



# Adding EVs to Your Municipal Fleet and Community

A Sustainable Jersey webinar

June 24, 2020

# Today's Presenters

\*In speaking order

**Tracey Woods**

Sustainable Jersey

**Cathleen Lewis**

NJ Board of Public Utilities

**Ari Messinger**

Cherry Hill

**Victor De Luca**

Maplewood

**Andrea Friedman**

NJ Department of Environmental Protection



# What is Sustainable Jersey?

Certification program for municipalities and schools

- **Tools, resources, and guidance** to help municipalities and schools become more sustainable
- **Grants and funding** for municipalities and schools
- **Regional Hubs**



# Sustainable Jersey Municipal Stats

2009  
Program  
Started

81%  
Participating

89%  
Population

45% of  
Participants  
Certified



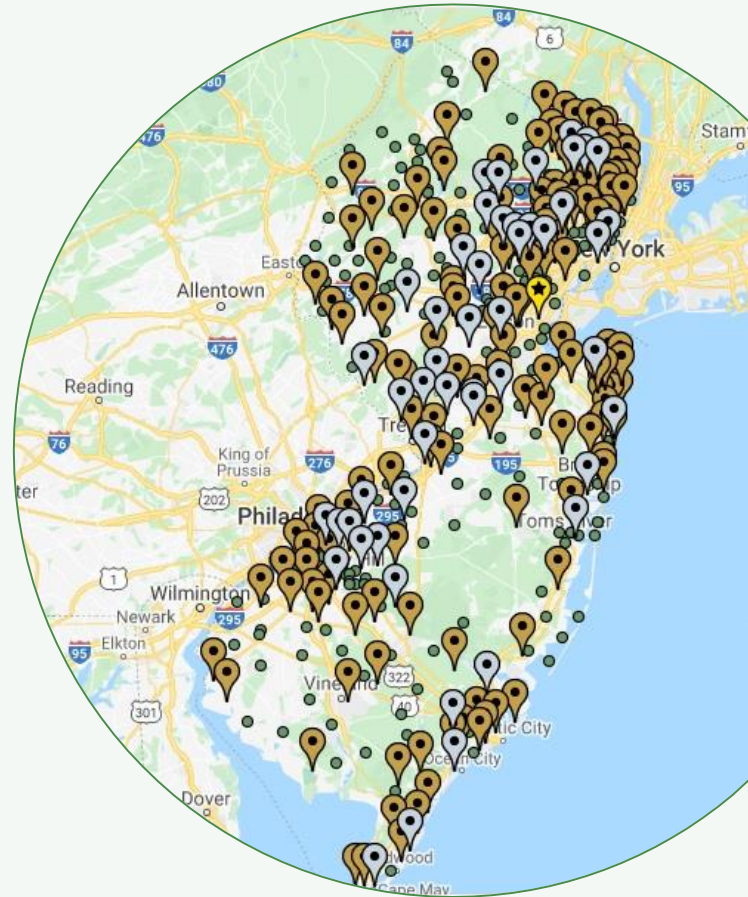
151 Bronze  
Certified



53 Silver  
Certified

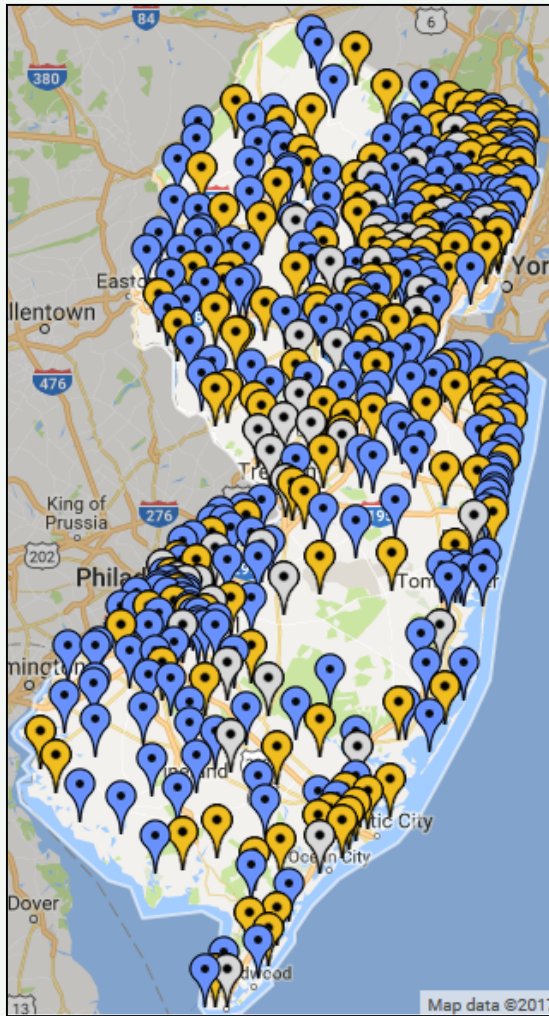


1  
Star





# Program Participants



**Municipal Program**



**Schools Program**

## **Municipal Program**

456 (81%) participating  
204 Certified

- 151 Bronze
- 53 Silver

## **Schools Program**

352 Districts (>50%)  
968 Schools  
241 Schools Certified

- 223 Bronze
- 18 Silver

# Actions: Prosperity, Planet, People

## GREEN DESIGN

Green Building Policy/Resolution

Green Building Training

Create Green Develop

Green Building Educat

Site Plan Green Design

New Construction

Upgrade/Retrofit-Light

Upgrade/Retrofit-Water

## ENERGY

## Points

### Energy Efficiency for Municipal Facilities\*

5-50

### Energy Tracking & Management\*

10-20

Buy Electricity from a Renewable Source

10

Municipal On-Site Solar System

10-40

Municipal Geothermal Energy System

10

Municipal Wind Energy System

10

Renewable Government Energy Aggregation

5-50

Commercial Energy Efficiency Outreach

10-20

Residential Energy Efficiency Outreach

10-20

Make Your Town Solar Friendly

15-30

Community-Led Solar Initiatives

10-15

Wind Ordinance

10

### Fleet Inventory\*

10

Meet Target for Green Fleets

30

Purchase Alternative Fuel Vehicles

10

Public Electric Vehicle Charging Infrastructure

15

Make Your Town Electric Vehicle Friendly

15

- Municipalities choose from menu of actions to accumulate points
- Actions created by issue-based Task Forces:
  - subject matter experts
  - local leaders
  - state / federal agencies
  - stakeholders

# Sustainable Jersey Energy Actions

	Energy Efficiency	Renewable Energy	Alternative Fuel Vehicles (AFVs)
<b>Facilities Operations</b>	<ul style="list-style-type: none"> <li>• Energy Tracking and Management</li> <li>• Energy Efficiency for School/Municipal Facilities</li> <li>• Behavior-Based Energy Conservation Programs</li> </ul>	<ul style="list-style-type: none"> <li>• On-Site Solar Energy</li> <li>• On-Site Geothermal</li> <li>• On-Site Wind Energy</li> <li>• Buy/Purchase Renewable Energy</li> </ul>	<ul style="list-style-type: none"> <li>• Fleet Inventory</li> <li>• Meet Target for Green Fleets</li> <li>• Purchase AFVs</li> <li>• Sustainable Fleets</li> </ul>
<b>Community Energy Use</b>	<ul style="list-style-type: none"> <li>• Residential Energy Efficiency Outreach</li> <li>• Commercial Energy Efficiency Outreach</li> </ul>	<ul style="list-style-type: none"> <li>• Community Choice Aggregation (R-GEA)</li> <li>• Make Your Town Solar Friendly</li> <li>• Community-Led Solar Initiatives</li> </ul>	<ul style="list-style-type: none"> <li>• Make Your Town EV Friendly</li> <li>• Public EV Charging Infrastructure</li> </ul>



# Fleet Inventory

10 points

Maintaining a Fleet inventory helps municipalities and schools:

- Track fleet emissions
- Identify vehicles that should be replaced with alternative fuel options or decommissioned

Template fleet inventory spreadsheet, automatically calculates fleet emissions

Vehicle Type (bus, truck, sedan, segway, scooter, etc)	Year	Make	Model	Fuel Type (Gasoline, Diesel, Propane, etc)	Odometer Reading at end of Baseline Year	Miles Traveled in Baseline Year	Annual Fuel Usage in Baseline Year	Fuel Units (Gallons, GGE, kWh)	Annual Fuel Cost in Baseline Year	Average Fuel Efficiency in Baseline Year (miles per fuel unit)	Is the vehicle owned or leased?	If leased, in which year will lease contract end?	If owned, in which year is this vehicle expected to be replaced?	Used by which municipal department?	Primary duty of vehicle
SUV	2009	TOYOTA	HIGHLANDER	GASOLINE	20,976	3,500	206	Gallons	\$ 459.12	17	Owned	N/A	2019	POLICE	POLICE ADMIN
SUV	2008	DODGE	DURANGO	GASOLINE	21,145	3,500									
SUV	2006	DODGE	DURANGO	GASOLINE	101,297	3,500									
SEDAN	2005	FORD	CROWN VIC	GASOLINE	67,388	6,700									
SEDAN	2007	DODGE	CHARGER	GASOLINE	58,625	6,200									
SEDAN	2007	DODGE	CHARGER	GASOLINE	48,140	6,000									
SEDAN	2007	DODGE	CHARGER	GASOLINE	80,504	7,000									
SEDAN	2008	FORD	CROWN VIC	GASOLINE	99,780	14,250									
SEDAN	2005	FORD	CROWN VIC	GASOLINE	99,640	14,250									
SEDAN	2009	FORD	CROWN VIC	GASOLINE	68,043	6,700									
SEDAN	2009	FORD	CROWN VIC	GASOLINE	81,222	8,000									
SEDAN	2008	FORD	CROWN VIC	GASOLINE	87,268	12,000									
SEDAN	2008	FORD	CROWN VIC	GASOLINE	94,397	13,450									
SEDAN	2009	FORD	CROWN VIC	GASOLINE	110,760	16,500									
PICKUP	2010	FORD	EXPLORER	GASOLINE	20,053	4,000									
PICKUP	2010	FORD	F150	GASOLINE	15,543	2,200									

Municipality: City of Ocean City									
Fuel Consumption (and Scope 1 Emissions from Mobile Fuel Combustion)									
Municipal Operation - Vehicle Emissions	Total Fuel Units consumed by all municipal vehicles in baseline year	CO2 Emissions (lbs/fuel unit)	CO2 Emissions (lbs)	CO2 (Metric Tons CO2e)					
CO2 emissions by fuel usage									
Motor Gasoline (gallons)	11500	19.54	224710	101.1195					
Diesel Fuel (gallons)	0	22.37	49214	22.1463					
Biodiesel B20 (gallons)	2200	22.37	0	0					
Natural Gas (gge)	0	15.25	0	0					
Propane (gallons)	0	12.67	0	0					
Other 1 specify fuel (units)			0	0					
Other 2 specify fuel (units)			0	0					
Other 3 specify fuel (units)			0	0					
Carbon dioxide emissions coefficients: <a href="http://www.eia.doe.gov/oiaf/1605/excel/Fuel%20Emission%20Factors.xls">http://www.eia.doe.gov/oiaf/1605/excel/Fuel%20Emission%20Factors.xls</a>									
Municipal Operation - Vehicle Emissions	Total Mileage	CH4 Emissions (Metric Tons)							
CH4 and N2O emissions by mileage									
Totals from Worksheet 2, "Vehicle CH4 and N2O"	13700	0.00024963							
Total Emissions (Metric Tons CO2e)									
FLEET CARBON FOOTPRINT	123.3249295								

Notes  
Be sure to use the units specified in the chart or adjust formulas accordingly  
Abbreviations: CO2e=carbon dioxide equivalents CO2=carbon dioxide, CH4=methane, N2O=nitrous oxide



# Purchase Alternative Fuel Vehicles

**5-15 points**

## **Vehicles eligible for points**

- Plug-in hybrid electric vehicle
- Plug-in electric vehicle
- Pursuit class hybrid vehicles
- CNG or EV heavy-duty service vehicles



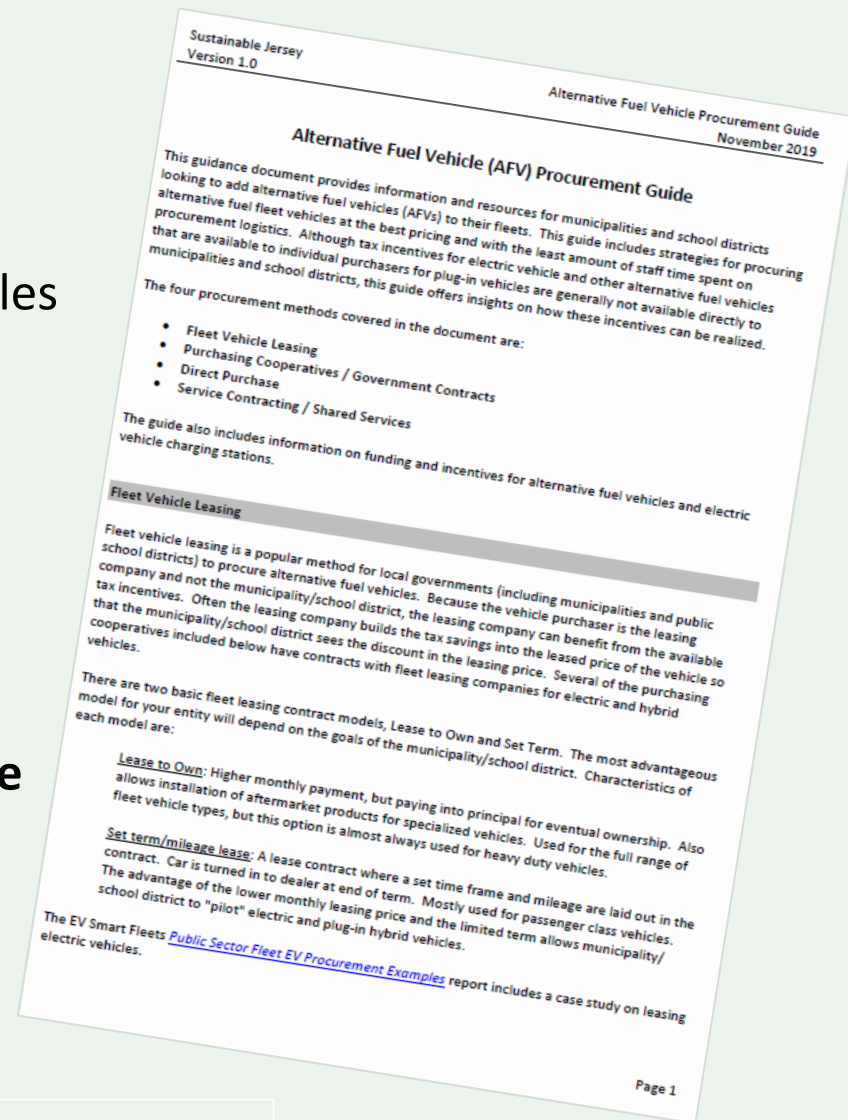
# Purchase Alternative Fuel Vehicles

## Plug-in Electric Vehicles

- 22-33% total emissions of gasoline vehicles
- 20-25% less maintenance costs
- 40-50% less fuel cost
- Rebates/incentives available

## Alternative Fuel Vehicle Procurement Guide

Includes guidance for capturing tax credits and procurement options



# Purchase Alternative Fuel Vehicles

## **NJDEP It Pay\$ to Plug In**

- Public, Workplace, Multi-Unit Housing charging stations
  - \$750 per Level 1 charging station
  - \$4,000 per port Level 2 charging
  - \$200,000 per location for public DC Fast Chargers along major roads

[www.drivegreen.nj.gov/plugin.html](http://www.drivegreen.nj.gov/plugin.html)

## **NJBPU Clean Fleet Electric Vehicle Incentive Program**

- \$4,000 grant toward the purchase of a municipal EV
- \$1,500 toward the purchase of a dual-port Level 2 EV charging station

<https://www.nj.gov/bpu/pdf/publicnotice/Clean%20Fleet%20Electric%20Vehicle%20Incentive%20Program%20Application.pdf>



# Purchase Alternative Fuel Vehicles

**EVs Available on New Jersey  
State Purchasing Contract for FY20**

**2020 Chevrolet Bolt EV**  
(Hatchback)  
\$32,190  
7% Discount



**2019 Nissan Leaf**  
(Hatchback)  
\$26,894  
11% Discount



**2020 Ford Fusion Energi  
Titanium (Sedan)**  
\$29,912  
6% Discount



**2020 Toyota Prius  
Prime (Hatchback)**  
\$24,690  
11% Discount



**2019 Chrysler Pacifica  
Hybrid (7-person  
passenger van)**  
\$39,238  
5% Discount





# SJS Sustainable Fleet

## 5-15 points

### Vehicles eligible for points:

- Plug-in hybrid electric vehicle
- Plug-in electric vehicle
- Propane or EV school buses
- CNG or EV heavy-duty service vehicles



Image source EPA.gov

### Electric School Buses

- Zero tailpipe emissions/  
significant overall emissions reduction
- Quiet
- **Cost Effective**



Images: [afdc.energy.gov/uploads/publication/case-study-propane-school-bus-fleets.pdf](https://afdc.energy.gov/uploads/publication/case-study-propane-school-bus-fleets.pdf)

# Meet Targets for Green Fleets

**30 points**

Average fuel efficiency of 35/mpg  
for all light duty vehicles

**OR**

20% reduction in fuel usage



**Idling Reduction Technologies in Woodbridge Firetruck**

Image Source: Woodbridge

## **Fleet Fuel Reduction Strategies**

- Fleet Management
  - Replace vehicles
  - Fleet right sizing
  - Share vehicles
  - Driver training: save 5% on fuel
  - Maintenance
- Fleet Route Optimization
- Telematics
- Hybridize vehicles with Idle Reduction Technology
- Convert vehicles to alternative fuels

# Make Your Town EV Friendly

## 15 points

Zoning Ordinance —  
EV charging stations as accessory use

Plug-in Electric Vehicle (PEV) Ordinance —  
design standards for EV charging parking spaces

- Required spaces (e.g. ratio, percentage)
- Signage
- Protection around EV chargers, e.g. bollards
- Lighting
- ADA accessibility

First responder training

Additional activities from list



# Make Your Town EV Friendly

## Additional activities

- EV Awareness Event
- Incentive for EV Charging Pre-Wiring
- EV Charging at the Workplace
- Multi-Family Housing EV Charging



**Ribbon Cutting Ceremony:** Burlington City unveils new EV charging station



Participating in National Drive Electric Week is a great way to support EV Adoption

<https://driveelectricweek.org/index.php>



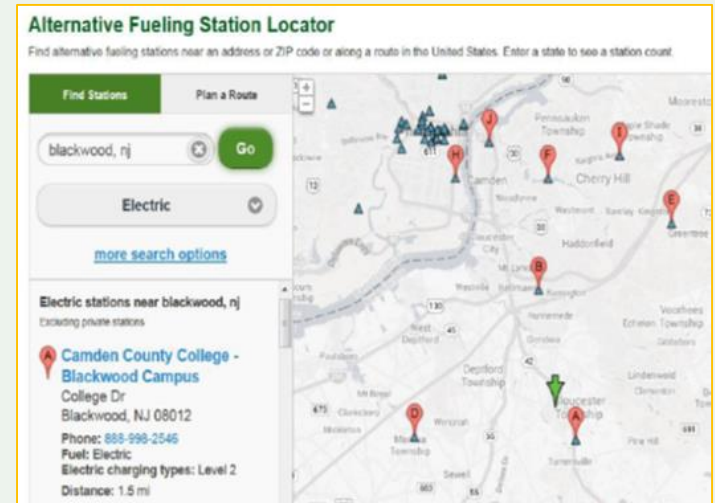


# Public EV Charging Infrastructure

15 points

Guidance on **installation** and **outreach** for municipally supported public charging infrastructure

Funding and procurement guidance in **Alternative Fuel Vehicle Procurement Guide**



# Effective Parking Management

## 10 points

Adopt or revise parking policies and or code provisions in a way that:

- uses existing parking more efficiently
- reduces future parking demand
- enhances walkability

Action includes guidance for understanding parking needs and parking management strategies.



# *Adding EVs to Your Municipal Fleet & Community*

Sustainable Jersey Virtual Summit

June 24, 2020

# Electric Vehicle Programs in New Jersey





# EVs in the Energy Master Plan

- EMP's first strategy and goal is **“Reduce Consumption and Emissions from the Transportation Section”**
- Goal of 330,000 light duty electric vehicles by 2025
- Charging infrastructure
- State light-duty fleet
- Increase transportation options, encourage new options
- Decrease “Vehicle Miles Traveled”
- Port emissions

# Electric Vehicle (EV) Overview

- In June 2019, Gov. Murphy signed an MOU outlining NJBPU's role in encouraging electric vehicle use in New Jersey
- Under this MOU, NJBPU will:
  - Consider how to utilize Clean Energy Program funds to finance Zero Emission Vehicles (ZEV) charging infrastructure deployment and mapping
  - Consider how to dedicate funds to create an incentive program to encourage NJ consumers to buy and lease new and used ZEVs
  - Track usage and electric consumption from charging infrastructure

# EVs for Underserved Communities

- Grant from the U.S. Department of Energy
- Focused on how to enhance EV adoption in urban areas and in underserved communities
- Look at EV car-sharing options and Plug-in Electric Vehicle (PEV)-based ride hailing

# Local Government Fleets

- Electric vehicles are now included in the State Purchasing Contract
- New NJBPU Grant Program
  - Designed to encourage local governments to add EVs to their fleet
  - \$4,000 per battery electric vehicle
  - \$1,500 for one Level-Two EV charging station
  - Grants awarded on rolling basis or until funding expended
- Questions? **EV.programs@bpu.nj.gov**



# Charge Up New Jersey

- Receive an incentive of up to **\$5,000** when you purchase or lease a new electric vehicle
- Online portal for post-purchase incentive launched on May 27
- Time-of-purchase incentive coming soon

**[www.ChargeUp.NJcleanenergy.com](http://www.ChargeUp.NJcleanenergy.com)**

# Charge Up New Jersey

## Program Requirements

- To apply for the Charge Up New Jersey incentive, your purchase or lease must meet the following requirements:
  - Vehicle must have a purchase/lease agreement of January 17, 2020 or later;
  - Vehicle must be registered to you in the State of New Jersey;
  - Your name must be on the purchase or lease agreement;
  - Purchase or lease agreement must be from a New Jersey dealership or showroom;
  - You must provide proof of New Jersey residency by providing a state ID or other acceptable documentation.

# Charge Up New Jersey

Additionally, your vehicle must:

- Be a new battery electric or plug-in hybrid electric vehicle
- Have an MSRP\* of less than \$55,000



*\*MSRP cap refers to the final Manufacturer's Suggested Retail Price of the vehicle.*

# NJBPU's EV Straw Proposal

- On May 18 NJBPU released a straw proposal aimed at furthering EV adoption in New Jersey by setting minimum utility filing guidelines.
- It requested feedback on:
  - Who should construct, own, operate, and pay for publicly accessible chargers
  - How rates should be structured
  - How to encourage charging infrastructure at Multi-Unit Dwellings
  - Barriers to EV adoption in LMI and EJ communities, and solutions to overcoming those obstacles

# Community Energy Plans

## Localizing the Energy Master Plan Goals



ENERGY USE



TRANSPORTATION  
PLANNING



LAND USE



WATER  
MANAGEMENT



WASTE  
MANAGEMENT



# More Information

**CATHLEEN LEWIS**

Outreach Coordinator

Cathleen.lewis@bpu.nj.gov

**VISIT**

[NJCleanEnergy.com](http://NJCleanEnergy.com)

**NEWSLETTER**

[NJCleanEnergy.com/NEWSLETTER](http://NJCleanEnergy.com/NEWSLETTER)

**LISTSERVS**

[NJCleanEnergy.com/LISTSERVS](http://NJCleanEnergy.com/LISTSERVS)

@NJCleanEnergy



A photograph of a modern multi-story building with a glass facade. The building has several floors with large windows, some of which are reflecting the sky. In the foreground, there are several small, rounded green trees planted in front of the building. The text "THANK YOU" is overlaid on the image in a large, bold, dark grey font. A semi-transparent white horizontal bar is positioned behind the text. A yellow plus sign is located on the right side of the image, overlapping the white bar.

**THANK YOU**



# KNOWING WHERE YOU ARE IN ORDER TO MOVE FORWARD

Adding EVs to  
Your Municipal  
Fleet and  
Community



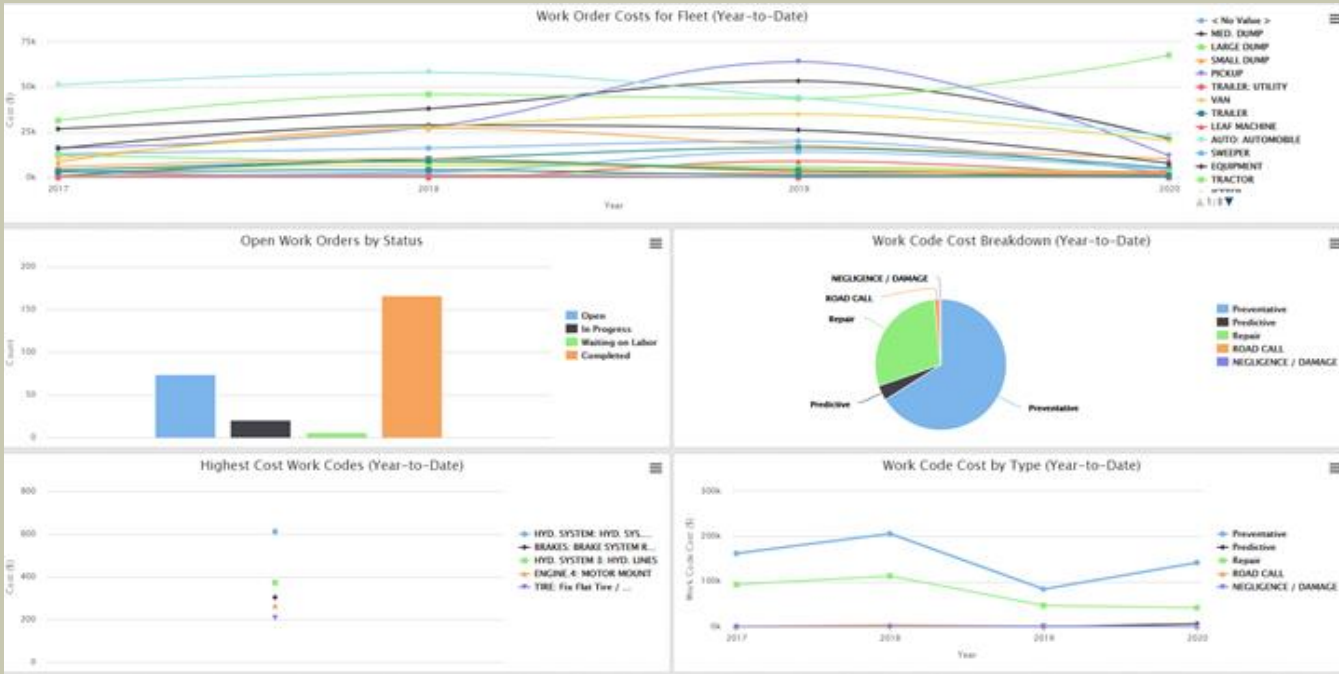


# KNOWLEDGE = INFORMED DECISIONS

- Fleet Management Software
- Fleet Telematics
- EV Fleet Conversion Analysis
- Internal Pilot Programs



# FLEET MANAGEMENT SYSTEM



**COLLECTIVE DATA**

Search: collective/test

Home | Accounts | Asset | Dashboard | Fuel Log | Maintenance Request | Req. Tasks | PM Scheduled Tasks | Parts | Parts Order | Quick Motor Update | Super View | Technician View Mobile | Work Order

Filter: Location: 3-TOWN HALL | Apply | Clear | Advanced

300: 2018 Ford Fusion

Run Report | Ad-Hoc Report

No Query Selected

**General Info**

Template: Vehicle  
 Asset No.: 300  
 Type: AUTO, AUTOMOBILE  
 Sub Type:  
 Make: Ford  
 Model: Fusion  
 Mile: 10,195.0  
 Mile Updated: 05/18/2020  
 Other: 10,195.0  
 Other Updated: 05/18/2020  
 License Plate No: 19K27MG  
 License Plate State:  
 VIN: 3FASPDG7UR18T587

**Location**

Location: 3-TOWN HALL  
 Department: 35-CODE ENFORCEMENT

**Asset Info**

Color: WHITE  
 GVW: 3310  
 Service Priority: 0.00  
 Service Class:  
 Service Status:  
 Asset Condition: New  
 Active Season:

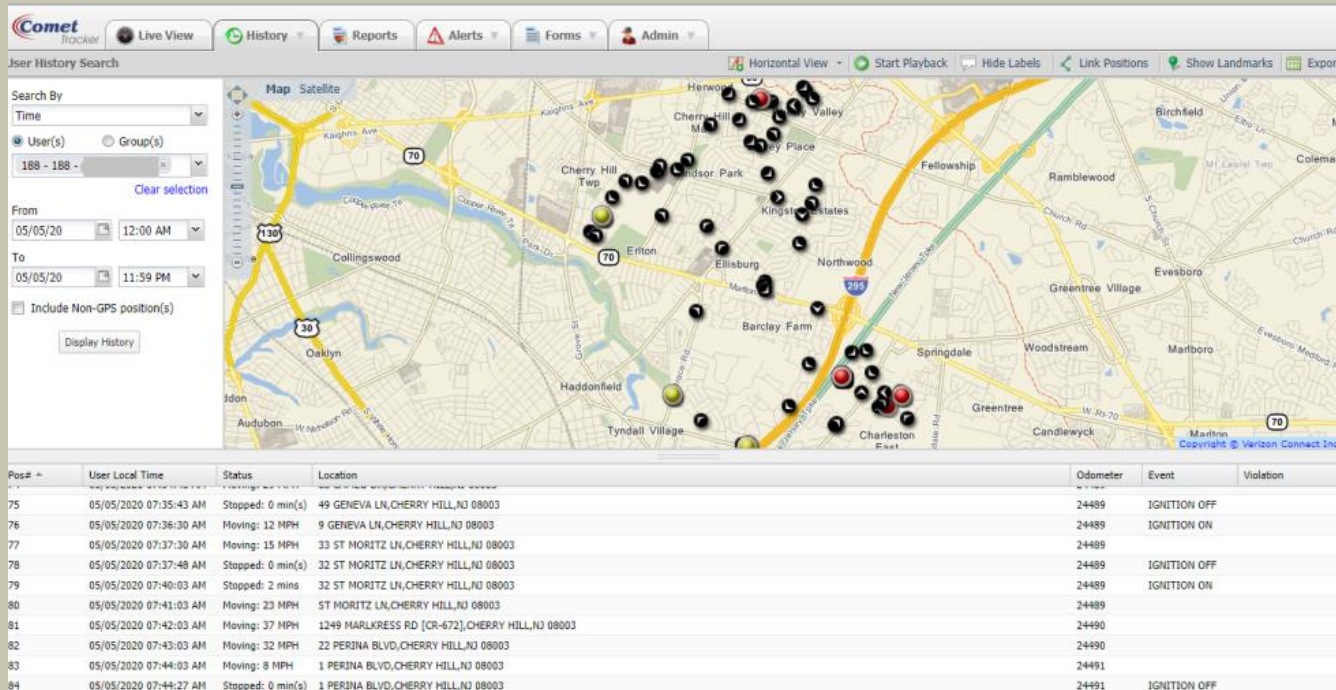
**Fuel and Oil Info**

**Yearly Operating Costs**

This bar chart shows the yearly operating costs from 2017 to 2020. The Y-axis represents Cost, ranging from 0 to 400. The X-axis represents the Year. The legend includes: Maintenance Costs and Fuel Costs. The chart shows a significant increase in costs in 2019, primarily due to maintenance costs.

**PM Services - Over Due and Upcoming**





## GPS History Detailed

From 2/1/2019 12:00:00 AM to 2/6/2020 11:59:59 PM

All Points are shown

User: 26 - 26

User Number: 26

User Name: 26 -

Friday, February 08, 2019

Time	Pos Src	Speed	Latitude	Street	City	State	Postal Code
	# Sats	Direction	Longitude	Landmark	IP Address	Pos Accuracy	
10:33:19 AM	GPS	0	39.900444	1 PERINA BLVD	CHERRY HILL	NJ	08003
	0	SSW	-74.985055		166.129.90.59	99999	
10:34:17 AM	GPS	0	39.900455	1 PERINA BLVD	CHERRY HILL	NJ	08003
	7	N	-74.985241		166.129.90.59	1	
10:35:17 AM	GPS	0	39.900455	1 PERINA BLVD	CHERRY HILL	NJ	08003
	9	N	-74.985225		166.129.90.59	1	
10:36:17 AM	GPS	0	39.900478	1 PERINA BLVD	CHERRY HILL	NJ	08003
	12	N	-74.985165		166.129.90.59	1	
10:37:17 AM	GPS	0	39.9005	1 PERINA BLVD	CHERRY HILL	NJ	08003
	12	N	-74.985125		166.129.90.59	1	
10:38:17 AM	GPS	0	39.900487	1 PERINA BLVD	CHERRY HILL	NJ	08003
	12	N	-74.985107		166.129.90.59	1	
10:39:17 AM	GPS	0	39.900515	1 PERINA BLVD	CHERRY HILL	NJ	08003
	12	N	-74.985108		166.129.90.59	1	
10:40:17 AM	GPS	0	39.900502	1 PERINA BLVD	CHERRY HILL	NJ	08003
	12	N	-74.985135		166.129.90.59	1	

FLEET TELEMATICS

## Fleet Summary

Generated on: 04/13/2020

Observation Period: 09/30/2019 - 04/02/2020

Vehicles: 18

Recommended EVs: 11

The Top 10 best EV candidates for your fleet are listed below.

Asset ID	Model	Recommendation	ezEV Overall Score
188	2016 FORD EXPLORER	2020 Nissan Leaf S BEV	100
186	2016 FORD EXPLORER	2020 Nissan Leaf S BEV	99
172	2002 FORD EXPLORER	2020 Nissan Leaf S BEV	98
24	2016 FORD EXPLORER	2020 Nissan Leaf S BEV	98
2665	2006 FORD CROWN VIC	2020 Nissan Leaf S BEV	98
302	2018 FORD FUSION	2020 Nissan Leaf S BEV	97
303	2018 FORD FUSION	2020 Nissan Leaf S BEV	97
175	2004 CHEVROLET BLAZER - S10	2020 Nissan Leaf S BEV	97
199	2004 CHEVROLET IMPALA	2020 Nissan Leaf S BEV	96
301	2018 FORD FUSION	2020 Nissan Leaf S BEV	96

# EV FLEET CONVERSION ANALYSIS

# EV FLEET CONVERSION ANALYSIS

## Fleet Impact

Estimated lifetime impact of replacing Top 11 EV Candidates:

### TCO

Cost parity

### Operational Cost



-\$35,000

### GHG Emissions



48%

### Fuel



45,510 gal

# **ez** Suitability Assessment

175 - 2004 CHEVROLET BLAZER - S10

## Recommended Replacement: 2020 Nissan Leaf S BEV



Client: cherry\_hill

Observation: 9/30/2019 - 2/26/2020

Days tracked: 150 days

Trips tracked: 273 trips

Last trip: 2/26/2020

VIN: 1GNDT13X34K159832

## Estimated Operational Metrics in a 2020 Nissan Leaf S BEV

This table shows the estimated usage metrics if the trips driven by your 2004 CHEVROLET BLAZER - S10 had been driven in a 2020 Nissan Leaf S BEV.

VMT	GHG Reduction	Operational Cost Difference (Lifetime)*	TCO* (Lifetime)	TCO** (%)
3,960	98%	▼ -\$3,000-6,000	Cost parity	0%

\*Total Cost of Ownership (TCO) Change and Operational Savings reflect the financial savings over the lifetime of the vehicle.

\*\*TCO Change takes into account the purchase price of the recommended vehicle, Operational Savings does not.

## Top Parking Locations

The table shows the 3 most frequent extended period parking locations for this vehicle.

Address	Dwell Time (avg. hours)*	Frequency
1 Perina Blvd, Cherry Hill, New Jersey, 08003	16	94%
08003, Cherry Hill, New Jersey	16	5%
1197 Marlkrass Rd, Cherry Hill, New Jersey, 08003	16	1%

To view results of all 3 parking locations and other detailed information for 175, please visit the ezEV dashboard.

\*For the purpose of calculating average dwell time, long parking instances are capped at a duration of 16 hours.

# EV FLEET CONVERSION ANALYSIS



# INTERNAL PILOT PROGRAMS



# CONTACT INFORMATION

**Ari Messinger**

**Operations Manager**

**Cherry Hill Township**

**856-432-8760**

**[amessinger@chtownship.com](mailto:amessinger@chtownship.com)**

**POLL TIME!**

**MPLWD=GREEN**





# 2019 Township Ordinances

## #2971-19

- Multifamily buildings with five or more units shall have electric vehicle charging stations as 10% of the approved parking spaces.



## #2972-19

- An Electric Vehicle Charging Station is a permitted accessory use in all zones.





# New Electric Car Charging Station

## November 2018



**DCH Audi donated the charging unit. The electrical wiring and installation costs were provided as a prize for Maplewood's second place finish in the state-wide Solar Challenge, sponsored by Sustainable Jersey and the Gardinier Environmental Fund.**

# Maplewood Police Department acquired a Hybrid Ford Responder pursuit class patrol vehicle in 2018



## + Plus

- Estimated 60% reduction in gasoline usage compared to non-hybrid patrol cars
- Ability to use temperature controls and communication devices without idling
- Safety feature that allows officers to exit without putting car into park during emergency situations

## - Minus

- Reduced back size of back seat does not allow for detainees to be transport in the vehicle
- Slightly less acceleration of the car purchased although can order different engine size

# TOWNSHIP OF MAPLEWOOD



## RESOLUTION NO. 148-20

RESOLUTION  
AUTHORIZING THE TOWNSHIP OF MAPLEWOOD  
TO APPLY FOR A GRANT  
FROM THE  
NATIONAL VOLKSWAGEN SETTLEMENT PROGRAM





# On the Horizon

- Add more EV public charging stations around town
- Establish an EV Car Share Program in an area of town with high apartment density
- Convert municipal fleet from hybrid vehicles to electric vehicles once infrastructure is in place
- Continued community outreach to bolster support for EVs



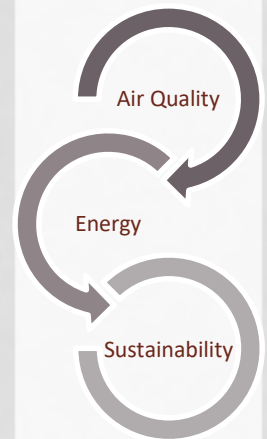
STATE OF NEW JERSEY  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



## DIVISION OF AIR QUALITY AIR QUALITY, ENERGY, AND SUSTAINABILITY

# Electric Vehicle Resources for Local Governments & Schools

SUSTAINABLE JERSEY JUNE 24, 2020



Andrea Friedman, Supervisor – Electric Vehicle Programs  
NJDEP Division of Air Quality

# Here's your sound bite

Electric vehicles are 70% – 80% cleaner  
than gasoline vehicles.

Including power plant emissions.





# Final Solicitation - Volkswagen Settlement



**\$45 Million in grant funding for:**

1. Heavy duty electric vehicles/equipment
2. EV charging stations (priority: public fast chargers)
3. Electric shared mobility programs

**DEADLINE EXTENDED TO JULY 22!**

# Electric Heavy Duty Vehicles/Equipment



\$37 million available to replace diesel vehicles & equipment

Examples: school buses, garbage trucks, delivery trucks, transit buses, port trucks and equipment, marine vessels, airport ground support equipment

Includes associated charging equipment

Overburdened communities will be prioritized

Details and application materials at [www.state.nj.us/dep/vw/](http://www.state.nj.us/dep/vw/)

# ***It Pay\$ to Plug In***

## **NJDEP's Grant Program for EV Charging Stations**

**Level 1 and Level 2 chargers** at public places, workplaces (including fleets), and multi-family homes.

*Applications considered on a first-come first-served basis.*

**NEW!!!**

**Public fast chargers along major roadways.**

*Competitive solicitation.  
Deadline to apply: July 22, 2020*

Apply online at  
[www.drivegreen.nj.gov/plugin.html](http://www.drivegreen.nj.gov/plugin.html)



# ***It Pay\$ to Plug In***

## Important program changes – Level 1, & 2 chargers

- **Maximum grant amount**
  - Level 1: \$750 per port (↑)
  - Level 2: \$4,000 per port (↑ for dual port, ↓ for single port)
- **Networked chargers required** for Level 2 (**new**)
- **Eligible costs:** 5 year network costs (**new**), and 5 year maintenance agreement (↑ from 3)
- **Quarterly data sharing** with NJDEP (**new**)
- **Number of ports per location** (**new**)
  - Level 1: minimum 5 ports
  - Level 2: minimum 2 ports, maximum 20
- **Leasing is eligible** (**new**)
- **Installation deadline:** 9 months (↓ from 12)

# ***It Pay\$ to Plug In***

## New public fast charger grants



For high-powered public fast chargers along major roadways



# Reimbursement Amounts and Eligible Costs

- Maximum grant is **\$200,000 per location**
  - On **government-owned property**: 100% up to maximum
  - On **private property**: 80% up to maximum
- Eligible costs: purchase, installation, maintenance agreement (up to 5 years), network costs (up to 5 years)



# Eligible Locations

- Located along a designated major travel corridors
  - Toll roads
  - US highway
  - Interstates
  - NJ state highway
- Within 1 mile driving distance from an exit or intersection

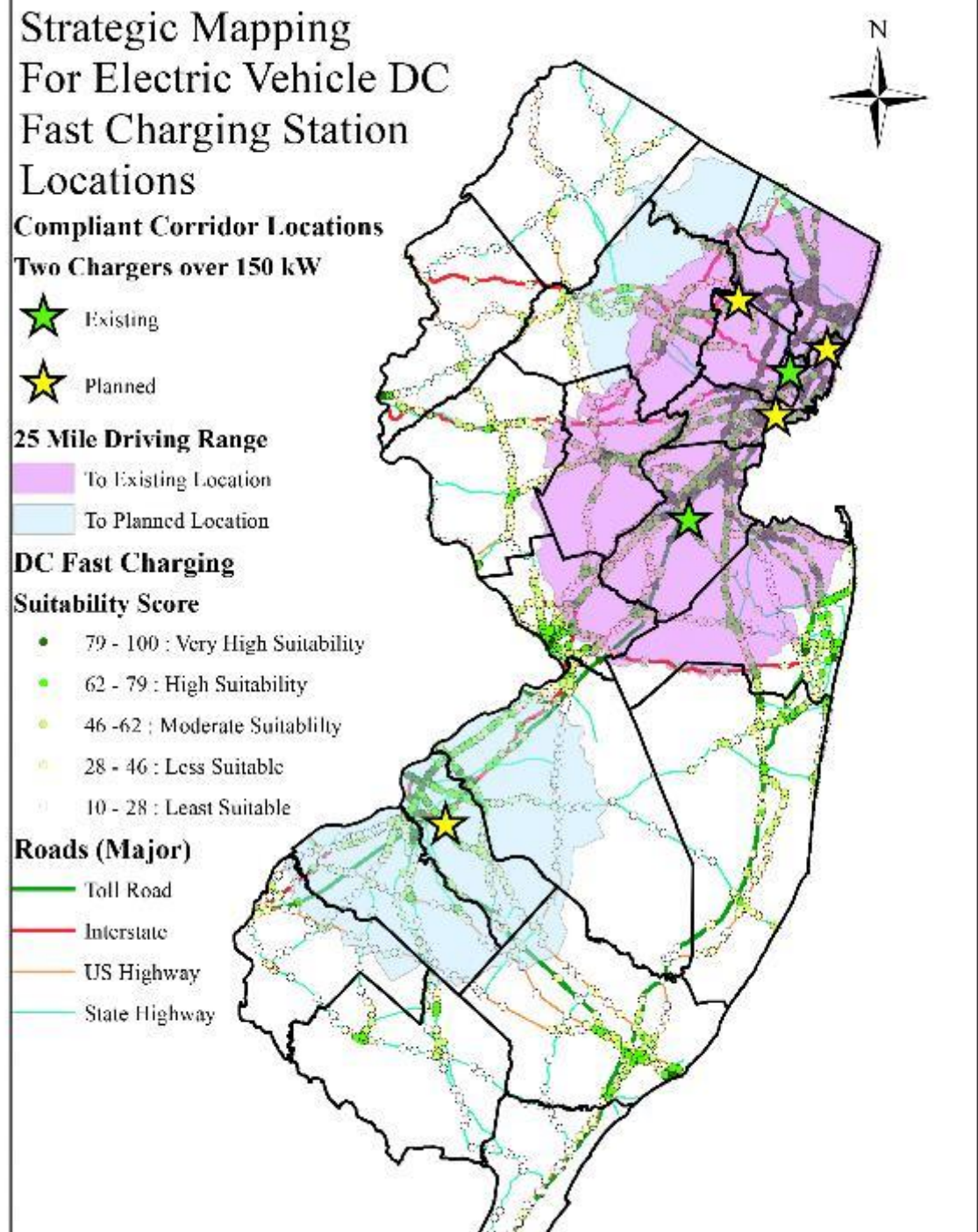
# Eligible Projects

- Must install at least 2 Direct Current Fast Charging (DCFC) stations at same location
  - You can install more, but we'll only incentivize two.
- At least 150 kilowatts (kW) per charging station simultaneously
- Each charging station must have a CCS connector and a CHAdeMO connector (aka “dual standard”)
- User friendly and available exclusively to the general public.

# Interactive mapping tool

Helps you evaluate potential locations for public fast chargers

[www.drivegreen.nj.gov/dg-partnership-to-plugin.html](http://www.drivegreen.nj.gov/dg-partnership-to-plugin.html)





# Grant Process



- Meet public procurement requirements (3 quotes)
  - Exception: If purchased from a cooperative purchasing organization (example: Sourcewell)
- Apply online at [www.drivegreen.nj.gov/plugin.html](http://www.drivegreen.nj.gov/plugin.html)
- Receive an approval letter from NJDEP.
- Execute a grant agreement with NJDEP. **Do not purchase or install equipment before your grant agreement has been executed.**
- Install charging stations within 9 months of the grant agreement (Level 1 &2) or 12 months (DC Fast Charger).
- Submit paid invoices to NJDEP. Receive reimbursement.

**UPDATED** Frequently Asked Questions: [www.drivegreen.nj.gov/pluginfaq.pdf](http://www.drivegreen.nj.gov/pluginfaq.pdf)

# Electric Shared Mobility Programs

**Funding for electric shared mobility projects like electric car sharing and ride hailing services.**

Programs that benefit overburdened communities will be prioritized.

Rolling deadline.



Jersey City's new public ride-share service with VIA hits the road  
One of 15 vehicles part of the City's new public ride-share service.

3 / 5

Apply at [www.state.nj.us/dep/vw/eMobility%20project%20proposal.pdf](http://www.state.nj.us/dep/vw/eMobility%20project%20proposal.pdf)

# Stay Tuned for Future Solicitations

**“Community” Fast Chargers:** Funding for lower-powered DC Fast Chargers where people live and work

**Solicitation for RGGI funding:** Proceeds from the Regional Greenhouse Gas Initiative (RGGI) to catalyze clean, equitable transportation



# Visit our Website



Electric vehicle basics  
All about charging  
Charging station locator

How much will I save?  
Choosing an EV  
Multistate initiatives

Grants & incentives  
Maps and data  
Join our listserv

[www.drivegreen.nj.gov](http://www.drivegreen.nj.gov)

# NEW FLYER!

## EV Resources for Local Government

**Includes:**

- Incentives
- Procurement Tools
- Policy & Planning Support
- Sustainable Jersey Resources
- Resources For Residents

**Download from**  
[www.drivegreen.nj.gov](http://www.drivegreen.nj.gov)



# Links to everything in this presentation

[Volkswagen Settlement Grants for Electric Heavy Duty Vehicles & Equipment](#)

[It Pay\\$ to Plug In – NJ's Electric Vehicle Charging Grants](#)

[Maps, eligible roads, suitability scores for public fast chargers](#)

[Grants for Electric Shared Mobility Projects](#)

[Regional Greenhouse Gas Initiative \(RGGI\) Strategic Funding Plan 2020-2022](#)

[Drive Green New Jersey](#)

## Follow us on Social Media!

**Instagram** drivecleannj

**Twitter** @NewJerseyDEP

**Facebook** [www.facebook.com/NJDEPAQES](http://www.facebook.com/NJDEPAQES)

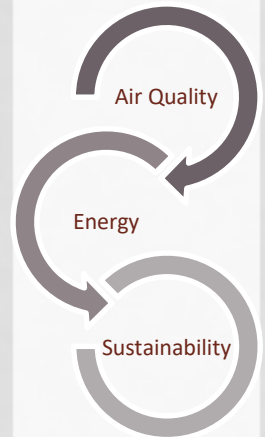


STATE OF NEW JERSEY  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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[www.drivegreen.nj.gov](http://www.drivegreen.nj.gov)

# Minimizing EVSE Costs

**EVSE Unit Selection**

**Location**

**Long Term Planning**



# Minimizing EVSE Costs

## EVSE Unit Selection

- Select EVSE unit with the minimum level of features needed
  - Level 1 vs. level 2
  - Networked vs. non-networked
- Wall mounted EVSE minimizes cost
- Dual port EVSE unit minimizes cost per port
- Size EVSE unit to fit available electrical capacity

List adapted from the U.S. Department of Energy's Report,  
*Costs Associated With Non-Residential Electric Vehicle Supply Equipment*  
[https://afdc.energy.gov/files/u/publication/evse\\_cost\\_report\\_2015.pdf](https://afdc.energy.gov/files/u/publication/evse_cost_report_2015.pdf)

Additional resource on EVSE costs  
Rocky Mountain Institute, 2019  
*Reducing EV Charging Infrastructure Costs*  
<https://rmi.org/insight/reducing-ev-charging-infrastructure-costs/>



Photo 4. Wall mounted EVSE installed by the New York Power Authority for employee charging.  
*Photo from NY Power Authority, NREL 26468.*

[https://afdc.energy.gov/files/u/publication/evse\\_cost\\_report\\_2015.pdf](https://afdc.energy.gov/files/u/publication/evse_cost_report_2015.pdf)



# Minimizing EVSE Costs

## Location

- Select meter first, then parking spaces
- Locate EVSE unit near electrical service
- Minimize the trenching distance

List adapted from the U.S. Department of Energy's Report,  
*Costs Associated With Non-Residential Electric Vehicle Supply Equipment*  
[https://afdc.energy.gov/files/u/publication/evse\\_cost\\_report\\_2015.pdf](https://afdc.energy.gov/files/u/publication/evse_cost_report_2015.pdf)

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Electrical meter and switch servicing Level 2 EVSE. Photo from Don Karner.  
[https://afdc.energy.gov/files/u/publication/evse\\_cost\\_report\\_2015.pdf](https://afdc.energy.gov/files/u/publication/evse_cost_report_2015.pdf)

# Minimizing EVSE Costs

## Long Term Planning

- Contact utility early in process to discuss electricity consumption and demand charges
- Avoid utility demand charges by balancing charging times
- Consider EVSE that you plan to install over 10-20 years
- When doing electrical work, consider possible EVSE infrastructure
- Plan electricity infrastructure for EVSE for new facilities

List adapted from the U.S. Department of Energy's Report,  
*Costs Associated With Non-Residential Electric Vehicle Supply Equipment*  
[https://afdc.energy.gov/files/u/publication/evse\\_cost\\_report\\_2015.pdf](https://afdc.energy.gov/files/u/publication/evse_cost_report_2015.pdf)

Additional resource on EVSE costs  
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<https://rmi.org/insight/reducing-ev-charging-infrastructure-costs/>

# Case Study - Glen Rock

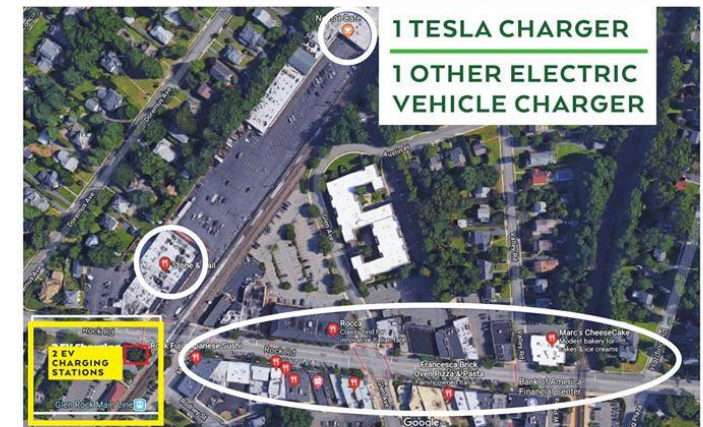


Level 2 Charger/Tesla Charger donated by Tesla

Installation/siting paid for with  
*It Pays to Plug in Grant*

Chargers are free to public

## PLUG-IN & PLAY-IN DOWNTOWN GLEN ROCK



**SHOP AND DINE DOWNTOWN  
WHILE YOU CHARGE YOUR  
ELECTRIC VEHICLE!**

MANY RESTAURANTS AND SHOPS ARE  
A SHORT WALK FROM CHARGING STATIONS

**CHARGERS ARE FREE TO USE!**

**ELECTRIC CHARGING STATIONS LOCATED  
NEAR MAIN LINE STATION**



# Case Study - Maplewood

Non-networked  
dual port charger  
donated by local car  
dealership

Installation  
(electrical work,  
parking meters,  
trenching) cost  
covered by a grant,  
\$5000

Parking meters set at  
\$1/hour used to  
offset cost of  
electricity





# Case Study - Denville



Total cost of project \$14,000 (\$10,000 provided via Sustainable Jersey Gardinier Grant)

Dual Port networked charger, accepts credit cards

Charging fee \$0.50/hour for first four hours, then \$3/hour



# Upcoming Events



## Going for Energy Gold Happy Hour

June 30, 2020, 3:30 PM to 5:00 PM

# Sustainable Jersey Opportunities



## Sustainable Communities Grant Program

Two categories: Resiliency or Environmental Stewardship

**Municipalities in Atlantic City Electric (ACE) territory**

Applications accepted until **July 16, 2020**

## Local Public Information & Engagement (PIE) Planning Opportunity

Applications are due **August 9, 2020**

## **Energy Efficiency Outreach Support for NJNG Municipalities**

Partnering with green team students at Montclair State University's PSEG Institute for Sustainable Studies

Contact Susan Ellman - [SEllman@njng.com](mailto:SEllman@njng.com)

# Sustainable Jersey Supporters & Sponsors

## Program Underwriters



## Grants Program



## Corporate Sponsors

### PLATINUM



### GOLD



### SILVER



### BRONZE



# Sustainable Jersey for Schools Supporters & Sponsors

## Program Underwriters



## Grants Program



## Corporate Sponsors

### PLATINUM



### GOLD



### SILVER



### BRONZE



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