6,000,000 proven and drive miles on its current batteries, electric components and heavy-duty chassis. Today, Lion also has the manufacturing capacity to build 1,000 trucks annually. Designing, building and delivering electric heavy-duty vehicles is Lion's daily mandate; their experience and success will reflect on the Township of Lakewood, through measurable performance, real-life client references, 100% on-time deliveries and way beyond the "early adopter" experience.

The Township of Lakewood strongly supports the Volkswagen Project Solicitation and thanks the New Jersey Department of Environmental Protection for its work to date on zero-emission vehicle implementation. We hope that our response will successfully demonstrate that Lakewood can fulfill New Jersey's goals by delivering and operating quality, zero-emission vehicles in a short amount of time.

We look forward to working with the New Jersey Department of Environmental Protection to implement this project.

Sincerely,

Phil Roux  
Director of Public Works  
Township of Lakewood





# State of New Jersey

Department of Environmental Protection

PHILIP D. MURPHY  
*Governor*

CATHERINE R. McCABE  
*Commissioner*

SHEILA Y. OLIVER  
*Lt. Governor*

## PROJECT PROPOSAL

### OVERALL GOAL

The State of New Jersey, as a beneficiary of the Trust established pursuant to the national Volkswagen settlement, intends to use its allocation from the mitigation trust to efficiently implement projects that reduce oxides of nitrogen (NOx) emissions in a cost effective and technically feasible manner. The implemented projects must meet the criteria of the Consent Decree. New Jersey is issuing this solicitation for project ideas to ensure a broad range of project ideas are considered.

NJDEP anticipates primarily funding pilot electrification projects, including the replacement of heavy-duty vehicles/engines such as buses, trucks, and non-road equipment in urban areas disproportionately impacted by diesel emissions, as well as electric vehicle charging/fueling infrastructure installation in strategic locations across the state.

Submissions must contain all the information outlined in the “Project Proposals” section of this document.

### ELIGIBLE PROJECTS

A general summary is below. [Click here for comprehensive list and associated definitions.](#)

Source Category	Emission Reduction Strategy	Allowed Expenditure Amount
<b>1. Class 8 local freight trucks &amp; port drayage trucks</b>	Repower and replacement	Up to 40% for repower with diesel or alternative fuel or up to 75% (up to 100% if government owned) for repower with electric. Electric charging infrastructure costs are an eligible expense.  Up to 25% for replacement with diesel or alternative fuel or up to 75% (up to 100% if government owned) for electric replacement. Electric charging infrastructure costs are an eligible expense.
<b>2. Class 4-8 school bus, shuttle bus or transit bus</b>	Repower and replacement	Same as row 1
<b>3. Freight switching locomotives</b>	Repower and replacement	Same as row 1
<b>4. Ferries/Tugs</b>	Repower	Same as row 1
<b>5. Oceangoing vessels</b>	Shorepower	Up to 25% for shore side infrastructure if non-government owned (up to 100% if government owned)

Source Category	Emission Reduction Strategy	Allowed Expenditure Amount
<b>6. Class 4-7 local freight trucks</b>	Repower and replacement	Same as row 1.
<b>7. Airport ground support equipment</b>	Repower and replacement	Up to 75% to repower or replace with electric (100% if government owned). Electric charging infrastructure costs are an eligible expense.
<b>8. Forklifts and Port Cargo Handling Equipment</b>	Repower and replacement	Up to 75% to repower or replace with electric (100% if government owned). Electric charging infrastructure costs are an eligible expense.
<b>9. Electric vehicle charging stations or hydrogen fueling stations for light duty vehicles only</b>		Up to 100% to purchase, install and maintain infrastructure if available to public at <i>government owned</i> property. Up to 80% to purchase, install and maintain infrastructure if available to public at <i>non-government owned</i> property. Up to 60% to purchase, install and maintain infrastructure at a workplace or multi-unit dwelling that is not available to the general public. Up to 33% to purchase, install and maintain infrastructure for publicly available hydrogen dispensing that is high volume or 25% for lower volume.

### **PROJECT PROPOSALS (Open with Adobe Reader)**

Electronic submittals are preferred and should be sent to [VWComments@dep.nj.gov](mailto:VWComments@dep.nj.gov), however paper submittals will also be accepted and should be sent to:

NJDEP  
Division of Air Quality  
Mail code 401-02E  
Trenton, NJ 08625-0420  
Attn: VW Settlement

All proposals must contain the following information; incomplete applications will not be considered. If your project is selected, you may be contacted for additional detailed information. Send questions to [VWComments@dep.nj.gov](mailto:VWComments@dep.nj.gov)

To enter information electronically, use Adobe Reader

**CONTACT INFORMATION**

Applicant Name	Township of Lakewood
Applicant Address	231 Third Street
City, State, Zip Code	Lakewood, New Jersey, 08701
Contact Person	Samantha Everett
Title/Position	Clean Communities Coordinator
Phone	(732) 364-2500 ex 5254
E-mail	severett@lakewoodnj.gov
Owner Name	Township of Lakewood
Owner Address	231 Third Street
City, State, Zip Code	Lakewood, New Jersey, 08701
Contact Person	Phil Roux
Title/Position	Director of Public Works
Phone	(732) 364-2500 ex 6024
E-mail	proux@lakewoodtpnj.gov

<b>PROJECT NAME</b>	Township of Lakewood - Electric Stake-Bed Truck
<b>PROJECT CATEGORY OR CATEGORIES</b> (choose from 1-9 in "Eligible Projects" section above)	
1 <input checked="" type="checkbox"/>	2 <input type="checkbox"/>
3 <input type="checkbox"/>	4 <input type="checkbox"/>
5 <input type="checkbox"/>	6 <input type="checkbox"/>
7 <input type="checkbox"/>	8 <input type="checkbox"/>
9 <input type="checkbox"/>	

<b>PROJECT PRIORITY</b>	Priority # 1	of 1	proposals
If submitting more than one proposal, what is the sponsor's priority of this proposal?			

**NOTE FOR CATEGORY 9 PROPOSALS**

If your proposal is for Category 9 (Light Duty Zero Emission Vehicle Supply Equipment), follow these instructions:

Electric Vehicle stations: Do not complete this form. Instead, go to [It Pay\\$ to Plug In – NJDEP’s Electric Vehicle Charging Grants Program](#), and apply for a Charging Grant. Volkswagen funds for charging stations will be administered through *It Pay\$ to Plug In*.

Hydrogen fuel cell vehicle supply equipment: Complete all of the questions on this form.

**PROJECT BUDGET**

Provide total estimated project budget, include source, amount of cost share, and administrative costs if applicable:

The amount of grant request is 100%.

The total estimated project budget will be \$284,595.00, for the purchase of one (1) all-electric stake-bed truck and 2 (two) charging stations, as well as the cost of the charging infrastructure installation for the project.

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

The Township of Lakewood Electric Stake-Bed Vehicle Project will see one (1) work truck, from our current fleet, scrapped and rendered inoperable. This work truck will then be replaced with one (1) all-electric, zero-emission, Lion6 Stake-Bed Truck from The Lion Electric Co. Please find the information for the vehicle that we will be scrapping and replacing in the text box below and on a separate PDF page further down in our project submission form.

Geographic area where emissions reductions will occur? Township of Lakewood

Estimated size of population benefitting from the emission reductions? Over 100,000

Estimated useful life of the project? Up to 12 years

Number of engines/vehicles/vessels/equipment included in the project? One (1) all-electric stake-bed truck

DEP will be modeling emission benefits for all projects. Please provide the necessary information below:

Model Year GMC – 2003

Horsepower 215

Annual hours of use 1,040

Annual amount of fuel used 700-1,000 gallons

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

The project will benefit Lakewood Township, located in Ocean County. Although the air quality in the State of New Jersey has improved, it still ranks among the worst in the nation because of high concentrations of ground-level ozone pollution, according to the American Lung Association. In 2017, Ocean County was ranked number five out of 11 counties in New Jersey that had the worst air pollution in the State. Our county was given an "F" grade and we had a total of 16 unhealthy "orange alert days", those in which the air quality is considered unhealthy for children, active adults, and anyone with asthma or other respiratory ailments. To this day, our "F" grade remains and in 2019 we had a total of 17 "orange alert" days. Looking at the report card that the American Lung Association published for our county a few of the groups most at risk are our children under 18 (144,247), our elderly population - 65 and older (135,652), children living with pediatric asthma (10,453) and adults currently living with asthma (38,245).

Only shovel ready projects will be considered. Please list project partners.

The following project partners will be involved in this project: Township of Lakewood, The Lion Electric Co. – original equipment manufacturer, Clipper Creek – electric vehicle charging infrastructure vendor, and The Lion. Electric Co. licensed dealer – H.K. Truck Center.

Estimated timeframe for implementation? Include a project timeline that identifies start and end dates, as well as the timeline for key milestones.

Project Period // We will take possession of our vehicle six to nine months after a purchase order has been emitted to The Lion Electric Co. licensed dealer for the purchase of one (1) Lion6 Stake-Bed Truck. Lion is committed to deliver quality products as quickly as possible based on the grant response.

Demonstrated success in implementing similar projects?

As this will be our first zero-emission stake-bed truck we are very confident in our equipment manufacturer, The Lion Electric Co., capabilities and proven success in implementing and demonstrating success with similar projects.

A global leader in deploying electric vehicles, Lion has already deployed vehicles with more than 6,000,000 miles of service and recorded data. They are in a unique position to have operating data and a history of advancing our technology towards a zero-emission future. Lion is the most experienced in this field from infrastructure support, to service, to on-time delivery.

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

We are currently only operating diesel work trucks, and so this vehicle will be our first zero-emission option. We do not have adequate charging infrastructure to power our new all-electric stake-bed truck and will therefore request funding support from the Department of Environmental Protection to purchase and install these units. As per the project requirement, we will scrap one (1) diesel truck and replace it with an all-electric stake-bed truck. To charge the vehicle we must install two (2) charging stations. Each Lion truck has (2) onboard chargers to provide an acceptable overnight charge time so the assets will be ready the following morning for work.

To note, the project budget presented in this proposal includes the following estimated costs: charging station units, as well as the costs to install the charging station infrastructure. With the assistance of our project partners, they have provided us with these estimations for the purposes of this application. However, we are aware that based on our utility and the site we would choose for the placement of the charging station, these numbers could vary. Should the New Jersey Department of Environmental Protection award a grant to us for this project we would like to include all costs in the funds allocated to us.

Has your organization been approved to receive and expend any other grant funds related to this project? If so, please provide details.

We will solely apply for this funding opportunity to replace our diesel truck with an all-electric stake-bed truck.



Please provide any additional information that supports this project.

Lakewood Township, New Jersey is the most populous township in Ocean County, New Jersey. The township ranked as seventh-most populous municipalities in the state in 2010, after having been ranked 22nd in 2000. It now ranks 5th. With such a strong uptake in residents it is no doubt that the amount of greenhouse gas emissions has soared in the past twenty

years, which is why it was important for our Township to take the pledge and join the other municipalities in the Sustainable Jersey program. Lakewood Township is proud to be part of New Jersey Clean Communities, a state-wide litter abatement program. The Township has implemented programs that incorporate the fundamentals of litter clean up, enforcement, and education. We have hosted volunteer park clean ups, given educational tours of our Public Works Department for students, visited public and private schools to give presentations on recycling and storm-water drains, and participated in many town-wide events to further promote recycling.

Not only is greenhouse gas emissions reduction a goal of Sustainable Jersey, but one for the Township of Lakewood as well. Applying to the Department of Environmental Protection to help us fund the purchase of a zero-emission vehicle for the public works department is, we believe, a step in the right direction for the town to work towards being carbon-neutral.

Since this all-electric vehicle will be new to our fleet and transportation operators, it is for this reason that we are only applying for one vehicle through this round of funding with the Department of Environmental Protection. That said, we see this vehicle being a pilot project for our Township and hope to be able to add more vehicles like it to our fleet. We are more than confident that the vehicle will fit perfectly into our already planned routes, because it will mimic what our scrapped diesel vehicle would have accomplished, but without the extra fumes and incurred costs. Once it arrives, we will ensure that all parties involved in the integration and operation are comfortable driving them before expanding its route with the transportation provider.

Our stake-bed truck will charge overnight during non-peak hours and may be charged mid-day if needed, therefore reducing our operational costs. The utilization of these new vehicles will also reduce our maintenance costs by about 60% and energy costs up to 80% based on our preliminary evaluation. This is since the truck has no fuel, no transmission and very few moving parts. With the help of the New Jersey Department of Environmental Protection, our return on investment will occur in a minimal time frame, allowing us to significantly reduce greenhouse gas emissions while providing economic and environmental benefits to our community. In fact, one truck will reduce the amount of CO<sub>2</sub> in the air by approximately 100 tons per year and will also reduce the noise pollution in the area.

With many uncertainties on so many levels of County governments, waste collection routes and services remain the same. The diesel trucks that are currently in our fleet are our biggest problem when it comes to greenhouse gas emissions and every day when our trucks go out, they are spewing the air with unnecessary emissions. Knowing this, it brings us great pride to have the opportunity to scrap and remove one large Class 6 truck from our fleet. We are also certain that the citizens we service will appreciate this change and our commitment to their health and safety. We are more than confident that switching to an all-electric fleet is taking a step in the right direction, and that the all-electric Lion6 Stake-Bed Truck we would like to purchase will go above and beyond our needs.

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

#### Supplemental Page 1

We have chosen to partner with The Lion Electric Co. licensed dealer in the State of New Jersey, to bring one (1) purpose built all-electric Lion6 Stake-Bed Vehicle to our community, thus ensuring zero emissions throughout the state. Lion builds their own chassis, body, battery packs and design their own proprietary operating software. The trucks are not retrofitted diesel vehicles, they are born to be electric.

Investing in a Lion vehicle will allow us to track our progress by calculating our average consumption through the smart charging system, and collect data through the onboard telematic touchscreen, which is unique to Lion vehicles. The operator will simply select their charging preferences through the screen to maximize charging efficiency. The onboard touch screen will serve many purposes to our operators: it registers power usage, driving efficiency through the driving interface, maintenance interface, battery state, charging interface, parameters, smart charge, and preheat. All information on the onboard touchscreen is recorded and can be extracted as a report on a regular basis to perform multiple analyses and to understand the efficiency and cost of each electric truck.

The vehicles are also equipped with electronic modules that monitor and record data from various systems, including the motor, batteries, braking, and electrical systems. The electronic modules record information about various driving and vehicle conditions, including braking, acceleration, trip distance and other related information regarding the vehicle. These modules record information about the vehicle's features such as charging events and status, the enabling/disabling of various systems, diagnostic trouble codes, VIN, speed, direction, and location.

The success of the project will be enhanced by the number of miles driven per year on the all-electric truck. The more we will use the truck, the more we will save and the better it will be for our environment and community. We will be the grantee of this grant and will operate the truck multiple times a week while analyzing the reports generated by the vehicle.

In our case, electric trucks are new to us and we will require the necessary training to help bridge our knowledge gap from diesel to electric. To ensure that our operators are comfortable using the new all-electric truck, they will take part in the Lion Academy Training Program. The training program will be available to a wide range of stakeholders, and most importantly our vehicle operators. The training curriculum will be extremely detailed and can last up to six hours to ensure that all parties are comfortable working on the trucks once they are delivered and operational. The interactive classes cover various topics such as safety, troubleshooting, electric chargers, EV components, maintenance, repairs, warranty work, driver tips, accessories, etc.

Conclusion//

Leaders in manufacturing and deploying zero-emission vehicles, with more than 300 electric heavy-duty vehicles on the road and a manufacturing capacity to build 1,000 trucks annually today, The Lion Electric Co., their licensed dealer, and Clipper Creek - charging infrastructure vendor, are poised to immediately support the Township of Lakewood. It is our strong desire to scrap one high pollutant diesel vehicle and replace it with a zero-emission vehicle and the necessary charging infrastructure.

Having a shared goal of improving air quality is what best aligns us and our project partners. Not only do our partners value focus on safety and reliability, but also the health of the communities we serve. They have invested early and deeply to develop a zero-emission technology that supports the communities in which we serve and live.

With help from the Department of Environmental Protection this program will help us to permanently remove the previously mentioned high pollutant diesel vehicle that is currently operating in our fleet, which our entire community are presently exposed to. Additionally, it will give us the opportunity to pave the way for other municipalities to join the electrification movement.

We would like to thank the Department of Environmental Protection in the State of New Jersey for allowing us to submit a project proposal for the Volkswagen settlement funds. We look forward to working with this Department so that we may be able to provide a healthy breathing environment to Ocean County.

## **Fleet Spreadsheet**

**See attached**

Township of Lakewood  
 New Jersey Department of Environmental Protection - Volkswagen Mitigation Application  
 Fleet Spreadsheet

Existing Vehicle						Replacement Vehicle				
Vehicle Number	Make/Model	Model Year	Horsepower	Annual Hours	Annual Fuel	Replacement Model Year	Replacement Fuel Type	Replacement Cost	Charging Infrastructure	Funding Request
1	GMC Single Axel Dump	2003	215	1,040	700 - 1,000 gallons	2021	All-electric	\$ 272,095.00	\$ 12,500.00	\$ 284,595.00
<b>Totals:</b>								<b>\$ 272,095.00</b>	<b>\$ 12,500.00</b>	<b>\$ 284,595.00</b>