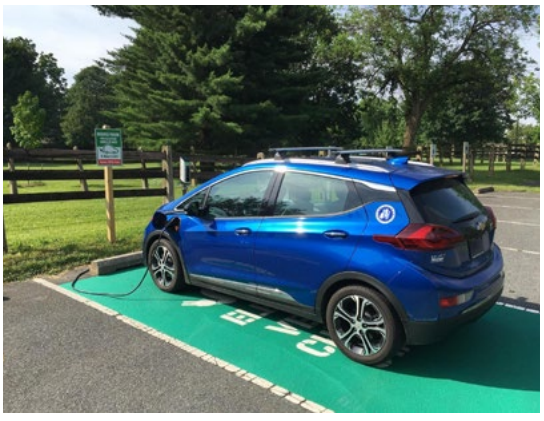
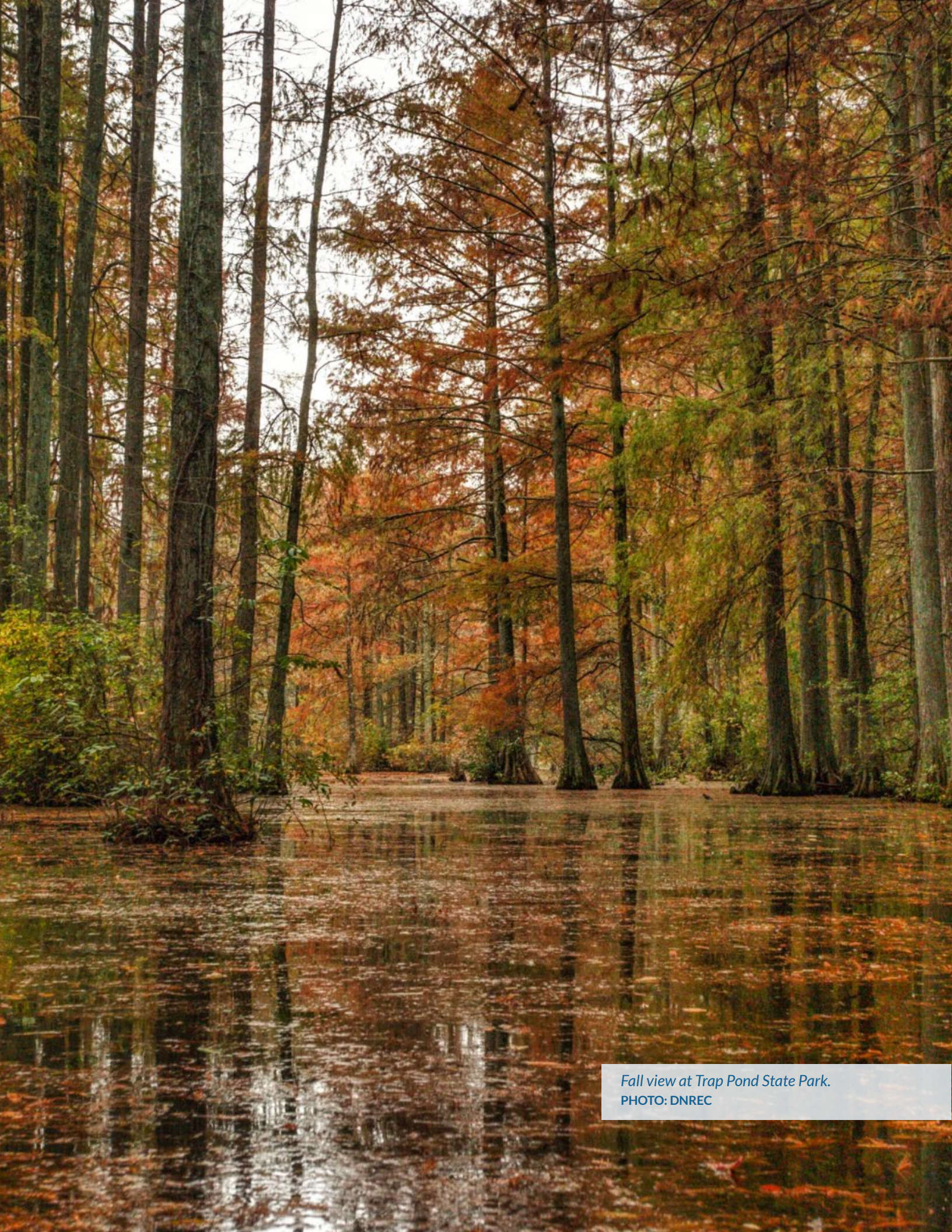
Executive Summary

DECEMBER 2025

Delaware Climate Action Plan

A STATEWIDE PLAYBOOK FOR ADDRESSING CLIMATE CHANGE IN THE FIRST STATE





Fall view at Trap Pond State Park.
PHOTO: DNREC

Executive Summary

Climate change is no longer a distant challenge in Delaware — it is a daily reality. Record-breaking heat waves, rising seas, stronger storms and persistent flooding show that climate change impacts in the First State are clear, immediate, and growing. These impacts threaten homes, infrastructure, public health, the economy and the natural environments that make Delaware unique.

The science is clear: Human activity is changing the climate.[1] As humans burn fossil fuels to power homes, businesses, cars, and industry, greenhouse gas emissions are trapped in the atmosphere. An increasing concentration of greenhouse gases in the atmosphere is driving climate change and its worsening impacts.

Bold action is needed at every level — from international cooperation on emissions to neighborhood resilience planning. With federal support for climate change action waning, strong state leadership is more important than ever. States have a unique and important role to play in meeting this moment and taking action to reduce the consequences of climate change. Delaware is well-positioned to lead and is committed to making progress for our quality of life and for the security of future generations.

A shared moment by the Delaware shore.
PHOTO: JACK SHIH

Delaware's Risks and Vulnerabilities

Delaware faces a distinct set of climate change risks. The state's most pressing climate change hazards include rising temperatures, shifting precipitation patterns, and accelerating sea level rise.

Sea levels have already increased by about 15 inches since the early 1900s and are projected to rise an additional 1.2 feet to 1.5 feet by 2050. This increase in average tide levels is evident through the number of flooding days along the Delaware coast. In the 1950s, there were less than 10 days per year when flood levels exceeded the minor flood threshold. Today, that number exceeds 50 days annually — a trend that is projected to accelerate in the coming decades.[2]

The amount and intensity of precipitation is also changing. Delaware's total annual precipitation has increased by about 3 inches since 1895. Annual precipitation is projected to increase by 2 inches to 4 inches by 2050. Climate change is also driving an increase in extreme precipitation. This is especially apparent in the U.S. Northeast region, where heavy precipitation has increased by approximately 60% in recent decades.

Rising temperatures are further evidence of climate change in Delaware. The state's average annual temperature is now 3 degrees Fahrenheit (F) higher than in 1895. Mean annual temperature is projected to increase by an additional 2 degrees F to 4 degrees F by 2050. The annual average temperature increase means more than just hot summer days; nighttime temperatures will increase and there will be fewer days below freezing.

Climate change introduces emerging threats that are expected to grow in significance. These emerging threats include increased wildfire risk, prolonged drought, ocean and coastal acidification, more frequent extreme weather, invasive species, and expanding vector-borne diseases. The cost to Delaware, if these risks are not abated by rapid emissions reductions globally, was calculated to exceed $1 billion annually by late century. These costs include rising expenses associated with heat-related mortality, disease, decreased water quality and high-tide flooding among others.[3]

Delaware's Climate Action Plan

Delaware must simultaneously adapt to climate impacts that are already occurring while also reducing emissions to prevent those impacts from becoming unmanageable. Delaware's Climate Action Plan is the State's playbook for climate action, highlighting the critical link between climate change resilience and greenhouse gas emissions. The 2025 Climate Action Plan is a comprehensive update to the 2021 plan and is guided by the requirements of the Delaware Climate Change Solutions Act of 2023.

The centerpiece of the plan is a series of goals, strategies and actions for reducing greenhouse gas emissions and increasing resilience to climate impacts. The strategies and actions chosen for inclusion in this plan focus on activities that can reasonably be initiated or accomplished by 2030, when the next Climate Action Plan will be published.

The strategies and actions outlined in this plan are also designed to be flexible over time. Not all actions can be implemented at once; rather, they can be put in place as resources, data,

Attendees discuss planning and sustainability topics at the 2025 RASCL Summit. **PHOTO: DNREC**

technology and partnerships evolve. Actions may change over time based on increased understanding of climate impacts, technology advancements and stakeholder input.

Developing the Plan

This Climate Action Plan represents the culmination of a multiyear, collaborative effort. Initiated in 2024, it builds upon the foundation established by the previous Climate Action Plan issued in 2021 and integrates new data, research and community input to reflect Delaware's evolving climate priorities.

DNREC engaged with more than 2,300 community members, technical experts, and stakeholders to share information and gather feedback for inclusion in the plan. This included six community engagement sessions, four technical expert workshops, and 40 community events and small group meetings.

Equitable Climate Action

Delaware is especially vulnerable to climate change, but not all communities experience these effects equally. In Delaware, as in many parts of the United States, a legacy of historically discriminatory policies and inequitable decision-making shaped the built environment. Black, Indigenous and other people of color, as well as low-income households, are more likely to live near sources of air pollution or in flood-prone areas and to have less access to amenities such as urban green space. These environmental justice communities are often exposed to more environmental hazards while having fewer resources to prepare for, respond to, and recover from disasters such as flooding and tornadoes.

Equity and environmental justice were central to development of this Climate Action Plan. In implementing the actions in this document, a

thoughtful, future-oriented, and community-based approach must be taken. The following principles define how Delaware can achieve its climate goals while protecting people, strengthening communities, and ensuring durable results:

- Prioritize community perspectives in decision-making
- Ensure fair transition for workers and communities
- Protect health and safety
- Ensure transparency, accountability, and use of knowledge

Toward Net-Zero Emissions by 2050

Reducing Delaware's greenhouse gas emissions to nearly zero by 2050 helps avoid the worst impacts of climate change. Delaware's Climate Change Solutions Act sets statewide targets for greenhouse gas emission reductions. The targets are 50% reduction in greenhouse gas emissions by 2030 and net-zero emissions by 2050. Both targets are measured from a 2005 baseline. Delaware has already made significant progress in reducing its greenhouse gas emissions and has a path toward net-zero emissions by 2050.

Most greenhouse gas emissions in Delaware originate from three sources: transportation, industrial facilities and electricity generation. The transportation sector has been the largest emitting sector in Delaware since 2016 and represented 29.9% of emissions in 2021. Agriculture, solid waste and wastewater combined represent a small fraction of Delaware's emissions, typically 6% to 8% of gross emissions.

Delaware's emissions declined by 23.8% between 2005 and 2021. This decline in emissions occurred primarily in the electricity sector and was driven in part by fuel-switching of coal-fired power plants to natural gas, coupled with foundational state policies and programs.

DNREC worked with a technical consultant to calculate potential future emissions across sectors. This effort projected emissions to 2050 with existing policies and programs in place. With existing policies and programs, Delaware's emissions reductions could reach 54% by 2050. These reductions derive primarily from policies and programs for clean energy, energy efficiency improvements, reduced use of fossil fuels in buildings, and electrification of vehicles.

While Delaware makes considerable progress toward its emissions goals with existing policies and programs, there is a gap to close. To meet Delaware's mid-century emissions goals requires new programs and policies to rapidly reduce emissions and increase investments to improve the ability of our wetlands, forests, and agricultural lands to capture and store carbon. If a suite of additional policies and programs are implemented, Delaware can nearly reach its net-zero emissions goal by 2050, reducing emissions by 96.4% from 2005 levels.

The Climate Action Plan compiles a series of goals, strategies, and actions that would put Delaware on a path to meet its mid-century emissions targets. The goals and strategies are highlighted below.

Protecting Our Communities

Preparing for both established and emerging hazards and building resilience through climate adaptation is critical to safeguarding Delaware's residents, economy and environment. Climate adaptation is a

continuous process that can protect people, places and infrastructure; accommodate changing conditions; avoid future risk; and help communities strategically retreat from areas that cannot be safely protected.

Compounding climate risks occur when multiple climate hazards and stressors interact and amplify each other, leading to cascading effects.[4] As climate change impacts continue to intensify, Delaware can expect to experience more compounding risks. For example, an extreme heat wave that occurs during a drought could exacerbate heat stress on crops, strain water supplies, and create ideal conditions for wildfires. Compounding climate risks can be particularly dangerous when extreme events coincide with or follow one another, straining emergency response, and impacting vulnerable populations most acutely.

While there is no one-size-fits-all solution, strategic action on climate adaptation delivers measurable returns. Research from the U.S. Chamber of Commerce shows that every dollar invested in climate resilience and disaster preparedness saves communities $13 in avoided economic losses.[5] Beyond financial benefits, holistic adaptation solutions can address multiple hazards simultaneously while generating co-benefits such as improved public health, enhanced ecosystem services and stronger social cohesion.

Long-term resilience will depend on sustained coordination, adequate resources and a shared commitment to building a more resilient Delaware. The Climate Action Plan compiles a series of goals, strategies and actions that will help Delaware prepare and protect its communities. The goals and strategies are highlighted below.

Legislative Hall in Dover, Delaware. PHOTO: ADOBESTOCK

Land Use Intersections

Land use patterns and practices have a powerful intersection with climate change in Delaware.

Historic suburban development patterns in Delaware increased car dependency and the resulting emissions from cars and trucks. Loss of farmland and forests reduces opportunities to store and sequester carbon in soil and roots. Continued development in or near floodplains exacerbates flood vulnerability while loss of forests, trees and wetlands reduces opportunities to improve resilience.

These challenges can be addressed in part through emerging opportunities to bring together partners to address climate change, housing, transportation, and land use through a single lens. Shared goals for affordable housing and transportation can be accomplished through promoting dense and connected communities and removing barriers to infill development. Shared goals for storing carbon, improving resilience and conserving natural spaces can be accomplished through increased land preservation and avoiding development in flood-prone areas.

Goals and Strategies for a Path Toward Net-Zero Emissions

TRANSPORTATION

Expand transportation choice through improved public transit and multimodal options

- Increase bus transit ridership by improving travel times, service frequency, efficiency and coverage.
- Increase train ridership by improving travel times, service frequency, efficiency and coverage.
- Expand multimodal transportation options in communities.

Prioritize safety and access for walking and biking

- Adopt a plan to complete a statewide multimodal network.
- Improve access to bikes.
- Design communities for pedestrian and cyclist safety.
- Expand multimodal transportation infrastructure funding.

Reduce light-duty vehicle tailpipe emissions and accelerate zero-emission vehicle deployment

- Improve accessibility and feasibility of zero-emission vehicles for all Delawareans.
- Expand education and outreach to highlight the benefits of electric vehicles.
- Ensure convenient, reliable and abundant access to electric vehicle charging stations.

Reduce tailpipe emissions from medium- and heavy-duty vehicles

- Incentivize the adoption of electric medium- and heavy-duty vehicles.
- Advance implementation of school bus electrification and charging infrastructure.
- Reduce emissions associated with freight and shipping operations.
- Assess the feasibility of adopting emerging low-carbon fuels.

Reduce emissions from off-road engines and equipment

- Reduce greenhouse gas emissions from lawn-care equipment.
- Explore opportunities for sustainable aviation fuel.
- Support electrification of vessels and equipment at Delaware ports and ferry terminals.

INDUSTRY

Support data collection, technical assistance, and regional cooperation

- Help industrial facilities decarbonize.
- Develop comprehensive industrial emissions policies through regional collaboration and improved reporting.

Advance energy efficiency in industrial buildings and processes

- Advance on-site energy storage at industrial facilities.
- Advance deployment of combined heat and power technology and energy-efficient equipment at industrial and manufacturing facilities.

Advance electrification in industrial buildings processes

- Electrify low-temperature industrial heat processes.
- Prepare for technology advancements for medium- and high-temperature industrial heat processes.

Advance low-carbon fuels, feedstocks and energy sources

- Advance the production and use of low-carbon fuels and energy sources.
- Advance the use of low-carbon feedstocks.
- Encourage technological advancement of clean hydrogen production and applications in industry sector processes.
- Prepare Delaware for the clean hydrogen industry.

Advance development of carbon capture, utilization and storage

- Support the development and scaling of carbon capture, utilization and storage.

ELECTRICITY GENERATION AND GRID INFRASTRUCTURE

Accelerate deployment of solar and wind energy

- Increase grid-scale solar capacity statewide.
- Increase distributed solar capacity statewide.
- Advance the development and scaling of offshore wind.
- Adopt new renewable and clean energy adoption targets.

Support emerging clean energy technologies

- Evaluate the potential of small modular nuclear reactor technology in Delaware's energy future.
- Explore the feasibility and potential benefits of thermal energy networks and district heating.

Modernize Delaware's electric grid

- Support utility efforts to modernize transmission infrastructure.
- Work with utilities to support emission reductions and cost-saving programs.
- Accelerate battery storage.
- Ensure electric vehicle technology contributes to enhanced grid stability and resilience.
- Prepare for data center impacts on grid stability, costs and emissions.

RESIDENTIAL AND COMMERCIAL BUILDINGS

Strengthen building energy codes and establish building performance standards

- Strengthen building energy codes for new construction.
- Establish building performance standards to improve energy use in existing buildings.
- Facilitate sustainable building standards for affordable housing developments.

Increase energy efficiency in new and existing buildings

- Advance adoption of high-efficiency, low-carbon building heating and cooling systems.
- Scale up residential and commercial energy efficiency programs to accelerate building decarbonization.
- Enhance access to energy efficiency programs for low-and moderate-income residents and small businesses to reduce energy burdens and support economic opportunity.

Support the long-term transition to electrification in new and existing buildings

- Electrify appliances and systems in residential and commercial buildings.

FORESTS AND URBAN TREES

Maximize carbon sequestration and environmental co-benefits potential of Delaware's forests and urban tree canopies

- Protect, conserve and expand forested lands.
- Expand tree planting and land management in urban and suburban areas.
- Improve forest management to protect habitats and reduce emissions.
- Improve forest and tree inventories and metrics tracking.

Advance the forestry industry in Delaware

- Promote traditional and non-traditional forest industries.
- Ensure future native tree supply.

OCEANS AND WETLANDS

Maximize carbon sequestration in wetlands and marine waters

- Protect and preserve existing wetlands.
- Facilitate marsh migration.
- Enhance Delaware's ability to manage wetlands for carbon sequestration.
- Protect and enhance carbon-storage capacity of coastal ecosystems.
- Assess marine carbon dioxide removal technologies.

AGRICULTURE

Reduce emissions and support carbon sequestration on crop lands

- Encourage cropland management practices that increase and maintain soil carbon sequestration.
- Encourage adoption of agroforestry practices.
- Reduce emissions from nutrient and manure management.
- Reduce emissions and energy demand through precision agriculture practices.
- Preserve agricultural lands.

Reduce emissions from the livestock industry

- Reduce operational emissions in the poultry industry.
- Improve management of and reduce emissions from pasturelands.

WASTE

Reduce operational emissions at landfills and wastewater treatment plants

- Reduce methane emissions from solid waste and wastewater treatment operations.
- Reduce energy consumption and fossil fuel use at solid waste and wastewater treatment operations.

Reduce and divert solid waste

- Divert non-organic waste to recycling and other measures.
- Divert organic material to composting and other management methods.

Goals and Strategies for Protecting Our Communities

EXTREME HEAT

Improve data collection, research and decision support tools for extreme heat

- Strengthen understanding of how extreme heat affects human health and well-being.
- Improve data tools for tracking excessive heat impacts on natural resources and agriculture.

Foster collaboration to support extreme heat preparedness

- Strengthen collaboration with healthcare providers and other trusted partners to advance heat monitoring and risk prevention.

Support heat-resilient design and communities

- Support a coordinated network of community cooling centers to ensure all Delawareans have access to safe cooling spaces.
- Support infrastructure and building designs that reduce heat impacts.

Enhance technical support for community cooling

- Advance heat-informed planning through research and data sharing.
- Educate the public and businesses about heat risks and potential solutions.

Enhance outreach and engagement about extreme heat, especially to vulnerable populations

- Target education and risk reduction in vulnerable communities, such as those located in urban heat islands.
- Conduct targeted efforts to protect Delaware's workforce, especially outdoor workers, from adverse extreme heat impacts.

SEA LEVEL RISE, PRECIPITATION AND INLAND FLOODING

Bolster research and monitoring efforts on sea level rise and flooding

- Increase awareness and understanding of impacts from sea level rise, precipitation and flooding through technical research and monitoring.

Incorporate climate change considerations to enhance the resilience of natural resources and habitats

- Protect and preserve tidal and non-tidal wetlands.
- Protect and preserve wildlife and fisheries.
- Create or enhance green spaces.
- Protect and maintain Delaware's shorelines.

Update designs and plans to protect infrastructure and prepare for additional flood risk

- Maintain and protect stormwater, wastewater and drinking water infrastructure.
- Protect homes and buildings from flooding.
- Prevent contaminant releases from occurring during flooding or inundation.
- Prepare a multi-decadal strategy for potential strategic retreat from areas highly vulnerable to persistent and repetitive flooding.

EMERGENT HAZARDS

Enhance drought preparedness and water management

- Incorporate drought considerations into state operations, plans and policies.
- Enhance understanding of drought risks and vulnerabilities.

Reduce wildfire risk and enhance fire management

- Increase understanding of urban fires and wildfire risk.
- Reduce wildfire risk through landscape and invasive species management.
- Increase readiness and preparedness for wildfires.

Enhance severe weather awareness and preparedness in Delaware

- Improve communications and response to severe weather.
- Monitor severe weather conditions to inform emergency alerts and policies.
- Understand how tornadoes affect forest ecosystems.

Advance vector-borne illness prevention and invasive species management

- Increase public understanding of vector-borne diseases.
- Increase technical understanding of vector-borne diseases.
- Support further data collection and research to inform invasive species management.

Increase coastal acidification monitoring and planning

- Research and monitor the impacts of coastal acidification.
- Use ocean acidification research to inform planning and preparedness efforts.

COMPREHENSIVE RESILIENCE

Protect natural and agricultural resources

- Enhance the resilience of natural landscapes and agricultural lands.
- Invest in nature-based solutions and infrastructure improvements that support resilience to multiple hazards.

Enhance technical support and design to advance resiliency

- Provide technical assistance to local governments to incorporate climate change into planning efforts.

Promote collaborative governance and policy alignment

- Align state investments with long-term resilience goals.

Strengthen climate resilience across systems and infrastructure

- Incorporate climate considerations into wastewater and hazardous waste remediation processes.
- Support resilient transportation structures and systems.
- Support resilient buildings and design.

Improve data collection, research and decision support tools

- Support accessible and transparent data collection and research to implement resilience strategies.

Enhance outreach, engagement and collaboration

- Coordinate with health care institutions to track and provide a holistic response to the health impacts of climate change.
- Continue to build relationships with Delaware's Tribal and Indigenous communities, partnering in climate planning, land stewardship and conservation.
- Increase access and resources to climate change educational materials and involvement opportunities for students.

Implementing Delaware's Climate Action Plan

This plan is intended to be a living document. It lays out a path for Delaware to continue preparing for the impacts of climate change on our economy, communities and natural resources, while meeting ambitious but achievable greenhouse gas emission targets. The plan does not create new mandates or requirements but lays out the actions that can be taken over time as resources, data and partnerships develop and evolve. The plan does not specify precisely how or when each action should be undertaken, or by whom. The success of this plan depends on continued collaboration and conversation with residents, communities and stakeholders across the state.

DNREC serves as the lead agency for coordinating implementation of this plan and for tracking progress. DNREC will work through the State Agency Climate Change Officers, the Governor's Energy Advisory Council and others to gauge and track progress related to the strategies and actions outlined in this plan.

Progress reports for this Climate Action Plan will be issued every 2 years — in 2027 and 2029 — leading up to the publication of the next Climate Action Plan due in 2030. Progress reports will highlight new activities that have been undertaken, progress on existing initiatives, and emerging issues or threats.

Conclusion

Delaware is prepared for this moment and is ready to take continuing and evolving actions to address the causes and consequences of climate change in the state. Actions will require partnership and keen attention to opportunities to improve equity through community-based climate actions. Progress for climate change will be tracked in a transparent and continuing way, showcasing Delaware's leadership in resiliency and sustainability.

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