DELAWARE'S Climate Action Plan

Agriculture and Natural and Working Lands

September 26, 2024

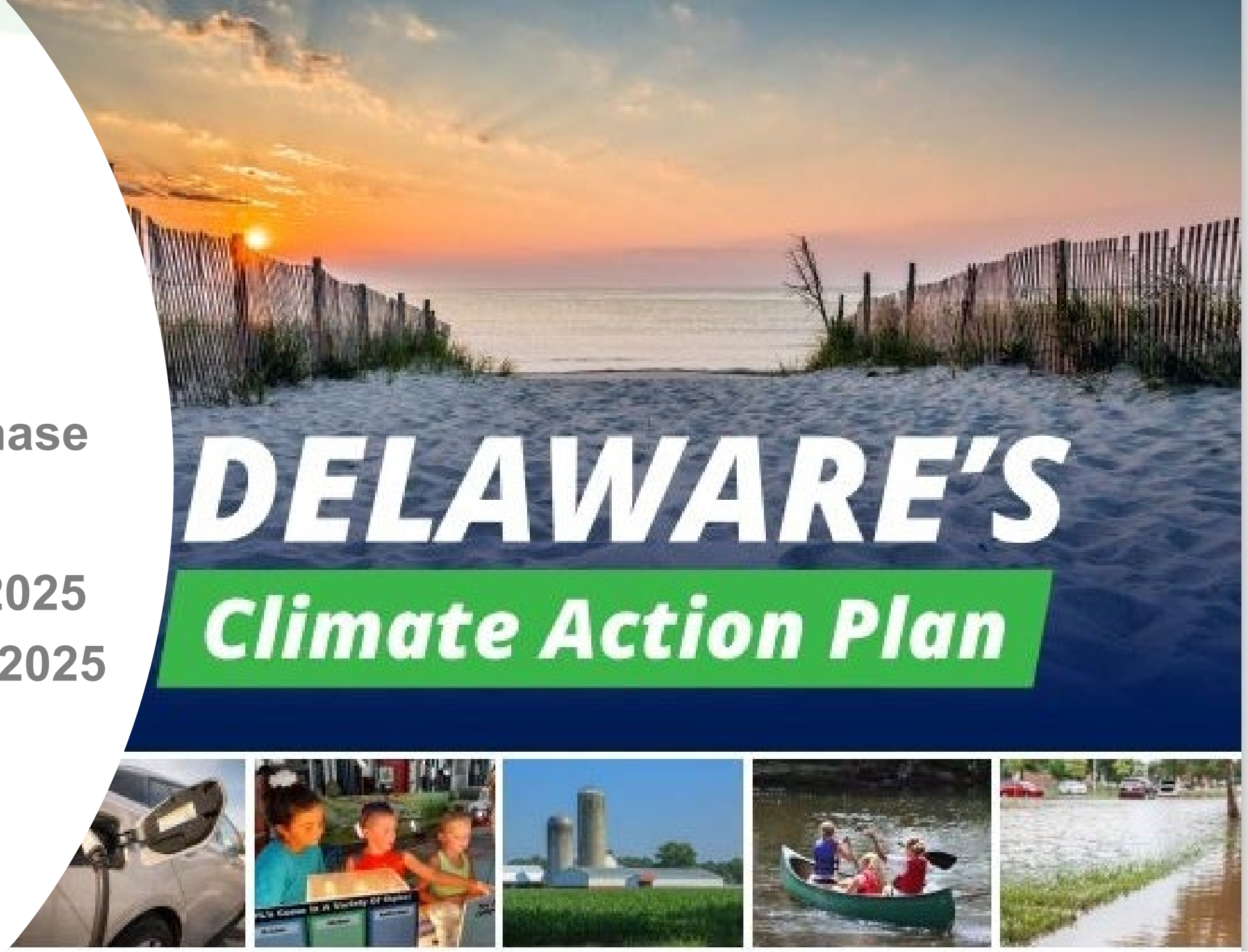
www.de.gov/climateplan

Sign up for CAP email updates: DEClimatePlan@delaware.gov

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Today's Workshop

- Part of initial phase of updating the state's Climate Action Plan in 2025
- Due November 2025



Outcomes from Today

- Feedback from you, our sector experts, which we can consider in developing strategies for the 2025 Climate Action Plan
  - Current challenges and barriers for your sector
  - Actions and opportunities for your sector
  - Data sources and needs
  - Workforce needs and opportunities
  - Community challenges

- Opportunity to learn from one another and network

Today's conversations are part of the initial information gathering for the 2025 Climate Action Plan.

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Today's Schedule

9:00 – 10:00	Welcome and Introductions Background information on climate change in Delaware
10:00 – 10:40	Facilitated Table Discussion #1 • Climate impacts on your sector and challenges • Actions and Barriers
10:40 – 10:55	Break
10:55 – 11:35	Facilitated Table Discussion #2 • Data needs • Workforce needs • Communities
11:35 – 12:00	Closing remarks and follow-up steps

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Ground Rules

- Participate actively
- Listen openly
- Be courteous to opinions that may differ from your own
- Minimize side-bar conversations
- Phones and devices on silent
  - Please step out of the room to take calls

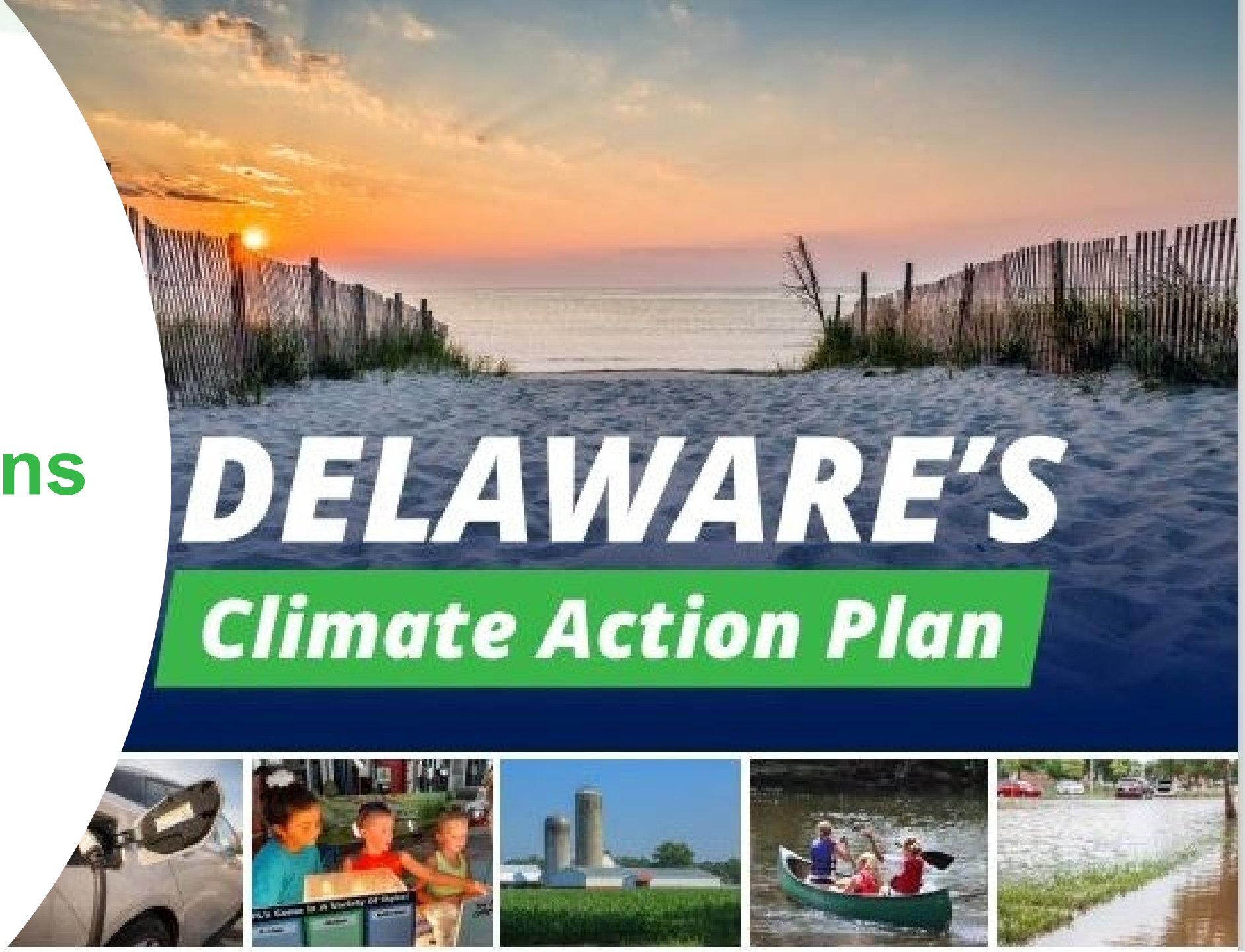
DELAWARE DEPARTMENT OF
NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL

Notetaking and Attribution

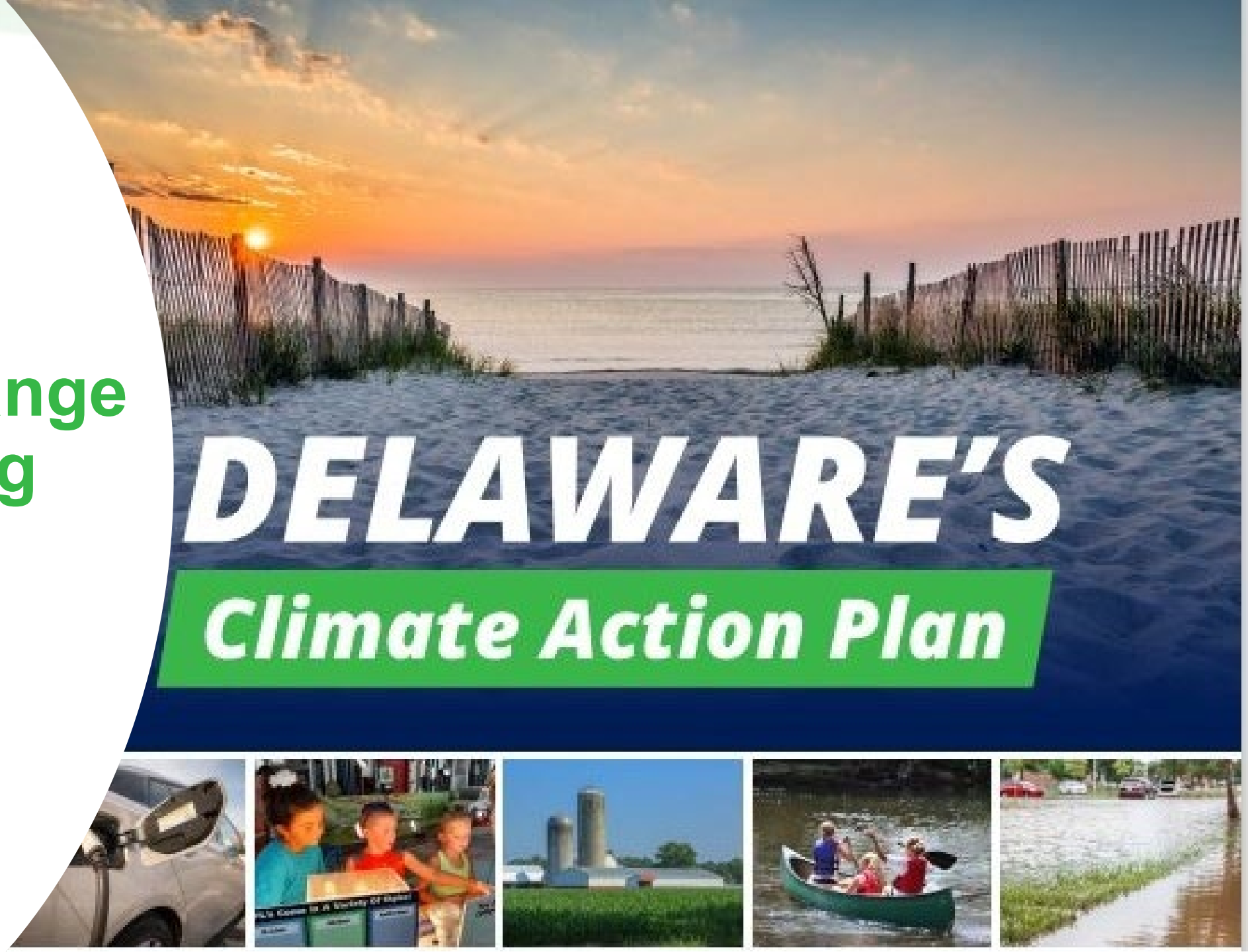
- Throughout today, DNREC staff and ICF Facilitators will take notes to capture conversations
- Notes will be compiled into a publicly accessible document
- We will not attribute specific comments to specific individuals
  - We may note specific individuals or organizations if follow up information or meetings are needed

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

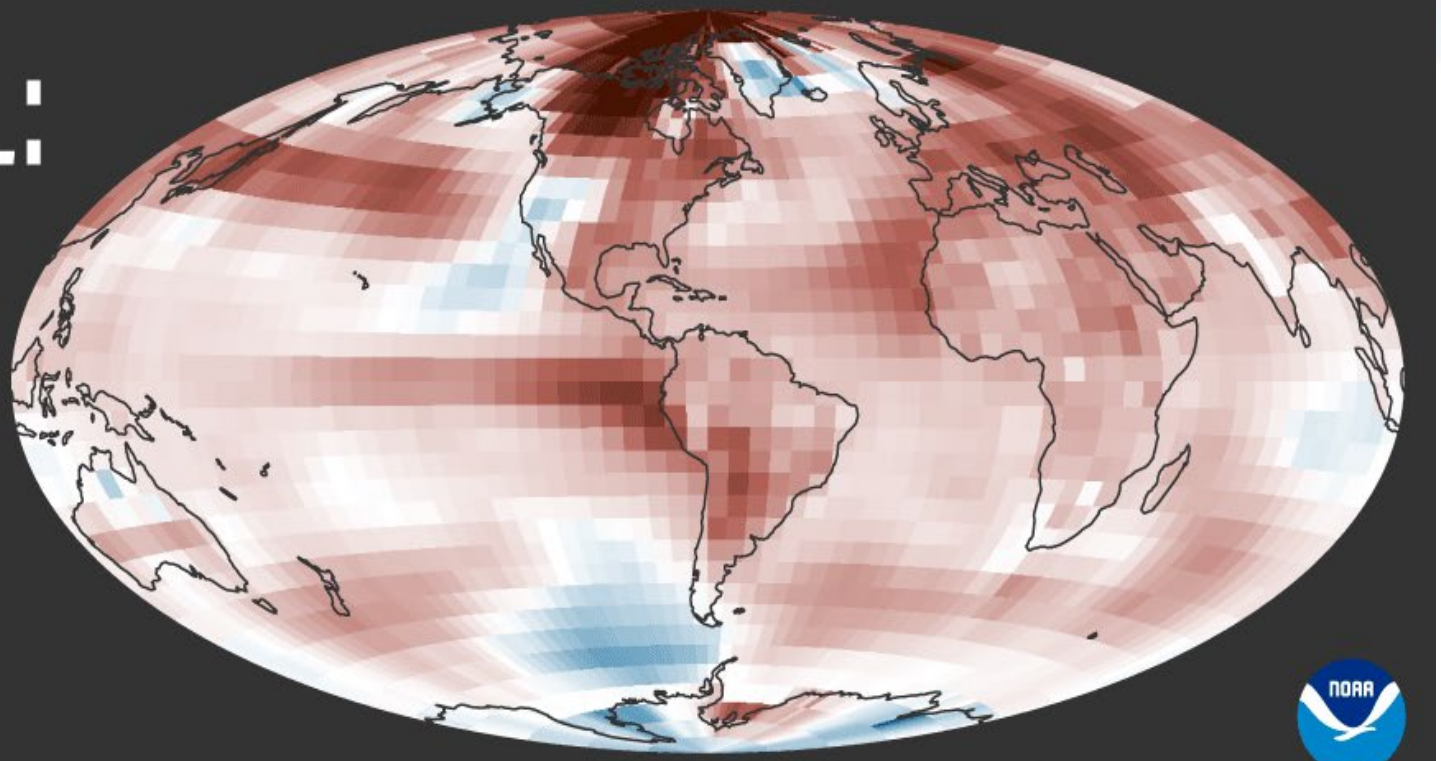
Introductions



Climate Change and Planning in Delaware

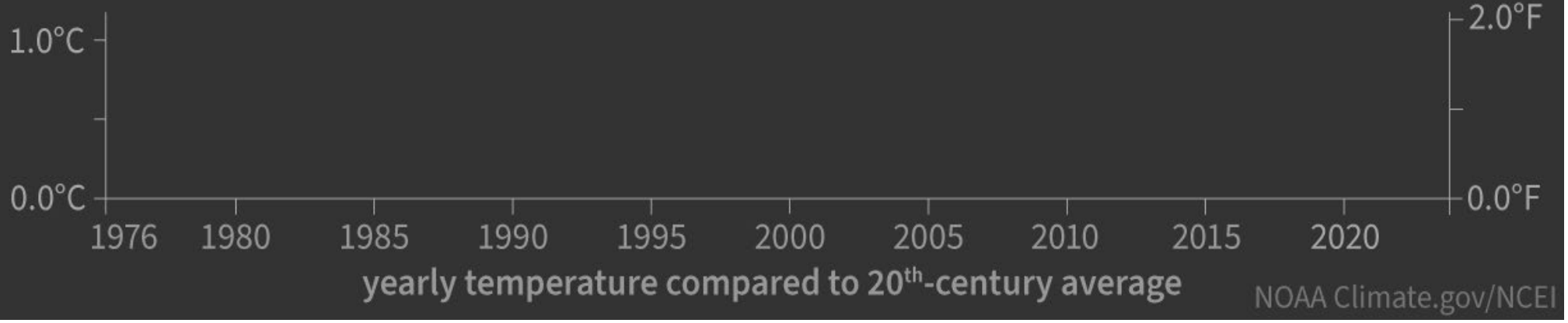


IT'S OFFICIAL:



Difference from 1991–2020 average (°F)

−5 0 5



DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL



Why is the climate changing?

Human activities have increased the amount of greenhouse gases in our atmosphere, warming our planet and causing climate change.

The leading sources of greenhouse gas emissions in Delaware are:

- **Transportation**
- **Industrial**
- **Electric Power**

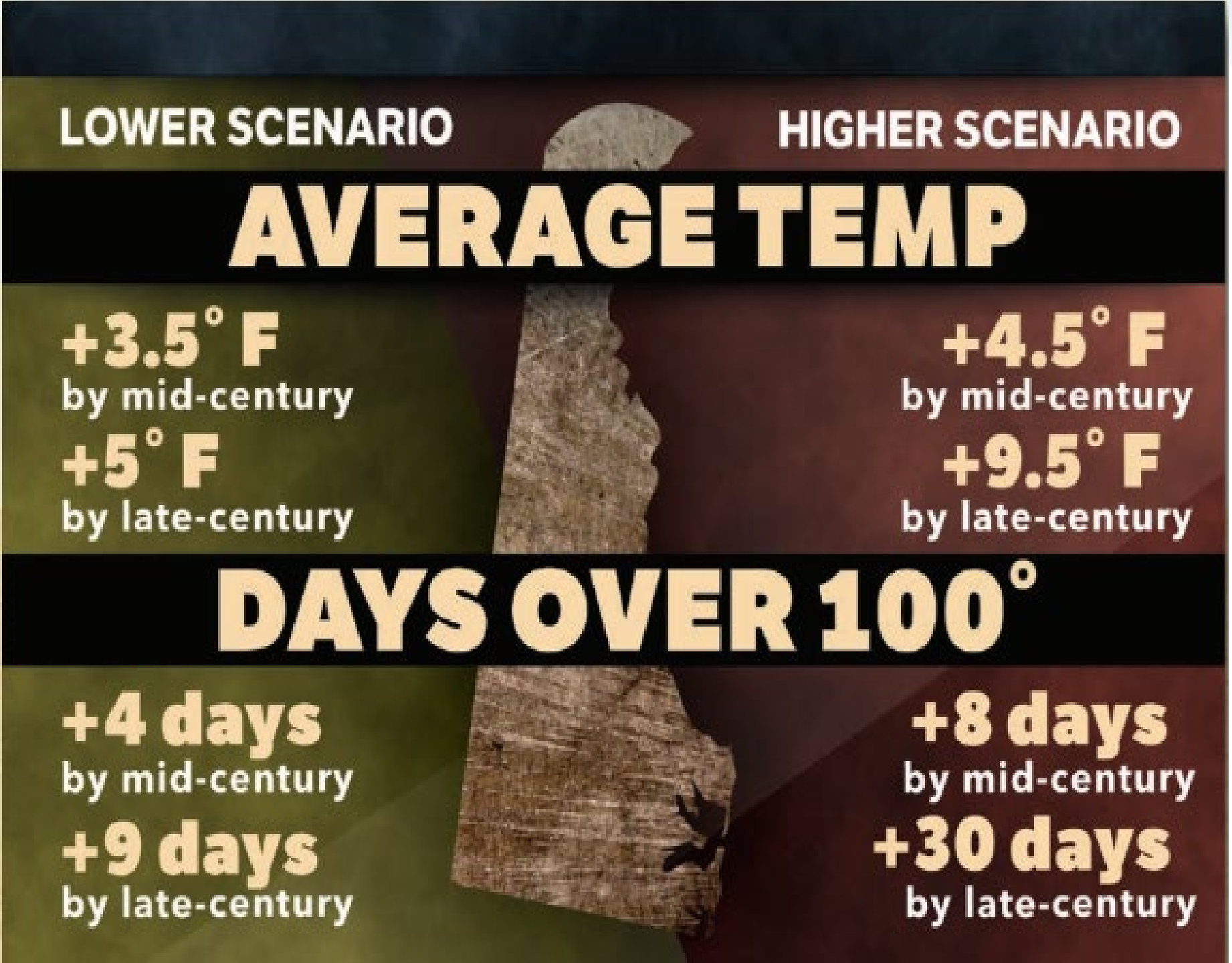
DELAWARE DEPARTMENT OF
NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL

Climate change is affecting Delaware today

Across the world, the impacts of climate change are already being felt. Here in our state, climate change primarily takes the form of:

- **Sea level rise,**
- **Increased temperatures**, and
- **More frequent intense storms**, including **heavy precipitation and flooding.**

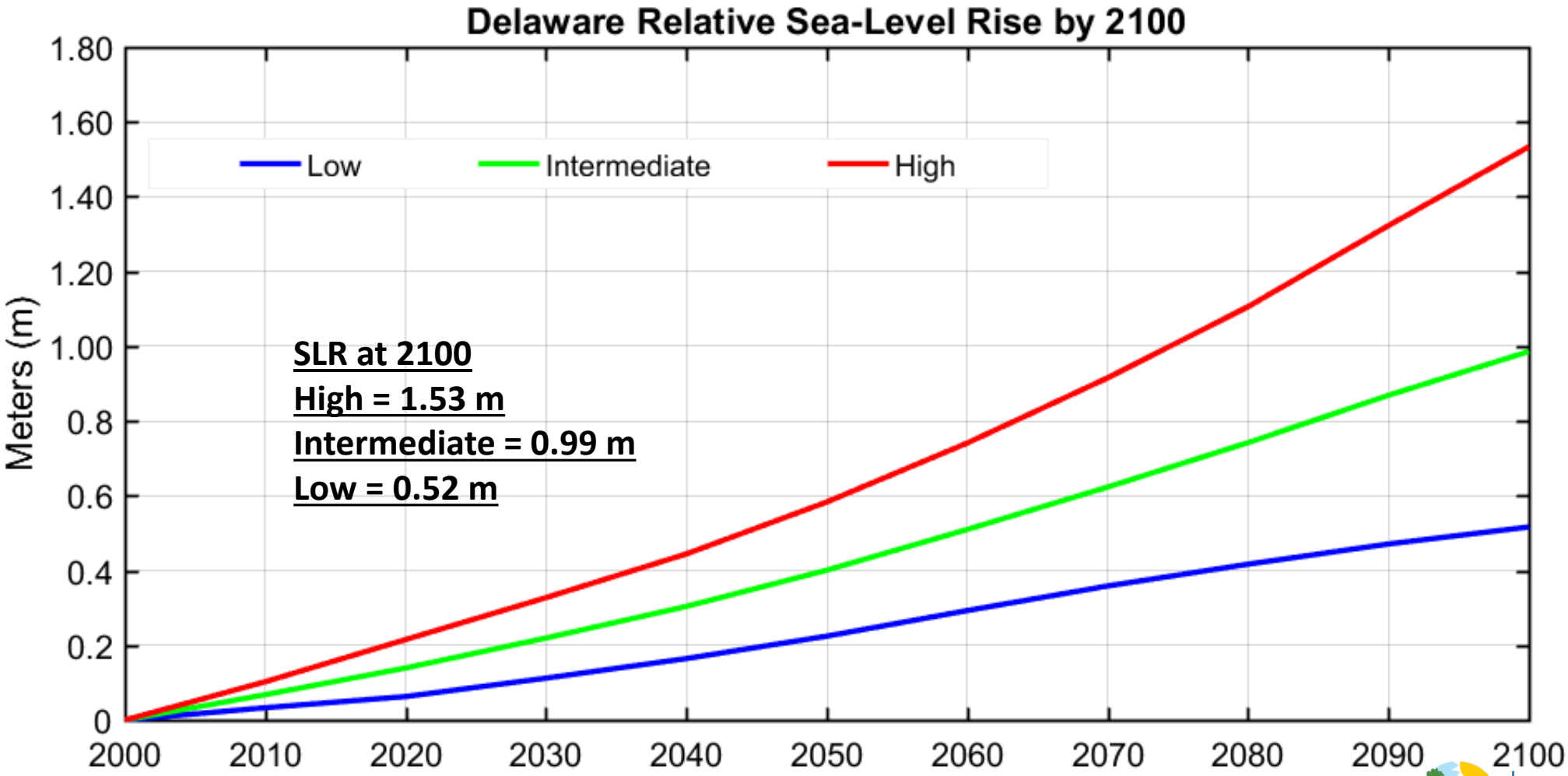
DELAWARE DEPARTMENT OF
NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL



Climate models show that Delaware will continue to warm under lower and higher future emissions scenarios

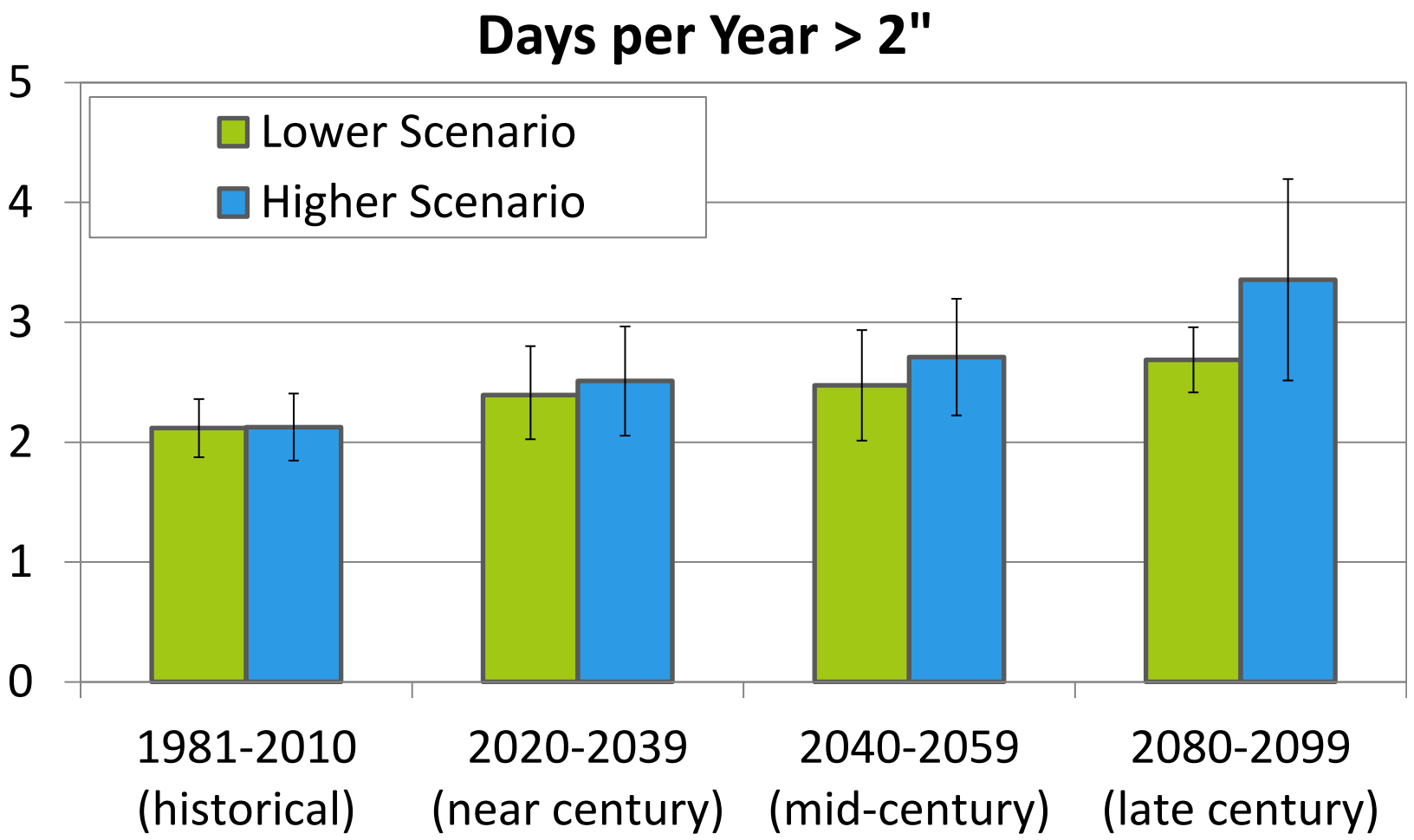
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Sea Levels will continue to rise

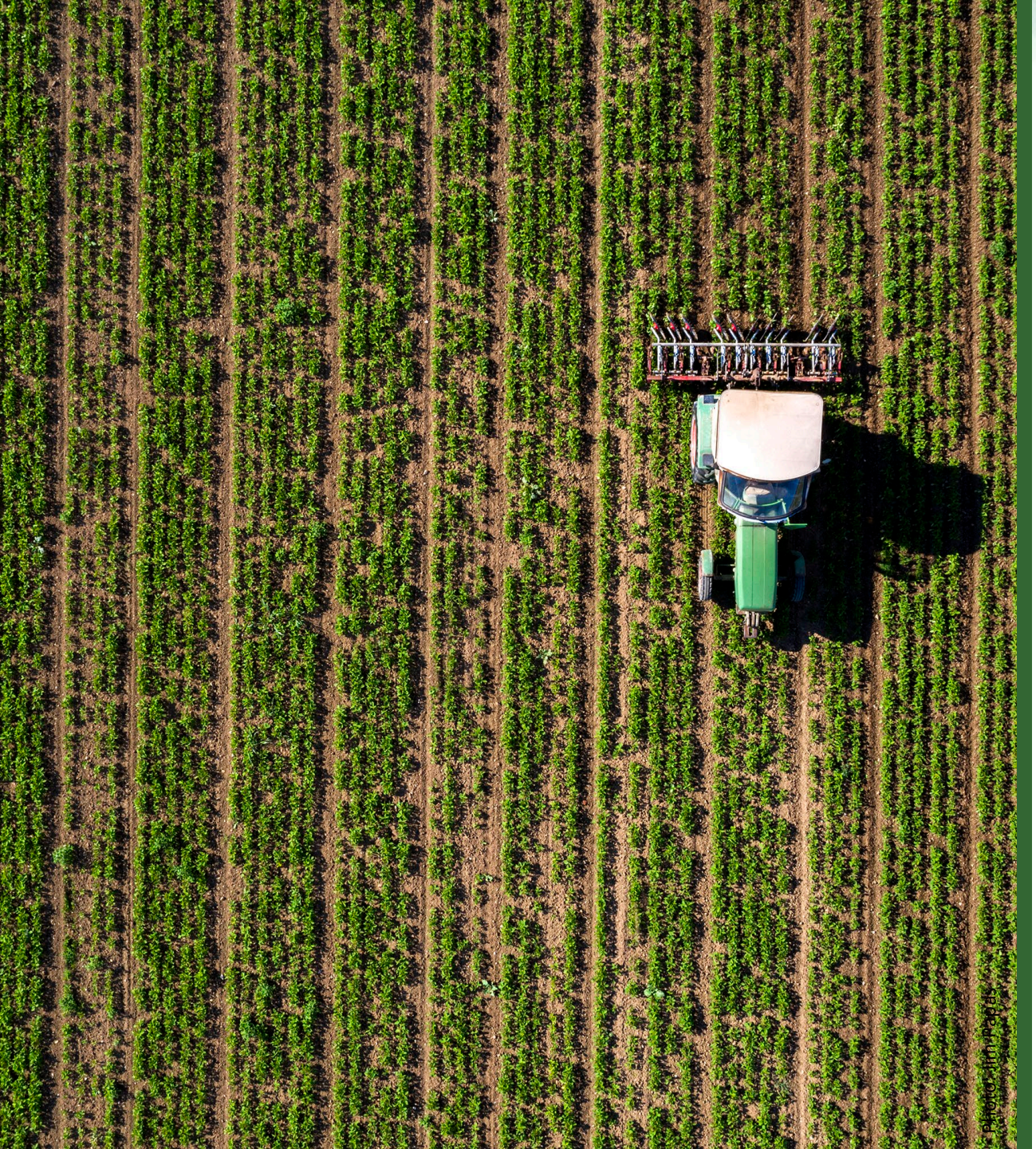


DELAWARE DEPARTMENT OF
NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL

Days with very heavy precipitation are expected to increase



DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL



These changes have direct impacts for Agricultural and Natural Lands

- Longer growing season; shorter warmer winters
- Damage to crops and forests from extreme storms and extreme heat
- Invasive pest species and invasive plants
- Permanent inundation of forests and cropland
- Saltwater intrusion into irrigation wells and soils
- Increasing wildfire threats

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

These changes also have indirect implications for agriculture and natural lands:

- Cost and availability of insurance
- Cost of irrigation and energy use
- Crop losses
- Supply chain shortages, local and global
- Demand for products
- Consumer preferences
- Emerging land use demands/conflicts

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Two primary ways to respond to climate change

Reduce Emissions (Mitigate)

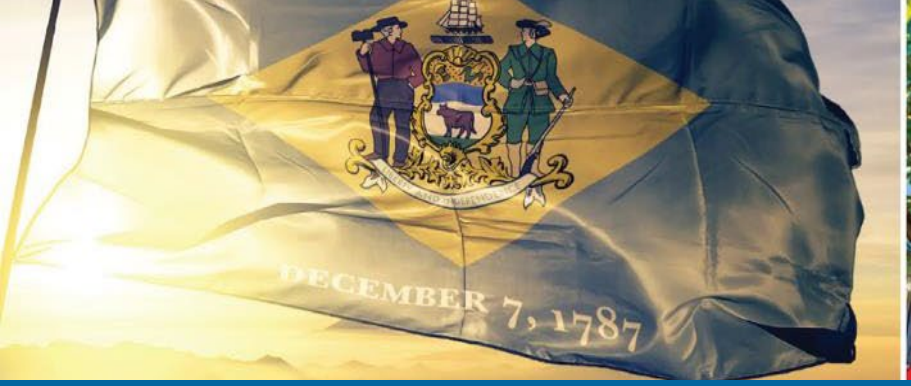
Increase Resiliency (Adapt)

DELAWARE DEPARTMENT OF
NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL

Taking action has benefits:

- Cleaner air and water, indoors and out
- Revitalization of aging infrastructure
- A more flexible, modernized grid
- Greater resilience to power outage events
- More efficient, weatherized homes and workplaces
- Economic Development
- Good paying jobs and workforce training

DELAWARE DEPARTMENT OF
NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL




Delaware's 2021 Climate Action Plan

Delaware's 2021 Climate Action Plan guides state efforts to **Minimize greenhouse gas emissions** and **Maximize resilience to climate change impacts.**

The Climate Action Plan was created to:

- Help Delaware meet its emissions reduction goals
- Integrate emissions reduction and climate change adaptation actions
- Set a course for state climate action in the decades ahead

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

2021 Climate Action Plan Strategies for Reducing Emissions

- Clean and Renewable Energy
- Energy Efficiency
- Transportation
- High Global Warming Potential Greenhouse Gases
- Offsetting Carbon Emissions with Natural and Working Lands

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

2021 Climate Action Plan Strategies for Maximizing Resilience:

- Updated or New State Regulations
- Management Plans
- Facility and Infrastructure Design and Management
- Agency Support
- Research and Monitoring
- Support for Communities and Stakeholders
- Outreach and Education

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Sample Strategies from 2021 CAP

Strategy	Action
Support BMPs on agricultural lands that provide greenhouse gas emissions co-benefits	Increase statewide implementation of winter cover crops with a goal of reaching 224,000 acres annually by 2025 through cost share programs and partnership with conservation districts
Improve methods for measuring and tracking carbon sequestration	Use new coastal wetlands carbon mapping in current research and management planning efforts; assess opportunities to use new forest carbon accounting from UMD.
Support Conservation and Restoration of forest lands	Permanently protect 2,500 acres of forested areas by 2028 and 1,000 acres of headwater forests by 2025 through conservation easements or fee simple acquisitions

Delaware's Climate Change Solutions Act of 2023

- Provisions include:
  - Establishing greenhouse gas emissions reduction targets
    - 50% reduction by 2030
    - Net zero by 2050
  - Updating the Climate Action Plan every 5 years to keep us on track
  - These targets are **ambitious**, but **achievable**

Photo by Delaware DNREC/Errol Ebanks – dnrec.delaware.gov

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

2025 Climate Action Plan will include:

- Robust engagement with stakeholders
- Discussion of changing climate risks
- Assessments of existing strategies for emissions reductions and resiliency
  - including emissions inventories and models
- Additional emissions and resiliency strategies to be considered for implementation
- Recommendations for legislative, regulatory, and policy changes

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Delaware Reduced Emissions by 30% between 2005 and 2020:

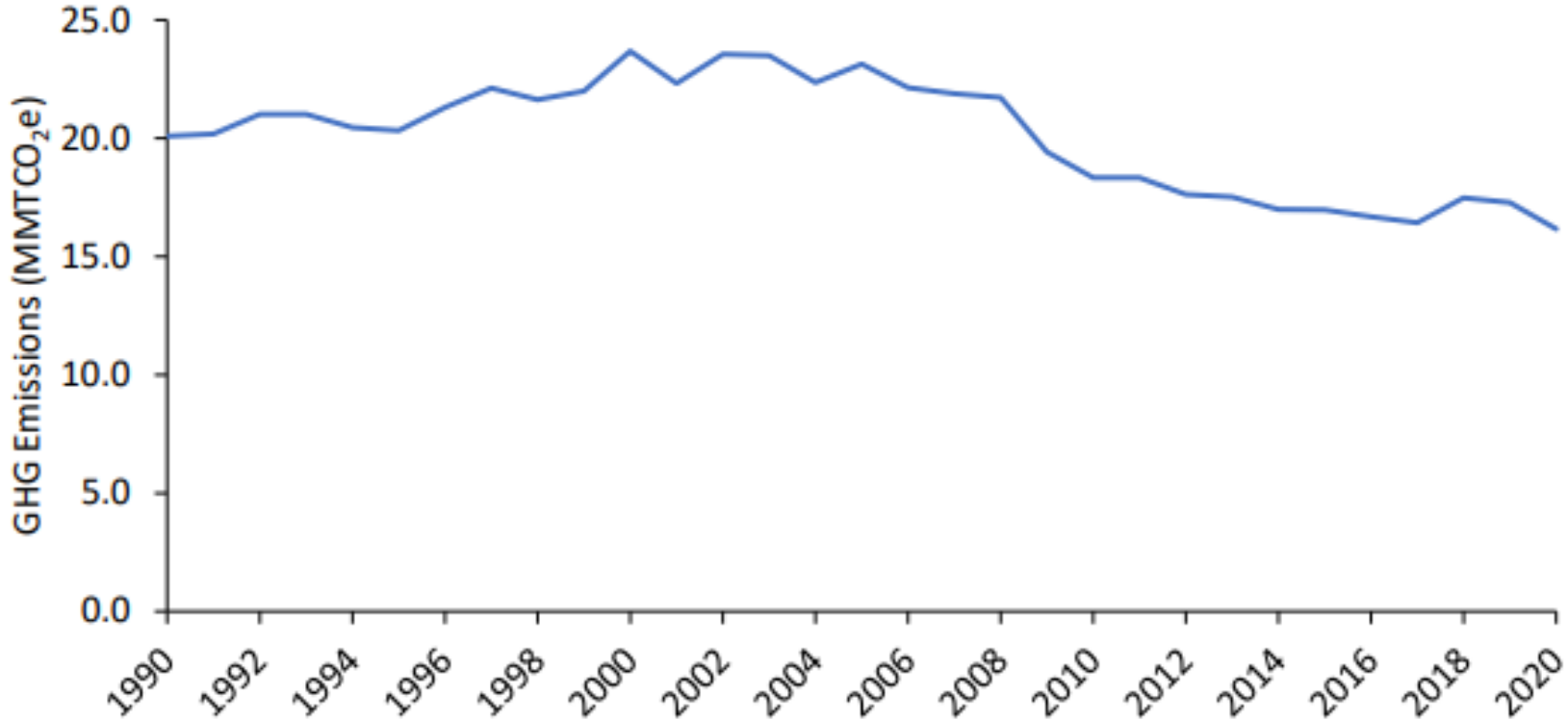
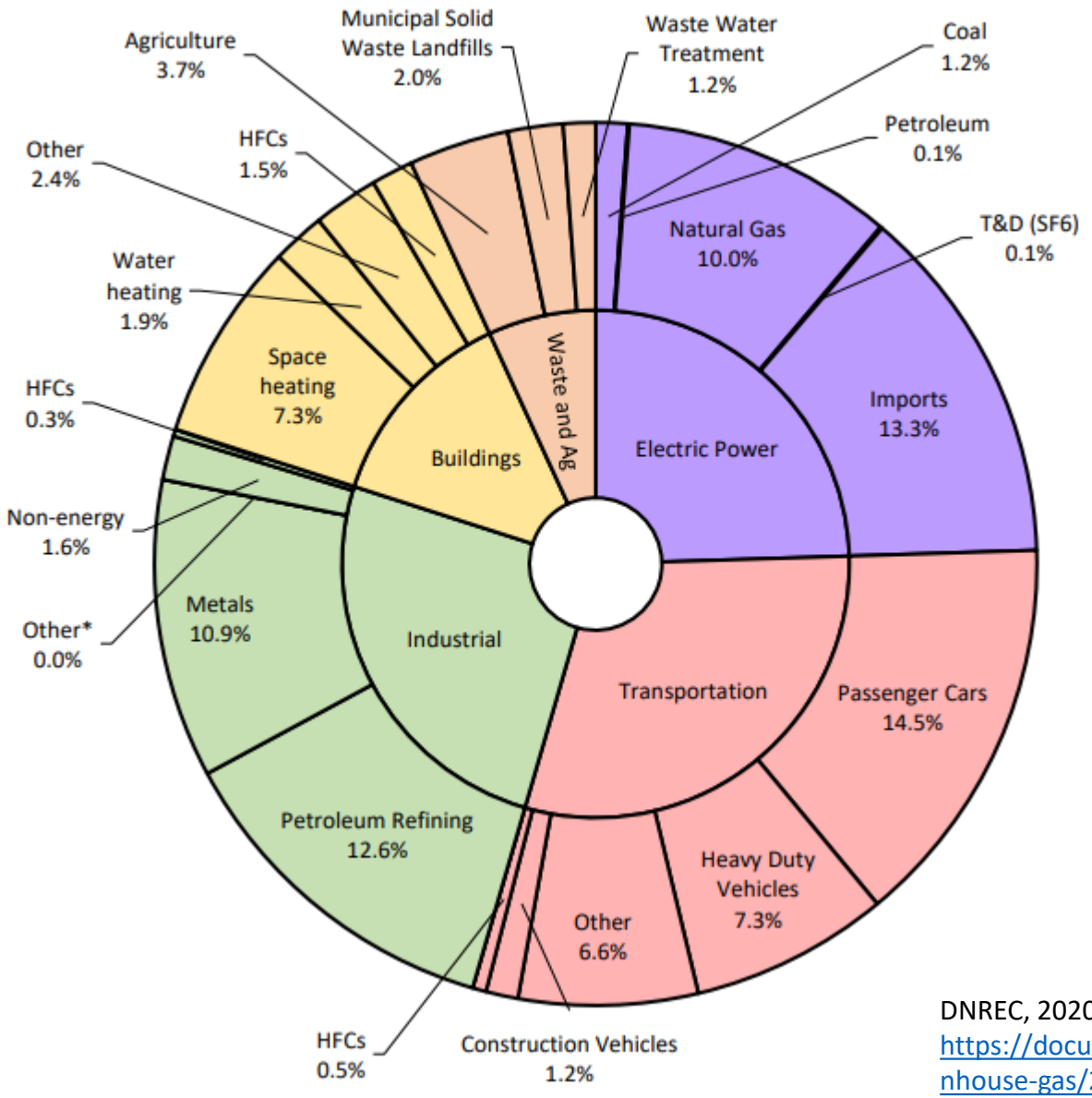


Figure 2. Gross GHG emissions from 1990 to 2020

DNREC, 2020 Greenhouse Gas Inventory -- https://documents.dnrec.delaware.gov/Air/greenhouse-gas/2020-DE-GHG-Inventory.pdf

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Emissions by Sector in 2020

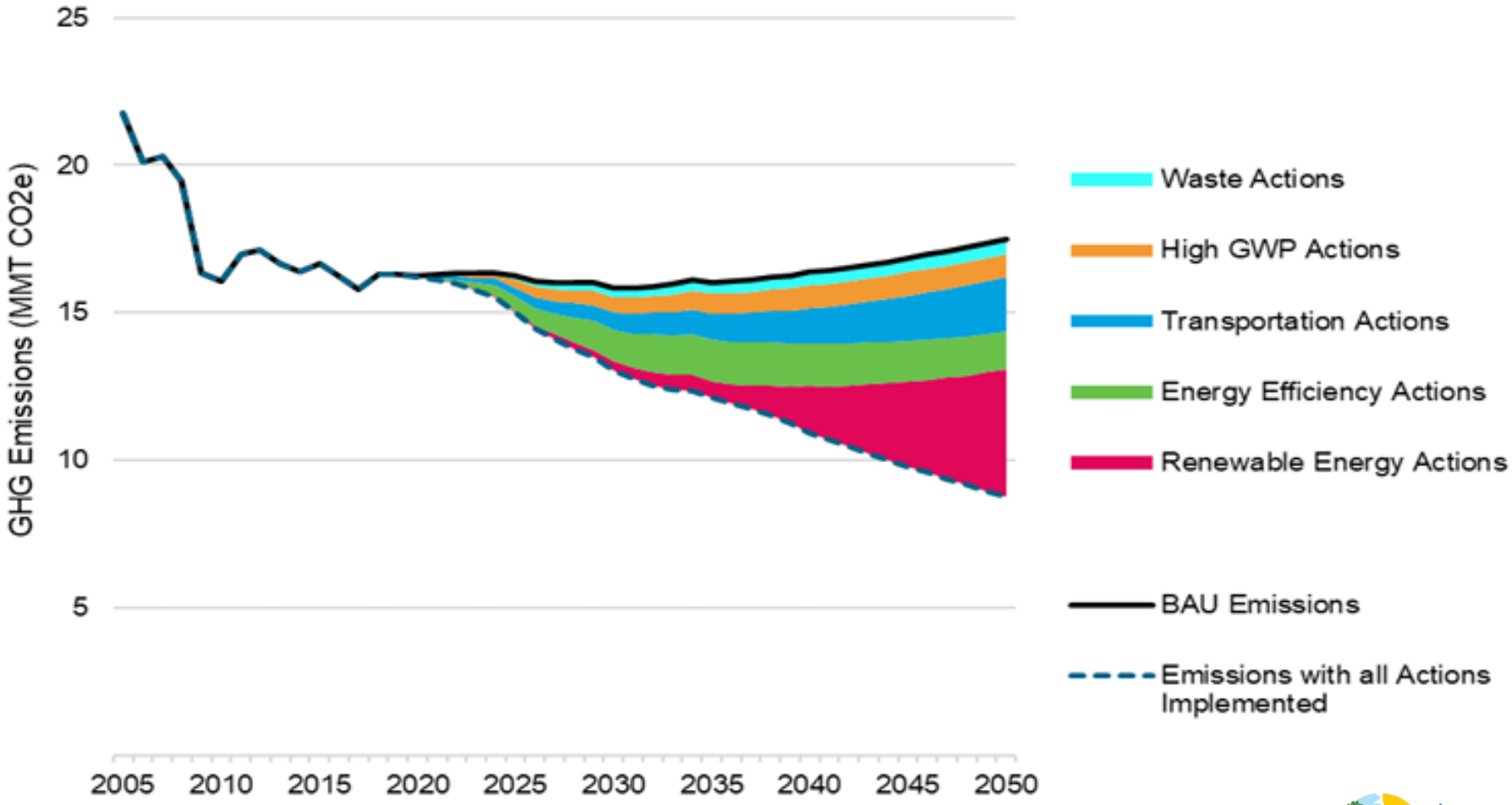


DNREC, 2020 Greenhouse Gas Inventory -- https://documents.dnrec.delaware.gov/Air/greenhouse-gas/2020-DE-GHG-Inventory.pdf

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Greenhouse Gas Emissions Modeling for 2021 Climate Action Plan

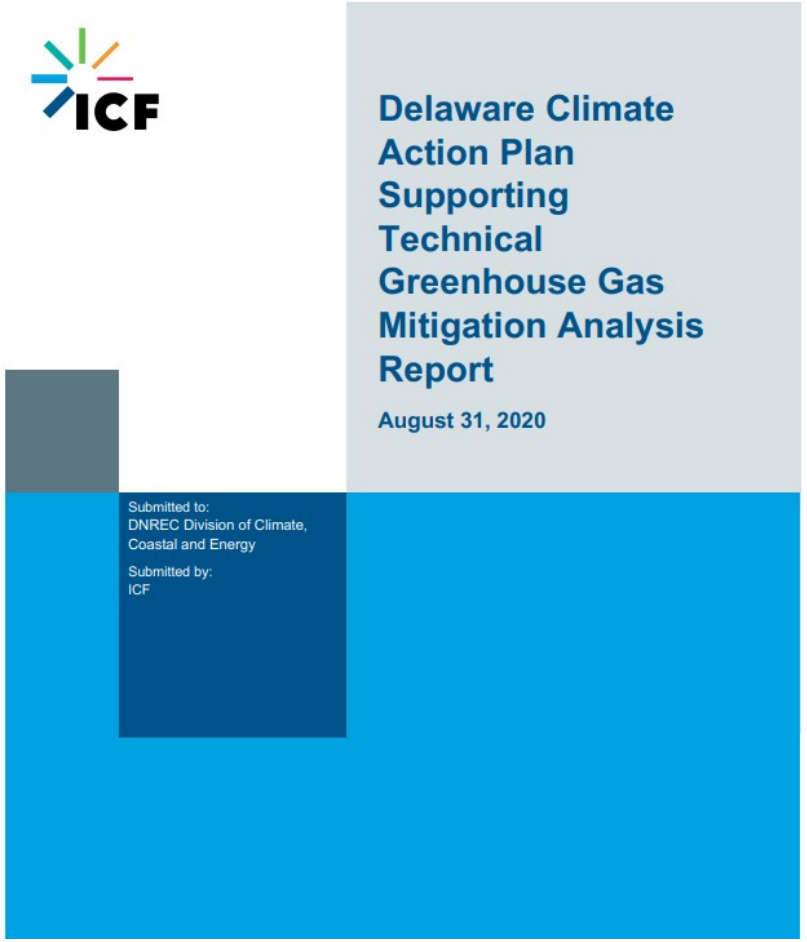
Figure 4. Net GHG Emissions Mitigation ($MMTCO_2e$) by Mitigation Action Category



DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Modeling Greenhouse Gas Emissions for 2025 Climate Action Plan

- For 2025, we will build off the work done for 2021, with key updates
- **New emissions reductions targets are more ambitious**
- **New technology and funding gives us more opportunities**
- Results of modeling will be shared this spring at a variety of engagement meetings
- Modeling results help inform selections of emission reduction actions for inclusion in the 2025 plan, but other considerations will be factored in.



DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Developing the 2025 Climate Action Plan

Phase 1

Initial information gathering

Fall/Winter 2024

- Sector-based meetings
- Public workshops
  - Oct 22 – Kent
  - Oct 29 – Sussex
  - Oct 30 – New Castle
- Community meetings

Phase 2

Modeling Emissions and Compiling Initial Feedback into Potential Strategies

Winter 2024

- Model potential emissions reductions
- Compile initial information received
- Develop lists of potential strategies

Phase 3

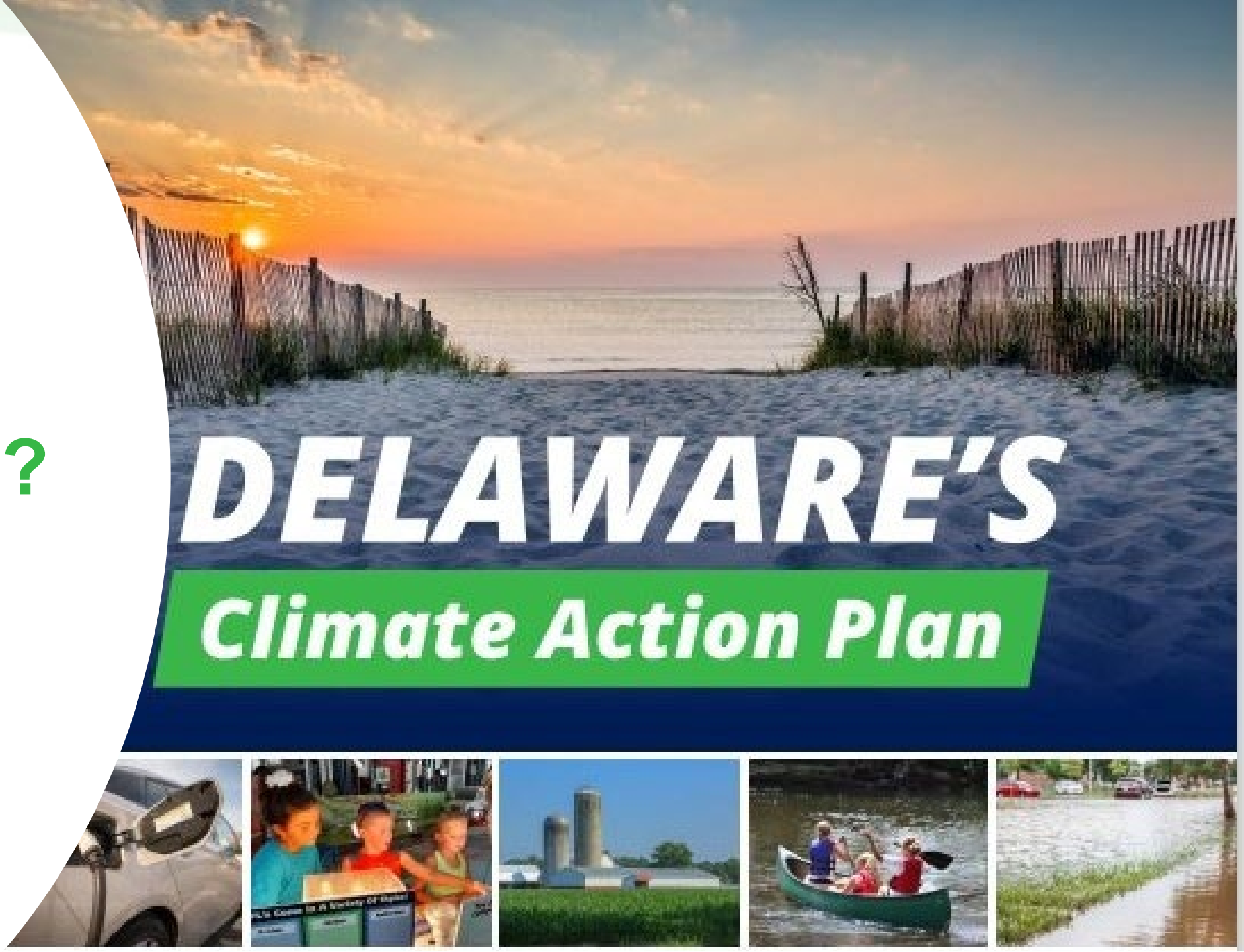
Stakeholder Feedback on emissions modeling results and potential strategies

Spring/Summer 2024

- Additional sector-based meetings
- Public Workshops
- Community Meetings

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Questions?



Today's Workshop Discussions

- YOU know what is happening on the ground in your sector!
- Your feedback on key topics will help us shape the 2025 Climate Action Plan:
  - What climate impacts are you already seeing?
  - What is happening now with resiliency and emissions reductions?
    - What might be feasible in the next 5, 10, or 25 years?
  - What are your challenges and where are you experiencing barriers?
  - What are the workforce and data needs in your sector that will help Delaware move forward?
  - Do you have the data you need? If not, what would help improve it?
  - What are your workforce challenges and needs?
  - What about the communities that you serve and/or work with?

Breakout #1:
Progress and Opportunities Since 2021

- Approximately 40 minutes for discussion
- Move to the breakout table that corresponds with the color dot on your nametag
- You facilitation team will provide additional context and lead the discussion
- A 15-minute break will follow this breakout session

Breakout #2: Special Topics

- Approximately 40 minutes for Discussion
- Your Choice!

  - **Research, Monitoring and Data needs**
    - What information do you need to prepare for future conditions? What research is happening now? What data exists to track the benefits of natural and working lands?
  - **Emerging Markets and Workforce:**
    - What are the emerging market opportunities? What do we need to do to position Delaware to take advantage of them. What workforce is needed
  - **Future Trends**:
    - What factors do you see changing or evolving in the next 10 years? 30 years?
    - technology development, change in land use, climate impacts on agricultural production)?

Bonus Graph

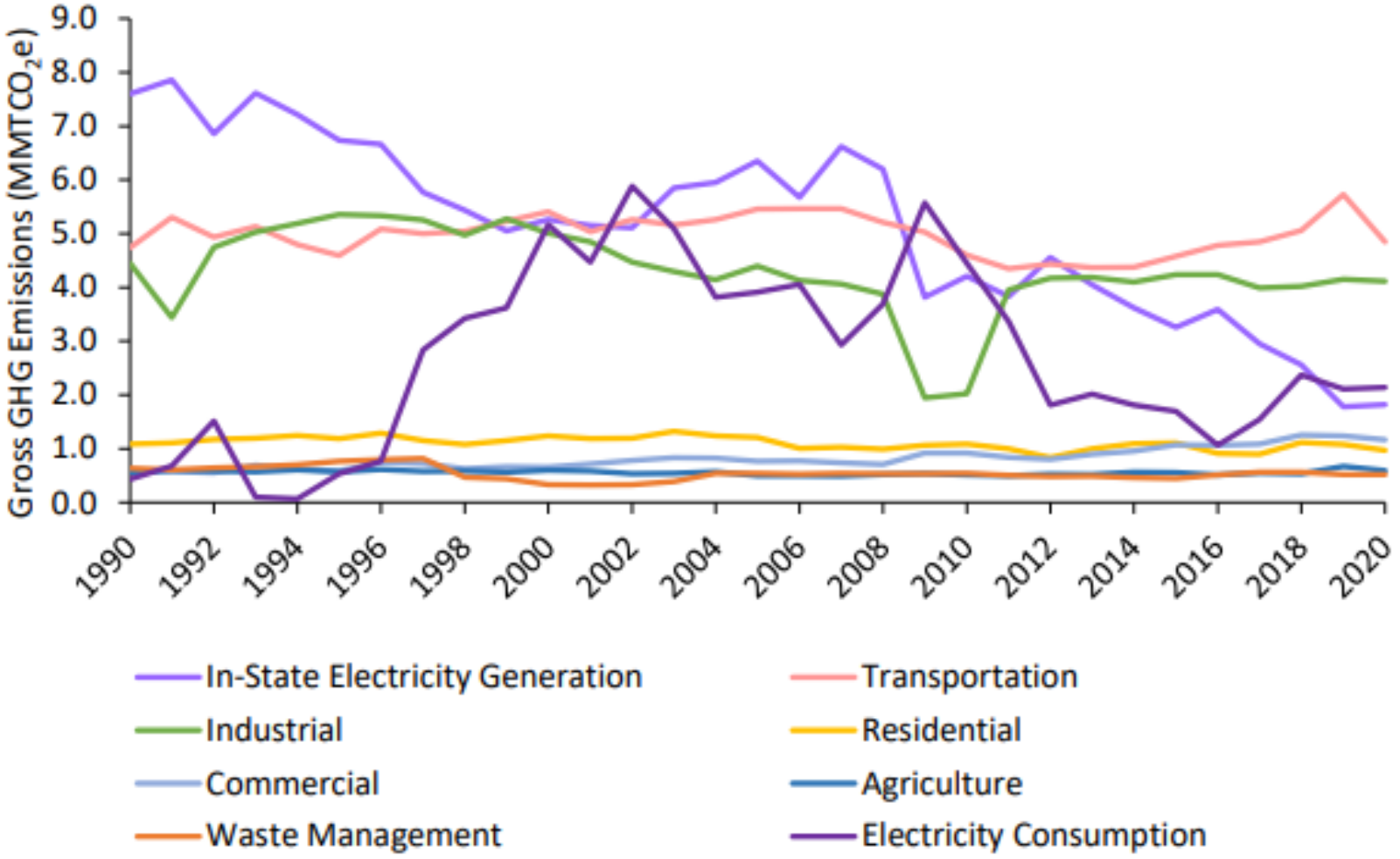


Figure 3. Gross GHG emission trends by economic sector from 1990 to 2020