U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

2016 Transportation Technology Deployment Report:

State of Delaware Clean Cities

Expanded Edition

March 2017

Clean Cities
U.S. Department of Energy

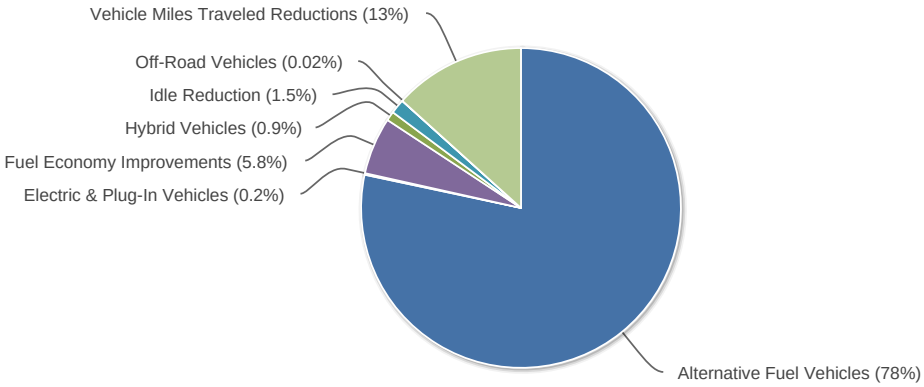
The U.S. Department of Energy's (DOE) Clean Cities program advances the nation's economic, environmental, and energy security by supporting local actions to reduce petroleum use in transportation. A national network of nearly 100 Clean Cities coalitions brings together stakeholders in the public and private sectors to deploy alternative and renewable fuels, idle-reduction measures, fuel economy improvements, and new transportation technologies, as they emerge.

Every year, each Clean Cities coalition submits to DOE an annual report of its activities and accomplishments for the previous calendar year. Coalition coordinators, who lead the local coalitions, provide information and data via an online database managed by the National Renewable Energy Laboratory (NREL). The data characterize membership, funding, projects, and activities of the coalitions. The coordinators also submit data on the sales of alternative fuels, deployment of alternative fuel vehicles and hybrid electric vehicles, idle-reduction initiatives, fuel economy activities, and programs to reduce vehicle miles traveled. NREL and DOE analyze the data and translate them into petroleum-use and greenhouse gas reduction impacts for individual coalitions and the program as a whole. This report summarizes those impacts for State of Delaware Clean Cities.

To view aggregated data for all local coalitions that participate in the Clean Cities program, visit cleancities.energy.gov/accomplishments.

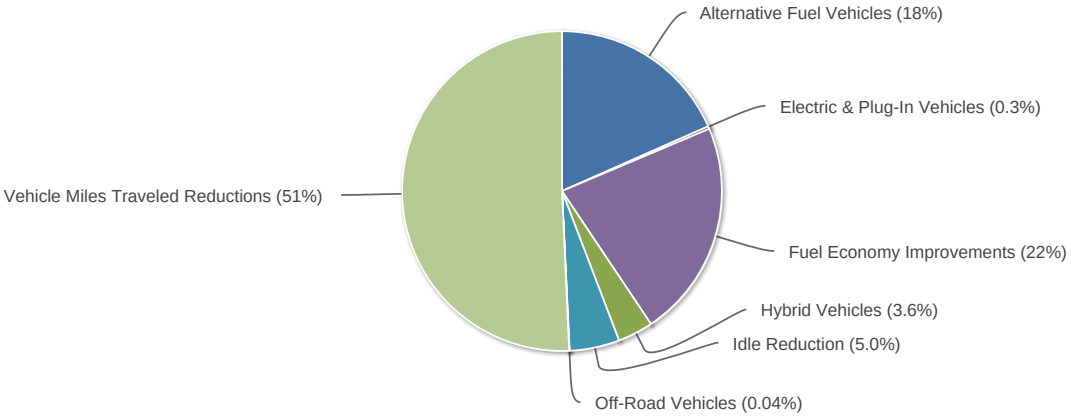
2016 Gallons of Gasoline Equivalent Reduced

679,638 gallons

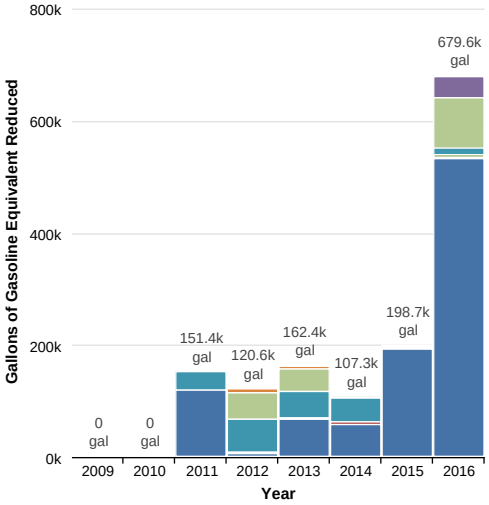


2016 Greenhouse Gas Emissions Reduced

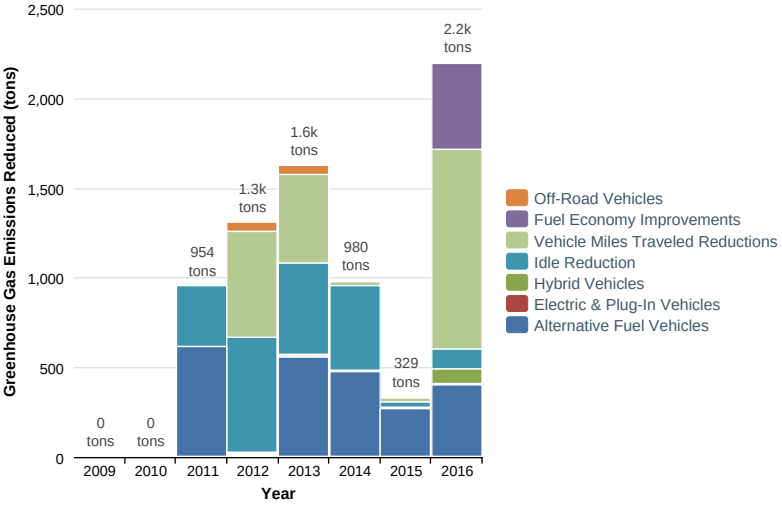
2,198 tons



Historical Gallons of Gasoline Equivalent Reduced

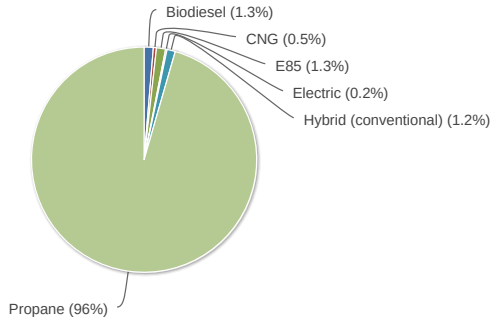


Historical Greenhouse Gas Emissions Reduced



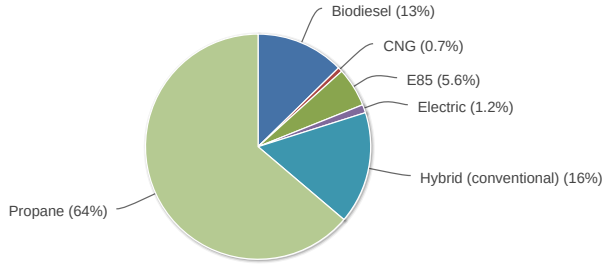
2016 Gallons of Gasoline Equivalent Reduced by Fuel Type for Alternative Fuel Projects

539,950 gallons



2016 Greenhouse Gas Emissions Reduced by Fuel Type for Alternative Fuel Projects

489 tons



Criteria Pollutant Emissions Reduced

Criteria pollutants are chemicals that have been linked to human health effects and therefore regulated in the Clean Air Act of 1970. The Clean Cities annual report calculates them using the same assumptions and default values as AFLEET 2016, with some adjustments to fit specific data inputs. They are quantified at vehicle tailpipes, as those are the emissions contributing to the regulated “ambient” air quality of a given city. This means that they omit emissions from sources such as electric power plants, refineries, and biofuel feedstock farms (where emissions are sufficiently removed from populations in order to minimize health effects). When a specific pollutant surpasses a given threshold for a given area, the area is considered to be in “nonattainment” for that pollutant. Nonattainment areas for given pollutants can be viewed at www.epa.gov/green-book. To learn more about what your emissions numbers mean, please take the Understanding Emissions or Emissions Compliance courses at Clean Cities University.

Reductions by Fuel Type*	NOx	VOC	CO	PM10	PM2.5
Biodiesel	0 lb	0 lb	0 lb	0 lb	0 lb
CNG - Compressed Natural Gas	0 lb	2 lb	0 lb	0 lb	0 lb
E85 - 85% Ethanol	0 lb	277 lb	0 lb	0 lb	0 lb
Electric (all-electric)	5 lb	7 lb	137 lb	0 lb	0 lb
Hybrid (conventional)	16 lb	45 lb	0 lb	0 lb	0 lb
Propane	19,066 lb	-1,073 lb	-27,925 lb	114 lb	30 lb
VMT Reduction (Gasoline)	430 lb	688 lb	12,346 lb	173 lb	38 lb
Total:	**19,517 lb**	**-53 lb**	**-15,442 lb**	**287 lb**	**68 lb**

* This table accounts for criteria pollutants from alternative fuel vehicle, hybrid vehicle, and VMT reduction projects only. It does not include fuel economy, idle reduction, or off-road projects. Negative values indicate an increase in emissions.

COALITION

State of Delaware Clean Cities - DE

http://www.dnrec.delaware.gov/energy/services/otherservices/Pages/Clean_Cities/Home.aspx

Designated: 10/12/1993
Boundaries: Entire state of Delaware

COORDINATORS

	Address	Telephone	Fax
Kathy Harris	100 W Water St, Ste 5A Dover, DE 19904		

Number of coordinators	2
Coordinator(s) hours per week on Clean Cities	20 hours
Other staff hours per week on Clean Cities	5 hours
How long have you been the coordinator?	4 years

OPERATING INFORMATION

Host organization	Government - State

Stakeholders

Number of stakeholders	45
Number of private stakeholders	25
Does the State Energy Office provide any financial support to the coalition or stakeholders?	Yes

Explain State Energy Office's support

The State Energy Office provides office space, administrative support, and financial support for the coordinator and co-coordinator's salaries.

How would you rate the quality of the data on your survey?	Poor
How do you obtain most of your data for the survey?	Estimates, Paper, e-mail, or spreadsheet questionnaire to stakeholders, Phone calls to stakeholders
Has your coalition registered with www.grants.gov?	No

2016 Outside Funding

Stakeholder dues collected	$0
How much funding is obtained from other sources to cover coalition operating expenses?	$0
Non-DOE or ARRA grant and matching funds spent in 2016	$1,922,250
Total non-DOE or ARRA funding in 2016	$1,922,250

Alternative Fuel & Vehicles

Fleet/Station Name	Vehicle Class	Fuel	Number of Vehicles	Fuel Used	GGE Reduced	GHG Reduced
Chesapeake Utilities	Light-Duty	CNG	5	2,466 GGE	2,343 gal	3.0 tons
Market: Utility **Vehicle type:** Pickup/SUV/Van **Percentage from coalition:** 100% **National Clean Fleets Partnership:** No						
Delaware Transit	Heavy-Duty	Propane	74	219,878 gal	149,803 gal	58.7 tons
Market: Commuters **Vehicle type:** Bus: Shuttle **Percentage from coalition:** 100% **National Clean Fleets Partnership:** No						
Delaware Transit Corporation (DART) has greatly increased the deployment of propane powered Ford 450s from 6 buses in 2015 to 74 in 2016.						
Kent Sussex Industries	Light-Duty	Propane	6	38,150 gal	28,880 gal	40.8 tons
Market: Corporate Fleet **Vehicle type:** Pickup/SUV/Van **Percentage from coalition:** 100% **National Clean Fleets Partnership:** No						
Prime Care Medical	Light-Duty	Propane	11	25,000 gal	18,925 gal	26.8 tons
Market: Corporate Fleet **Vehicle type:** Pickup/SUV/Van **Percentage from coalition:** 100% **National Clean Fleets Partnership:** No						
Schwan's - Medium-duty Propane	Heavy-Duty	Propane	17	70,018 gal	47,703 gal	18.7 tons
Market: Corporate Fleet **Vehicle type:** Truck: No Trailer **Percentage from coalition:** 100% **National Clean Fleets Partnership:** Yes						
Sharp Energy	Heavy-Duty	Propane	74	85% of time	210,900 gal	82.7 tons
Miles traveled per vehicle: 20,000 mi **Average vehicle fuel economy:** 7 MPGde **Market:** Corporate Fleet **Vehicle type:** Truck: No Trailer **Percentage from coalition:** 100% **National Clean Fleets Partnership:** No						
Includes 47 new school buses, Sharp service trucks and Sharp bobtail transport trucks. The service trucks and bobtails are new this year.						
Sharp Energy	Light-Duty	Propane	40	85% of time	59,649 gal	84.3 tons
Miles traveled per vehicle: 30,000 mi **Average vehicle fuel economy:** 17 MPGge **Market:** Corporate Fleet **Vehicle type:** Pickup/SUV/Van **Percentage from coalition:** 100% **National Clean Fleets Partnership:** No						
Sharp corporate fleet vehicles.						
State of Delaware	Light-Duty	E85	1,680	2% of time	7,036 gal	27.4 tons
Miles traveled per vehicle: 9,984 mi **Average vehicle fuel economy:** 19 MPG **Market:** Government - State **Vehicle type:** Car **Percentage from coalition:** 65% **National Clean Fleets Partnership:** No						

Fleet/Station Name	Vehicle Class	Fuel	Number of Vehicles	Fuel Used	GGE Reduced	GHG Reduced
State of Delaware DelDOT	Heavy-Duty	Biodiesel (20%)	421	60% of time	6,963 gal	61.0 tons
Miles traveled per vehicle: 4,216 mi **Average vehicle fuel economy:** 22 MPG **Market:** Government - State **Vehicle type:** Unknown/Other **Percentage from coalition:** 65% **National Clean Fleets Partnership:** No						
Sustainable Energy Utility	Light-Duty	CNG	1	100% of time	143 gal	0.2 tons
Miles traveled per vehicle: 5,000 mi **Average vehicle fuel economy:** 35 MPGge **Market:** General/Unknown **Vehicle type:** Car **Percentage from coalition:** 100% **National Clean Fleets Partnership:** No						
Total:			**2,329**		**532,344 gal**	**404 tons**

Electric, Hybrid & Plug-in Vehicles

Fleet/Station Name	Vehicle Class	Fuel	Number of Vehicles	GGE Reduced	GHG Reduced
State of Delaware Fleet Services	Light-Duty	HEV	99	6,384 gal	78.6 tons
Average vehicle fuel economy: 40 MPG **Miles traveled per vehicle per year:** 5,480 mi **Market:** Government - State **Vehicle type:** Car **Percentage from coalition:** 65% **National Clean Fleets Partnership:** No **Workplace Charging Challenge:** No					
State of Delaware OMB	Light-Duty	Electric	2	1,111 gal	5.8 tons
Average electric fuel economy: - kWh/100mi **Miles traveled per vehicle per year:** 13,001 mi **Market:** Government - State **Vehicle type:** Car **Percentage from coalition:** 100% **National Clean Fleets Partnership:** No **Workplace Charging Challenge:** No *All-electric Ford Focus Electric*					
Total:			**101**	**7,495 gal**	**84 tons**

Off-Road Vehicles

Fleet Name	Application	Method	Fuel	Number of Vehicles	GGE Reduced	GHG Reduced
State of Delaware DelDOT	Landscaping and lawn equipment	Alternative fuel or vehicles	Biodiesel (20%)	252	111 gal	1.0 tons
Fuel used: 800 gal **Percentage from coalition:** 65% **National Clean Fleets Partnership:** No						
Total:				**252**	**111 gal**	**1 tons**

FUEL ECONOMY

Fuel Economy Improvements

Fleet Name	Previous Fuel	Current Fuel	Number of Vehicles	Miles Traveled per Vehicle	GGE Reduced	GHG Reduced
State of Delaware Fleet Services	25 MPG	27 MPG	2,652	9,984 mi	39,226 gal	483.2 tons
Method: Telematics **Vehicle class:** Light-Duty **Market:** Government - State **Vehicle type:** Car **Percentage from coalition:** 50% **National Clean Fleets Partnership:** No						
This is the first time that Delaware OMB fleet services has reported telematics for the State Fleet.						
Total:			**2,652**	**9,984 mi**	**39,226 gal**	**483 tons**

Vehicle Miles Traveled Reductions

Project Name	Method	Vehicle Class	GGE Reduced	GHG Reduced
State of Delaware Employees Van Pool	Vanpooling	Light-Duty	90,482 gal	1,114.5 tons
Fuel type of vehicles driven less: Gasoline **Fuel economy of vehicles driven less:** 22 MPG **Number of vehicles driven less:** 310 **VMT reduction per vehicle being driven less:** 15,000 mi **Fuel type of additional vehicles:** Gasoline **Fuel economy of additional vehicles:** 15 MPG **Number of additional vehicles:** 33 **VMT per additional vehicle:** 14,797 mi **Percentage from coalition:** 50% **National Clean Fleets Partnership:** No				
The State of Delaware operates a state employees vanpool program that takes individual commuting vehicles off the road each day. Approximately 310 employees using 33 vanpools are currently enrolled in the vanpool program. GPS systems in the 33 vans log an average of 4,294 miles per day for an average trip of 90 miles per pool.				
Total:			**90,482 gal**	**1,115 tons**

IDLE REDUCTION

Truck Stop Electrification

Project Name	Number of Bays	Usage per Bay	GGE Reduced	GHG Reduced
I-95 Delaware Welcome Center Truckstop Electrification	6	1,750 hrs/year	7,552 gal	80.7 tons
Percentage from coalition: 65% **National Clean Fleets Partnership:** No				
Total:	**6**		**7,552 gal**	**81 tons**

Idle Reduction

Project Name	Number of Vehicles	Idling Reduced per Vehicle	Fuel Saved per Vehicle	GGE Reduced	GHG Reduced
State of Delaware Idling Policy	1,200	5 mins/day 257 days/year	0 gal/hr	2,429 gal	30.1 tons
Type of project: Policies **Type of vehicle:** Light-Duty **Percentage from coalition:** 35% **National Clean Fleets Partnership:** No					
Total:	**1,200**			**2,429 gal**	**30 tons**

FUEL STATIONS

New Stations

Fuel	Public Stations	Private Stations
Biodiesel	-	-
CNG - Compressed Natural Gas	-	-
E85 - 85% Ethanol	-	-
Electric Charging Outlets	2	1
Hydrogen	-	-
LNG - Liquefied Natural Gas	-	-
Propane	2	10
Total:	**4**	**11**

OUTREACH ACTIVITIES

Activity Name	Dates	Activity Type	Percentage from Coalition	Persons Reached
Planning Meeting	01/13/2016	Meeting - Stakeholder	100%	10
Technology: Electric vehicles, Hybrid electric vehicles, Natural gas vehicles, Propane **Audience:** Government, Private Fleets, Transit, Utility *This was a planning meeting for our large event in May, 2016.*				
Planning Meeting	02/17/2016	Meeting - Stakeholder	100%	15
Technology: Electric vehicles, Hybrid electric vehicles, Natural gas vehicles, Propane **Audience:** Government, Private Fleets, Transit, Utility *This was a planning meeting for our major event in May, 2016.*				
Planning Meeting	03/23/2016	Meeting - Stakeholder	100%	15
Technology: Electric vehicles, Hybrid electric vehicles, Natural gas vehicles **Audience:** Government, Private Fleets, Transit, Utility *This was a planning meeting for our major event in May, 2016*				
Junior Solar Sprint	04/14/2016	Media Event	50%	200
Technology: Hybrid electric vehicles **Audience:** General Public, Government, Utility, Other *State-wide solar car sprint race competition for Junior High and High School students. This event showcased AFVs, electric vehicles and other PV technology.*				
Stakeholder Meeting	04/27/2016	Meeting - Stakeholder	100%	15
Technology: Electric vehicles, Hybrid electric vehicles, Natural gas vehicles, Propane **Audience:** General Public, Government, Private Fleets, Transit, Utility				
Dover Days	05/07/2016	Literature Distribution	100%	250
Technology: Electric vehicles, Fuel economy improvements, Hybrid electric vehicles, Natural gas vehicles, Propane **Audience:** General Public, Other *Dover Days is an annual community event in Dover, Delaware. At this event, the Delaware Clean Cities Coalition provided information to Delawarean's about our rebate programs, gas saving tips, and the benefits of alternative fuels.*				
Legislative Hall Day	05/11/2016	Literature Distribution	100%	50
Technology: Electric vehicles, Hybrid electric vehicles, Natural gas vehicles, Propane **Audience:** Government *We hosted a table during a legislative session in Dover, Delaware. By having a table during the session, we were able to speak to some state legislatures about the importance of alternative fuel vehicles.*				
Fueling the Future	05/24/2016	Meeting - Other	100%	170
Technology: Electric vehicles, Hybrid electric vehicles, Natural gas vehicles, Propane **Audience:** Delivery, General Public, Government, Private Fleets, Transit, Utility, Other *Fueling the Future was the State of Delaware's first ever alternative fuel education event and ride&drive. This event had 14 panelists and presenters as well as 22 alternative fueled vehicles for attendees to ride in or test drive. 170 transportation professionals and Delawareans were in attendance at this event.*				

Activity Name	Dates	Activity Type	Percentage from Coalition	Persons Reached
Sharp Energy Ribbon Cutting	06/30/2016	Media Event	25%	100
Technology: Natural gas vehicles, Propane **Audience:** General Public, Private Fleets, Transit, Utility				
The Delaware Clean Cities Coalition participated at this event with one of our propane stakeholders. The Coalition was able to reach a varied audience of business leaders, legislators, and members of the public.				
Developed New Logo	07/05/2016	Advertisement	100%	500
Technology: Electric vehicles, Hybrid electric vehicles, Natural gas vehicles, Propane **Audience:** General Public				
Our biggest form of advertising this year was developing a new Delaware Clean Cities logo. We now use this logo on our website, on promotional materials, and giveaways. This branding has helped us outreach to fleets and become a recognizable organization in Delaware.				
Delaware State Fair	07/21/2016, 07/22/2016, 07/23/2016, 07/24/2016, 07/25/2016, 07/26/2016, 07/27/2016, 07/28/2016, 07/29/2016, 07/30/2016	Literature Distribution	50%	1,000
Technology: Electric vehicles, Fuel economy improvements, Hybrid electric vehicles, Idle reduction, Natural gas vehicles, Propane, Vehicle miles traveled reduction **Audience:** General Public				
Green Jobs Program	07/28/2016	Workshop held by coalition	100%	15
Technology: Electric vehicles, Hybrid electric vehicles, Natural gas vehicles, Propane **Audience:** General Public, Other				
The Coordinator and Co-Coordinator, along with five stakeholders, hosted a "Green Jobs Day," where eight high school and college students came to learn about opportunities and careers in the alternative fuel vehicle industry. Each stakeholder (representatives from propane, natural gas and electric) gave a presentation about what they do, the paths they took to get there, and opportunities that were available for students. Stakeholders also brought alternative fueled vehicles for the students to look at and ask questions. This program allowed for us to reach a demographic that our Coalition does not normally get to talk about alternative fuels.				
DART Ribbon cutting	08/03/2016	Media Event	50%	100
Technology: Propane **Audience:** Government, Private Fleets, Utility				
This event was a ribbon cutting for the Delaware Department of Transportation's new propane fueling station. This station will be used by DART paratransit buses. At this event, the coordinator and co-coordinator were able to connect with stakeholders and discuss opportunities for collaboration.				
Delaware Auto Show	10/07/2016	Conference participation	100%	500
Technology: Electric vehicles, Hybrid electric vehicles, Natural gas vehicles, Propane, Vehicle miles traveled reduction **Audience:** General Public				
The Delaware Clean Cities Coalition had a table at the Delaware Auto Show. We provided materials to participants at the Auto Show and spoke to many Delawareans that we would have otherwise not been able to reach.				
Green Your School	10/28/2016	Literature Distribution	100%	50
Technology: Electric vehicles, Fuel economy improvements, Idle reduction, Natural gas vehicles, Propane **Audience:** General Public, Transit, Other				
This event helped to educate principals, school bus drivers, and other education professionals on the importance of sustainability in schools. The Coalition had a table at this event to provide information on alternative fuels, their benefits, and the alternative fueled vehicles available in the state.				
Our Town Conference	11/02/2016	Conference participation	100%	150
Technology: Electric vehicles, Hybrid electric vehicles, Natural gas vehicles, Propane **Audience:** Delivery, General Public, Government, Private Fleets, Transit, Utility, Other				
The coordinator spoke at this conference about alternative fuels in Delaware, the Delaware Clean Cities Coalition, and incentive programs that the state currently has.				

Activity Name	Dates	Activity Type	Percentage from Coalition	Persons Reached
Delaware Trucking Association Dinner	11/05/2016	Meeting - Other	100%	150
Technology: Natural gas vehicles **Audience:** Delivery, General Public, Private Fleets				
The co-coordinator spoke at the Delaware Trucking Association Dinner. In attendance were drivers and fleet managers of class 7&8 vehicles.				
Elevating Coalition Profile in your Agency and Adding Coalition Capacity without Adding Staff	11/09/2016	Workshop held by coalition	100%	20
Technology: Electric vehicles, Hybrid electric vehicles, Natural gas vehicles, Propane **Audience:** Government, Other				
The coordinator and co-coordinator presented a webinar to the CCC hosted in a state and local government group about building capacity without adding staff.				
Delaware Dealership Association Lunch	11/16/2016	Meeting - Other	100%	100
Technology: Electric vehicles, Hybrid electric vehicles, Natural gas vehicles, Propane **Audience:** General Public, Private Fleets, Transit				
The coordinator and co-coordinator presented to the Delaware Dealership Association about alternative fuels in Delaware, the Delaware Clean Cities Coalition, and rebates and incentives available in Delaware for alt fuels.				
Total:				**3,410**

GRANTS

Grantor	Total Grant Amount	Total Matching Funds	Total Project Funding	Grant Amount Spent in 2016	Matching Funds Spent in 2016	Total Project Funding Spent in 2016
The Delaware Division of Energy and Climate	$19,575	$21,075	$40,650	$19,575	$21,075	$40,650
Length of grant: 1 **Year grant began:** 2016 **Sources of the grant:** State Government **Technologies:** Propane **Purpose:** Propane Fueling Infrastructure						
Sharp Energy, one of the Delaware Clean Cities Stakeholders, received a grant to install a Propane Fueling Station at a private school bus yard.						
The Delaware Division of Energy and Climate	$19,186	$42,309	$61,495	$13,186	$42,309	$55,495
Length of grant: 1 **Year grant began:** 2016 **Sources of the grant:** State Government **Technologies:** Propane **Purpose:** To install propane fueling infrastructure						
Sharp Energy, one of the Delaware Clean Cities Stakeholders, received a grant to install a propane fueling station at a private school bus yard.						
The Delaware Division of Energy and Climate	$11,652	$14,452	$26,105	$11,652	$14,452	$26,105
Length of grant: 1 **Year grant began:** 2016 **Sources of the grant:** State Government **Technologies:** Propane **Purpose:** To install propane fueling infrastructure						
Sharp Energy, one of the Delaware Clean Cities Stakeholders, received a grant to install a public propane fueling station.						

Grantor	Total Grant Amount	Total Matching Funds	Total Project Funding	Grant Amount Spent in 2016	Matching Funds Spent in 2016	Total Project Funding Spent in 2016
The Delaware Division of Energy and Climate	$500,000	$1,300,000	$1,800,000	$500,000	$1,300,000	$1,800,000
Length of grant: 1 **Year grant began:** 2016 **Sources of the grant:** State Government **Partners:** Chesapeake Utilities **Technologies:** CNG - Compressed Natural Gas **Purpose:** To install compressed natural gas infrastructure						
Chesapeake Utilities, a Delaware Clean Cities Coalition stakeholder, received this grant to install a new CNG fueling station in Dover, DE.						
Total:	**$550,413**	**$1,377,837**	**$1,928,250**	**$544,413**	**$1,377,837**	**$1,922,250**