



Spotlight NJDEP

Sustainable Jersey Summit | June 14, 2019

About NJDEP

- Formed on America's first official "Earth Day" – April 22, 1970.
- 2,900+ employees in five divisions
- Leader in the country for pollution prevention efforts and innovative management strategies



Protect New Jersey's wildlife, like this Oystercatcher whose legs were tangled.



Support watershed protection efforts through cleanups, monitoring programs and planning.



Daily flights of the coast during the summer months to ensure beaches are safe for the public.



Prescribed burns in state parks to reduce invasive species and improve habitat.



NJDEP & Climate Change

NJDEP is working to reduce and respond to Climate Change. From threats to its coastline to rising temperatures, New Jersey has an urgent need to lead the way in addressing climate change.

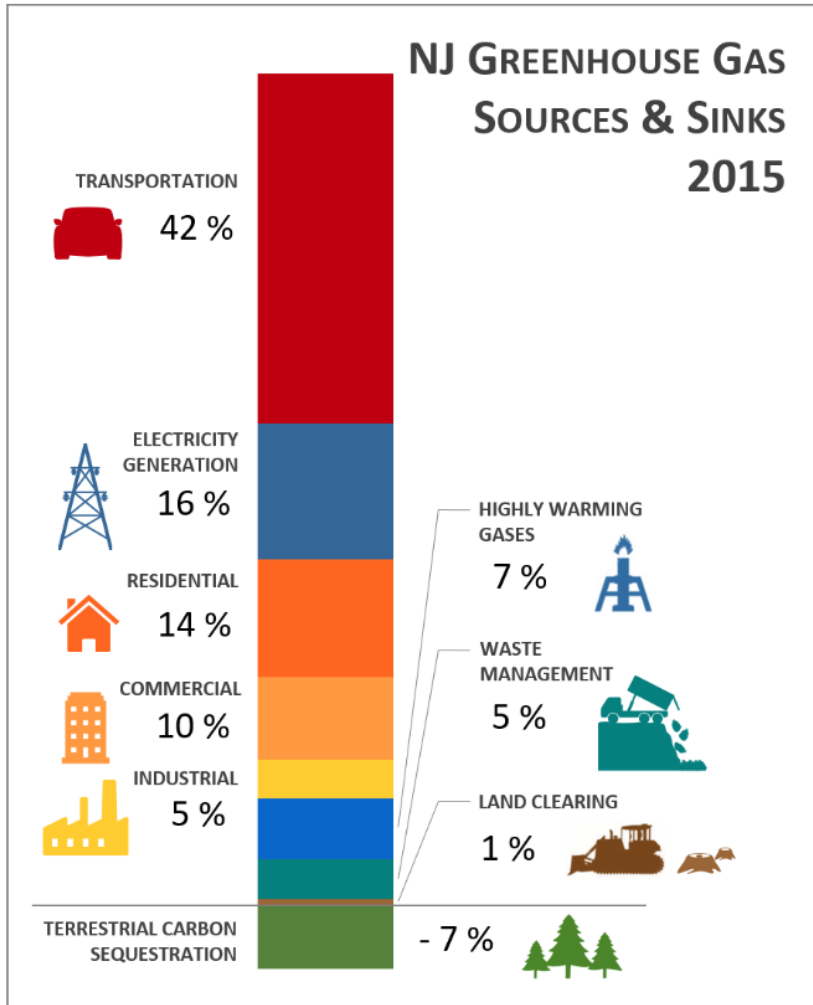
Under Governor Murphy's leadership New Jersey has:

- Joined the US Climate Alliance
- Committed to 3,500 MW of offshore wind energy
- Committed to rejoining the Regional Greenhouse Gas Initiative (RGGI)
- Participating in the Transportation and Climate Initiative

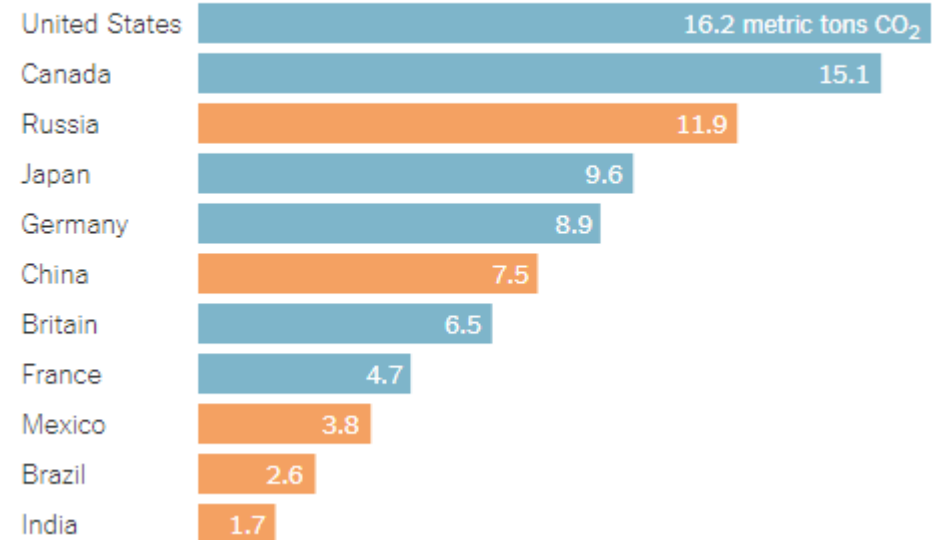


There is more to do...

In 2015, New Jersey emitted over 100.9 MMT CO₂e



Per person carbon emissions in 2014



Transportation

In 2015:

- 42% of greenhouse gas emissions in New Jersey.
- Accounted for 45.7 MMTCO₂e.

Andrea Friedman,
*Supervisor of Electric Vehicle
Program, Division of Air
Quality*

- New Jersey's strategy to expand electrification of transportation.



Business (Commercial/Industrial)

In 2015:

- 15% of greenhouse gas emissions in New Jersey.
- Accounted for 16 MMTCO₂e.

Gina Gambacorto,
*Environmental Specialist,
Bureau of Energy &
Sustainability*

- Greening businesses in New Jersey.



Waste/Food Waste

In 2015:

- 5% of Greenhouse Gas emissions in New Jersey
- Accounted 5.2 MMTCO₂e

Emily DeMaio,
*Environmental Specialist,
Bureau of Energy &
Sustainability*

- Food Waste in New Jersey and upcoming efforts.



Natural Resources/Carbon Sequestration

In 2015:

- 1% of greenhouse gases in New Jersey come from land clearing activities
- New Jersey's natural sinks like grasslands, forests, and wetlands, sequester 5.2 MMTCO₂e, offsetting 7% of greenhouse gases emissions.

Jen Feltis Cortese,
*Regional Environmental
Planner, Division of Water
Monitoring & Standards*

- Protection of Natural Resources and Water Gold.



Climate Change Resiliency

New Jersey's climate is changing. During the last century, New Jersey has experienced rising temperatures, increased rainfall, more frequent extreme weather events and rising sea levels.

Nick Angarone,
*Bureau Chief, Climate Resilience
Planning*

- What DEP is doing to adapt to Climate Change.





Electric Vehicle Initiatives at the New Jersey Department of Environmental Protection

Andrea Friedman, Bureau of Mobile Sources

New Jersey Department of Environmental Protection
Air Quality, Energy and Sustainability





Photo from Tesla Motors

>1 million Americans have made the switch to electric.





Photo from Workhorse



Photo from Workhorse



Photo from Stevenson Crane Service



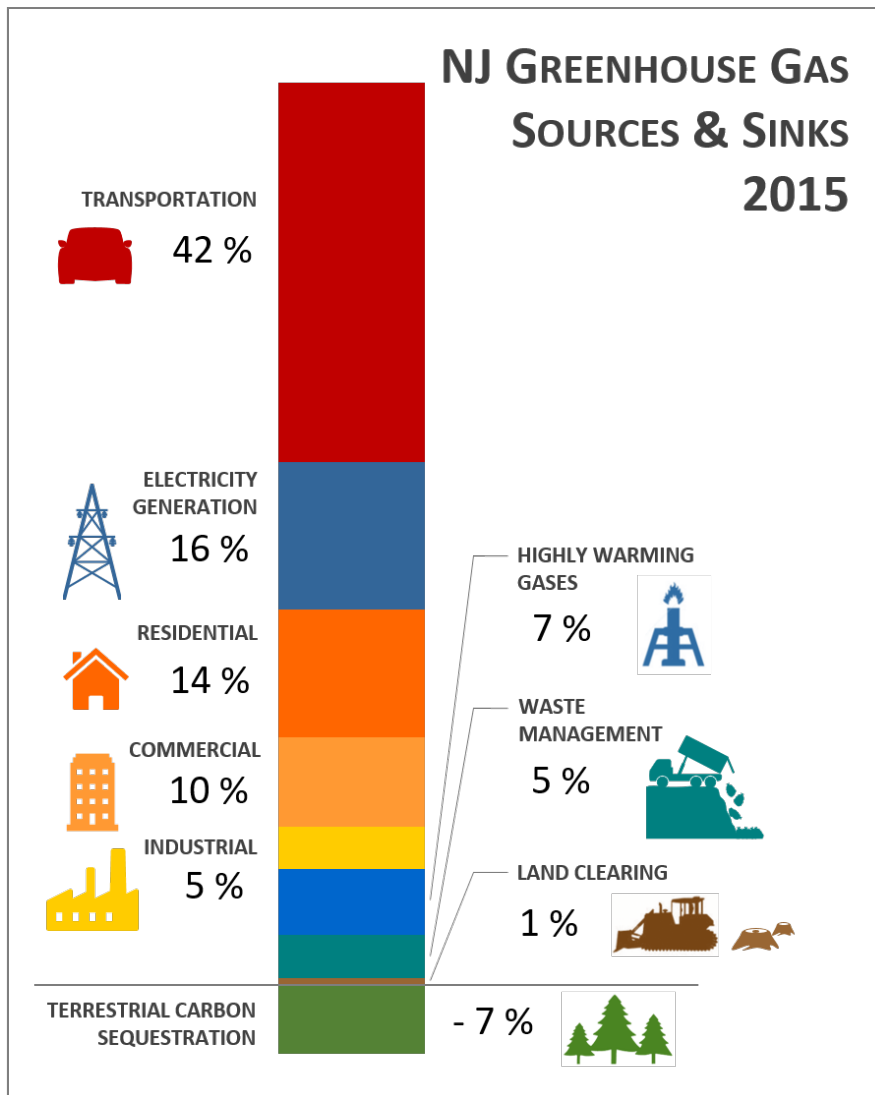


Vehicles cause air pollution.

Photo from Getty Images



Vehicles Cause Climate Pollution



Source: New Jersey Statewide Greenhouse Gas Emissions Inventory Report 2015



Electric Vehicles are 80% cleaner than comparable gasoline vehicles.

- Less ozone-causing chemicals
- Less harmful particulates
- Less greenhouse gases

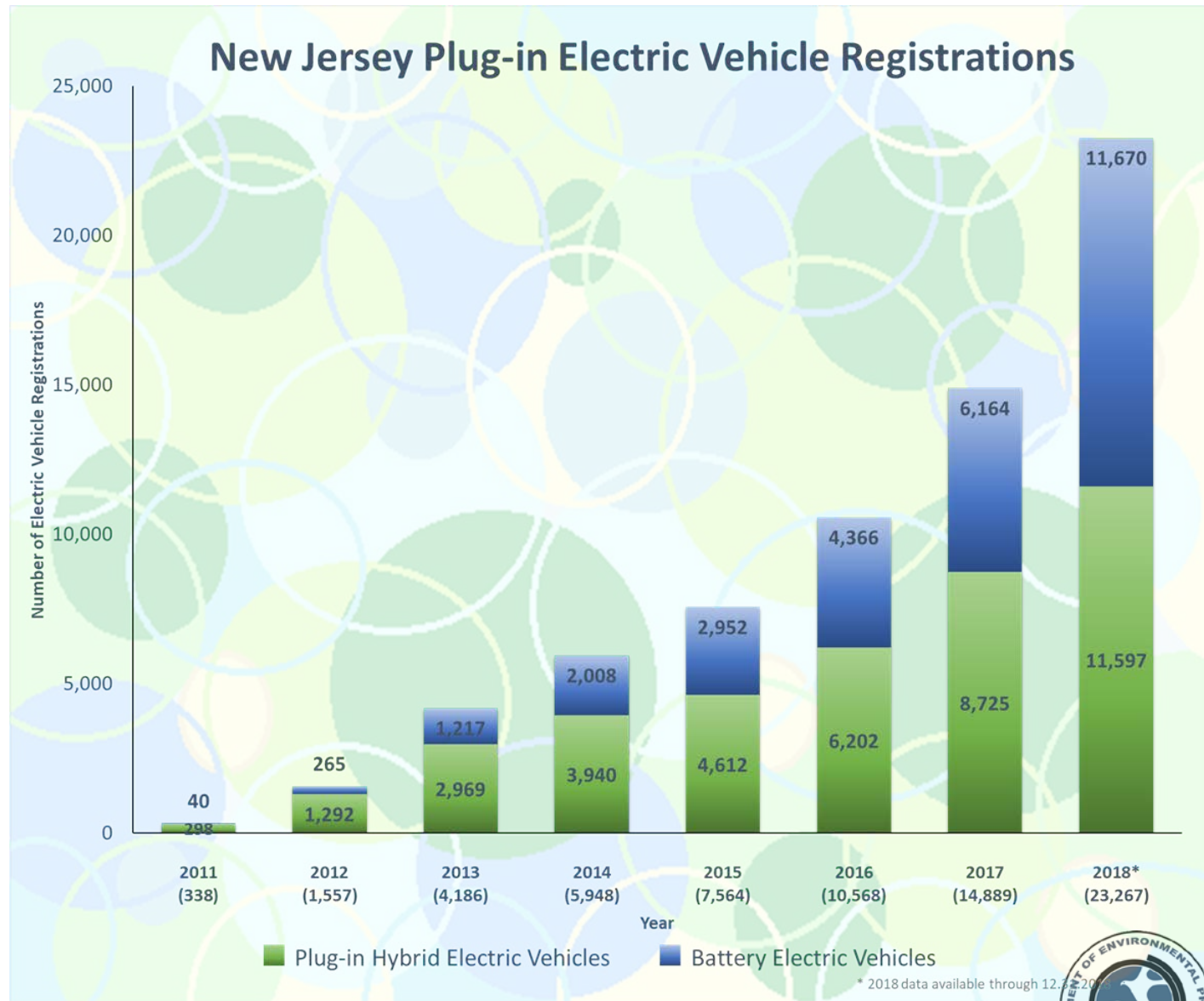
Photo from Citi.io



NJ EV Registrations

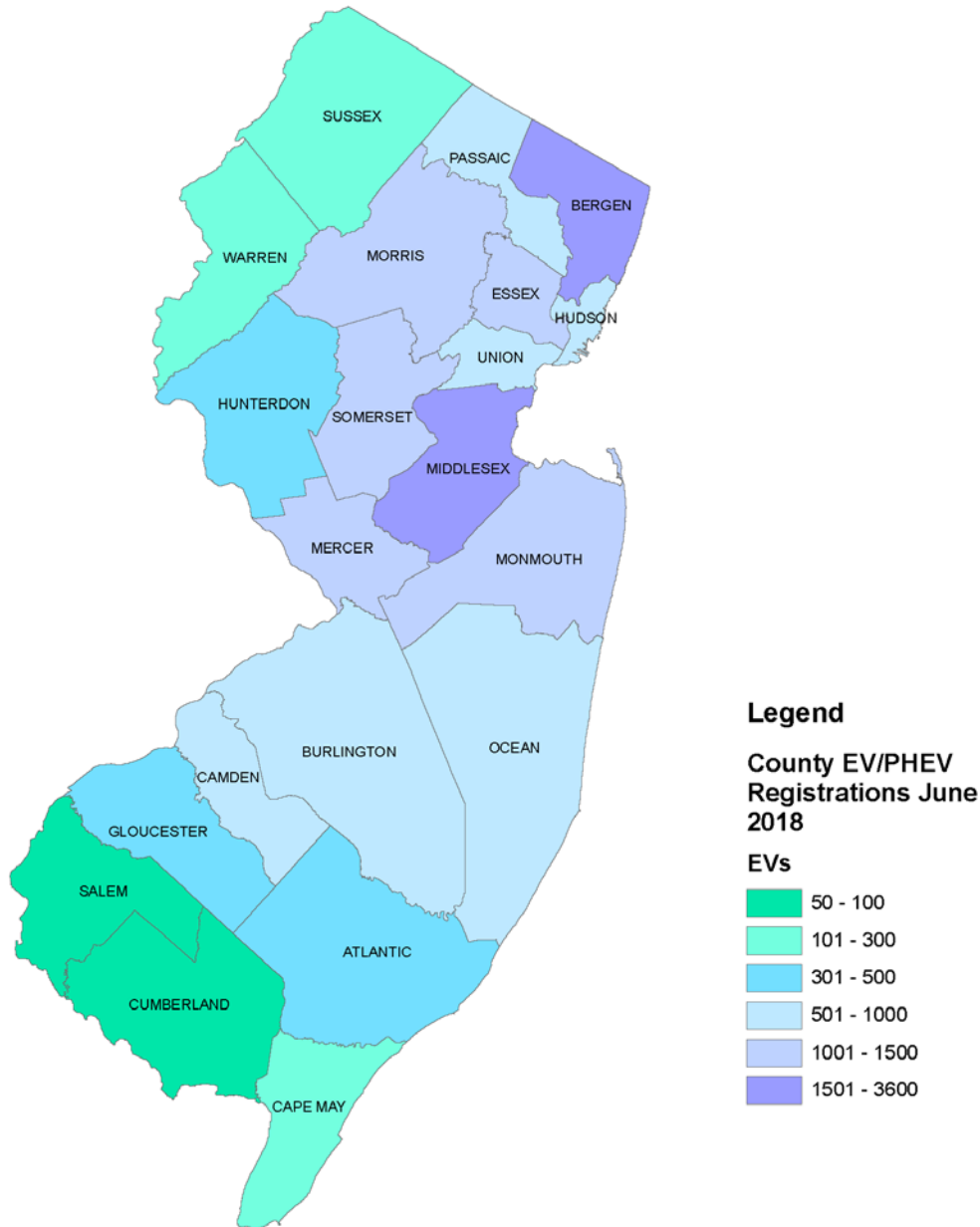
2011: 338

2018: 23,267



NJ Electric Vehicle Registrations by County

- Battery Electric Vehicles
- Plug-In Hybrid Electric Vehicles





The Charging Network is Growing

Publicly accessible EV charging stations:

784 charge points
300 locations

Including 223 DC Fast Chargers at 62 locations.

Source: www.afdc.energy.gov (May 2019)



Incentives, Tools and Resources



(ADVERTISEMENT!)

2:30 today in the Lecture Hall

Sun & Sparks: Community Solar and Electric Vehicles

Learn more about incentives, tools and resources for EVs and infrastructure.



Drive Green New Jersey



- Electric vehicle basics
- All about charging
- Grants and incentives
- Which EV is right for me?
- Can I afford it?
- Charging station locator
- Maps and data
- Sign up for our email list

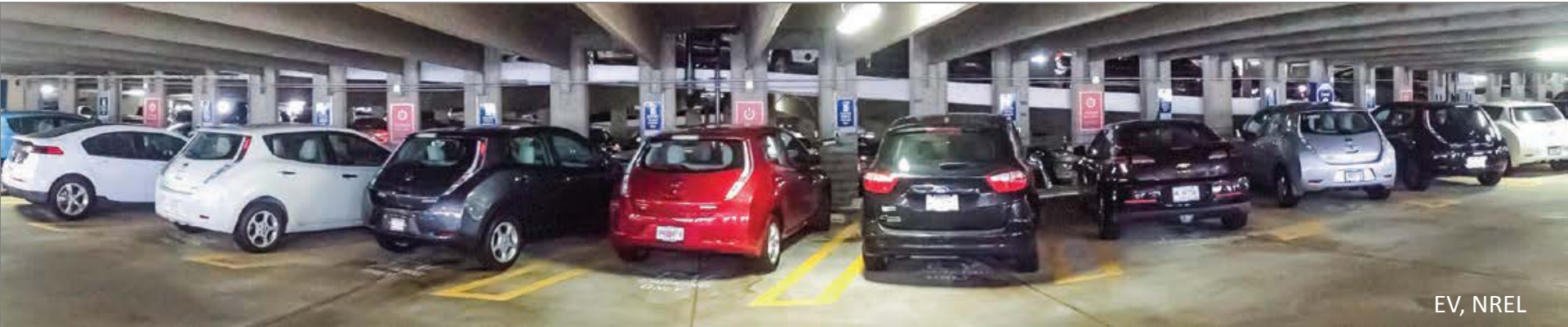


www.drivegreen.nj.gov



It Pay\$ to Plug In

New Jersey's Grant Program for EV Charging Stations



*Up to \$6,000 per charging station at **workplaces, public places, and multi-family housing.***

- For purchase, installation and maintenance.
- Apply online at: www.drivegreen.nj.gov/plugin.html



Volkswagen Settlement



- Volkswagen secretly installed software in certain diesel vehicles to cheat emission tests. Settlement: VW to provide funds to states and tribes for NOx reduction projects.

\$72.2 million for New Jersey, including
\$10.8 million for EV charging infrastructure

- See www.state.nj.us/dep/vw for details and to join the email list.



Eligible Vehicle Classes / Equipment



1. Class 8 Local Freight Trucks & Port Drayage Trucks
2. Class 4-8 School, Shuttle & Transit Bus
3. Switcher Locomotives
4. Ferries/Tugboats
5. Ocean Going Vessels
6. Class 4-7 Local Freight Trucks
7. Airport Ground Support Equipment
8. Forklifts & Port Cargo Handling Equipment
9. EV charging and hydrogen fueling
10. DERA



Procurement Tools for Public Fleets

Climate Mayors Electric Vehicle Purchasing Collaborative

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Climate Mayors Electric Vehicle
Purchasing Collaborative

**Unprecedented cooperation of
cities nationwide to electrify
municipal fleet vehicles.**

BUY NOW

www.driveevfleets.org



New Initiatives at DEP and Sister Agencies

- Ride & Drives
- Partnership to Plug In
- Draft Energy Master Plan



Sustainable Jersey EV-Related Actions

- Purchase Alternative Fuel Vehicles
- Public EV Charging Infrastructure
- Make Your Town EV Friendly
- Fleet Inventory

www.sustainablejersey.com





Call me!

Andrea Friedman
NJDEP Division of Air Quality
Bureau of Mobile Sources
Andrea.Friedman@dep.nj.gov
(609) 984-2055



www.drivegreen.nj.gov



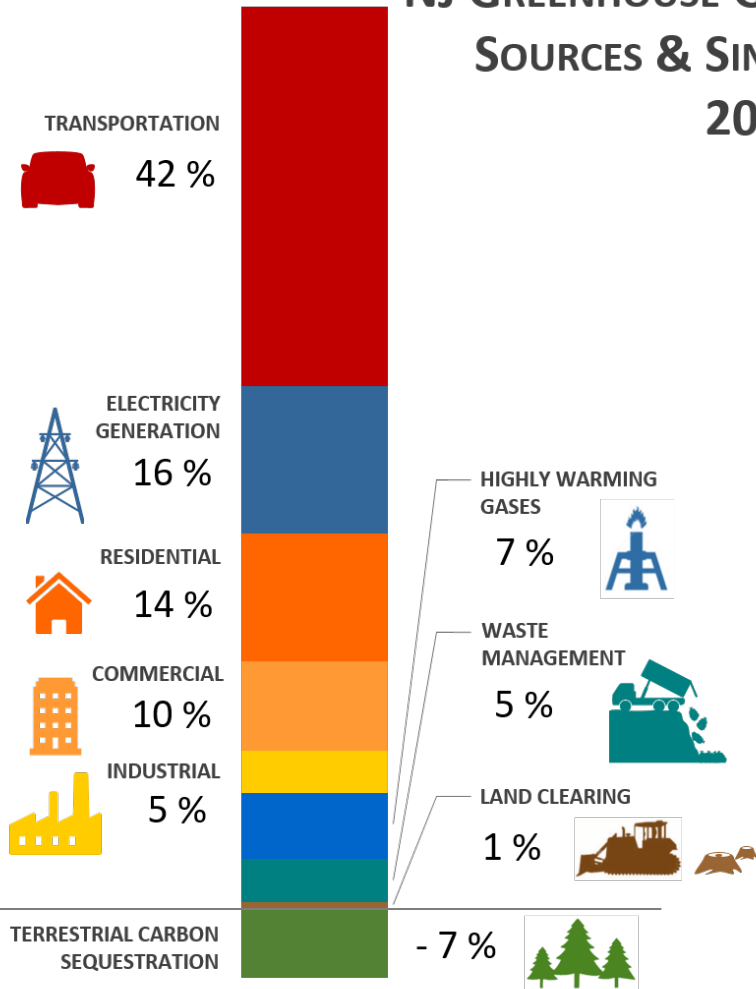
Greening Businesses in New Jersey

Gina Gambacorto | June 14, 2019



GHG Production

NJ GREENHOUSE GAS SOURCES & SINKS 2015



15% of NJ Greenhouse Gases come from the commercial and industrial sector.

Energy Use by Commercial Building Type

The top five energy-consuming building categories use about half the energy consumed by all commercial buildings.

15%

Mercantile and Service

- Malls and Stores
- Restaurants
- Dry Cleaners
- Gas Stations

14%

Office

- Professional and Government Offices
- Banks

10%

Education

- Elementary, Middle and High Schools
- Colleges

8%

Health Care

- Hospitals
- Medical Offices

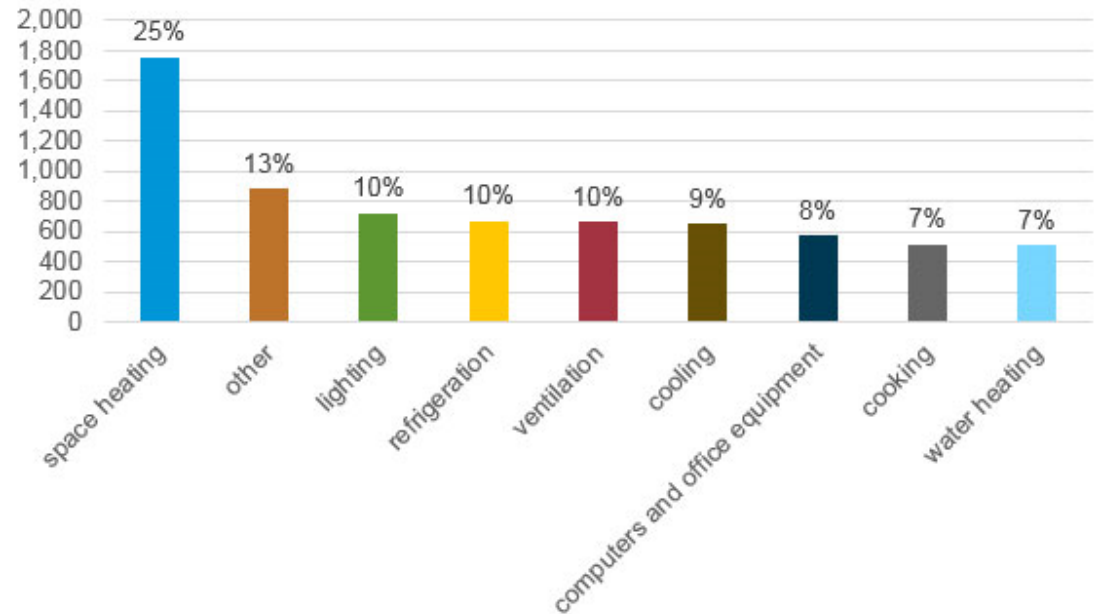
9%

Lodging

- Hotels
- Nursing Homes

Energy use in U.S. commercial buildings by major end uses, 2012

trillion British thermal units



Source: U.S. Energy Information Administration, 2012 Commercial Buildings Energy Consumption Survey: Energy Usage Summary, Table 5 (March 2016)



Take Action

Incentives are in place to help you!



Reduce energy use and make energy efficient upgrades



Make green purchasing decisions to achieve supply chain sustainability



Conserve water, stop leaks and install WaterSense labeled products



Reduce, Reuse, Recycle



Weatherproof your business and get your heating and cooling system serviced for efficiency



Become a Registered Sustainable Business in NJ

Energy Benchmarking

SmartStart Buildings Program

Direct Install Program

<http://njcleanenergy.com/>



Sustainable Business



Sustainable Businesses develop goods that meet present demand without compromising the needs of future generations



New Jersey Sustainable Business Registry

 SELLS ORGANIC, LOCALLY SOURCED, FRESH, COLD PRESSED JUICES

 COMPOSTS ALL FOOD WASTE AND REUSES JUICING BY-PRODUCTS

 CHECKOUT COUNTER MADE FROM RECLAIMED WOOD: A FALLEN TREE FROM SUPERSTORM SANDY

 UTILIZES BIODEGRADABLE PACKAGING FOR PREPARED FOODS

 INSTALLED LED LIGHTING



Arlee's Raw Blends



M & E ENGINEERS



- Energy Star Certified
- Recycles ink cartridges, batteries, pens, e-waste, and k-cups
- Installed low flow fixtures
- Office EV charging station
- Provides consulting services to school districts for the Sustainable Jersey for Schools program



Why Work with Local Businesses?

Relationship Building

Establishes a relationship and creates a favorable impression within the business community

Learning Opportunity

Gives local leaders the opportunity to learn the unique challenges for businesses in adopting sustainable practices

Gateway to Engagement

Lays the groundwork for more meaningful engagement and partnerships in the future



Sustainable Jersey Green Business Recognition Program

**10
Points**

Establish a Green Business Recognition Program for local companies. A minimum two businesses must be participating in the Program.

**20
Points**

Incorporate participation in the Registry as part of the criteria for your Green Business Recognition Program. A minimum three businesses must be participating.



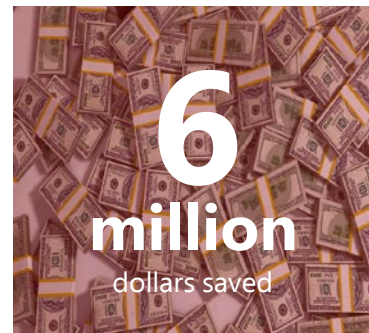
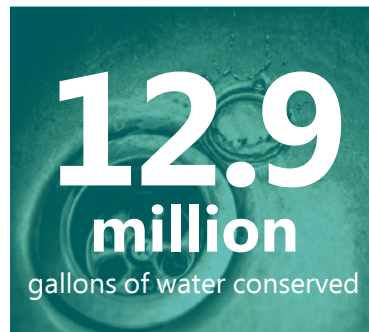
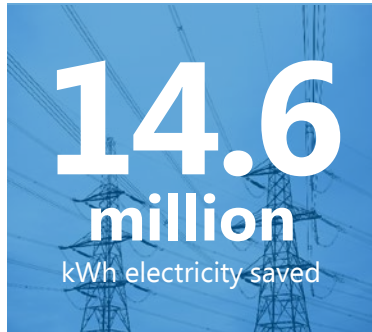
How To Register

1. Create an online account: <http://registry.njsbdc.com/>
2. Submit a brief written description of Five Sustainable Actions/Practices your business, nonprofit organization or higher education institution has adopted
3. Identify One Measurable Environmental Benefit from a practice
4. Identify One Cost Savings from a Practice
5. Re-Register once every two years by showing continual improvement; Add One Sustainable Action/Practice at your Facility and One New Measurable Result



Annual Results

Members Make a Difference



Contact



CONTACT US:

Website

registry.njsbdc.com

Email Address

Gina.Gambacorto@dep.nj.gov

BE SOCIAL WITH US:



Like us on Facebook

@NJSustainableBusinessRegistry

Follow us on Twitter

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Follow us on Instagram

@njsustainablebusinessregistry

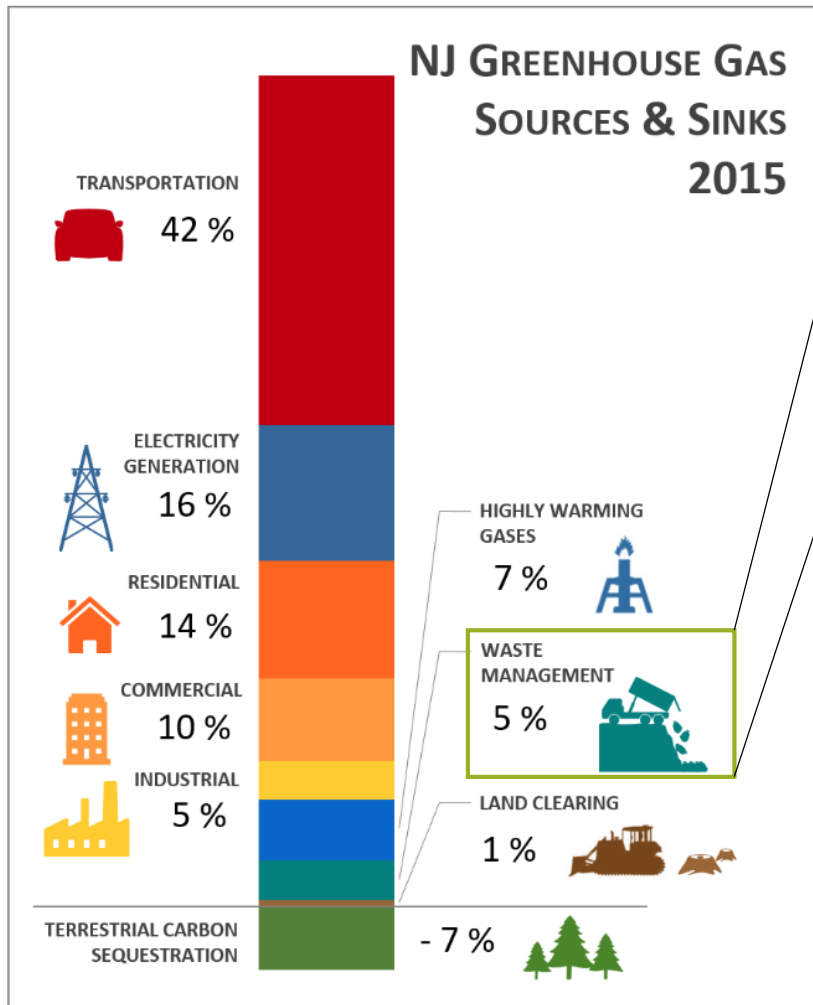




NJDEP Food Waste Actions

Emily DeMaio | June 14, 2019

Where does food waste fit into the greenhouse gas (GHG) equation?



WASTE MANAGEMENT

5 %



Food waste generates methane when sent to landfill.



Methane is **84x more potent** than CO₂ as a GHG (EDF, 2019)

20% of municipal solid waste sent to landfill is food waste (EPA, 2017)



The rest of the picture



Nearly 40% of all food produced for consumption in the United States is wasted.

(NRDC, 2017)



What are we talking about when we say “food waste”?

- Any food that is fit for human consumption that is sent for disposal
- Non-consumable food waste, such as spoiled food and inedible trimmings

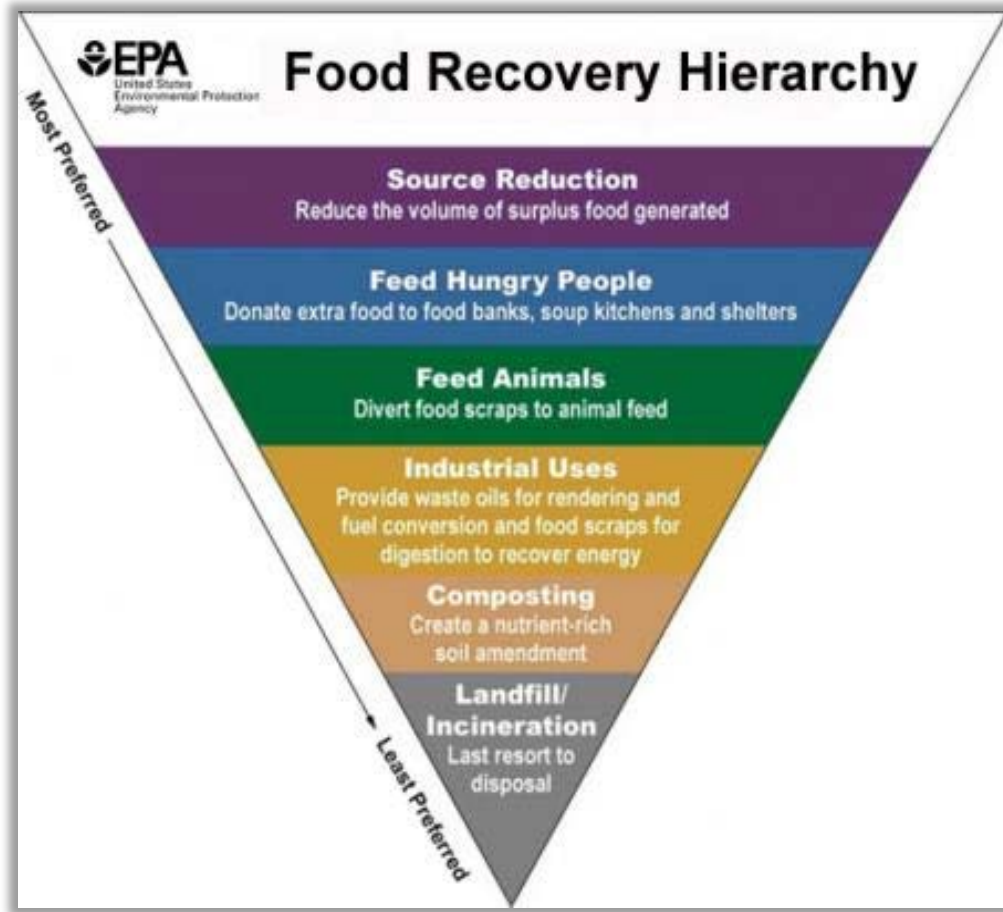


This includes, but is not limited to:

- Consumer food waste, plate waste
- Unsold food from retail stores
- Untouched prepared food
- Trimmings from restaurants, grocery stores, cafeterias or industrialized processing facilities



EPA Food Recovery Hierarchy



The EPA Food Recovery Hierarchy prioritizes actions schools can take towards reducing, recovering and recycling food waste.

Food Waste Legislation concerning NJDEP

Food Waste Reduction Legislation

P.L.2017, c.136

- Signed August 2017
- Establishes 50% reduction goal of municipal solid waste by 2030

CHAPTER 136

AN ACT concerning the reduction of food waste and supplementing Title 13 of the Revised Statutes.

BE IT ENACTED by the Senate and General Assembly of the State of New Jersey:

C.13:1E-226 Findings, declarations relative to food waste.

1. The Legislature finds and declares that food waste is a major issue in the United States and globally; that, according to the Food and Agriculture Organization of the United Nations (FAO), unwanted and discarded food squanders resources, including water, land, energy, labor, and capital, and, when food waste is dumped in a landfill, it rots and creates methane, which is a powerful greenhouse gas; that the FAO has estimated that one third of the food produced in the world for human consumption – about 1.3 billion tons – is lost or wasted every year, and the food loss and waste in industrialized countries equates to a value of approximately \$680 billion; that the FAO has also stated that if one fourth of the food lost or wasted globally could be saved, it would be enough to feed 870 million hungry people; that the Harvard Food Law and Policy Clinic has estimated that 40 percent of the food supply in the United States is not eaten; that, according to the United States Environmental Protection Agency and the United States Department of Agriculture, food loss and waste is the single largest component of disposed municipal solid waste in the United States; in 2015, that the Administrator of the United States Environmental Protection Agency and the Secretary of the United States Department of Agriculture announced a national goal of reducing food waste by 50 percent by the year 2030; that much more can and must be done in

Food Waste Guidelines Legislation

P.L.2017, c.210

- Signed August 2017
- Request guidelines to be written for K-12 and higher education institutions to reduce, recover and recycle food waste

CHAPTER 210

AN ACT concerning food waste in K-12 schools and institutions of higher education, supplementing Title 13 of the Revised Statutes, and amending P.L.1982, c.178.

BE IT ENACTED by the Senate and General Assembly of the State of New Jersey:

C.13:1E-99.115 Guidelines for handling food waste for certain institutions.

1. a. Within 90 days after the effective date of this act, the Department of Environmental Protection, in consultation with the Department of Agriculture, the Department of Education, the Department of Health, and the Office of the Secretary of Higher Education, shall establish, or work with appropriate nonprofit organizations to establish, voluntary guidelines to encourage and facilitate the ability of K-12 schools and institutions of higher education to reduce, recover, and recycle food waste.

b. The guidelines shall include, but need not be limited to:

- (1) information on food waste generally, and the benefits of reducing, recovering, and recycling food waste;
- (2) recommendations for how schools can incorporate this information in their curricula, and create programs and activities for the reduction, recovery, and recycling of food waste;
- (3) recommendations for how schools can reduce the volume of surplus food they generate, including, but not necessarily limited to, conducting food audits, eliminating trays in cafeterias, enacting longer lunch periods, scheduling lunch periods after recess



Food Waste Reduction Bill

P.L. 2017, c.210

Responsibility of the Division of Solid and Hazardous Waste
(DSHW)

1. The Department of Environmental Protection, in consultation with the Department of Agriculture, shall develop and commence implementation of a plan to accomplish the State food waste reduction goal.

2. The Department of Environmental Protection shall hold at least three public hearings during the development of the plan to seek public input.

3. As part of the plan, the Department of Environmental Protection, in consultation with the Department of Agriculture, shall make such recommendations for any administrative or legislative action that may help the food waste reduction goal.



The DSHW is currently planning stakeholder meetings to receive public input on their proposed plan to meet their goal



Food Waste Guidelines Bill

P.L. 2017, c.210

Responsibility of the Office of Sustainability

1. Information on food waste generally and the benefits of reducing, recovering, and recycling food waste.
2. Recommendations for how schools can incorporate this information into their curricula and create programs and activities for the reduction, recovery, and recycling of food waste.
3. Recommendations for how schools can reduce the volume of surplus food they generate.
4. Guidance on how schools can create share tables in their cafeterias.
5. Information on cost-effective, safe, and sanitary means by which schools may donate excess, unused, and edible food to nonprofit organizations that distribute food to nearby individuals.



Food Waste Guidelines are set to be released Summer 2019



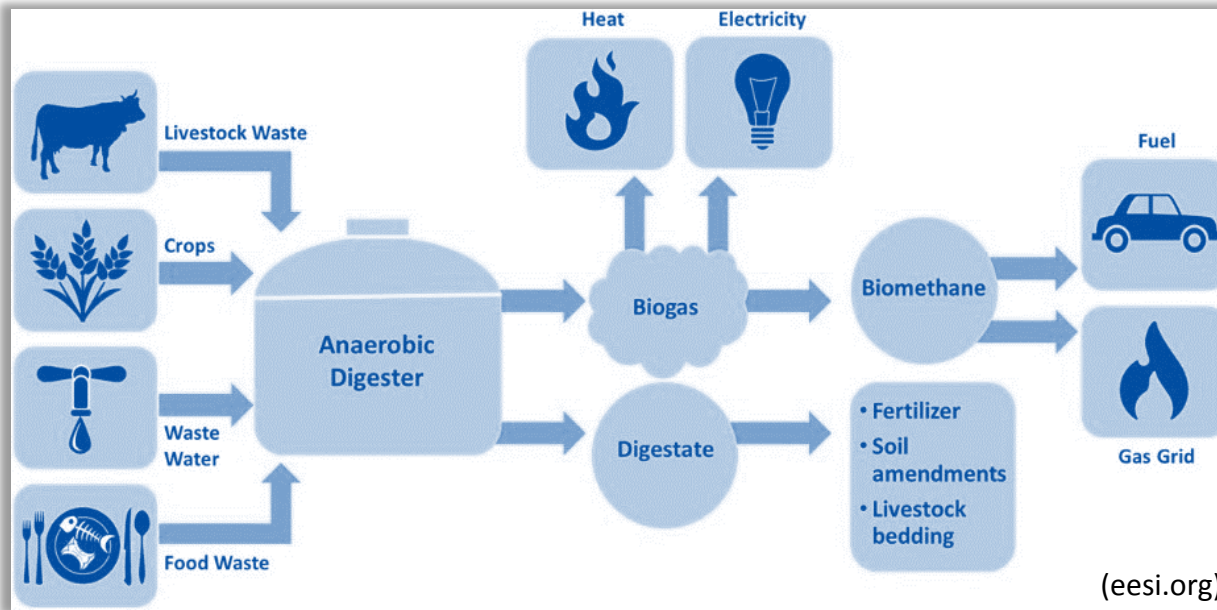
Food Waste Guidelines Overview

Sections of the Food Waste Guidelines:

<i>Section in Guidelines</i>	Higher Education Guidelines	K to 12 Guidelines
Executive Summary	✓	✓
Getting Started	✓	✓
Getting Started Case Study	X	✓
Reduction	✓	✓
Reduction – Case Study	✓	✓
Recovery	✓	✓
Recovery – Case Study	✓	✓
Recycling	✓	✓
Recycling – Case Study	✓	✓



Food Waste to Energy



- Creates an avenue to use biogas energy from methane often flared at landfills.
- Current DEP research and site assessments seek to encourage wastewater treatment plants to perform waste to energy



Sustainable Jersey Food Waste Actions

Municipalities

Food Waste **10 Points**

Waste Audit of Municipal Buildings or Schools **10 Points**

Schools

i Food Waste Management

15 Points **🔔** School Only

i Waste Audit

10 Points **★** Priority **🔔** School Only



Work cited

EDF (n.d.). Methane: The other important greenhouse gas. Retrieved from <https://www.edf.org/climate/methane-other-important-greenhouse-gas>

EPA (2018). Sustainable Management of Food Basics. Retrieved from www.epa.gov/sustainable-management-food/sustainable-management-food-basics#what

NRDC (2017). Wasted: How America is Losing Up To 40 Percent of Its Food From Fork to Landfill. (2017, August). Retrieved December, 2017, from www.nrdc.org/sites/default/files/wasted-2017-report.pdf



Natural Resources Task Force and the Development of Gold Star for Water Resources

Jennifer Feltis Cortese, AICP

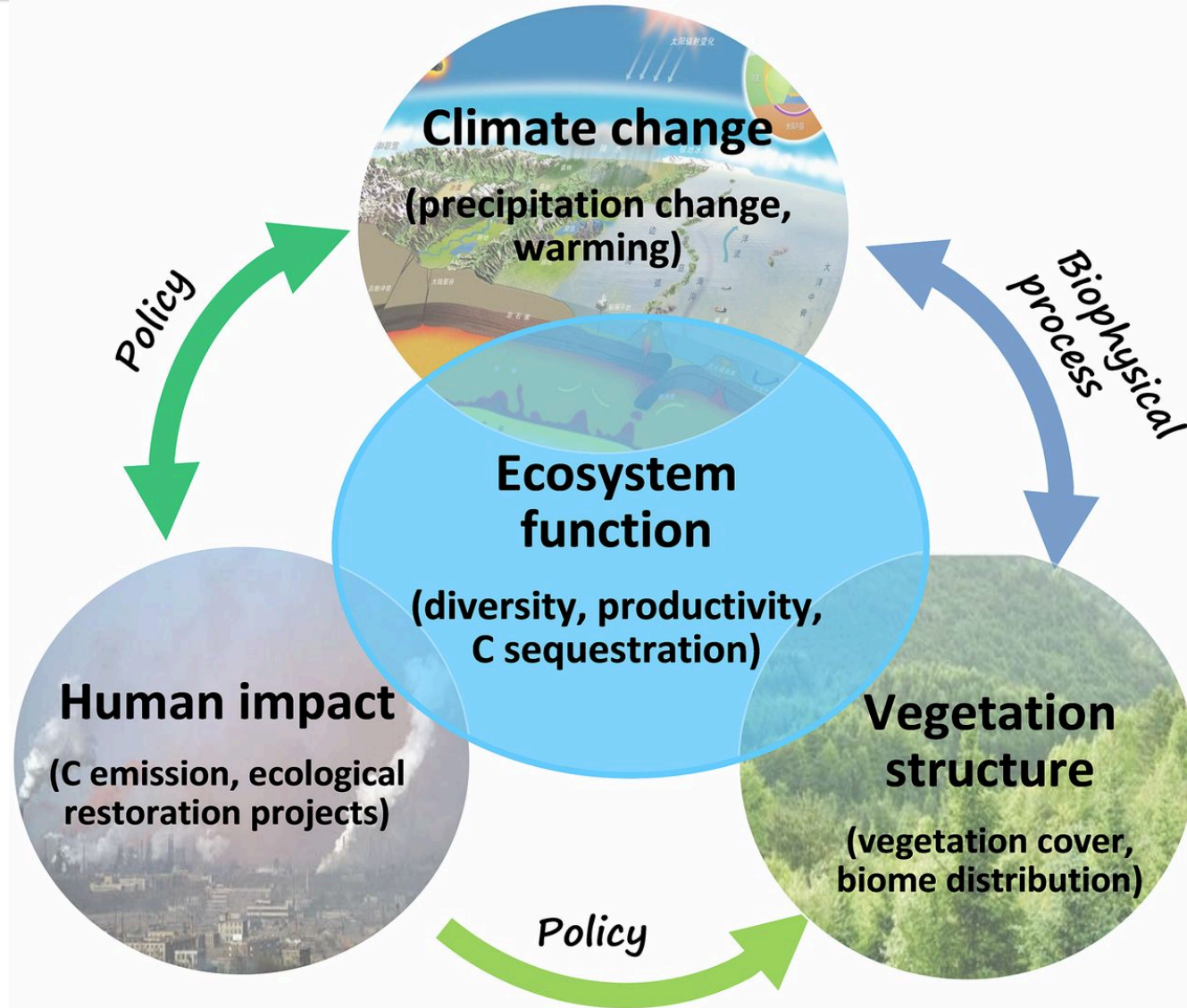
Water Resources Management

*Bureau of Environmental Analysis, Restoration, and Standards and Office of Environmental
Justice*

**Natural Resources Task Force and Water Gold Committee
Leader**



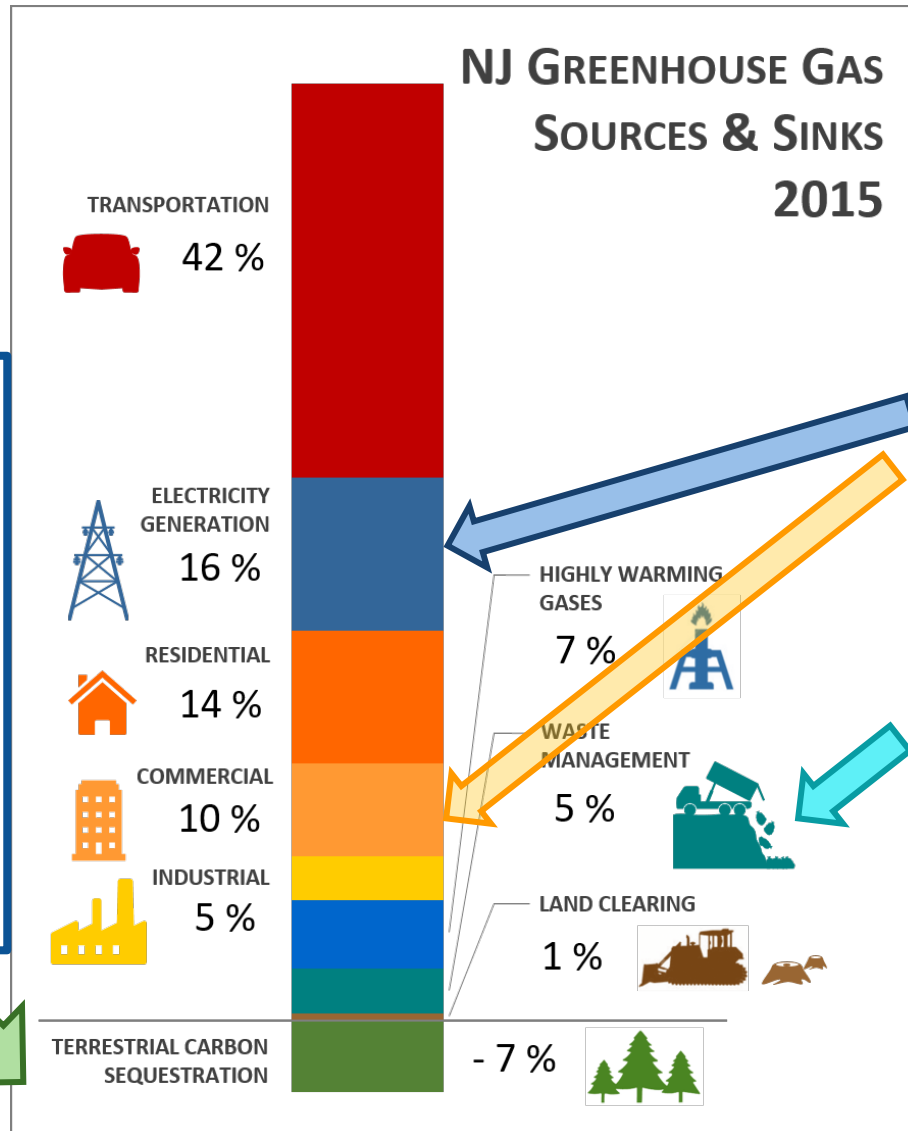
Natural Resource Protection Benefits



Jingyun Fang et al. PNAS 2018;115:16:4015-4020



Natural Resource Protection Benefits



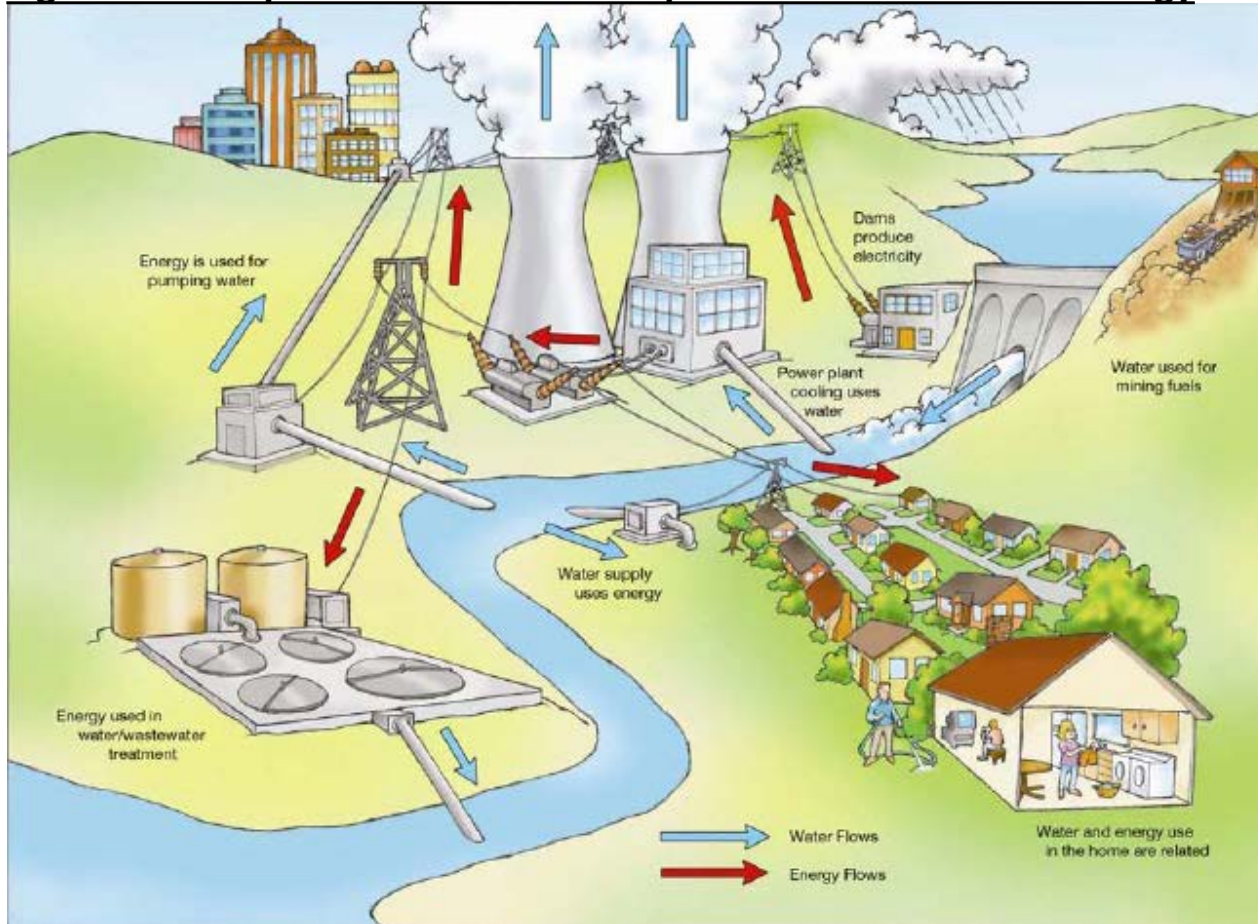
- ### Natural Resource Protection Actions
- Open Space Plans
 - Conservation Easements
 - Riparian Zone Protection
 - Tree Protection and Woodland/Community Forestry Management
 - Green Infrastructure

- ### Water Resources Management Actions
- Stormwater Management and Green Infrastructure
 - Water Conservation
 - Riparian Zone Protection
 - Integrated Water Management Planning
 - Winter Road Management



Water Gold

Figure 1. Examples of Interrelationships Between Water and Energy



Water Story: The Building Block for the Newest Gold Star Standard in Water @ 3:15 in Room General Session 1

Source: U.S. Department of Energy, Energy Demands on Water Resources, Report to Congress on the Interdependency of Energy and Water, December 2006, p. 13.



Contact Information



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609-984-3451



Join a Task Force

[Fill out an application](#) and email it to info@sustainablejersey.com



New Jersey Department of Environmental Protection

Bureau of Climate Resilience Planning

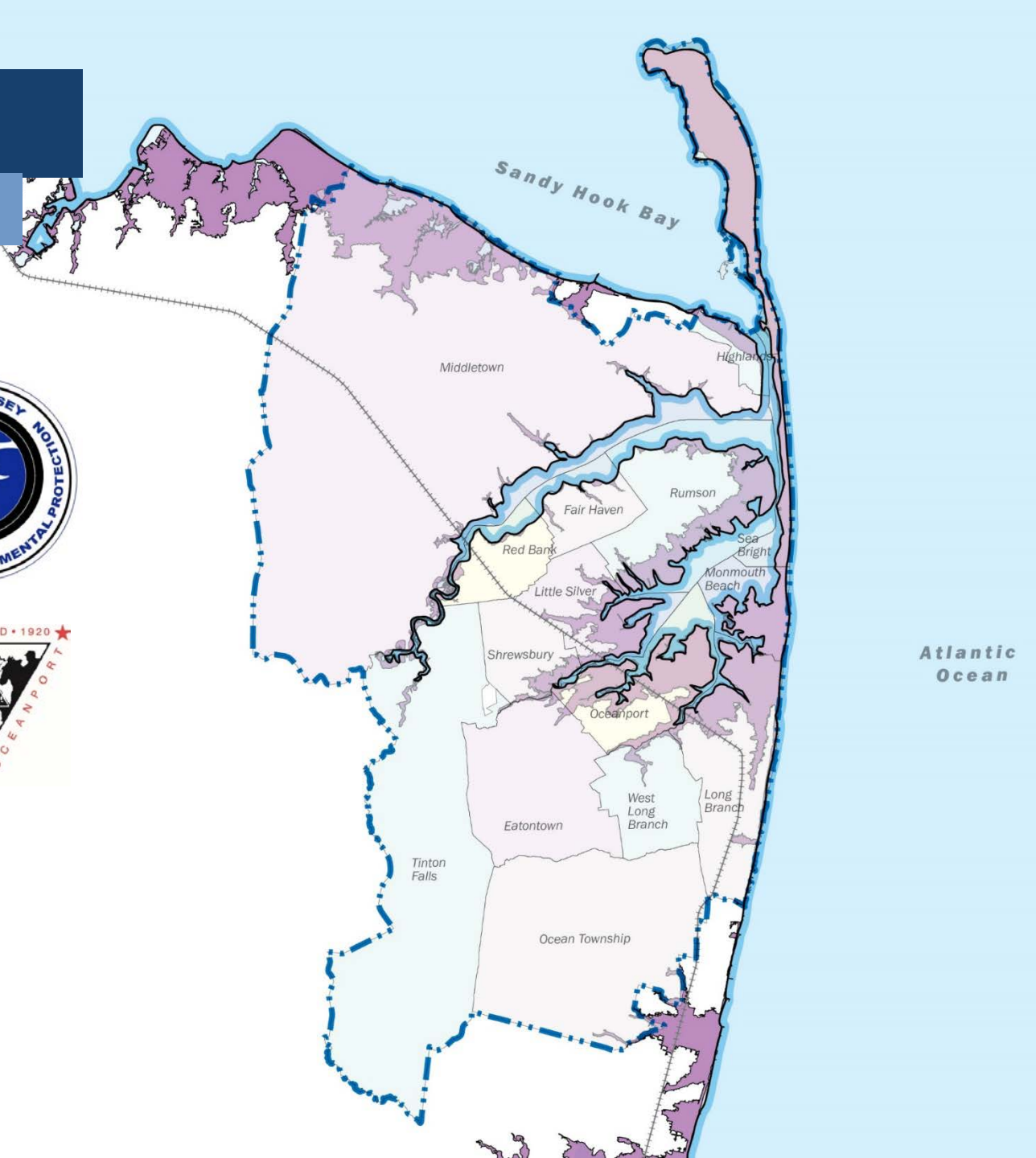


Resilience Planning



NJ FRAMES

Two Rivers One Future



Louis Berger

RUTGERS
Climate Institute

NJ FRAMES



	HOUSING	INFRASTRUCTURE	NATURAL RESOURCES	ECONOMIC DEVELOPMENT
2030	<ul style="list-style-type: none"> 1 USACE plan- road regrading 2 Connect to USACE plan- Port Monmouth Rd regrading 3 Elevate Houses 4 Flood Damage Prevention Ordinance 5 Landscaping and vegetation ordinance 	<ul style="list-style-type: none"> 1 Backflow preventers (GTR, location not specified) 	<ul style="list-style-type: none"> 1 Beach nourishment 2 Wetland restoration 3 Beach vegetation management plan 	<ul style="list-style-type: none"> 1 Flood Damage Prevention Ordinance 2 Elevate businesses
2050	<ul style="list-style-type: none"> 6 Floodable development 7 Floor Area Ratio Ordinance 8 Coastal Hazard Disclosure Policy 9 Development Fees in Vulnerable Areas 			<ul style="list-style-type: none"> 3 Regrade at risk sections of Rt 36 4 Retrofit ferry terminal and marina's supporting structures 5 Floodable development 6 Floor Area Ratio Ordinance 7 Coastal Hazard Disclosure Policy 8 Development Fees in Vulnerable Areas
2100	<ul style="list-style-type: none"> REGION WIDE SOLUTION 			



Project of Special Merit

A Seat at the Table

'I Got Stuck': In Poor, Rural Communities, Fleeing Hurricane Michael Was Tough

Oct. 11, 2018, NY Times

As Storms Loom, Some Immigrant Families Wonder: Is It Safe to Seek Help?

Sept. 19, 2018, NY Times

While Residents Are Urged to Leave, Inmates Remain in Hurricane's Path

Sept. 13, 2018, NY Times

A tale of two Irmas: rich Miami ready for tumult as poor Miami waits and hopes

Sept. 9, 2018, The Guardian

Hurricane Maria exposed big gaps in help for Puerto Rico's disabled. So how to fix it?

"We didn't prepare accurately for the emergency and to address the needs of people with disabilities," said the head of an independent government agency.

Aug. 28, 2018, NBC News

U.S. • TEXAS

'Need Help ASAP' The Story Behind the Photo of Nursing Home Residents Trapped in Hurricane Flood Water

Aug. 28, 2017, Time

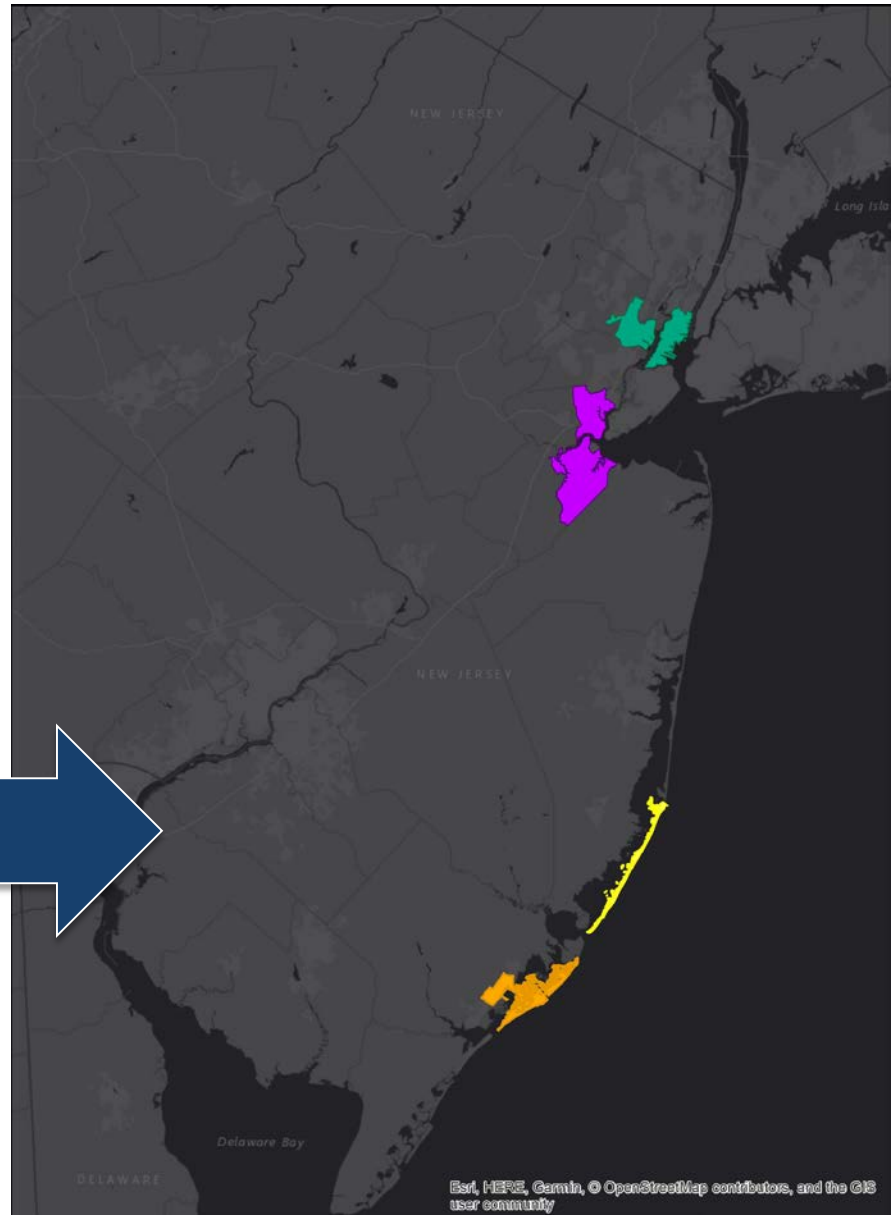




**Start planning
Phase**
Early 2020

**Complete
projects**
Spring 2022

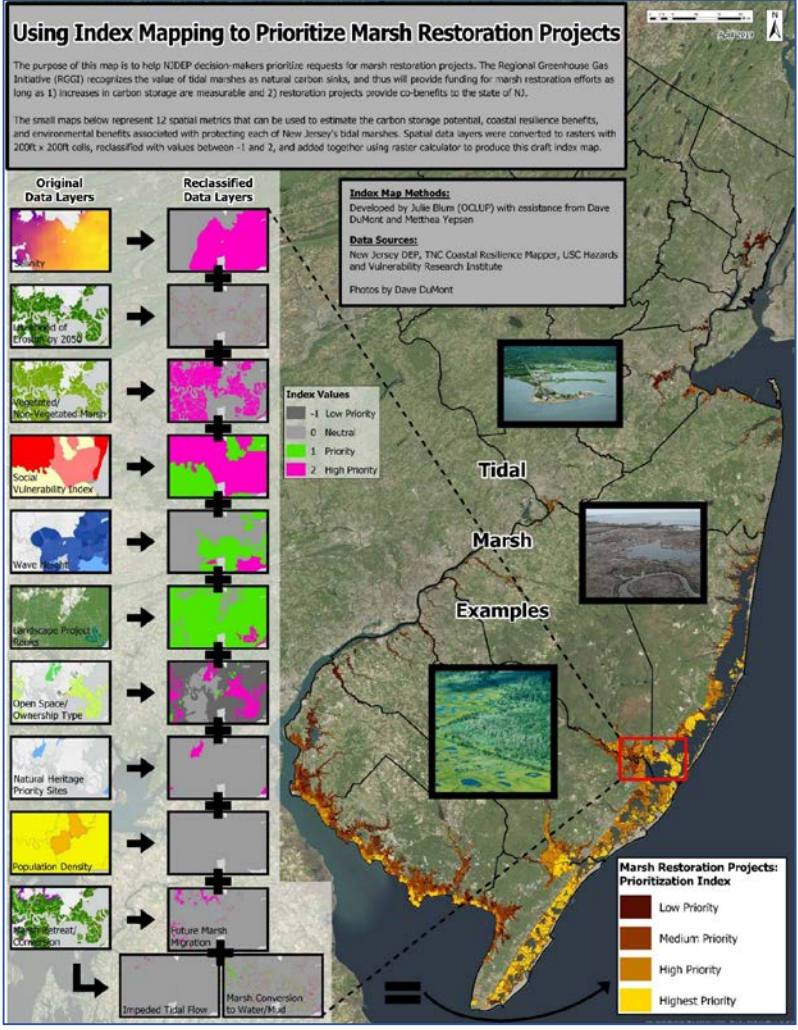
**Start
Implementation
Phase**
Mid 2021



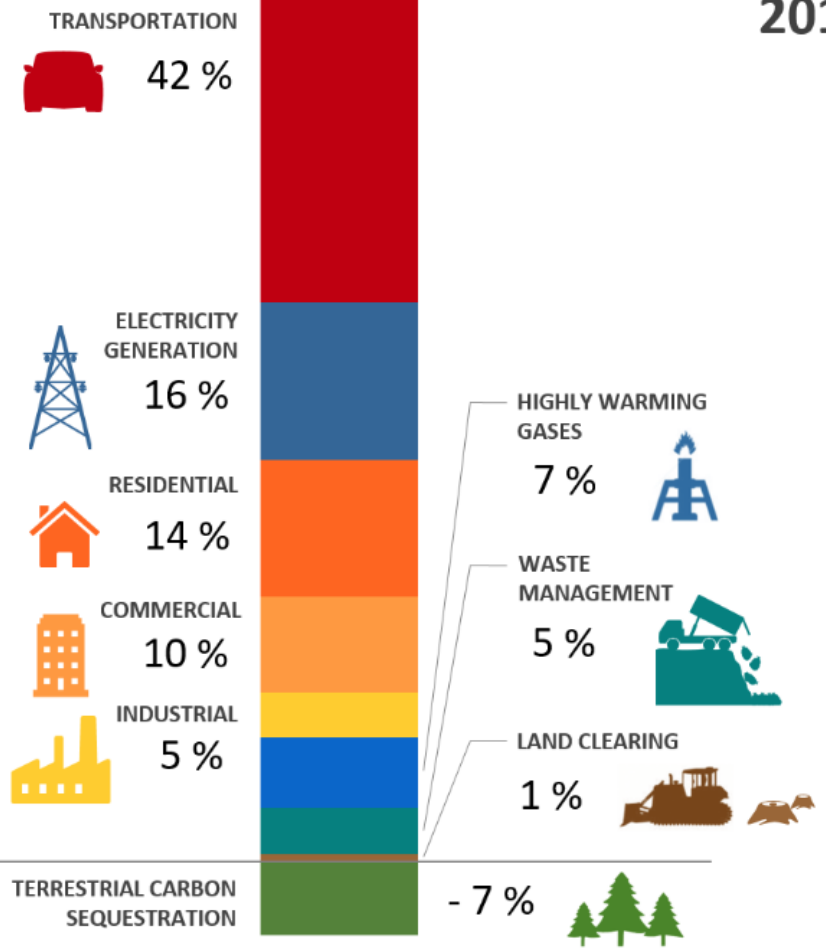
Nature-based Solutions



Nature-based Solutions



NJ GREENHOUSE GAS SOURCES & SINKS 2015



Coastal Resilience Plan



Coastal Resilience Plan

DEP Priorities

- Reduce and Respond to Climate Change
- Protect New Jersey's Water
- Revitalize our Communities and Protect Public Health
- Manage and Promote Thriving Natural & Historic Resources

Goals

- Reduce Risk & Vulnerability
- Create Consistent Guidance
- Increase Awareness & Understanding
- Make Adaptation Easier





**SUSTAINABLE
JERSEY**

A Decade of Impact

Sustainable Jersey Actions

Community Education and Outreach **5 Points** **10 Points** **15 Points** **20 Points**

Climate Adaptation: Flooding Risk **20 Points** **Bronze Priority** **Silver Priority**

Community Asset Mapping **10 Points**

Coastal Vulnerability Assessment **20 Points**

Vision Statement and Goals **5 Points**

Indicators and Targets **10 Points**



Thank you!

<https://climatechange.nj.gov>

