Natural & Working Lands Strategy

Stakeholder Meeting:

Developed Lands

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

NEW JERSEY DEPARTMENT OF AGRICULTURE

3/21/2023

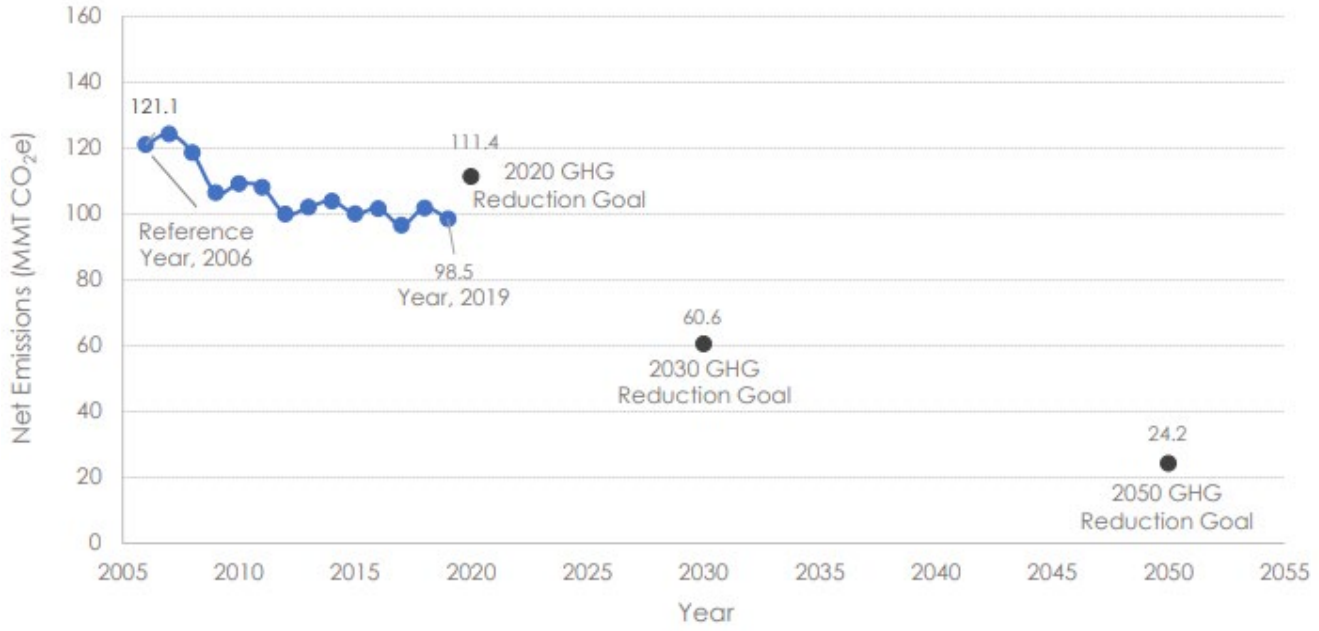
Ground Rules

- Attendee microphones and cameras are off by default
- Questions or comments can be typed into the chat at any time
- Please limit your input to topics we are discussing today
- After each land type, we will address some questions from the chat and there will be time to raise your hand and speak – we will enable your microphone when you are called on
- All input will be considered, but there will not be a response to comments document
- If you are unable to comment today, please use the comment form at https://www.nj.gov/dep/climatechange/mitigation/nwls.html

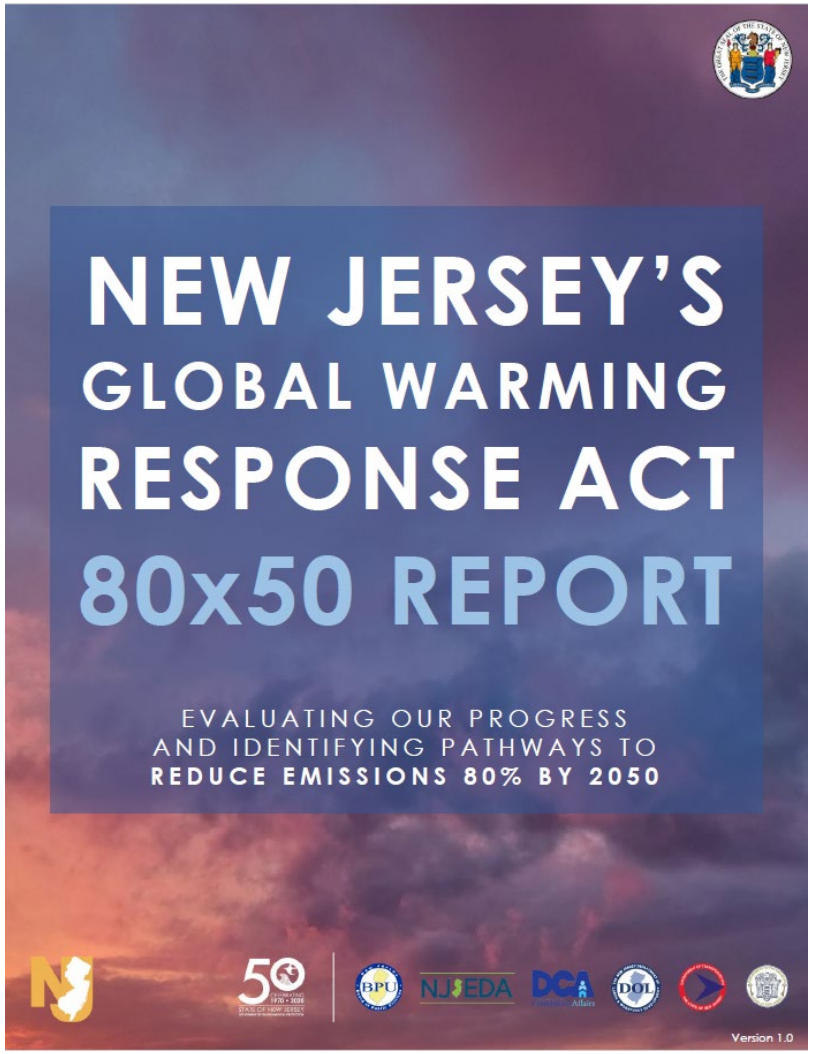
Agenda

- Introduction – Heather Genievich
- Background – Tony Rho
- NWLS Overview – Metthea Yepsen
- Timeline- Metthea
- How recommendations were developed - Metthea
- Overview of how each habitat sequesters carbon – Frank McLaughlin and Katie Hogue
- Major components of the strategy for each habitat type – Frank McLaughlin and Katie Hogue
- Questions for attendees - Heather
- Input from attendees - Heather and Frank
- Reminder of timeline and ways to send comments - Heather

Greenhouse Gas Reduction Goals



New Jersey's 80x50 Report



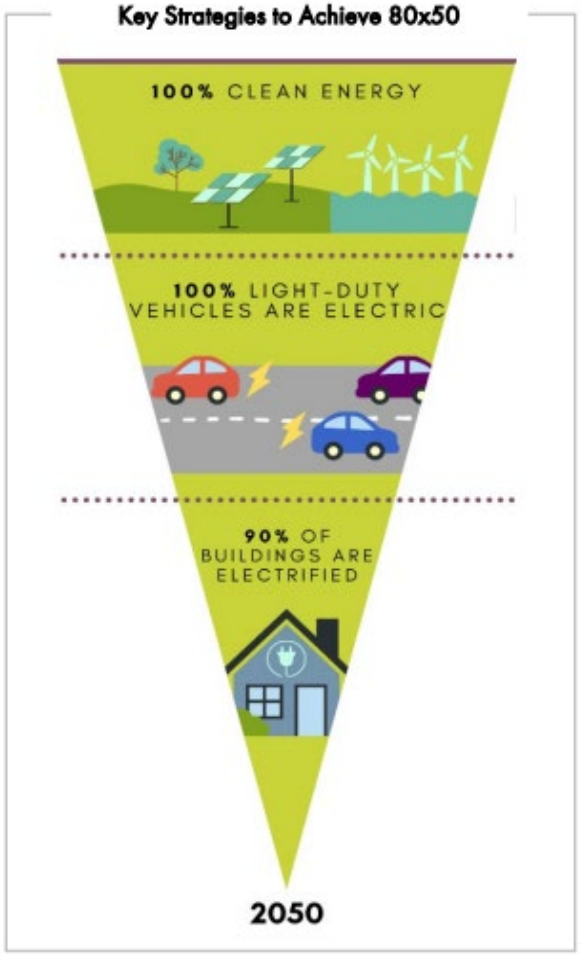
- Seven emission sectors are evaluated to determine how to achieve the 80x50 Goal.

- Each Sector Includes:
  - Business-as-Usual Projection.
  - Emissions Reduction Pathway Projections.
  - Specific legislative and administrative recommendations for achieving emissions reductions.

- Four electric demand scenarios are evaluated based on various levels of electrification throughout the state.

NJ Greenhouse Gas Reduction Pathways

CO2e Redux:



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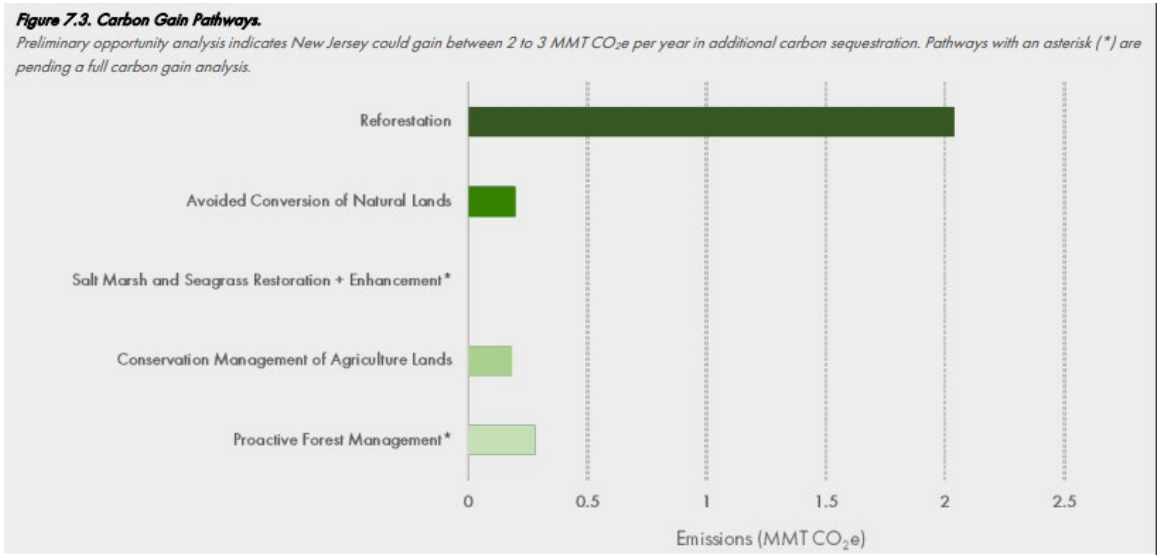
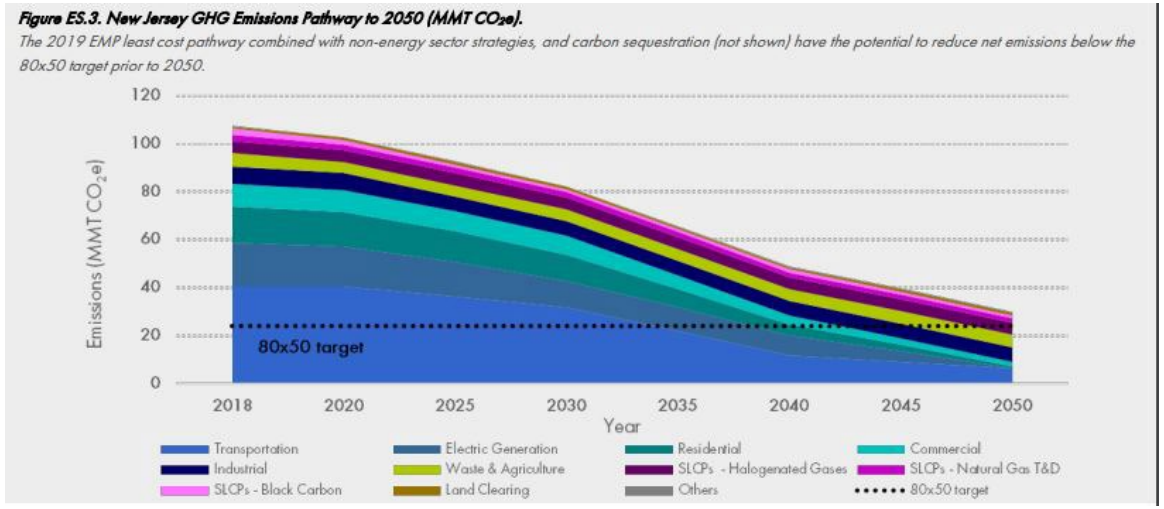
CO2e Gains:





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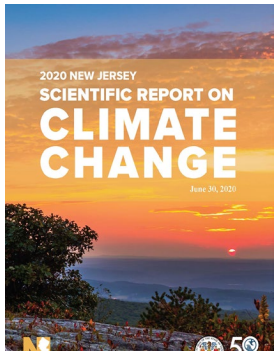
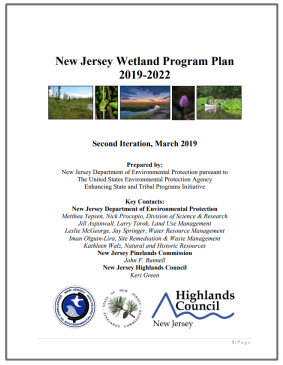
NJ needs CO2 sequestration through NWL to meet state 2050 goals!

A Collaborative Call to Action

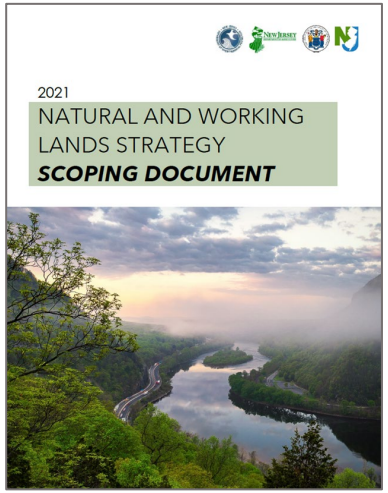
Scientific Report on Climate Change



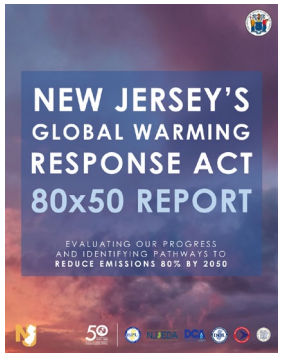
New Jersey Wetland Program Plan



RGGI Strategic Funding Plan

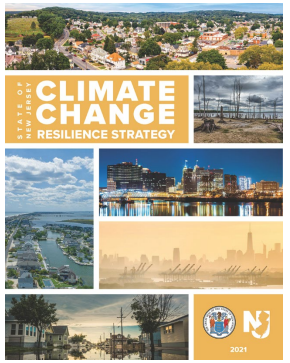


GWRA 80x50 Report



New Jersey Forest Action Plan

Climate Change Resilience Strategy



Carbon Sequestration Basics

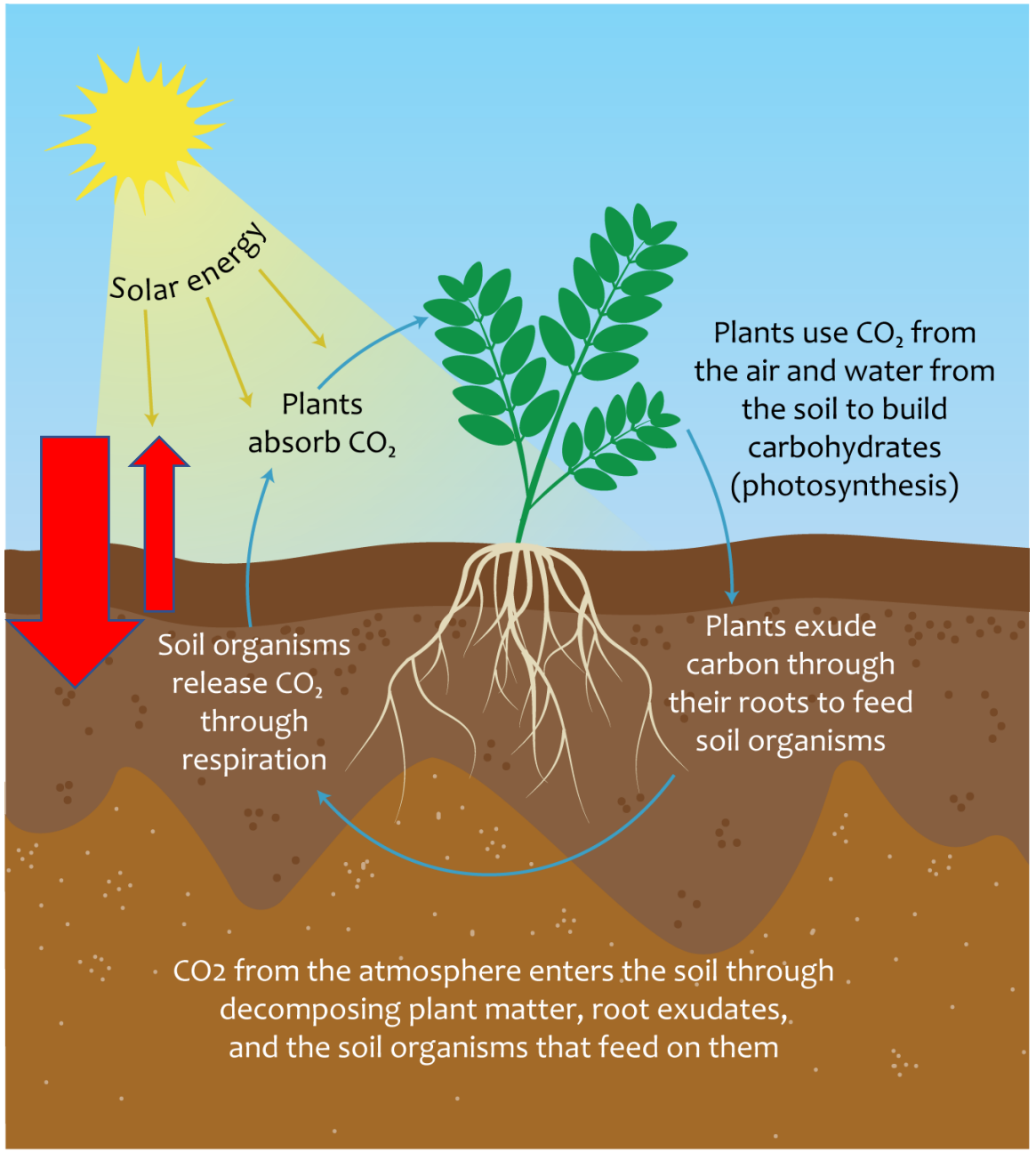


Image from https://sustainability.colostate.edu/humannature/jocelyn-lavallee/

Land Types in the NWLS

- Forests
- Agriculture
- Wetlands
- Developed Lands
- Aquatic Habitats

Milestones

NWLS Kickoff

Work on the strategy began in **May 2021**

Scoping Document

Scoping Document was released **December 2021**

Recommendation and Target Development

Stakeholdering

Four stakeholder meetings are set for the second half of **March 2023**

Final Strategy

Release final strategy in **third quarter of 2023**

How was the strategy developed?

- Reviewed other NWLS
- Honed the list for NJ
- Modeling and literature searches:
  - Carbon benefit
  - Cost
  - Scalability
- Recommendation selection
  - Who, what, where, when, why, how
  - Impediments
  - Environmental justice
  - Climate change
  - Other benefits to the ecosystem and people
- Targets
  - 2030 and 2050

Our questions for you:

1. What is missing from our draft list of targets?
2. Are there any targets that do not belong on these lists?
3. What are key obstacles to achieving these targets?
4. What financing mechanisms are available?

Developed Lands

- **34% of the land area in New Jersey is urban or developed**
- **Benefits of urban/developed land improvements include open space, recreational access, decreased temperatures, better air quality, enhanced stormwater management & improved water quality** – often placed on lands that are currently underutilized or distressed
  - *There are also social, economic, public health, justice/equity and quality of life benefits*
- **Regional & Global climate implications for improving urban/developed lands including:**
  - *Reduced carbon footprint from urban/brownfields redevelopment (25-33% reduction in residential VMT)*
  - *Land savings (up to 4.6 acres of undeveloped 'greenfield' acres saved for 1 acre brownfield reuse)*
  - *Stormwater runoff reduction 47-62% for brownfield reuse vs. conventional 'greenfield' development*
- **Urban forests in NJ have 178.7 million trees, which store ~27 million metric tons of carbon**
  - *Each year, urban forests sequester about 1 million metric tons of carbon*
- **Large inventory of urban vacant lands & brownfields available for improvements**
  - *Much of the land is along waterways & transportation corridors with existing infrastructure*

NOTE: Very little research has been conducted on carbon sequestration in developed/urban lands

What do urban/developed lands look (act) like?

Distressed communities are connected to distressed environmental conditions
Many urban/developed areas lack tree canopy, permeable soils, wildlife habitat, and open spaces
Urban land reclamation can improve environmental conditions & revitalize communities
Urban redevelopment is much better for climate/resiliency than traditional development

North Camden Neighborhood, Camden

What do urban/developed lands look (act) like?

Range from suburban developments to urban lands & brownfields

(brownfields = vacant or underutilized former industrial or commercial sites, presumed to be contaminated)

Developed/urban lands: higher % of impervious surfaces & compacted soils

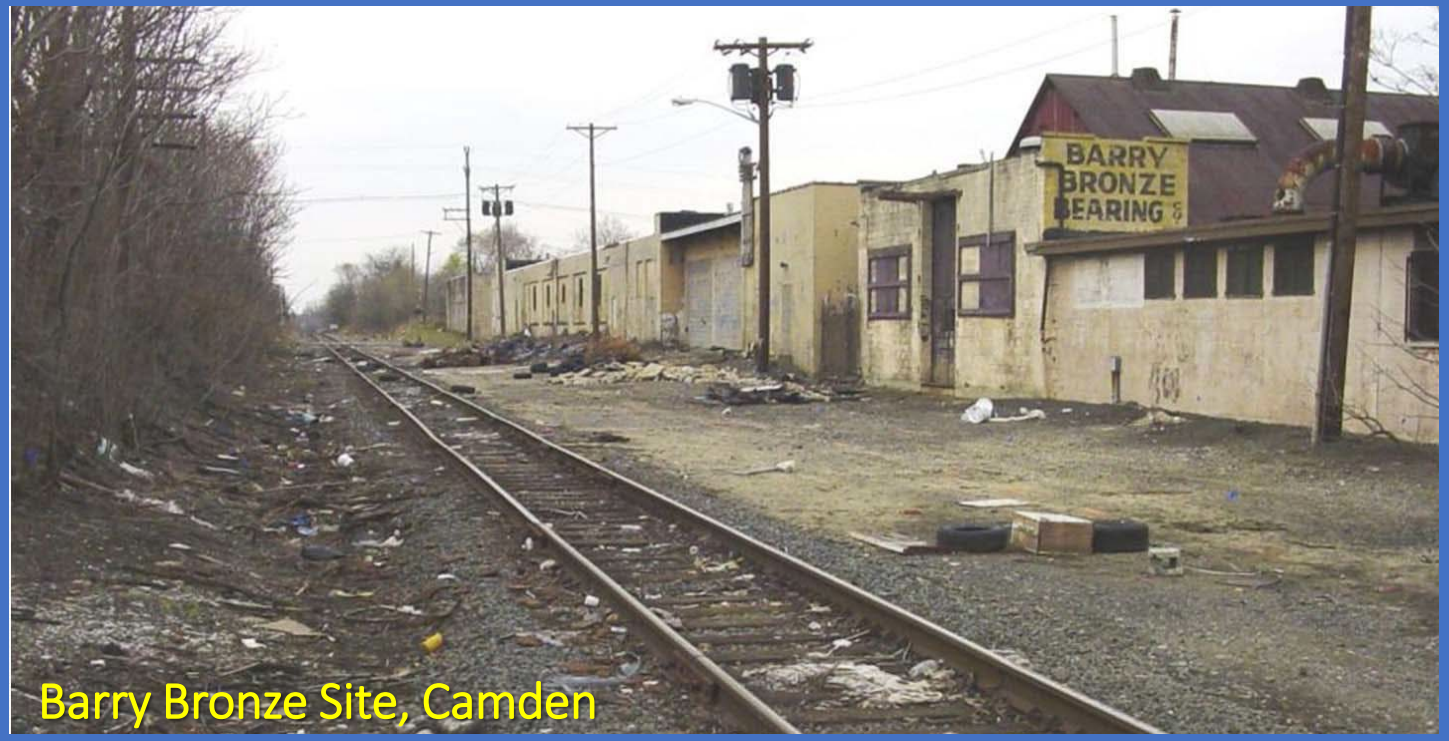
often have lower carbon content and less robust vegetative growth

Developed/urban lands: significant improvements in environmental quality possible

carbon sequestration in new/enhanced vegetation, improved soils and new open spaces

redevelopment has much lower carbon footprint than traditional 'greenfield' development

co-benefits: stormwater management, urban heat island mitigation, community revitalization, economic growth



Barry Bronze Site, Camden


#2048 South Broadway Gas Station, Camden

Conditions of urban/developed lands can be greatly improved

Unproductive lands can be transformed into productive lands

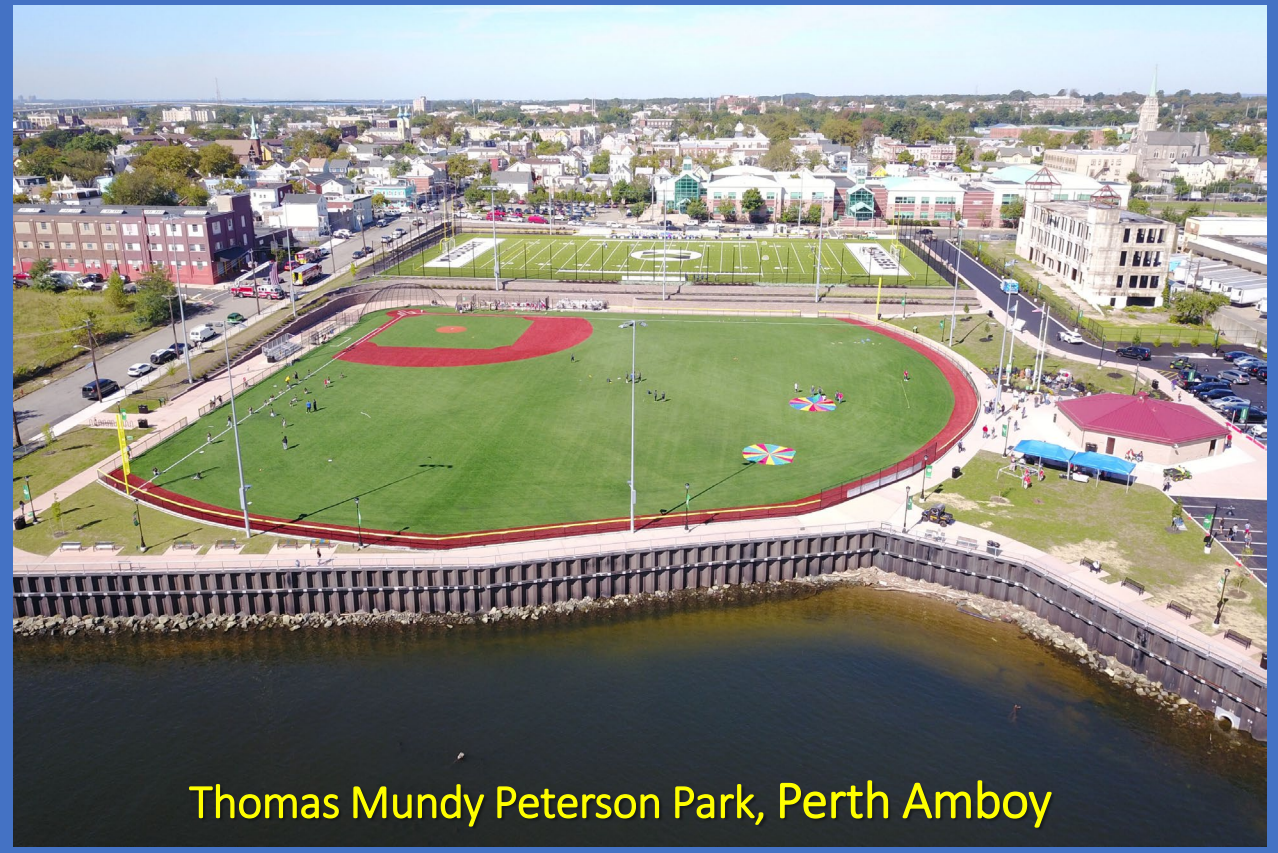
Impervious surfaces can be removed & soils improved

Carbon can be sequestered in various land improvements

Co-benefits to urban/developed land reclamation…

stormwater management, urban heat island mitigation, community revitalization, economic development

Former General Cable Site, Perth Amboy



Thomas Mundy Peterson Park, Perth Amboy

Recommendations for developed/urban lands

1. Green Infrastructure – Rain Gardens, Vegetative Swales
2. Streets Trees / Shade Trees
3. Tree Trenches / Tree Boxes
4. Brownfields: transformed to open space/parks & improved uses
5. Soil amendments / improvements – residential lots & brownfields
6. Conserve/enhance existing green spaces

Street Trees, Erie Street, Camden

Waterfront South Rain Gardens Park, Camden

Waterfront South Rain Gardens Park, Camden


04/2012

<u>Abandoned Gas Station remediated</u>…

Local Pocket Park

Stormwater Management (~800,000 gal/year)

Carbon Sequestration (66 tons in 10 years)

<u>Developed lands type</u>:

- Brownfields to Park
- Green Infrastructure/Rain Gardens
- Open Space Creation

04/12/2012


11/03/2022

Waterfront South Rain Gardens Park

Data Collection and Calculations

To **estimate** the amount of CO_2 Sequestered in each tree:

1. Determine the total (green) weight of the tree.
2. Determine the dry weight of the tree.
3. Determine the weight of carbon in the tree.
4. Determine the weight of carbon dioxide sequestered in the tree
5. Determine the weight of CO_2 sequestered in the tree per year

In order to perform these calculations, we needed to measure the DBH and height of each tree.

An estimated 63.06* tons of CO_2 have been sequestered by the stand-alone trees.

*Does not include the vegetation in the rain gardens themselves, grasses, scrubs and carbon in the topsoil.

NOTE: 1 ton CO_2 = 23,000 miles in the avg car (once around the world), 18 dairy cows in weight, 25 million plastic straws, 1 trip by plane from Paris to NY, or 121,643 smartphones charged.

Draft Targets for Developed Lands – Management Practices

Recommendation Type	Target	2030	2050
Planting*	Green Infrastructure: Install rain gardens & vegetated swales	250	2500
Afforestation*	Plant street trees/shade trees	250,000	1,000,000
	Install tree trenches/tree boxes	200	2500
Restoration**	Brownfields remediation into parks/open space	20	150
Enhancement*	Soil amendments / improvements	750 ac	5000 ac
Conservation*	Preserve & enhance existing green space (urban parks, forests, etc.)	X	X

***= may require remediation prior to carbon sequestration improvements**

****= investigation & (likely) remediation required prior to carbon sequestration improvements**

Draft Targets for Developed Lands – Policy Recommendations

Recommendation Type	Target	2030	2050
New Funding	Explore Stormwater Management Fee based on amount of impervious land to fund urban and suburban projects. RGGI Carbon Sequestration Grants for Developed/Urban Lands	X	-
Increase Existing Funding	Increase state & funding for developed lands remediation & restoration [e.g., EPA Brownfields grants; NJDEP Hazardous Discharge Site Remediation Fund (HDSRF) grants; Infrastructure Bank (funds water quality improvements & brownfield remediation)]	X	-
Research	Conduct research quantifying the carbon sequestration potential of developed lands	X	-
Research/ Prioritization	Further explore co-benefits of developed lands projects such as environmental, social, economic and public health improvements	X	-

Our questions for you:

1. What is missing from our draft list of targets?
2. Are there any targets that do not belong on these lists?
3. What are key obstacles to achieving these targets?
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What's next?

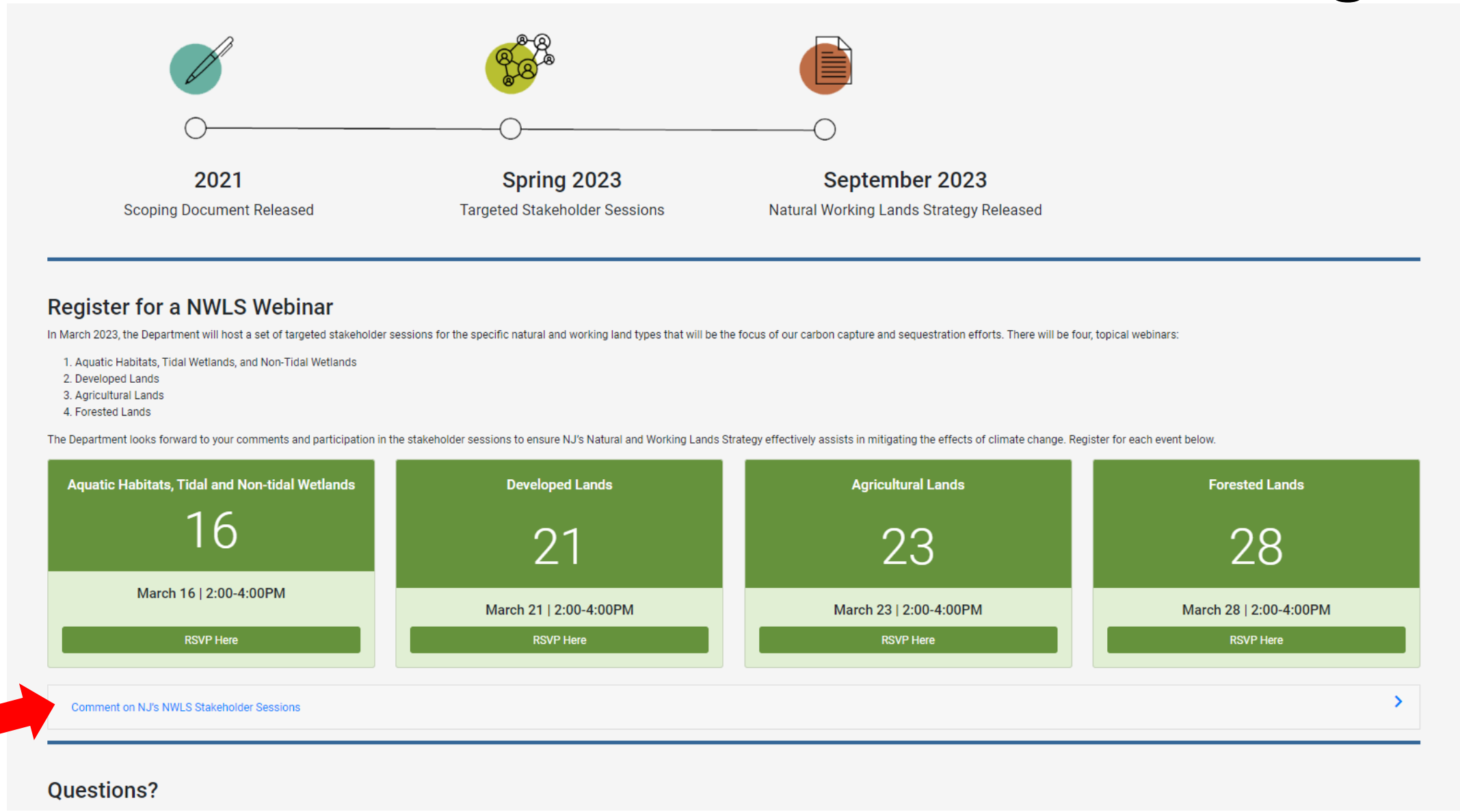
- ❑ Virtual stakeholder meetings from 2-4 pm
  - March 21 – developed land
  - March 23 – agriculture
  - March 28 – forests

- ❑ Comments on all draft targets are due April 14

- ❑ Final strategy to be released in 2023 Q3

https://www.nj.gov/dep/climatechange/mitigation/nwls.html

To submit comments after the meeting:



2021
Scoping Document Released

Spring 2023
Targeted Stakeholder Sessions

September 2023
Natural Working Lands Strategy Released

Register for a NWLS Webinar

In March 2023, the Department will host a set of targeted stakeholder sessions for the specific natural and working land types that will be the focus of our carbon capture and sequestration efforts. There will be four, topical webinars:

1. Aquatic Habitats, Tidal Wetlands, and Non-Tidal Wetlands
2. Developed Lands
3. Agricultural Lands
4. Forested Lands

The Department looks forward to your comments and participation in the stakeholder sessions to ensure NJ's Natural and Working Lands Strategy effectively assists in mitigating the effects of climate change. Register for each event below.

Aquatic Habitats, Tidal and Non-tidal Wetlands	Developed Lands	Agricultural Lands	Forested Lands
16	21	23	28
March 16 | 2:00-4:00PM	March 21 | 2:00-4:00PM	March 23 | 2:00-4:00PM	March 28 | 2:00-4:00PM
RSVP Here	RSVP Here	RSVP Here	RSVP Here

Comment on NJ's NWLS Stakeholder Sessions

Questions?

https://www.nj.gov/dep/climatechange/mitigation/nwls.html

Comment on NJ's NWLS Stakeholder Sessions

NWLS Stakeholder Sessions

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To submit a comment on NJ's NWLS, please complete the form below, select the comment topic you are commenting on (if multiple topics are addressed in your comments, please select "other"), and enter your comments in the space provided. Then click the Submit button to send them.

* indicates required field

First Name*

Last Name*

Email*

We'll never share your email with anyone else.

Affiliation (if any)

Comment Topic (please select one)*

Comments*

20000 characters left

Reset Submit

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