NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION'S

STRATEGIC CLIMATE ACTION PLAN

JUNE 2025

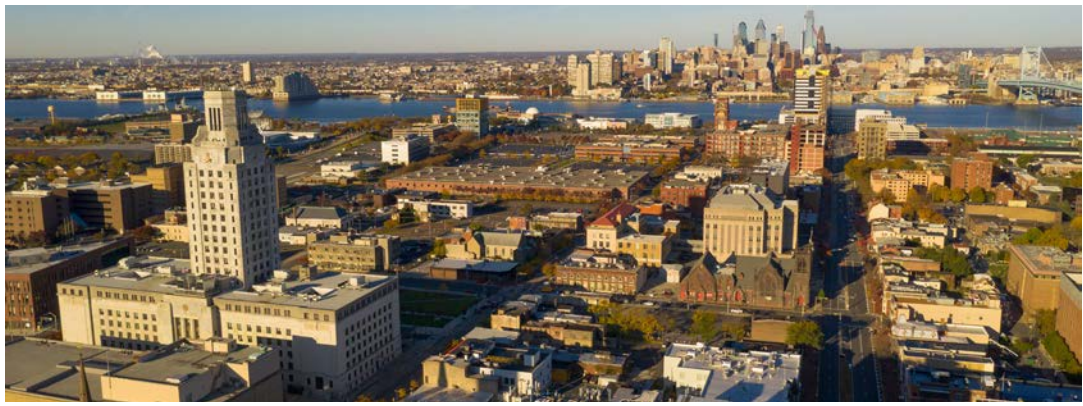

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Image: Trenton, NJ

2. EXECUTIVE SUMMARY

Perth Amboy, NJ

Climate change poses the greatest long-term threat to New Jersey's public health, safety, environment, and economy. Communities across the Garden State are facing increasingly more frequent and severe storms, rising sea-levels, coastal and inland flooding, extreme heat, and droughts due to our changing climate. Scientists agree that these climate impacts will only continue to worsen unless drastic reductions in the emissions of climate pollutants are achieved around the globe to help mitigate some of these impacts. As the occurrence of serious climate impacts phenomena has become more routine, the public dialogue about whether or when climate change will affect us has given way to deeper consideration about the scale and pace of societal response and our role as individuals, businesses, institutions and governments in meaningful climate action. Against this backdrop, public and private organizations across economic and social sectors have begun to chart their course of climate action.

The Department of Environmental Protection (NJDEP)—the New Jersey state government institution responsible for improving and protecting public health, safety, and the environment—has for years worked to reduce climate hazards and boost preparedness. Spurred to greater action by the Global Warming Response Act of 2007, its 2019 amendments, and later Executive Orders, NJDEP launched the New Jersey Protecting Against Climate Threats (NJPACT) initiative in 2020. Through NJPACT, NJDEP has advanced state specific climate science to ground planning and policy actions, invested in clean energy and climate resilience solutions, and pursued regulatory reform efforts to modernize dated aspects of environmental governance. While recognizing that no single institution alone can facilitate the structural changes necessary to fully reduce and respond to climate change, NJDEP has made doing so a principal goal of all Departmental programs and actions.

This NJPACT Strategic Climate Action Plan sets the course for NJDEP's ongoing and intended future efforts to respond to climate change. The goal of the NJPACT Strategic Climate Action Plan is to:

- Better inform organizations and individuals across all economic sectors as to the Department's climate action plans;
- To support their work to advance climate action;
- To coordinate collective efforts to reduce the emissions of climate pollutants in the state; and
- To build climate resilience for New Jersey families, communities, and businesses.

As it has to date, the NJDEP intends to advance its efforts to reduce and respond to climate change through three important environmental governance vehicles: producing thought leadership and corollary decision-support tools, incentivizing climate action, and pursuing supportive regulatory and policy reforms. This Strategic Climate Action Plan is arranged accordingly and identifies specific climate actions, deliverables, and milestones that NJDEP intends to achieve in the short term (1-2 years), medium term (2-4 years), and long term (4+ years). Additionally, the Department intends to publish an annual report each September to supplement this document.

These climate actions, deliverables, and milestones include, but are not limited to, actions across each of these thematic areas:

THE ROAD TO 80X50: REDUCING EMISSIONS OF CLIMATE POLLUTANTS

The NJPACT Strategic Climate Action Plan reflects a continuing Departmental commitment to advance an aggressive climate pollutant reduction strategy as New Jersey endeavors to meet the State's goals of reducing emissions to below 50% of 2006 levels by 2030 (known as the 50x30 goal) and to 80% of 2006 levels by 2050 (known as the 80x50 goal), and indicates plans for, among other things:

- Improved climate pollutant emissions monitoring to measure progress towards the 50x30 and 80x50 goals.
- Promoting building electrification through Department-administered State assets while supporting statewide building electrification planning and policy development.
- Advancing transportation decarbonization through zero-emission vehicle standard adoption, infrastructure planning and deployment, and exploring complementary policies to reduce vehicle miles traveled.
- Provide continuing support for a statewide clean energy transition by improving siting guidance for renewables while pursuing regulatory reforms to promote efficiencies at energy generating and other industrial facilities.

BUILDING CLIMATE RESILIENCE

As New Jersey acts urgently to reduce the emissions of climate pollutants, it is critical that communities, businesses, and government institutions take actions to become more resilient take measures to enhance their resilience to the adverse effects of climate change that cannot be avoided. The NJPACT Strategic Climate Action Plan reflects NJDEP's continued commitment to build climate resilience across all economic sectors, thereby supporting New Jerseyans in responding to current and future climate threats, such as sea-level rise, extreme weather and heat, and chronic flooding. Ongoing and intended Departmental measures include:

- Coordinating the state department and agency members of New Jersey's Interagency Council on Climate Resilience (known as the IAC) to advance climate actions designed to prepare and protect communities from the negative impacts of climate change.
- Enacting a suite of Resilient Environments and Landscapes (REAL) rules to enable people, communities, and businesses to effectively respond to current and future climate threats.
- Identifying and enacting measures for ensuring coastal resilience, including improved beach, bluff, and dune protection critical to shoreline resilience.
- Supporting the Interagency Council on Climate Resilience in updating the statewide Climate Change Resilience Strategy and preparing issue-specific Resilience Action Plans that detail state agencies efforts and intentions and track progress toward resilience goals.
- Working with other state departments and agencies to implement the recommendations of the IAC's statewide extreme heat resilience action plan, and continuing to educate the public about the dangers of extreme heat and how they can best protect their communities.
- Improving stormwater and wastewater infrastructure through investment, permitting, compliance, and the provision of technical assistance.
- Investing in flood and coastal resilience infrastructure and nature-based resilience projects that address climate change by, among other things, prioritizing construction of flood protection projects that maximize risk reduction and incorporate community co-benefits.
- Ensuring state and local consistency with National Flood Insurance Program criteria while providing municipal climate resilience guidance, planning incentives, and technical support through ResilientNJ and complementary programs.

High Point State Park

SECURING NATURAL AND WORKING LANDS

Through actions to protect and enhance natural and working lands, including forests, wetlands, developed lands, and agricultural lands, New Jersey can preserve existing carbon sinks and dramatically increase the potential of natural and working lands to store and sequester carbon. These efforts often come with substantial co-benefits like increased resilience, water quality and habitat improvements, reductions in temperatures and poor air quality, and enhancement of recreation and community values. These and other Departmental actions to support natural and working lands will bolster climate change mitigation as these lands remove carbon dioxide from the atmosphere through long-term accumulation in vegetation and soils:

- Continual development of applications like the state's Coastal Ecological Restoration and Adaptation Planning Tool (CERAP) to identify and secure areas that are ecologically vulnerable to climate change and in need of restoration or resilience improvements along New Jersey's tidally influenced coast, bays, and rivers.
- Refine and implement the Natural and Working Lands Strategy (NWLS) to provide policy guidance and support for maximizing the carbon sequestration potential of forested, wetland, and agricultural lands.
- Expand forest stewardship and protection through the planning and implementation of science-based management strategies to protect above and below-ground carbon pools, minimize and mitigate the impacts of wildfire, improve ecosystems, and protect soil, water and air quality.
- Restore, expand, and protect critical wetlands through enhanced monitoring, further enforcement of land resource protection rules and requirements, and investment in blue carbon projects that improve wetland health and sequester carbon.

ENSURING CLIMATE EQUITY & JUSTICE

Economically disadvantaged communities and communities of color in New Jersey – and across the United States–are disproportionately burdened with climate pollution, increased flood risk, more exposure to intense heat waves exacerbated by the Urban Heat Island (UHI) effect, and other climate change hazards. The NJPACT Strategic Climate Action Plan reflects NJDEP's continuing commitment to furthering the promise of environmental justice through actions that advance climate equity, including:

- Identifying and enacting climate pollutant reduction strategies that improve air quality and mitigate extreme heat in communities with environmental justice concerns.
- Implementation and enforcement of the Environmental Justice Law and Rules, which include criteria concerning the assessment of certain climate equity and justice factors, during applicable permitting reviews.
- Development and implementation of uniform and consistent principles to guide Departmental analyses of environmental and climate justice in permitting, compliance, enforcement, and rulemaking processes.
- Development of environmental and climate justice guidance to inform the updated State Plan as well as municipal planning efforts, which may be incorporated into the plan endorsement process before the State Planning Commission.

SUPPORTING AND SHARING CLIMATE SCIENCE & ECONOMIC INFORMATION

NJDEP will continue to support the development of the latest and most reliable scientific information on the impacts of climate change on New Jersey's communities as well as its natural and built environments. This includes identifying and fulfilling additional research needs to provide policymakers and the public with comprehensive and up-to-date information concerning the climate change impacts New Jersey can expect in the near- and long-term. These endeavors include:

- Consistently collecting, updating and refining heat, precipitation, flooding, and sea-level rise data and projections to inform user-friendly reports, analytic tools, and mapping applications available to the public and regulated communities.
- Characterizing and quantifying climate change risks to ground and surface water supplies through monitoring, modeling, and analyses to support policy, planning, and investment strategies that preserve and protect state water supplies and ensure their quality.
- Developing a New Jersey Ocean Acidification Plan that addresses both Estuarine and Ocean Acidification and the effect of nutrient over enrichment on acidification exacerbated by climate change effects, for impacts to water quality and the biological community, such as fish and shellfish. Evaluates existing data to design a monitoring network for New Jersey and merge with regional perspectives.
- Supporting the Offshore Wind (OSW) Research & Monitoring Initiative (RMI) to continually explore potential environmental, ecological, and socioeconomic impacts of OSW development and operation, and produce scientifically rigorous reports that clearly communicate findings and conclusions.
- Providing support to educators, schools, and communities in the statewide implementation of K-12 climate change educational standards.

- Improving ongoing partnerships and fostering new scientific collaborations to expand and promote New Jersey-specific climate science, data, and information.

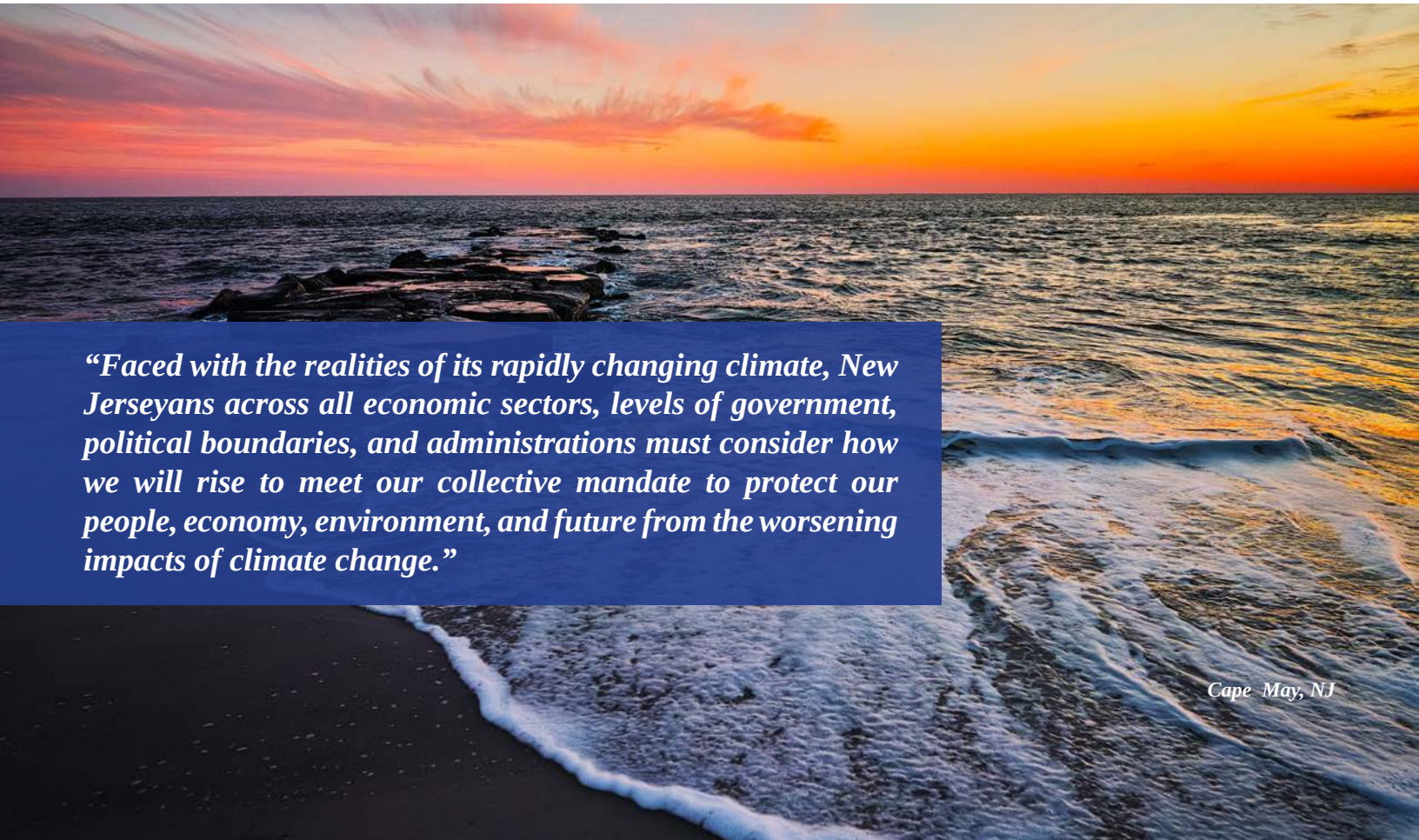
SUSTAINABLY MANAGING WASTE & MATERIALS

Waste and materials management is New Jersey's largest source of climate pollution after consumptive energy uses (i.e., generation, transportation, buildings). To reduce these emissions, it is imperative for the State to reduce waste at its source and amplify the reuse and recycling of materials. Through these and other regulatory and policy actions, New Jersey can reduce waste that is typically directed to landfills and incinerators:

1. Expand waste reduction programs, including amplifying the *Get Past Plastic* single-use plastic reduction and *Erase Food Waste* campaigns, implementing minimum recycled content standards, developing technical guidance to inform action across sectors on organics, composting, and food waste recycling facility siting, and enacting regulatory reforms that support such initiatives.
2. Pilot reductions programs at NJDEP facilities to evaluate and demonstrate innovative solutions and promote their adoption elsewhere.
3. Evaluate the vulnerability of landfills to climate risks, including sea-level rise, fluvial flooding, and extreme precipitation, including assessing the potential impacts to surrounding communities, and developing technical guidance and regulatory reforms to ensure waste management facilities are properly operating or adhere to post-closure conditions.

A CALL TO SUSTAINED ACTION

Faced with the realities of its rapidly changing climate, New Jerseyans across all economic sectors, levels of government, political boundaries, and administrations must consider how we will rise to meet our collective mandate to protect our people, economy, environment, and future from the worsening impacts of climate change. We must commit ourselves to actions and investments with immediate benefits and those that provide long-term resilience, some may not be evident immediately. We must have confidence that our successful climate actions will be measured by the long-term growth potential and protection we help ensure for the people and communities of New Jersey.



"Faced with the realities of its rapidly changing climate, New Jerseyans across all economic sectors, levels of government, political boundaries, and administrations must consider how we will rise to meet our collective mandate to protect our people, economy, environment, and future from the worsening impacts of climate change."

Cape May, NJ

3. INTRODUCTION: AN URGENT CALL TO SUSTAINED CLIMATE ACTION

New Brunswick, NJ

Climate change poses an existential threat to public health, safety, the environment, and economies all over the world.[1] New Jersey's coastal location, propensity for inland flooding, and high population density only increase its unique climate risk profile. Communities across the State already face rising sea-levels, extreme heat, and increased precipitation, as well as more frequent and intense storms and droughts due to climate change.

"New Jersey's coastal location, propensity for inland flooding, and high population density only increase its unique climate risk profile."

As noted by the Intergovernmental Panel on Climate Change in their Sixth Assessment report (IPCC Report) and characterized by the United Nations Secretary General's response as "a code red for humanity," climate change is happening now, and its effects will only continue to worsen with the passage of time.[2] The IPCC report echoes many of the findings in NJDEP's 2020 New Jersey Scientific Report on Climate Change (NJ Climate Science Report). Together, these reports, as well as the ongoing work of reputable scientists, remove any credible doubt that significant and rapid warming of the earth's atmosphere is occurring and that those temperature increases are causing sea-level rise as well as increasing the frequency and intensity of severe weather events. Despite these stark warnings, rapid, drastic reductions in greenhouse gas emissions can still curb greater impacts from climate change. In fact, humanity is in a powerful position with the ability to affect the long-term trajectory of global warming and our shared future.

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[1] 80x50 Report, October 15, 2020, Executive Summary, p. v, https://www.nj.gov/dep/climatechange/docs/nj-gwra-80x50-report-2020.pdf.

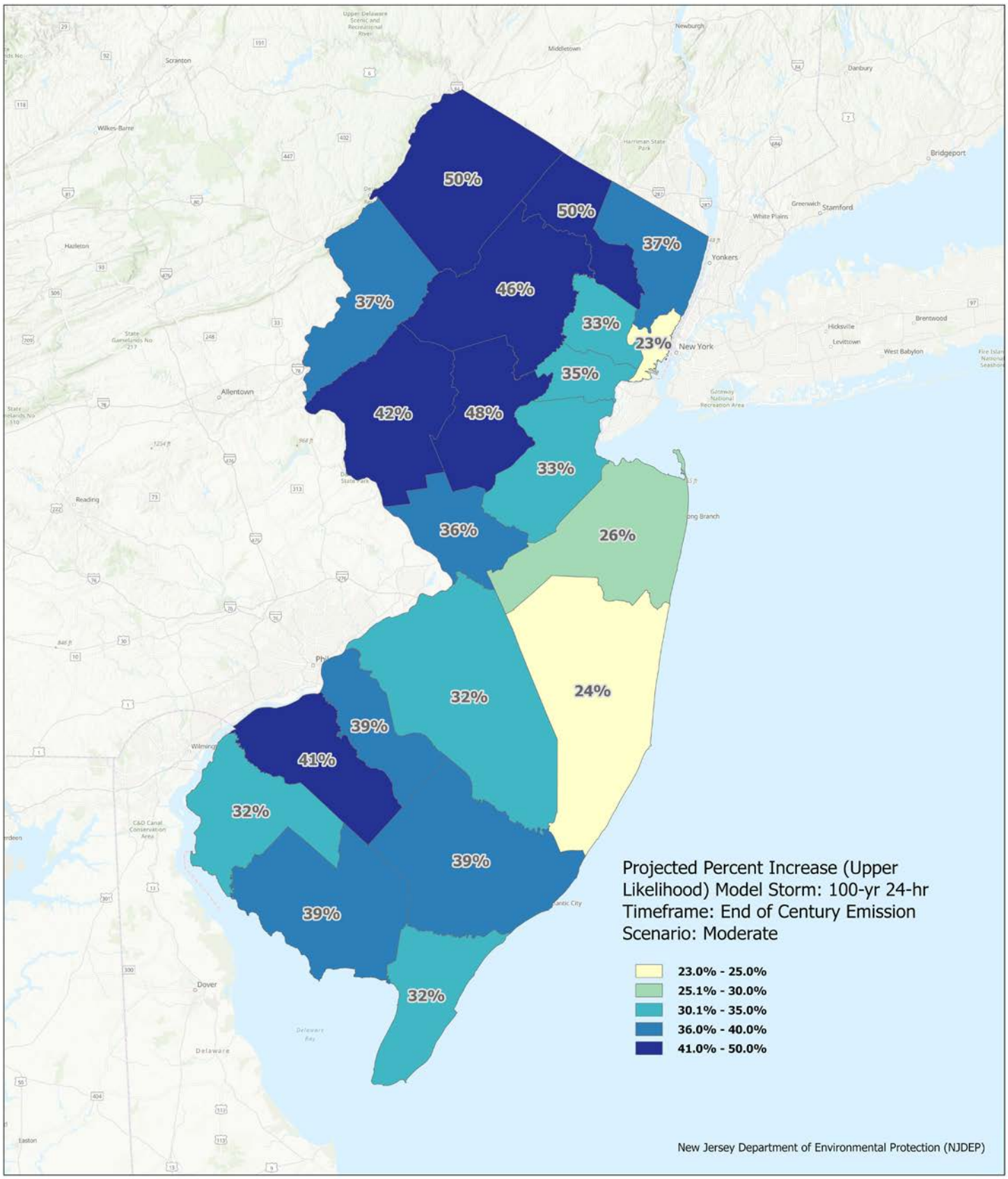
[2] Intergovernmental Panel on Climate Change (IPCC), "AR6 Climate Change 2021: The Physical Science Basis, 2021" https://www.ipcc.ch/report/ar6/wg1/

In New Jersey, average annual temperatures have already increased by 3.8°F from 1895-2021,[3] which is faster than the Northeast regional average of 2.8°F[4] and the global average of 2°F.[5] The Paris Climate Agreement, an international treaty adopted by 196 parties enacted in 2016, set the goal to limit global warming to below 3.6°F, preferably to 2.7°F, compared to pre-industrial levels.[6] The IPCC's most recent best estimates from both moderate and high emissions scenarios suggest we are on target to experience increases of 3.6°F or more by mid-century (2041-2060), with late-century (2081-2100) temperatures likely ranging from 3.8 to 10.3°F.[7] Given the latest, more ambitious pledges under the 2021 Glasgow Climate Pact from the 26th Conference of Parties (COP26), research has indicated it is possible to keep warming below 3.6°F if pledges are implemented fully and on time, including a strong near-term commitment.[8]

November 2021 studies from Northeast Regional Climate Center, commissioned by the State to analyze New Jersey-specific precipitation data, found that annual and short-duration intense precipitation is increasing statewide and will continue to increase through the end of the century.[9] These studies show that precipitation is already 2.5% to 10% higher than existing standards based on 1999 data. Additionally, moderate emissions scenario projections suggest county-level increases within the likely range of more than 20% from the historical baseline through 2100, with greater increases (as much as 50%) in the northern part of the State. This increase in extreme precipitation has led to repetitive flood events with devastating impacts on life, property, and commerce.

[3] Office of the New Jersey State Climatologist 2022.
[4] Northeast Regional Climate Center "Changes in Hourly and Daily Extreme Rainfall Amounts in NJ since the Publication of NOAA Atlas 14 Volume," November 18, 2021. https://dep.nj.gov/dsr/#changes-rainfall-nj
[5] Robert E. Kopp and Clinton J. Andrews et al. 2019. "New Jersey's Rising Seas and Changing Coastal Storms: Report of the 2019 Science and Technical Advisory Panel" (STAP report)., Kopp et al., 2019. https://doi.org/doi:10.7282/t3-eeqr-mq48
[6] See, e.g. Painter, M. (2020). An inconvenient cost: The effects of climate change on municipal bonds. Journal of Financial Economics, 135(2), 468-482, Krueger, P., Sautner, Z., & Starks, L. T. (2020). The importance of climate risks for institutional investors. The Review of Financial Studies, 33(3), 1067-1111, Shi, L., & Varuzzo, A. M. (2020). Surging seas, rising fiscal stress: Exploring municipal fiscal vulnerability to climate change. Cities, 100, 102658, Sinking Tax Base Land & Property at Risk from Rising Seas. (2022, September 8).
[7] Benjamin H. Strauss, Philip M. Orton et al. 2021. "Economic damages from Hurricane Sandy attributable to sea level rise caused by anthropogenic climate change." https://www.nature.com/articles/s41467-021-22838-1
[8] Adam B. Smith. 2022. "2021 U.S. billion-dollar weather and climate disasters in historical context." https://www.climate.gov/news-features/blogs/beyond-data/2022-us-billion-dollar-weather-and-climate-disasters-historical
[9] National Centers for Environmental Information. 2022. "Billion-Dollar Weather and Climate Disasters –Time Series." https://www.ncei.noaa.gov/access/billions/time-series

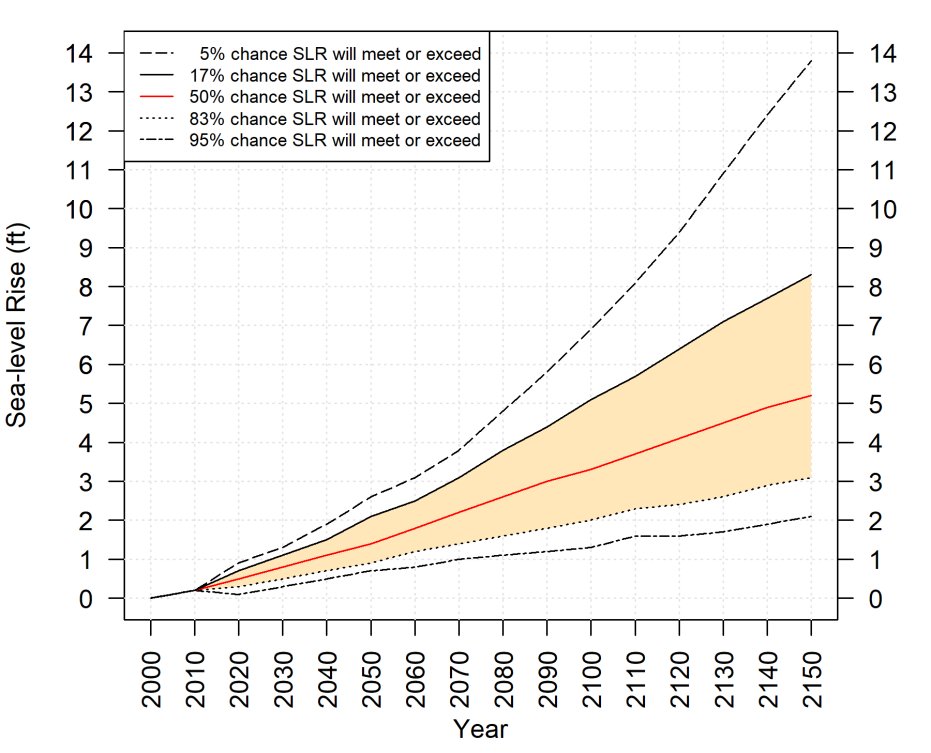
Figure 1: Projected Percent Increase Model Storm



As a coastal state, few climate change impacts present a higher risk to New Jersey's natural resources, economy, property, and culture than sea-level rise. Sea levels in New Jersey are rising at a rate more than double the global average. This rapid rise causes increased tidal flooding, even on clear days without precipitation (sunny day flooding), and low-lying coastal areas like Atlantic City are extremely likely to experience at least 95 sunny day flooding events per year. (NJDEP, 2020). As set forth in the definitive, State-specific assessment of sea-level rise conducted by the New Jersey Science and Technical Advisory Panel (STAP), based on a moderate emissions scenario, New Jersey's sea levels are likely to rise from their 2000 levels by up to 1.1 feet by 2030, 2.1 feet by 2050, and 5.1 feet by 2100.[10]

Figures 2 and 3 of Sea-Level Rise Projections Curve Under Moderate Emissions Scenario
There is a 50% chance that sea-level rise will exceed the level displayed by the red line, and a 66% chance that sea-level rise levels will be between the solid black line and the dotted black line (i.e., tan area).

	Year	2010	2030	2050	2070	2100	2150
Low End	> 95% Chance SLR will meet or exceed		0.3	0.7	1.0	1.3	2.1
Likely Range 66% chance	> 83% Chance SLR will meet or exceed	**0.2 Observed**	**0.5**	**0.9**	**1.4**	**2.0**	**3.1**
	~ 50% Chance SLR will meet or exceed		**0.8**	**1.4**	**2.2**	**3.3**	**5.2**
	< 17% Chance SLR will meet or exceed		**1.1**	**2.1**	**3.1**	**5.1**	**8.3**
High End	< 5% Chance SLR will meet or exceed		1.3	2.6	3.8	6.9	13.8



[10] Robert E. Kopp and Clinton J. Andrews et al. 2019. "New Jersey's Rising Seas and Changing Coastal Storms: Report of the 2019 Science and Technical Advisory Panel" (STAP report)., Kopp et al., 2019. https://doi.org/doi:10.7282/t3-eeqr-mq48

Increases in extreme precipitation and rising sea-levels not only elevate the risk of flooding in the State, but also continue to overwhelm inadequate, under designed and poorly maintained stormwater infrastructure, which further exacerbates flooding impacts, including in areas outside stream corridors or otherwise unaccustomed and unprepared for flooding. To compound the issue, drought or drought-like conditions, which are expected to increase in frequency, can also increase flooding when the soil is too dry to absorb large amounts of rain in a short period of time.

Addressing these threats is crucial to maintaining New Jersey's continued economic prosperity. Communities that are unable to protect against flooding from increasingly frequent and intense storms and sea-level rise can expect to see declining property values and abandoned homes, business closures, a reduced tax base, and less favorable credit terms for financing critical improvement projects. Decline in any of these market elements can snowball across the state, causing economic conditions to worsen until local communities and the State reach a tipping point.[11] To address this challenge, New Jersey has developed Sea-Level Rise Guidance, the Inland Flood Protection Rule, and the Resilient Environments and Landscapes Rule to help state and local decision makers plan for and adapt to these changing conditions.

"Increases in extreme precipitation and rising sea-levels not only elevate the risk of flooding in the State, but also continue to overwhelm inadequate, under designed and poorly maintained stormwater infrastructure..."

Planning in accordance with strong resilience standards will protect and improve local economies, leading to long-term benefits that far outweigh any marginally increased costs of compliance, including disaster avoidance, business interruption prevention, and stabilized flood insurance costs. This is evidenced by a recent study by researchers from Climate Central, Rutgers University, and Stevens Institute of Technology, showing that approximately 13% ($8.1 billion) of the $62.7 billion in losses incurred by New York, New Jersey, and Connecticut following Superstorm Sandy can be attributed to sea-level rise and climate change.[12] The damages caused by Sandy were not a one-time event. In fact, both National and New Jersey communities are already bearing the financial burden of economic losses from extreme weather at an increasing rate. NOAA noted that 2021 was another year among many where there were high frequency, high cost ($1 billion dollars in damages or greater)[13] extreme events that affected people's lives and livelihoods in the United States. This is concerning because it suggests that yearly high activity is becoming the new normal.[14] Building resilience is the only tool at our disposal to curb future costs and no single level of government can address the economic impacts of climate change alone.

Faced with this reality, we must ask ourselves – across all economic sectors, levels of government, political boundaries, and administrations – how we will rise to meet our collective mandate to protect our people, economy, environment, and future from the worsening impacts of climate change.

While it is clear that no state agency or set of initiatives alone can bring about these necessary structural changes, NJDEP is proud to do its part to support, and as appropriate, lead the State's efforts in conjunction with its agency partners to enhance the State's resilience to those climate effects that cannot be avoided while simultaneously reducing emissions of climate pollutants to limit a worsening of adverse climate change impacts. These efforts need to place particular emphasis on climate change impacts as a threat multiplier for those New Jersey communities already experiencing environmental injustices.

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[11] See, e.g. Painter, M. (2020). An inconvenient cost: The effects of climate change on municipal bonds. Journal of Financial Economics, 135(2), 468-482, Krueger, P., Sautner, Z., & Starks, L. T. (2020). The importance of climate risks for institutional investors. The Review of Financial Studies, 33(3), 1067-1111, Shi, L., & Varuzzo, A. M. (2020). Surging seas, rising fiscal stress: Exploring municipal fiscal vulnerability to climate change. Cities, 100, 102658, Sinking Tax Base Land & Property at Risk from Rising Seas. (2022, September 8).

[12] Benjamin H. Strauss, Philip M. Orton et al. 2021. "Economic damages from Hurricane Sandy attributable to sea level rise caused by anthropogenic climate change." https://www.nature.com/articles/s41467-021-22838-1

[13] National Centers for Environmental Information. 2022. "Billion-Dollar Weather and Climate Disasters –Time Series." https://www.ncei.noaa.gov/access/billions/

[14] Adam B. Smith. 2022. "2021 U.S. billion-dollar weather and climate disasters in historical context." https://www.climate.gov/news-features/blogs/beyond-data/2021-us-billion-dollar-weather-and-climate-disasters-historical

3.1 SETTING A COURSE FOR CHANGE

In an early acknowledgment of the acute need for State-lead climate action, the New Jersey Legislature passed the Global Warming Response Act, N.J.S.A. 26:2C-37 et seq. (GWRA) establishing a Statewide goal for reducing greenhouse gas emissions to 80% below 2006 levels by 2050 (known as the 80x50 goal). Recognizing the gravity of climate change and its impacts upon the State, as well as New Jersey's opportunities to spur innovation and economic growth in response to this challenge, Governor Philip D. Murphy signed the following Executive Orders:

- No. 7 (2018): Mandating that NJDEP and the New Jersey Board of Public Utilities (BPU) reenter the Regional Greenhouse Gas Initiative;
- No. 8 (2018): Establishing the goal of 3,500 megawatts of offshore wind energy generation by the year 2030;
- No. 23 (2018): Directing NJDEP to develop guidance for all state departments to incorporate environmental justice considerations into their actions;
- No. 28 (2018): Calling for BPU to update the State's Energy Master Plan (EMP);
- No. 89 (2019): Establishing the New Jersey Interagency Council on Climate Resilience (IAC), which would develop the Statewide Climate Change Resilience Strategy, and directed the development of the New Jersey Scientific Report on Climate Change;
- No. 92 (2019): Adopting the goal of 7,500 megawatts of offshore wind energy generation by 2035;
- No. 100 (2020): Requiring the NJDEP to integrate climate change considerations, such as sea level rise, into its regulatory and permitting programs;
- No. 221 (2021): Creating the Office of Climate Action and Green Economy (OCAGE) within the Governor's Office;
- No. 274 (2021): Establishing an interim benchmark for greenhouse gas emissions reductions of 50% below 2006 levels by 2030 (known as the 50x30 goal);
- No. 307 (2022): Increasing the State's goal of offshore wind energy generation to 11,000 megawatts by 2040;
- No. 315 (2023): Establishing the goal of 100% electricity sold in State from renewable sources by 2035;
- No. 316 (2023): Establishing building electrification and decarbonization goals; and
- No. 317 (2023): Directing the BPU to engage with stakeholders on the future of State's natural gas utilities.

These Executive Orders clearly establish New Jersey's policy to take aggressive climate action by:

- Reducing the greenhouse gas emissions on an economy-wide basis;
- Charting a just and equitable transition away from fossil fuel reliance while building a stronger economy fueled by renewable energy;
- Promoting the resilience of New Jersey's communities from the current and anticipated impacts of climate change through planning and regulation;
- Investing in climate solutions that create new economic opportunity and shared prosperity; and
- Furthering the promise of equity and environmental justice for all residents.

3.2 ANSWERING THE CALL

Pursuant to these climate policy directives, NJDEP continues to take significant steps to support and facilitate the State's overall climate goals.

As required pursuant to the GWRA, and building on New Jersey's 2019 EMP update which set the blueprint for large-scale electrification and 100% clean energy by 2050, on October 15, 2020, NJDEP delivered to the Legislature New Jersey's Global Warming Response Act 80x50 Report (80x50 Report). The report communicates the limitations of existing State legislation, policies, and programs in reaching the 80x50 goal and provides detailed recommendations across eight distinct economic sectors on how policymakers could bridge the resulting emissions reductions gap.

One year later in October 2021, under EO 89, NJDEP issued the State's first Statewide Climate Change Resilience Strategy (Resilience Strategy) which provides a suite of forward-looking policies to promote long-term climate resilience. As a framework for policy, regulatory, and operational changes, the Resilience Strategy presents actions that the State can take to further climate resilience in our communities, economy, and infrastructure. The Resilience Strategy includes recommended actions across six priority areas: (1) building resilient and healthy communities, (2) strengthening ecosystem resilience, (3) promoting coordinated governance, (4) investing in information and education, (5) ensuring informed investments and innovative financing to leverage resources, and (6) focus on protecting our precious natural and economic coastal resources.

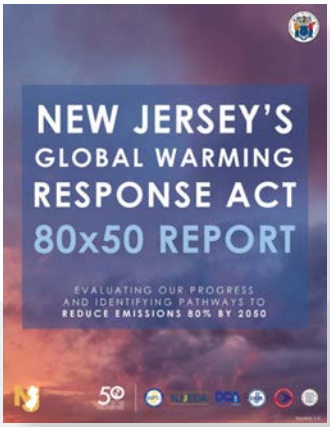
The Resilience Strategy continues the work of EO 89's IAC, comprised of 26 key state agency and departments, as well as the Governor's Office. The IAC is of critical importance to the State's resilience efforts to move toward cross-departmental change. The IAC is now working to implement the recommendations in the Resilience Strategy, primarily through the development of issue-specific Resilience Action Plans (RAPs), which will identify actions for each agency to undertake, both in the short and long term, to increase their resilience and that of the State. The first RAP, focused on Extreme Heat, released in April of 2024, includes 135 actions align with the priorities outlined in the Resilience Strategy. Action commitments address the completed, ongoing, and recommended activities of individual agencies, as well as efforts that cut across several or all state agencies who make up the IAC. These actions are designed to address community health, equity and justice, research needs, coordination of government, and the funding, financing, and investment needed to implement the action, in accordance with the Resilience Strategy.

With these planning efforts providing a framework for change, and as directed by EO 100 and Administrative Order No. 2020-01 (AO 2020-01), NJDEP continues to press forward with critical regulatory reforms informed by science, extensive outreach and conversation with its stakeholders under its New Jersey Protecting Against Climate Threats (NJPACT) initiative.

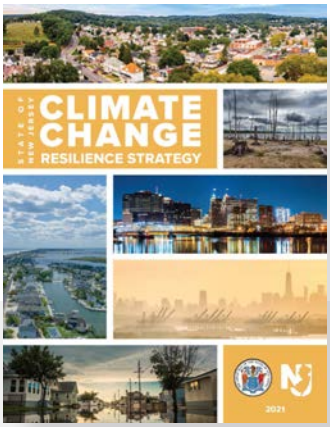
Despite these significant efforts, much work remains to be done.

As required under AO 2020-01, NJDEP now issues this plan to guide future meaningful action. This includes looking more broadly across all Department programs and services – their respective policies, procedures, regulations and funding mechanisms – to identify the efforts needed to reduce and respond to the impacts of climate change. These actions are set forth in three different timelines that are reflective of the breadth and scope of the work to be accomplished: (1) short term (1-2 years or as otherwise specified); (2) medium term (2-4 years); and (3) long term (4+ years).

NJDEP recognizes that it alone cannot affect the structural, economic, and societal changes necessary to reduce the worsening effects of climate change. Rather, meeting the State's climate goals requires deliberate and coordinated action by all levels of government, economic sectors, communities, and individuals. Therefore, as appropriate, NJDEP has identified and intends to offer its full support to its key partners in these efforts, providing assistance, guidance, and leadership wherever and in whatever form necessary to ensure the protection of our shared future.



New Jersey's Global Warming Response Act 80x50 Report



Statewide Climate Change Resilience Strategy

New Jersey Protecting Against Climate Threats Regulatory Initiative

4. ROAD TO 80X50

Atlantic City, NJ

New Jersey must continue to advance an aggressive climate pollutant reduction strategy as it pursues the State's 50x30 and 80x50 climate goals. Such state leadership is especially critical given the federal government's limited ability to effectively and efficiently regulate and reduce greenhouse gas emissions at the national level.

Expressed using the metric of carbon dioxide (CO_2) equivalent (CO_2e), in 2006, New Jersey's net emissions totaled 121.1 million metric tons (MMT) CO_2e, therefore setting the 50x30 goal as 60.6 MMT CO_2e and the 80x50 goal at 24.2 MMT CO_2e.[1]

NJDEP recognizes it cannot meet the State's emission reduction goals through environmental regulation alone. Addressing the State's two primary emissions sectors, transportation and buildings, requires broader, coordinated policy and regulatory action across several State agencies, including, among others, the BPU, the Department of Transportation (DOT), the Motor Vehicle Commission (MVC), and the Department of Community Affairs (DCA). However, NJDEP has pursued aggressive regulatory action through the first phase of its Climate Pollutant Reduction reforms (CPR 1.0), a part of the larger New Jersey Protecting Against Climate Threats (NJPACT) initiative directed by Executive Order 100.

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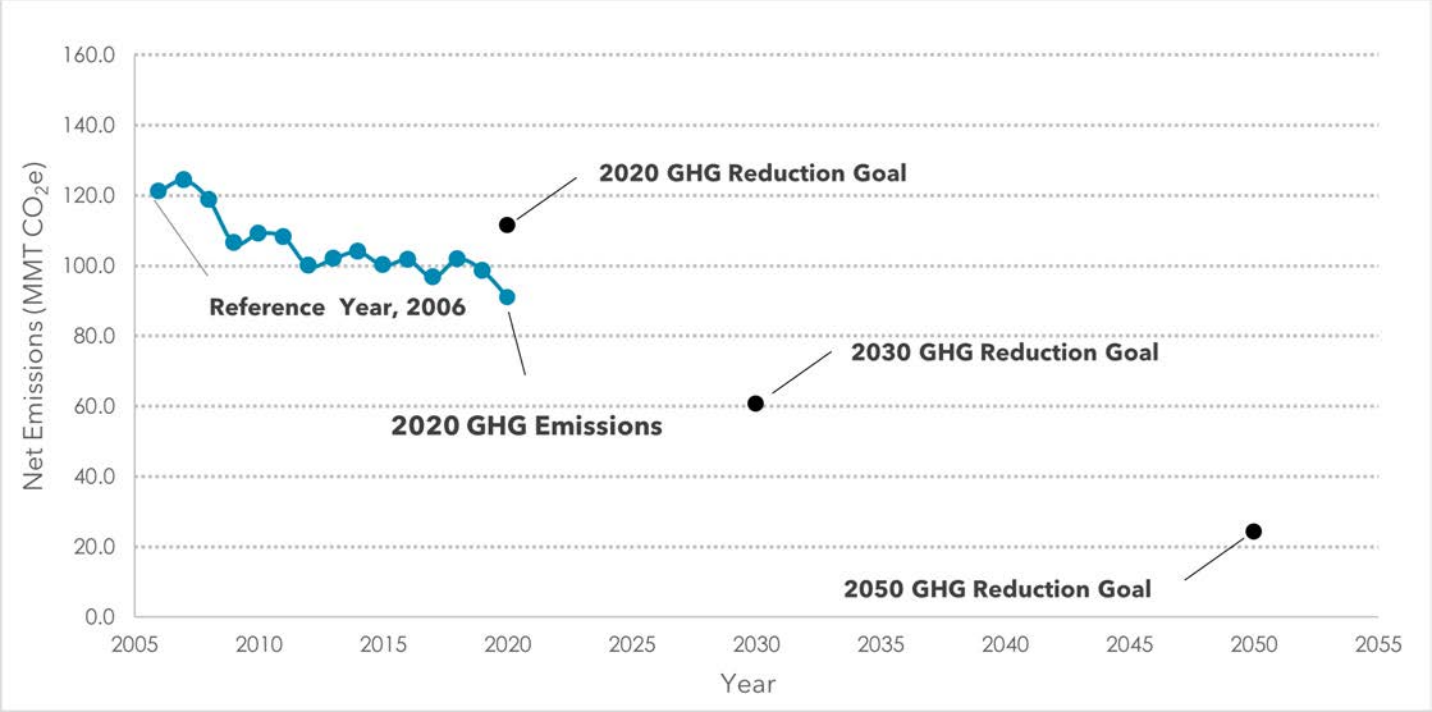
[1] CO_2e is a term for describing different greenhouse gases in a common unit. For any quantity and type of greenhouse gas, CO_2e signifies the amount of carbon dioxide CO_2 which would have the equivalent global warming impact, based on their relative global warming potential (GWP). See 80x50 Report, at p. 4, https://www.nj.gov/dep/climatechange/docs/nj-gwra-80x50-report-2020.pdf 2019 Energy Master Plan: Pathway to 2050, at p. 22, https://nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf (2019 EMP)

Figure 4: New Jersey Emissions and Greenhouse Gas Reduction Goals[2]



CPR 1.0 included:

- Incorporation of California's Advanced Clean Truck rules which set standards for the manufacture of certain zero emission commercial vehicles. **Adopted: 11/01/21.**
- New Greenhouse Gas Reporting Rule to better inventory significant sources of greenhouse gas (GHG) emissions and monitor progress towards the State's emission reduction goals, including closing reporting gaps on hydrofluorocarbons (HFCs) and natural gas distribution and service lines. **Adopted: 04/22/22.**
- Regulations to set declining CO_2 emissions limits for electric generating units and end the in-State use of certain heavy fuel oils. **Adopted: 12/06/22.**
- Incorporation of California standards to address mobile cargo handling equipment at ports and railyards by requiring diesel mobile cargo handling equipment to apply best available control technology to reduce localized nitrogen oxide (NO_x) and particulate matter (PM) emissions. **Adopted: 12/29/22.**
- Incorporation of California's NO_x emission standards for medium- and heavy-duty vehicles and inspection requirements for medium-duty vehicles. **Adopted 04/21/23.**

Following the completion of the initial phase of CPR regulatory reforms, and as described further herein, NJDEP continues the evolution of its greenhouse gas reduction efforts through the development of a second phase (CPR 2.0) that seeks to join nationwide efforts to implement regulations that further increase electric vehicle sales, implement appliance and equipment efficiency standards, address climate-influenced degradation of air quality from consumer products, better align policy and permitting decisions with the State's greenhouse gas emission reduction goals, and evaluate additional regulatory proposals related to electrification of large fleets, cargo handling equipment and harbor craft.

Taken together, once fully implemented, NJDEP expects its CPR reforms to avoid approximately 3 MMT per year of CO_2 emissions, with simultaneous reductions of significant co-pollutants such as NO_x and $PM_{2.5}$.

[2] NJDEP. 2022 New Jersey Greenhouse Gas Emissions Inventory Report Years 1990-2019. https://dep.nj.gov/wp-content/uploads/ghg/2022-ghg-inventory-report_final-1.pdf

4.1 THOUGHT LEADERSHIP

As evident from the Energy Master Plan and the 80x50 Report, the State will meet its greenhouse gas emissions reduction goals only if all levels of government, economic sectors, communities, and individuals act together. In the 80x50 Report, NJDEP outlined various strategies for the executive and legislative branches across eight distinct economic sectors which, if implemented, would bridge the resulting emissions reductions gap. The 80x50 Report placed specific focus on the three sectors that represent the largest sources of greenhouse gas emissions – electric generation (transition from fossil to renewable fuels, reduction in demand), transportation (large-scale vehicle electrification and vehicle miles traveled (VMT) reduction), and buildings (electrification and transition away from oil, propane, and natural gas for heating and cooling). Reducing greenhouse gas emissions will also have co-benefits by reducing criteria air pollutants such as particulate matter and ozone precursors, resulting in improved air quality throughout the State and in overburdened communities.

On January 20, 2023, Governor Murphy announced the commencement of planning for the development of updates to the EMP, as required by the EMP Statue L. 1977, c.146, amended 1987, c. 365 § 14 (N.J.S.A. 52:27F-14(b)), for release by the end of 2025. This updated EMP will reflect the State's updated climate goals and the impacts of recent state and federal policies that will help accelerate the state's transition to a 100% clean energy economy while providing a whole-of-government progress assessment on the goals and strategies in the 2019 EMP. The 2025 EMP will also identify how federal funding and new federal programs for clean energy and carbon reduction through the federal Infrastructure Investment and Jobs Act (aka Bipartisan Infrastructure Law or BIL) and the federal Inflation Reduction Act (IRA) will support New Jersey's transition to 100% clean energy by 2050, and meet its 50x30 and 80x50 greenhouse gas reduction goals.

4.2 POLICY DEVELOPMENT & INCENTIVES

4.2.1 SUPPORT COORDINATED GWRA IMPLEMENTATION

Implementation of the economy wide recommendations to achieve the State's twin goals of 80x50 and 100% clean energy requires coordinated action across government agencies and stakeholders. The state will need to implement legislative, regulatory, and policy initiatives. NJDEP, for its part, will continue to dedicate its resources to broadly supporting clean energy and emissions reductions efforts across all levels of government and social and economic sectors.

Lead program: Air, Energy & Materials Sustainability (AEMS)

When seeking change, measurement is critical. Achieving the state's greenhouse gas reduction and clean energy goals requires continual measurement of the State's greenhouse gas emissions and tracking of the efficacy of implemented actions. NJDEP is tasked with routinely monitoring and keeping all agency efforts on track to achieve the State's 50x30 and 80x50 GHG reduction goals. Accordingly, NJDEP is actively developing a series of reports, public information resources, and metrics to fully account for state actions and its progress in combating climate change, including fully considering and assessing the impacts and policy considerations of greenhouse gas reduction measurement on a 20-year time horizon.

Milestones and Targets:

Update the GWRA 80x50 Report to outline progress towards emissions goals.	Short-term
Release new GHG webpages.	Short-term
Develop a GHG dashboard showing the cumulative expected reductions from the State's GHG reduction efforts.	Short-term
Develop sector-specific webpages tracking implementation.	Short-term
Develop SCC guidance for State agencies.	Short-term
Issue annual GHG Inventory Report.	Short-term, ongoing
Continue participation in the United States Climate Alliance to stay abreast of state, national, and global policy development.	Ongoing

Lead program: AEMS

4.2.1.1 GHG Inventory and Progress Reports

New Jersey's greenhouse gas emissions inventory report provides critical data about the state's emissions profile and identifies which economic sectors are disproportionately contributing to the State's total emissions. However, emissions numbers are not enough for the State to evaluate its progress. Tracking other key performance indicators such as registered electric vehicles, number of solar installations and adoption of heat pumps is necessary to better understand the performance of the State's greenhouse gas emissions reduction policies. This will be especially important in the initial years when policies and programs are newly adopted and not yet at the scale to register as emission reductions. By evaluating more than just greenhouse gas emissions, policy makers can also consider other metrics to help them make critical adjustments to achieve the State's strategic goals.

See NJDEP's most recent GHG Inventory: https://dep.nj.gov/ghg/nj-ghg-inventory/.

The NJDEP will:

Develop other key performance indicators to report on progress towards its emissions reduction goals.	Short-term
Continue to release an annual inventory report.	Short-term, ongoing
Explore various means of communication to share current information with policy makers, to enable adaptive management of mitigation policy.	Medium-term

NJDEP also adopted monitoring and reporting rules for certain emissions of methane and halogenated gases, which are short-lived climate pollutants. Short-lived climate pollutants do not remain in the atmosphere as long as other greenhouse gases but are potent climate forcers with global warming potentials tens to thousands of times greater than that of CO_2. NJDEP will evaluate the information collected for potential further action to reduce methane and halogenated gas emissions from reporting sources. NJDEP will also continue to work with the United States Climate Alliance on actions and studies to address halogenated gas emissions, specifically HFCs, monitor Federal actions to implement the American Innovation and Manufacturing Act, and support Federal actions to regulate and phase-out HFCs.

Lead program: AEMS

4.2.1.2 Collaborate to Update RGGI Strategic Funding Plan

New Jersey returned as a participating state in the Regional Greenhouse Gas Initiative (RGGI) in 2020. RGGI is a multistate, market-based program that establishes a regional cap on CO_2 emissions from fossil fuel-fired power plants. NJDEP's CO_2 Budget Trading Program rules require fossil fuel-fired power plants with a capacity greater than 25 megawatts (MW) to obtain an allowance for each ton of CO_2 emitted annually. Most of these allowances are distributed through quarterly, regional CO_2 allowance auctions.

New Jersey has realized over $838 million dollars in revenue due to its participation in RGGI. To ensure the efficient investment of these auction proceeds, and in accordance with the Global Warming Solutions Fund, N.J.A.C. 7:27D, NJDEP, in partnership with the Economic Development Authority (EDA) and the Board of Public Utilities (BPU), jointly develop a triennial Strategic Funding Plan. These Strategic Funding Plans guides the agencies' investments in climate action, clean energy, and environmental equity. They serve as a common climate agenda for the agencies, ensuring they make investments that will support the State's broader climate mitigation efforts.

NJDEP will:

Develop programs to support the Regional Greenhouse Gas Initiative (RGGI) Strategic Funding Plan (covering years 2023 – 2025) in partnership with BPU and EDA.	Ongoing
Regularly update the RGGI Climate Investments Dashboard to maintain transparency of the investment of RGGI funding and track greenhouse gas reductions.	Ongoing
Continue to provide support to agencies and programs investing RGGI funding, to ensure alignment with the Energy Master Plan and the 80x50 Report.	Ongoing

Support climate resilience while developing and implementing NJDEP's Natural and Working Lands Strategy.	Ongoing

Lead program: AEMS

4.2.2 BUILDING DECARBONIZATION

Residential and commercial buildings account for 26% of the State's greenhouse gas emissions. These emissions are largely due to space and water heating. To achieve the 80x50 goal, the building sector must transition to net-zero emissions, which will require a transition from heat generated by natural gas use to, for example, modern heat pumps powered by electricity. It is estimated that 80% of the buildings that will be around in 2050 already exist today. By 2050, at least 90% of the residential and commercial sectors must be electrified to meet the State' clean energy and climate goals.

Launched in October 2022, the statewide Clean Buildings Working Group, led by OCAGE and BPU, with representatives from the Department of Community Affairs (DCA), will develop a building electrification roadmap that includes recommendations for policy, legislative, workforce, and funding strategies to further, through incentives and other mechanisms, increased energy efficiency. NJDEP will support BPU's as they implement benchmarking requirements to measure and compare with targets pursuant to the Clean Energy Act of 2018, while also working with both partner agencies to evaluate viable technologies that would help decarbonize space and water heating systems.

To model actions that individual institutions can undertake, NJDEP will initiate a "Lead by Example" program for its own facilities across the State as described below.

4.2.2.1 Lead by Example: Advancing Clean Energy Through Department Assets

State governments can demonstrate energy and environmental leadership, raise public awareness of the benefits of clean energy technology, and reduce greenhouse gas emissions by implementing lead by example programs. Leading by example involves implementing clean energy policies and programs in buildings, facilities, operations, and fleets under government control and represents a key policy tool for states to both directly reduce emissions and demonstrate proofs of concept for others seeking to achieve clean energy and greenhouse gas reduction goals.

NJDEP will coordinate with the Department of Treasury and BPU's Office of State Energy Services to implement a Department-wide initiative that evaluates greenhouse gas emissions and reduction strategies for Department owned/leased buildings and lands. This initiative will inform future regulatory actions in the State and serve as a critical step toward a whole-of-government approach for addressing climate change. Tracking emissions reductions from buildings operated by the State will provide greater familiarity with the most effective tools available on the market as well as any technical and economic limitations that arise in the process of retrofitting buildings with energy conservation and renewable energy measures.

To achieve these goals, NJDEP will:

Fulfill requirements of the Clean Energy Act of 2018 by benchmarking its facilities for energy and water usage.	Short-term
Develop a greenhouse gas inventory for its facilities.	Short-term
Publish website with success stories and resources.	Short-term
Evaluate Department facilities for building electrification pilot projects.	Short-term
Prioritize its facilities for energy efficiency opportunities.	Medium-term
Work with its facility managers to apply for energy audits and implement energy conservation measures and renewable energy.	Medium-term
Prioritize its facilities for Solar PV and EV charging opportunities.	Medium-term
Evaluate procurement options of renewable energy sourced electricity for its facilities.	Medium-term

Lead program: AEMS

4.2.2.2 Support Building Electrification Roadmap

As set forth in the EMP, the workgroup lead by BPU will create a roadmap through 2050 to transition buildings from fossil fuels, an effort which NJDEP will continue to support. See EMP at 169-170 (Goal 4.2.2). The BPU will establish goals and a timeline in the roadmap to first target new construction and electric resistance, oil or propane-fueled buildings for early decarbonization, and consider which building use cases are more appropriate candidates for alternative fuels rather than electrification.

To support BPU in this effort, NJDEP will:

Provide technical assistance to support the adoption of net-zero carbon goals for new construction of commercial and residential buildings	Short-term
Assist in the development of incentive programs to subsidize the cost of decarbonizing existing buildings.	Short-term
Provide technical assistance to develop a New Jersey version of the Clean Energy States Alliance Clean Heat and Cooling Calculator. The calculator estimates the greenhouse gas emission savings and the estimated cost savings of investing in clean heating and cooling technology, reflecting available state-wide incentives.	Short-term
Develop a statewide GIS building decarbonization tool that shows locations of relevant building data and resources to support the development of targeted policy.	Short-term
Develop a Geothermal Heat Pump Baseline Report to support the adoption of systems across the state.	Short-term
Execute a funding partnership with BPU to engage a research consultant with expertise in Geothermal Heat Pump technology to develop training materials for industry participants, educational curriculum to improve public awareness, and technical understanding to support a GIS-based siting tool to improve understanding of market penetration potential and technoeconomic feasibility.	Short-term

Lead program: AEMS

4.2.2.3 Support Expanded Energy Efficiency

Energy efficiency is critical to addressing the climate crisis and achieving the State's clean energy goals. Energy efficiency improvements are firmly established as among the most cost-effective strategies available for reducing fossil fuel consumption and resulting emissions.

To support BPU in in pursuing aggressive energy efficiency policies, NJDEP will continue to:

Assist BPU in the implementation of Clean Energy Act of 2018 mandates, including (1) benchmarking energy and water usage at commercial properties over 25,000 square feet; and (2) ensuring annual reductions of electricity and natural gas usage by utilities (2.15% for electric utilities and 1.10% for gas utilities).	Short-term
Support BPU and DCA in adopting stringent building and energy codes, including appropriate stretch codes.	Short-term
Pursue mandated energy audits and implementation of energy conservation measures in Department-owned and -leased State buildings (also see Lead by Example, 4.2.3.1).	Medium-term
Explore feasibility of incentives or requirements that publicly funded construction meet lowest technically feasible emissions.	Medium-term

Lead program: AEMS

4.2.3 TRANSPORTATION

At 39 percent, transportation represents the largest source of the State's total greenhouse gas emissions. Gasoline-powered vehicles, specifically, account for 70% of transportation emissions. To achieve the necessary reductions in this sector, the State must transition from fossil fuel-powered to electric vehicles. At the same time, recognizing that fossil fuel-powered vehicles may remain in the interim, NJDEP will promote key complementary policies including reducing vehicle miles travelled and single-occupancy vehicle trips by increasing mass transit ridership and encouraging active mobility (e.g., walking, biking), incentivizing work-from-home programs and flexible work weeks, and continuing to explore equitable regional partnerships and strategies to reduce transportation emissions.

4.2.3.1 Inter-Agency Collaboration to Drive Increased Adoption of Electric Vehicles

There are several transportation electrification goals identified in the 80x50 Report and through a separate Memorandum of Understanding with other signatory states and the District of Columbia. First, the State has a goal of achieving 100% light-duty (Class 1 & 2) plug-in electric vehicle, which includes plug-in hybrid electric vehicles (PHEV) and battery electric vehicles (BEVs), new sales by 2035. This means New Jersey will need an estimated 4.5 million light-duty PHEVs and BEVs combined on the road in 2035, representing 73% of all registered light-duty vehicles. As of December 2024, the number of light-duty EVs registered in New Jersey is 218,631, a 42% increase from 2023, representing nearly 3% of total registered vehicles in the state. EVs were also nearly 14% of new vehicle sales which is an important milestone indicating the beginnings of mass societal adoption of this critical technology. Second, the State also has a medium- and heavy-duty (MHD) goal of 30% electric MHD new sales in 2030 and 100% in 2050, which means New Jersey will need 118,000 MHD EVs on the road in 2035, representing 24% of all registered MHD vehicles.

To meet these goals and transition the transportation sector, the State must continue to develop sufficient EV charging infrastructure, conduct appropriate education and outreach, and provide appropriate incentives through funding and grant programs. One example of this approach is NJDEP's work with the Northeast States for Coordinated Air Use Management (NESCAUM), a non-profit association of eight northeastern states, to finalize a multi-state zero-emission medium- and heavy-duty vehicle action plan.

To achieve these goals, NJDEP will:

Work with Treasury to develop a State Fleet Transition Plan and a standing State contract to enable the installation of EV chargers at State properties. This will serve as a model and influence EV adoption and markets.	Short-term
In accordance with the Electric Vehicle Law, N.J.S.A. 48:25-1, develop goals for vehicle electrification and infrastructure development that address medium- and heavy-duty on-road diesel vehicles.	Short-term

Continue promote awareness through the "Drive Green" website (https://dep.nj.gov/drivegreen/), participate in the regional "Drive Change. Drive Electric" campaign, develop a State-specific consumer awareness campaign as required by the EV Law, pursue partnerships with car dealerships, and promote EV "Ride and Drive" events.	Short-term, ongoing
Continue to implement Administrative Order 2021-05, which requires NJDEP to purchase the most fuel-efficient vehicles possible, limits purchases of combustion engine vehicles to only where strictly necessary, and requires planning and deployment of necessary EV charging infrastructure. on State-owned lands and at workplace facilities.	Short-term, ongoing
Support the NJZIP truck voucher program administered by EDA and continue to identify and provide funding to electrify medium- and heavy-duty vehicles.	Short-term, ongoing
Continue developing strategies and financial incentives to ensure all communities have access to clean transportation through electric ride sharing and ride hailing (www.drivegreen.nj.gov/emobility).	Short-term, ongoing
In coordination with agency partners (i.e., BPU, EDA,DOT), continue focused investment of available resources (e.g., National Electric Vehicle Infrastructure Formula Program, Infrastructure Investment and Jobs Act, New Jersey Clean Energy Program, It Pay$ to Plug In program) and explore public-private partnerships to build charging infrastructure and incentivize electric vehicle adoption and transition.	Short-term, medium-term
Work with DCA and legislative partners to update building codes to ensure adoption of the most progressive standards including those requiring new buildings to be "EV ready" which will lower barriers and costs of adoption for new EV users.	Medium-term

Lead program: AEMS

4.2.3.2 Regulatory Reforms

As a part of CPR 2.0 rulemaking, NJDEP will:

Implement California Air Resources Board's (CARB) Advanced Clean Cars II (ACC II) regulations for model years 2027-2035 passenger vehicles and light-duty truck which will increase the Zero Emission Vehicles (ZEV) new sales requirement to 100% by 2035.	Complete
Evaluate the recently submitted Advanced Clean Truck fleet reports and monitor CARB's Advanced Clean Fleets rule to complement the Advanced Clean Truck rules adopted in December 2021. This new rule would require purchase of the electric trucks that manufacturers are required to deliver as part of the Advanced Clean Trucks rule.	Short-term

Lead program: AEMS

4.2.3.3 Support Exploration of Complementary Reductions in VMT

Reducing consumption is another key component to reducing emissions. In the transportation sector, this includes reducing vehicle miles traveled (VMT). Amidst the challenges and difficulties of recent years due to the COVID-19 pandemic, the State has shown that institutions and businesses can successfully integrate remote work programs while maintaining productivity and providing demonstrable, immediate, and significant emissions reductions from the transportation sector. Due to technical, financial, and practical limitations, it is not currently feasible to replace every fossil fuel-powered vehicle with electric. NJDEP therefore must evaluate and encourage additional methods of reducing VMT.

Accordingly, NJDEP will:

Engage stakeholders on potential regulatory amendments to its land management rules to encourage transit villages, transit-oriented development and other innovative VMT reduction strategies.	Short-term
Coordinate with other partner agencies to develop joint recommendations for sustainable funding mechanisms to replace fuel tax revenues currently used to maintain transportation infrastructure and complimentary policy reforms to facilitate enhancement and expansion of mass transit opportunities.	Short-term
Implement flexible work schedules in accordance with State policy.	Ongoing
Update the 80x50 Report to reflect a deeper consideration of VMT reduction strategies.	Ongoing
Wherever possible, incorporate VMT reduction strategies in all comprehensive planning efforts, including watershed, climate resilience, open space, and healthy community planning.	Ongoing

Lead program: AEMS

4.2.4 ENERGY TRANSITION

Electric generation is arguably the sector most advanced on the path to decarbonization. From a level of 34.1 MMT CO_2e in 2005, emissions have dropped steadily and reached 18.7 MMT CO_2e by 2020. While consideration of economic factors, such as the availability of low-cost natural gas and renewable energy, was one cause of this transition to lower-emitting generation, government policy has also played an important role. NJDEP will continue to assist in expanding renewable energy, including solar photovoltaic (solar PV), offshore wind, green hydrogen, and other emerging clean energy technologies. Currently, New Jersey has the highest offshore wind goal in the nation, 11 GW by 2040. NJDEP is coordinating closely with offshore wind developers, BPU, EDA, and several federal agencies to ensure that the State's goal is met, and natural resources are protected.

The EMP and the 80x50 Report recognize the State will continue to need fossil fuels as part of the State's energy mix and electric generation. Ultimately, the goal is to achieve a 100% clean electric generation section, with emissions totaling zero by 2050.

To continue towards this goal, the Department will:

Support OCAGE in efforts to secure federal funding towards the development of a regional hydrogen hub.	Short-term
Continue to explore options for fossil fuel fired electric generating units to build out alternative technologies and reduce their overall emissions. Potential rules would be designed to provide appropriate flexibility to align with the growth of the State's clean energy capacity.	Ongoing
Explore legislative, regulatory, funding, and administrative avenues to, as appropriate, require the review of certain activities that directly increase greenhouse gas emissions to evaluate project consistency with the State's clean energy and emissions reductions goals, including analysis of appropriate alternatives, mitigation measures, and necessary justifications.	Ongoing
Continue to implement the objectives of the 2019 Energy Master Plan and its 2024 update and the 80x50 report and provide updated guidance and planning to the Governor and Legislature with subsequent GWRA reports.	Ongoing

Promote the objectives of RGGI, including support for partner agencies and investment in climate-supportive projects.	Ongoing
Provide the public with information and resources to promote equitable, fair, affordable, and convenient participation in the energy transition.	Ongoing
Continue to support the environmentally responsible development of the offshore wind industry, including offshore and onshore infrastructure and facilities are planned and built in a way that avoids and minimizes impacts to natural resources.	Ongoing

Lead program: AEMS

4.2.4.1 Support Solar Development Through Improved Siting Guidance & Policy

To achieve the state's clean energy and greenhouse gas emission reduction goals, the State must exponentially increase solar photovoltaic (solar PV) installations. At the end of 2024, New Jersey exceeded 4.9 GW of installed solar PV capacity from over 200,000 installed systems. By 2050, New Jersey will need to increase installations to 32 GW of solar capacity. To better support solar development, the Legislature passed, and Governor Murphy signed, the Solar Act of 2021 (Solar Act) which directs the BPU to enact sweeping changes to its programs incentivizing the construction of solar-powered generation facilities to serve New Jersey customers. The Solar Act further directed BPU, the NJ Department of Agriculture (NJDA) and NJDEP to work collaboratively to develop solar siting rules to guide solar development in a manner that facilitates the State's commitment to affordable, clean, and renewable energy while minimizing potential adverse environmental impacts. The Solar Act also establishes a preference for development in the built environment (including expanded eligibility for contaminated sites and landfills). The Solar Act specifies that the goal of the new incentive structures is to enable the development of at least 3,750 megawatts of new solar power generation by 2026.

Accordingly, NJDEP reexamined its authorities to develop a consistent but flexible approach to solar development. In doing so, NJDEP has developed siting guidance, adjusted policy positions, worked to streamline processes, looked inward for opportunities to lead by example, and assessed further opportunities for improvement. Taken together, these actions further NJDEP's overarching policy to maximize solar development throughout the state while ensuring activities are protective of human health and the environment. This is of particular import on landfills and contaminated sites where NJDEP believes there are significant opportunities to incentivize public-private partnerships in achieving parallel solar and remediation goals. Critical to this effort are clear and transparent solar project siting guidelines that apply across the State, and a complementary mapping tool that allows users to quickly and reliably identify areas best suited for solar development.

NJDEP will:

Update its 2017 Solar Siting Analysis tool to incorporate numerous datasets and align with statutory eligibility criteria to support the expansion of solar in New Jersey while protecting open and green space to the greatest extent possible.	Complete
Continue to partner with BPU on the Community Solar Energy Program by providing technical input on the straw proposal as well as developing a new/revised GIS Community Solar Siting Tool.	Short-term
Reform its internal review and evaluation procedures to conform with the updated eligibility criteria of the Solar Act and streamline internal review processes to ensure timely recommendations to BPU.	Short-term
Issue updated solar policy implementing reforms across programs.	Short-term
Explore complementary land resource protection rules reforms to incentivize solar development in preferred areas, including contaminated sites, landfills, rooftops, and parking lots.	Short-term
Continue to streamline the internal solar project review process.	Short-term
Interface with Department of Treasury on Solar PPA process to ensure compatibility with installation of solar PV on Department assets.	Short-term

Lead program: AEMS

4.2.4.2 Assist in Evaluation of Clean Energy Utilization Options

Beyond dramatically expanding renewable and distributed energy resources, the State will also need to limit reliance on fossil fuel powered electric generating units while, as called for by the EMP, concurrently working to maintain nuclear capacity and adapt existing infrastructure to accommodate distributed renewable energy and increasing electricity demand to achieve the EMP's lease cost scenario.

NJDEP will:

Conduct a study of potential biomass sources available to New Jersey and estimate the amount of biogas required for meeting electric generation demand by 2050.	Short-term
Evaluate options for alternative energy sources, including biogas-fired turbines, renewable energy-powered or hydrogen-powered fuel cells, and other emerging technologies.	Short-term
Evaluate opportunities for biomass-to-energy and other electricity generation projects based on source-separated food waste and anaerobic treatment technologies, as identified in 2019 EMP least cost scenario for 2040 and later implementation.	Medium-term

Lead program: AEMS

4.2.5 OTHER SOURCES & SECTORS

While NJDEP categorized its work according to different economic sectors in the 80x50 report, there is, of course, overlap. For example, while electrifying the transportation sector will reduce black carbon emissions, potential increases in emissions from the electric power generation sector must be accounted for as demand is expected to double as a result of large-scale transitions in transportation and other sectors.

Accordingly, NJDEP will also explore strategies and regulatory options to reduce emissions from landfill and wastewater treatment plant sources, targeting emission of methane (a highly warming gas), as well as the industrial sector.

4.2.5.1 Industrial Sector

Industry is considered one of the harder-to-abate emissions sectors. Few scalable methods exist today for generating the large quantities of high temperature heat required for many processes, other than burning fossil fuels and using process gases, both of which are emissions-intensive. Given this challenge, there is an exciting opportunity for innovation for emission reduction technologies for the industrial sector.

In New Jersey, industrial emissions account for 7% of New Jersey's GHG emissions. Therefore, staying up to date on the latest emission reduction technologies and approaches for the industrial sector, with an initial focus on energy efficiency, is necessary to reduce emissions from this sector.

In addition to GHG reductions, anticipated benefits could include reduced co-pollutant emissions and water discharges containing toxic chemicals, reduced solid waste generation, and improvements to environmental and public health conditions in overburdened communities where many manufacturing operations exist.

NJDEP will:

Incentivize New Jersey food manufacturers to engage in energy benchmarking and pollution prevention, especially within the dairy manufacturing, animal processing, and fragrance and flavors sectors.	Short-term
Explore the projects in the US Department of Energy Hydrogen Hubs Proposal.	Short-term
Participate in the United States Climate Alliance Industrial Decarbonization Workgroup, which facilitates peer-to-peer exchange among states, identifies and shares best practices, and develops technical documents and resources to assist state efforts.	Short-term, ongoing
As part of NJDEP's Small Business Assistance Program (SBAP), continue to provide technical support and compliance assistance to industrial businesses in the State, at no cost for businesses with 100 or fewer employees. The SBAP services include environmental and energy evaluations at participating facilities; recommending measures to improve a facility's environmental and energy performance; and providing cost/benefit analysis of recommended measures improving environmental and energy performance.	Short-term, ongoing
Continue to research and evaluate technologies and practices to decarbonize industrial processes and inform regulatory options.	Ongoing
Continue to develop innovative methods to increase education, awareness and foster adoption of broad sustainability practices.	Ongoing

Lead program: AEMS

4.2.5.2 Ozone Attainment

The State has shown significant improvements in tropospheric, or ground-level, ozone air quality by reducing ozone precursors emissions, specifically nitrogen oxides (NOx) and volatile organic compounds (VOCs), from transportation, industrial, commercial and residential sources. Ozone is also considered an important short-lived greenhouse gas. Because of New Jersey's control measures for ozone precursors, ambient air monitors throughout the State are measuring near or below the Federal standards.

However, New Jersey is part of two regional airsheds, that are classified as ozone nonattainment areas. These areas include portions of other nearby states that have monitors measuring relatively higher levels of ozone that continue to exceed Federal standards. In 2024, the U.S. Environmental Protection Agency reclassified New Jersey's northern and southern nonattainment areas from Moderate to Serious nonattainment due largely to regional influences from emissions from vehicles, equipment and large upwind industries. Even with the decreased levels of ozone measured at New Jersey monitors, the State still experiences days when elevated air quality levels could have a health impact on residents.

As our climate continues to warm and wildfire events become more common and extensive, the State will be further threatened with degradation of air quality, particularly ozone. Therefore, the State must take additional, targeted steps to reduce ground-level ozone to protect public health by reducing the number and extent of unhealthy air quality days, and further reduce impacts on the nearby states in the State's shared nonattainment areas.

Most immediately, this includes continuing to reduce VOCs from consumer products and architectural and industrial maintenance coatings, which represent the largest source of VOC emissions in the State's emission inventory. The Ozone Transport Commission (OTC), with New Jersey's input, developed model rules to reduce VOC emissions from these

products. NJDEP proposed these regulations on August 19, 2024, based on the OTC model rules and stakeholder outreach conducted prior to the initiation of rulemaking. These rule amendments, once adopted, will assist the State in attaining and maintaining the ozone National Ambient Air Quality Standard (NAAQS) by lowering the VOC limits in certain categories of products, incorporating VOC limits in certain new categories, and eliminating other categories.

NJDEP will:

Propose rules based on the 2010 OTC model rule for architectural and industrial maintenance coatings.	Complete
Propose rules based on the OTC model rule Phases III and IV for consumer products.	Complete
Adopt rules based on the 2010 OTC model rule for architectural and industrial maintenance coatings.	Ongoing
Adopt rules based on the OTC model rule Phases III and IV for consumer products.	Ongoing

Lead program: AEMS

4.2.5.3 Landfills & Wastewater Treatment Facilities

Waste management, including landfills and wastewater treatment facilities, is the largest source of non-energy greenhouse gas emissions in the State (5.3 MMT CO_2e). The composition of landfill gas varies greatly depending on the makeup of the waste. Typically, the State's landfill gas consists of equal amounts of methane and CO_2 with trace amounts of hydrogen sulfide, siloxanes, and moisture. Wastewater treatment facilities are also a notable source of methane and CO_2. Emissions from the wastewater management sector alone would comprise more than 25% of the State's total 80x50 goal if left unchecked.

NJDEP will:

Engage stakeholders to discuss potential avenues for improvement.	Medium-term
Propose and adopt necessary regulatory reforms.	Medium-term, Long-term, ongoing

Lead Program: AEMS

5. RESILIENCE

Just as the State's clean energy transition and climate pollutant reduction strategies are critical to abate the worst climate effects, the State also must prepare for and adapt to current and likely future adverse climate impacts. The State is already facing increased intensity and frequency of extreme precipitation and associated flooding, stronger hurricanes, and extreme heat. These impacts are especially challenging for low-income and marginalized communities, where vulnerability to these impacts is exacerbated by historic disinvestment, which hinders both preparation and recovery. New Jersey's ecosystems are also facing climate impacts that threaten their health and longevity, including shifts in species' habitat ranges, increased erosion and drowning of tidal wetlands, and saltwater encroachment on our forests due to sea-level rise.

Investing in and incorporating resilience into our infrastructure and ecosystems today will better prepare us for the effects of climate change in the future, reducing the burden of disaster recovery on New Jersey families and preserving New Jersey's natural landscapes and vibrant communities for generations to come. Investments in climate resilience have long-term economic benefits as well. According to an economic study[1] by Allstate, the U.S. Chamber of Commerce, and the U.S. Chamber of Commerce Foundation, every $1 spent on climate resilience and preparedness saves communities $13 in damages, cleanup costs, and economic impact. The study also shows that, even should a disaster never occur, investments in climate resilience produce positive economic benefits such as job creation, and increased production and incomes.

5.1 THOUGHT LEADERSHIP

In October 2019, Governor Phil Murphy signed Executive Order (EO) No. 89, which initiated several climate resilience programs and initiatives throughout NJDEP. EO 89 established the position of the State Chief Climate Resilience Officer (CRO) to provide strategic direction and support to the Interagency Council on Climate Resilience

(IAC) and other cross-departmental climate change resilience initiatives as vice-chair of the IAC, and coordinate DEP's policies, programs, and activities to plan for and address the current and anticipated impacts of climate change. In October 2021, the CRO and the IAC released the inaugural, Statewide Climate Change Resilience Strategy (Resilience Strategy), as directed under EO 89. The Resilience Strategy details over a hundred recommendations for building programs and policies that promote climate resilience throughout the State.

The actions listed in this section reflect and build on the Resilience Strategy by integrating and expanding resilience actions across existing NJDEP programs and policies, as well as create new initiatives that fill programmatic gaps in the State's climate resilience efforts. Although many of these actions will be led by the CRO, interdepartmental coordination is critical to achieving resilience in all aspects of the NJDEP's work, from permitting and planning to funding and technical assistance.

5.2 POLICY DEVELOPMENT & INCENTIVES

5.2.1 REGULATORY REFORMS

NJDEP continues moving the NJ Protecting Against Climate Threats (NJ PACT) Resilient Environments and Landscapes (REAL) rule forward. This regulatory reform includes amendments to the Flood Hazard Area Control Act Rules (N.J.A.C. 7:13), the Freshwater Wetlands Protection Act Rules N.J.A.C. 7:7A), the Coastal Zone Management Rules (N.J.A.C. 7:7), and the Stormwater Management Rules (N.J.A.C. 7:8). Once adopted, these targeted regulatory reforms will enable government, business, and residents to effectively respond to current and future climate threats, such as sea-level rise, extreme weather, and chronic flooding by modernizing the land use rules. These reforms are happening in two steps.

First, in response to a pattern of increasingly intense rainfall events (including the remnants of Tropical Storm Ida), NJDEP adopted the Inland Flood Protection Rule on June 2, 2023 to update the decades-old, insufficiently protective precipitation data that forms the basis of its flood hazard and stormwater regulatory standards to reflect the results of the New Jersey specific current and future precipitation data. This update ensures that new investments are better positioned to withstand present and future conditions over their useful life at modest marginal cost.

Millburn, NJ

"...every $1 spent on climate resilience and preparedness saves communities $13 in damages, cleanup costs, and economic impact."

Secondly, NJDEP proposed the REAL Rule which builds upon the changes made under the Inland Flood Protection rules to collectively protect New Jersey's land and water resources, as well as afford protections to public safety, health, and welfare. The REAL rules ensure alignment of the NJDEP's flood resilience standards across all programs including but not limited to remediation, planning, funding, solid waste, and water resources. REAL will also implement appropriate amendments to better focus on watershed-based regulation to protect water quality and alleviate existing conditions that exacerbate flooding. REAL removes barriers to environmentally-sustainable renewable energy development, and makes adjustments that may be necessary to facilitate the State's clean energy transition. NJDEP will ensure coastal resilience through mechanisms such as nature-based solutions, and requiring municipal or regional planning agencies to evaluate climate change impacts on stormwater management. NJDEP expects the REAL Rule to be adopted in late summer or fall of 2025.

Taken together, these reforms will facilitate the building of resilient communities by avoiding at-risk development in flood prone areas, reestablishing historical streamflow patterns, revegetating riparian areas, and encouraging green building and infrastructure.

NJDEP will:

Propose and adopt Inland Flooding Rules.	Complete
Identify regulatory NJPACT REAL amendments.	Complete
Conduct stakeholder engagement to gather input on conceptual list of amendments.	Complete
Propose NJPACT – REAL.	Complete
Adopt REAL rules.	Ongoing, Short-term

Lead program: Watershed & Land Management (WLM)

5.2.2 COORDINATION, GUIDANCE & COMMUNICATION

5.2.2.1 Facilitate Action by the Interagency Council on Climate Resilience (IAC)

The first iteration of the Resilience Strategy serves as a baseline for state agency action and is required under EO 89 to be updated every two years to keep up with developing science and the status and progress of State priorities. To affect these updates, the CRO and IAC will prepare issue-specific Resilience Action Plans and other similar reports which will detail how state agencies are supporting climate resilience, institute regular public engagement across the state, and track agencies' progress toward resilience goals.

In coordination with the IAC, NJDEP will:

Release the first issue-specific Resilience Action Plan on Extreme Heat.	Complete
Lead a stakeholder and public engagement process to share information and gather feedback to inform IAC action.	Ongoing
Establish topic-specific workgroups with representatives from IAC member agencies to accelerate actions on high-priority issues.	Ongoing
Track and maintain accountability across agencies for advancing recommendations from the Climate Change Resilience Strategy as part of IAC annual reports.	Ongoing
Release a flooding actions report detailing how IAC agencies are addressing flooding.	Short-term
Establish vulnerability considerations for state agency funding decisions, including data, mapping sources, impacts, and criticality.	Short-term
Supplement the Extreme Heat Resilience Action Plan with additional actions by agencies that recently joined the IAC.	Short-term

Lead program: Office of Climate Resilience (OCR)

5.2.2.2 Improve County Environmental Health Act (CEHA) Resilience Training

Incorporating resilience training opportunities for county health agencies into bi-annual CEHA training events will increase understanding and responsiveness to climate change. These opportunities will allow for up-to-date training on all resilience efforts, and help keep agencies informed of the evolving efforts throughout the state and country.

NJDEP will:

Provide initial education and training to the county agencies.	Short-term
Provide updates and/or changes to the plan through CEHA.	Medium-term
Outline changes in the plan at bi-annual CEHA meetings.	Ongoing, Long-term

Lead program: OCR

5.2.2.3 Address National Flood Insurance Program Consistency and Municipal Guidance

In the aftermath of a natural disaster, local and state officials take on many additional duties and often face the challenge of fulfilling them with few resources. Local and state officials may encounter a large number of damaged structures and a high volume of permit applications. When structures are "substantially damaged," meaning the cost of restoring the structure to its pre-damage condition would equal or exceed 50% of the structure's pre-damage market value, most property owners want to repair and rebuild as quickly as possible. But substantially damaged properties must be accurately assessed and documented by local and state officials to meet the requirements of the State's participation in the National Flood Insurance Program (NFIP), and to ensure that these properties meet appropriate resilience standards.

NJDEP provides floodplain management assistance to local communities through its NFIP Community Assistance Program. Maintaining an understanding of the requirements of the NFIP in each of these municipalities presents a considerable challenge, particularly when there is a high turnover rate among local floodplain administrators. Ensuring that local and state officials have sufficient management resources will help efficiently rebuild damaged areas and break the repetitive cycle of continuing flood damage on the same structures. It is equally important to ensure that NJDEP's FHACA rules uphold and, where possible, exceed minimum federal standards so that all local, state and federal partners synoptically approach floodplain management in New Jersey. As a result of ongoing discussions with the Federal Emergency Management Agency (FEMA), a suite of process improvements and regulatory amendments are warranted to achieve this goal, including the establishment of a State Floodplain Administrator. By instituting and affirming a holistic approach to floodplain management, buildings and infrastructure will be more resilient to the increasing challenges of a changing climate.

NJDEP will:

Establish standard operating procedures and templates for communicating with local officials after major floods.	Short-term
Work in coordination with FEMA to provide training and guidance to local and state officials on the development and preparation of substantial damage determinations.	Short-term
Work with communities to establish a Disaster Assistance Response Team (DART) to help communities handle their floodplain management responsibilities after a natural disaster.	Short-term
Work in coordination with FEMA to educate local and state officials on possible reimbursement funding for substantial damage determinations through FEMA Public Assistance DRRA 1206. DRRA 1206 authorizes FEMA to provide communities with resources to effectively administer and enforce building code and floodplain management ordinances following a presidential disaster declaration.	Short-term
Develop guidance and conduct outreach to locals regarding management of waste, particularly in flood prone areas or other vulnerable locations. Post-event Temporary Debris Management Areas are critical for recovery and to allow reimbursement of State, county or local expenditures through FEMA.	Short-term
Continue working with the 559 New Jersey NFIP participating communities to update ordinances to newer model code coordinated ordinances.	Short-term

Encourage communities that have extensive floodplains and significant numbers of flood-prone buildings to prepare for an increased workload post-event, provide guidance and promote use and implementation of the existing NJ Substantial Damage Management Plan template. This plan is also a requirement for Community Rating System (CRS) participating communities.	Medium-term
Use Floodplain Mapping Services Term Contract TC-007 to hire consultants to conduct substantial damage determinations of State-owned building structures located within floodplain areas after a Presidential-declared disaster.	Medium-term
Update and present for adoption new model Flood Damage Prevention Ordinances that include standards established by NJPACT-REAL, including expanding the number of NFIP participating communities.	Medium-term
Propose necessary process improvements and regulatory reforms to ensure that all state-owned assets as well as all permitted activities within the flood hazard area are compliant with minimum NFIP standards.	Medium-term
Continue to provide training and webinars to local floodplain administrators. Encourage local floodplain administrators to acquire Certified Floodplain Manager (CFM) certification. NJDEP will continue to apply for federal grants that can pay for the CFM certification training and fees for local floodplain administrators.	Ongoing
Prioritize technical assistance and available resources for communities with increased risk and/or fewer resources to ensure an equitable increase in resilience across all municipalities in the state.	Ongoing
Continue supporting local communities in their efforts for flood risk reduction. Help CRS communities improve their community rating class so that higher discounts are provided on their resident's flood insurance policies.	Ongoing

Lead program: WLM

5.2.2.4 Develop Statewide Extreme Heat Mitigation Initiative

New Jersey is warming faster than the rest of the Northeast region and the world, and extreme heat is expected to get worse, increasing in duration and frequency across a larger area of the State. The threat of extreme heat must be addressed at the State level. Based on the 56 actions assigned to NJDEP in the IAC Extreme Heat Resilience Action Plan, NJDEP will develop and implement a Statewide Extreme Heat Mitigation Initiative. Such actions may include, but are not limited to, communication and outreach, expansion of heat relief opportunities, and increased preparedness action across various scales of government.

NJDEP will:

Continue to develop and implement communications/outreach regarding extreme heat, leveraging new and— different media, methods, and targeted messaging to key vulnerable populations.	Ongoing
Continue to update Heat Hub NJ with new information and features, as well as its Chill Out NJ mapping application, and promote to the public as the source for all things heat-related in New Jersey.	Ongoing
Track and maintain accountability across agencies and DEP program areas for advancing recommendations from the Extreme Heat Resilience Action Plan as part of IAC annual reports.	Ongoing
Seek to expand Green Acres funding for natural infrastructure and green spaces (including pocket forests and other tree planting, urban parks/parklets, green stormwater infrastructure, as well as splash parks/water access).	Short-term
Develop guidance for municipalities and communities on how to plan for, and respond to, extreme heat events and chronic heat-related stressors.	Short-term
Evaluate methods to invest in and incentivize reduction of impervious surfaces and installation of less heat trapping alternatives like white or green roofs and cool pavement.	Short-term

Partner with municipalities, communities, and non-profit organizations to collect and analyze local data and identify priority areas to mitigate extreme heat at the community level.	Medium-term
In coordination with the IAC, advance the development of guidance and resources for agencies to seeking to implement workplace heat illness prevention interventions.	Medium-term
In coordination with the IAC, develop training, education and outreach programming and materials for specific audiences tasked with extreme heat event response and preparedness activities, such as first responders and cooling center operators.	Medium-term
Explore and develop appropriate legislative, regulatory, and funding mechanisms to provide extreme heat protections (e.g., Code Red, Heat Health Standards) and energy efficiency assistance.	Long-term
Invest in A/Cs, cool pavements/roofs, mapping, and greening/conversion of pavement.	Long-term
In coordination with the IAC, identify bidding, services, and contracting opportunities that can help municipalities to prepare for extreme heat.	Long-term

Lead program: Office of Climate Resilience (OCR)

5.2.3 SUSTAINABLE & RESILIENT COMMUNITIES

5.2.3.1 Blue Acres Evolution

NJDEP's Blue Acres buyout program is a national model for successful flood risk mitigation, acquiring close to 1,200 flood damaged homes and converting those properties to open space. NJDEP will refine and expand the reach of the program; adding proactive climate resilience planning activities to the program's existing disaster recovery function, promoting visioning around post buyout flood storage design and open space uses, emphasizing public engagement and working responsively and creatively to meet the key needs both buyout homeowners and communities face. Incorporating climate change-specific considerations into buyout planning will allow vulnerable locations to be more resilient when faced with the next severe weather event and the growing threat of climate change.

NJDEP will:

Secure consistent administrative funding and sustainable staffing for the core functions of the program.	Ongoing
Identify implementation process improvements that simplify and accelerate the buyout process for motivated, willing seller homeowners.	Ongoing
Ensure buyout offers enable relocation to areas not vulnerable to flooding.	Ongoing
Utilize emergency buyout prioritization and ranking criteria to offer a state-funded buyout pathway for homeowners with high social, personal, or financial vulnerability that cannot wait for federal grant funding approvals to be obtained.	Ongoing
Implement the vision of Blue Acres as a proactive climate resilience program and work with Resilient NJ teams and municipalities to incorporate buyouts into broader climate resilience planning discussions.	Ongoing
Identify federal and state grant funding opportunities beyond FEMA and HUD sources that can be used to fund buyout work and support flood prone landscape restoration activities.	Ongoing
Expand public engagement and visioning efforts around post buyout land use. Promote creative approaches to the restoration of former buyout properties to mitigate climate impacts and to stimulate positive local or regional community benefits.	Ongoing
Work with state partners (e.g., Office of Emergency Management and NJDCA) to utilize existing and future federal funding to further both Blue Acres disaster recovery and resilience planning functions.	Ongoing
Conduct voluntary, post buyout homeowner surveys to understand the longer-term benefits, challenges and impacts that relocation has on participants. Use data to evaluate program practices and identify improvements.	Ongoing

Build and maintain a network of national buyout practitioners who share their knowledge, expertise and best practices.	Medium-term

Lead program: OCR

5.2.3.2 Increase Local Resilience Planning Through Resilient NJ

Resilient NJ is New Jersey's preeminent resilience planning program and provides funding and technical assistance to support local and regional climate resilience planning through multiple means and at multiple scales. Consistent with the Statewide Climate Change Resilience Strategy, it is a goal of NJDEP to ensure that every municipality in the state has a comprehensive, equitable, resilience action plan. The Resilient NJ program currently includes multiple regional resilience plans – with additional opportunities forthcoming, a Municipal Action Plan grant program that funds municipal plans, technical assistance and voluntary review of municipal climate change related hazard vulnerability assessments required by New Jersey's Municipal Land Use Law, and the Local Climate Resilience Toolkit, an online resource for local governments to develop resilience action plans. The Resilient NJ program will be expanded to fund additional local and regional resilience action plans, build on and update the Toolkit to provide comprehensive guidance to local governments, and provide technical assistance across the state, prioritizing socially vulnerable and under-resourced communities.

NJDEP will:

Develop and release the Resilient NJ Climate Resilience Funding Directory, an online tool designed to assist practitioners identify funding for climate resilience projects.	Complete
Develop resilience planning guidance and resources to be maintained in the Local Planning for Climate Change Toolkit to assist local governments in developing and implementing resilience plans. Leverage the resources and expertise of NGOs, academic institutions, and other state agencies for guidance development. Seek additional, and permanent, funding sources with the goal of providing support to every local government in New Jersey.	Short-term
Utilize NJ's annual coastal zone management award from the National Oceanic and Atmospheric Administration (NOAA) to fund local resilience plans and activities.	Short-term
Use federal funding awards (Inflation Reduction Action Climate Regional Resilience Challenge funding from NOAA and HUD CDBG-DR) to fund regional resilience plans and activities.	Short-term
Incorporate Blue Acres acquisitions and extreme heat mitigation activities into the Resilient NJ planning framework.	Short-term
Seek additional, and permanent, funding sources with a goal of providing support to every local government in New Jersey.	Medium-term

Lead program: OCR

5.2.3.3 Increase Tree Equity

Urban forests and trees in New Jersey's most densely populated areas play a vital role in mitigating the impacts of climate change by providing carbon storage and sequestration, demand-side energy reductions, stormwater mitigation and flood reduction, shade that reduces the urban heat island effect, and improved air quality.

New Jersey's Urban and Community Forestry program currently utilizes and promotes advanced tools, including local inventory, iTree, and Tree Equity Score, to inform decisions and maximize benefits from urban trees and forests. Still, some communities lack resources to maintain and grow their urban forest. To meet the state's climate challenges and support tree equity in underserved areas, this program will need to expand efforts.

NJDEP will:

Pilot statewide school-focused tree planting grant program.	Complete
Evaluate the potential to leverage other funding sources to adapt the work of the urban and community forestry program to address climate change and increase tree equity.	Short-term

Assess the current structure and function of the program to identify opportunities to expand its reach and ensure tree equity across the state.	Short-term
Identify plant-able space in urban settings for potential afforestation.	Short-term
Evaluate the need for statewide urban forest inventory to ensure data collection amongst municipalities is consistent.	Short-term, medium-term
Recruit and onboard 10 new municipalities with management plans annually.	Medium-term
Issue 10 new or updated inventory grants per annual cycle.	Medium-term
Expand the Urban & Community Forestry grant programs for urban tree planting and maintenance.	Medium-term
Target to core train 100 individuals annually from participating municipalities.	Medium-term
Enroll all municipalities in the Urban & Community Forestry program by 2043.	Long-term

Lead program: State Parks, Forests & Historic Sites (SPFHS)

Princeton, NJ

5.2.3.4 Assess Vulnerability of State Parks & Cultural Resources

NJDEP'S SPFHS program oversees an estimated 1,600 buildings, facilities, and historic and cultural resources and structures, in addition to a network of roads, trails, campgrounds, and other amenities. These assets are vulnerable to more frequent and severe storms due to climate change. In addition, these assets host a significant number of visitors, with nearly 18 million people coming to a New Jersey state park each year. Many of these visits, particularly those to state parks with swimming areas, occur during the summer months. As New Jersey's temperatures continue to warm and the state experiences an increasing number of heat waves, the SPFHS program will need to ensure for the safety and awareness of those visitors to climate-driven extreme heat. To continue to ensure high quality outdoor recreation experiences that are accessible to all, the

SPFHS program must adapt its infrastructure for climate realities, which will include relocating and creating new facilities in more climate resilient locations. The SPFHS program must also lead by example, undertaking energy efficiency and sustainability evaluations to support the transition from fossil fuel supported heating and cooling to more sustainable energy systems, and by implementing energy saving measures.

The NJDEP will:

Work with Watershed and Land Management to evaluate permit compliance for ongoing and anticipated capital development projects in flood hazard areas to proactively assess the need to adapt and relocate projects out of flood hazard areas.	Short-term
Evaluate state park facilities, historic sites, and infrastructure within areas at risk to climate-related flooding threats (i.e.., sea-level rise and flash flooding) as well as those vulnerable to extreme heat (e.g., playground equipment, sports fields, parking areas, etc.) and identify and prioritize actions to avoid or reduce impacts.	Medium-term
Implement an outreach and education initiative to advise park visitors about extreme heat and its health impacts and direct them to Heat Hub NJ for additional information on ways to protect themselves.	Short-term
Complete energy audits and implement energy saving measures at SPFHS facilities.	Medium-term

Lead program: SPFHS

5.2.3.5 Implement Climate Resilience Considerations for Critical Facilities

The Department seeks to require facilities regulated by the Bureau of Release Prevention to assess climate change impacts as part of their Discharge Prevention Control and Countermeasure Plan (DPCC) or their Toxic Catastrophe Prevention Act (TCPA) Plans. The program intends to consider whether this can be accomplished, with stakeholder input, through policy or if regulatory amendments will be needed.

The Department will:

Engage stakeholders to determine feasibility and framework for potential regulatory amendments for facilities to prepare Climate Resilience Plans.	Short-term
As interim measure until regulatory amendments are implemented, utilize Consent Orders and other authorizing documents for facilities to consider potential impacts from climate change in their designs, operations, maintenance, or procedures.	Short-term
Propose and adopt regulatory amendments	Medium-term

Lead program: AEMS

5.2.3.6 Improve Stormwater and Wastewater Infrastructure

As seen during Tropical Storm Ida and subsequent extreme precipitation events, flooding continues to be exacerbated, whether near streams or not, due to inadequate, under-designed, and poorly maintained stormwater infrastructure. NJDEP continues to update its regulatory standards to more accurately reflect current and future precipitation rates, addressing new development and redevelopment. However, the issue can only be fully addressed through deliberate and meaningful action to upgrade and retrofit existing stormwater infrastructure, including addressing resilience of combined sewer overflow (CSO) systems to the impacts of increasing precipitation and sea-level rise.

Much of the state's water (storm, water, wastewater) infrastructure has aged past its useful life. The impacts of climate change will cause additional stress on that infrastructure causing inefficiencies and quality issues. It is crucial that municipalities and systems consider the impacts to climate change while planning for the installation and replacement of infrastructure.

As with most critical infrastructure needs, funding remains a significant barrier to action. A key, yet underutilized, tool in this effort is the development of municipal or regional stormwater utilities under the Clean Stormwater and Flood

Reduction Act. This Act authorizes local and county governments and certain utilities to create stormwater utilities to properly operate, maintain, repair, and improve their storm sewer system through the assessment of fair and equitable fees based on proportionate stormwater contribution. To spur consideration of this powerful community protection tool, NJDEP has offered technical assistance to qualified entities to conduct stormwater utility feasibility studies, with priority given to overburdened and CSO communities. Entities that complete this step are well positioned to receive additional aid to establish their utility.

NJDEP also offered a grant program totaling $7 million to fund green infrastructure, infrastructure retrofits, and other innovative projects that will help communities become resilient to the increase in extreme rainfall events. Subsequent phases of the program will provide Technical Assistance to aid municipalities that are improving water quality and reducing flooding through better stormwater management. Additionally, through a Climate Ready NJ, NJDEP is partnering with Rutgers University Cooperative Extension to implement 40-60 neighborhood-scale stormwater green infrastructure projects that will improve water quality and reduce localized flooding in Paterson, Newark, and Perth Amboy.

Additionally, NJPDES permittees are required to comply with resilience requirements for the installation of any CSO controls in order to address climate change effects. New Jersey CSO permittees have selected the Presumption Approach under the Federal CSO Control Policy which requires an increase in wet weather percent capture consistent with the Federal CSO Policy. Many CSO permittees have selected increased conveyance to the wastewater treatment plant, sewer separation, and green infrastructure. These improvements are anticipated to decrease CSO related flooding.

NJDEP will:

Launch its infrastructure program and publish opportunities for technical support in conducting stormwater utility feasibility studies and funding extreme rainfall resilience projects.	Complete
Develop guidance to update resilience requirements for water infrastructure projects receiving funding through the New Jersey Water Bank program.	Complete
Develop and issue CSO permits that incorporate requirements to address climate change impacts.	Short-term
Provide additional stormwater management technical assistance to municipalities to improve water quality and reduce flood risk.	Short-term
Incentivize upgrades to stormwater systems by requiring resilience measures as a condition of funding and asset management programs for water infrastructure.	Short-term
Evaluate enhanced stormwater compliance and enforcement advisories, funding initiatives, and educational opportunities.	Short-term
Codify the Water Quality Accountability Act, requiring water providers to develop asset management plans.	Short-term

Lead program: Water Resource Management (WRM)/Watershed and Land Management (WLM)/OCR

5.2.3.7 Implement One Water Initiative

Increased rainfall and changing weather patterns as a result of climate change will necessitate proactive assessments and coordinated watershed management across the State. Data collection, data assessment, and comprehensive management strategies are crucial to addressing the impacts of climate change, as well as improving and protecting New Jersey's water quality. New Jersey has already worked to assess gaps in current core watershed management functions and is developing and prioritizing new, coordinated management strategies, particularly in the light of a changing climate. In addition, NJDEP is working to expand public awareness of, and access to, watershed data by creating a new watershed management tool that will assess stressors and identify opportunities within localized parts of a watershed. NJDEP will continue to coordinate with state agencies like New Jersey Departments of Agriculture and Transportation to update and improve stormwater data and mapping.

To promote and protect water quality and as directed by United States Environmental Protection Agency (USEPA), NJDEP exercised its regulatory authority to reassign certain municipalities with municipal separate storm sewers systems (MS4s)

from a "Tier B" designation (typically applied to less densely populated areas) to "Tier A," requiring them to meet slightly elevated standards. MS4 permits and Watershed Improvement planning will include up-to-date integration of nonpoint source total maximum daily load (TMDL) controls, consideration of stormwater asset inventories, and current best management and restoration practices.

Finally, NJDEP is actively supporting communities to improve stormwater management and resilience. Because some communities struggle to keep up with overlapping climate change impacts and local emergencies, NJDEP offers educational tools, trainings, and outreach to support local water managers through its One Water initiative.

Expand the NJ Hydrologic Modeling Database and related stormwater asset map.	Short-term
Promote reduction of nonpoint impairments across Department programs, including implementing new or updated guidance.	Short-term
Update the MS4 Permitting process to include current, innovative measures for reducing stormwater pollution.	Short-term
Consider regulatory amendments consistent with underlying authorities to better address water quality impairments.	Short-term
Promote and provide capacity towards the creation of Stormwater Utilities to more effectively manage and maintain stormwater infrastructure and ensure equitable assessment of related financial obligations.	Short-term
Revaluate Water Quality Management Planning process to better align with underlying statutory purposes and remove unnecessary process barriers detrimental to a meaningful planning approach.	Short-term
Review and explore updates to the New Jersey's Continuing Planning Process Plan to articulate strategies and measures to achieve water quality goals, particularly given a changing climate.	Medium-term
Explore development of a stormwater/watershed infrastructure capacity development program.	Medium-term
Build and implement a Networked Watershed Program across NJDEP.	Ongoing
Consider and monitor community-based private public partnerships (CBP3) and integrated permitting approaches that have net environmental benefits and promote improvements in watershed management.	Ongoing

Lead program: WLM/WRM

5.2.3.8 Implement One Health Approach

As outlined in the 2022 Human Health and Communities addendum to the 2020 New Jersey Scientific Report on Climate Change, climate change will have direct, indirect, and wide-ranging influences on human health, including exacerbating respiratory conditions and cardiovascular disease in vulnerable populations, causing heat-related stress, increasing the risk of diseases borne by mosquitoes and ticks, increasing the frequency of pathogen contamination of food and water supplies, and increasing mental health stressors. Extensive research shows that warmer winters, longer heat waves, heavier rains, flooding along inland streams and rivers, and more tidal flooding along the coast are all predicted to endanger public health and safety, destroy property, undermine critical infrastructure, and harm New Jersey's economy.

NJDEP is working to expand public awareness of health-related issues to proactively plan and prepare for the climate change impacts. The One Health approach is a collaborative and transdisciplinary effort to achieve optimal health and well-being outcomes, by highlighting the connection between people, animals, and the environment. Recognizing One Health's importance to better integration of public health across disciplines, Governor Murphy signed P.L. 2021, c. 117, requiring the establishment of a One Health Task Force under the direction of the New Jersey Department of Agriculture (NJDA). NJDEP is a member of the Task Force along with NJDA and the New Jersey Department of Health (NJDOH). This One Health platform will serve as a resource for cross agency communication and the development of outreach tools specific to

promoting public health in the face of a changing climate.

Broaden environmental public health strategies and recommendations through NJDOH's Healthy NJ 2030 Initiative to consider cross-disciplinary health impacts to better prepare for changing ecosystems and emerging public health concerns.	Complete
Collaborate through the One Health Task Force to leverage existing partnerships with colleagues in other states and public health organizations.	Short-term
Regularly update the Human Health and Communities addendum as part of the New Jersey Scientific Report on Climate Change.	Medium-term

Lead program: Environmental and Public Health Analysis (EPHA)

5.2.3.9 Require Climate Risk Analysis for Water Supply

The 2020 Scientific Report on Climate Change projects impacts on the availability and quality of water due to more frequent and prolonged droughts or drought-like conditions, extreme precipitation events, warmer temperatures, and saltwater intrusion caused by sea-level rise. As a result, both New Jersey's natural systems and water supply infrastructure will be impacted, putting stress on their operation, and resulting increased impacts and costs to our communities and economy.

NJDEP issued a major update to the New Jersey Statewide Water Supply Plan on September 23, 2024. This comprehensive strategy highlights key concerns, including climate change impacts, infrastructure aging, water contamination, and regional supply imbalances. It addresses emerging threats such as droughts, extreme weather events, and increasing water consumption while emphasizing the need for conservation and investment in water infrastructure. Strategies include enhanced drought preparedness, stricter regulatory oversight, and proactive water resource management to prevent shortages in high-risk regions.

A major component of the plan is improving water use efficiency through conservation efforts, infrastructure upgrades, and better management practices. It highlights the importance of environmental justice, ensuring that water supply challenges in overburdened communities are adequately addressed. Through meticulous monitoring, policy updates, and community engagement, the DEP aims to create a resilient and adaptive framework for managing New Jersey's water resources for generations to come.

Release a major update to the New Jersey Statewide Water Supply Plan, with emphasis on climate change impacts to water supply. NJDEP published this document on September 23, 2024.	Complete
Provide recommendations on the maintenance and improvement of water supply infrastructure.	Short-term

Lead program: WRM

5.2.3.10 Understand Impacts and Sustain Fish and Fisheries

Climate change is and fill continue to affect changes in fish populations and migratory patterns. To more fully understand the issue, the Department is surveying and monitoring of commercial and recreation catches to track changes in population sizes and species occurrence. Results are distributed through a variety of channels, such as outdoor shows, guest lectures at schools and universities, presentations to stakeholder groups, public meetings, printed and web articles, and agency reports.

NJDEP will:

Work with partners to preserve working waterfronts and the industries they support. Climate change and sea-level rise are projected to result in more intense storms, larger storm surges, and increases in forceful flooding over the next 100 years. To the extent funding is available to make coastlines more secure or to rebuild after areas are damaged by climate-related impacts, funding can prioritize initiatives that incorporate working waterfronts and water-dependent businesses. Federal coordination can also help states and municipalities work on regional strategies regarding infrastructure needs for communities.	Medium-term, ongoing

Work with partners to support training and marketing activities that explore/expand new fisheries and markets, develop and test novel gears that maintain harvest while reducing discard mortality, and promote new fishery products. This could also include new jobs training for individuals who are displaced from a fishery.	Medium-term, ongoing
Support and share research on the impacts of climate change on fisheries and the most beneficial mitigation strategies and communicate these research findings to stakeholders.	Ongoing
Continue to strive for inclusivity of all sectors, particularly marginalized communities, in the decision-making process, with the goal of a zero-sum loss of accessibility to healthy fish stocks.	Ongoing
Broaden environmental public health strategies and recommendations through NJDOH's Healthy NJ 2030 Initiative to consider cross-disciplinary health impacts to better prepare for changing ecosystems and emerging public health concerns.	Ongoing

Lead program: Fish and Wildlife (F&W)

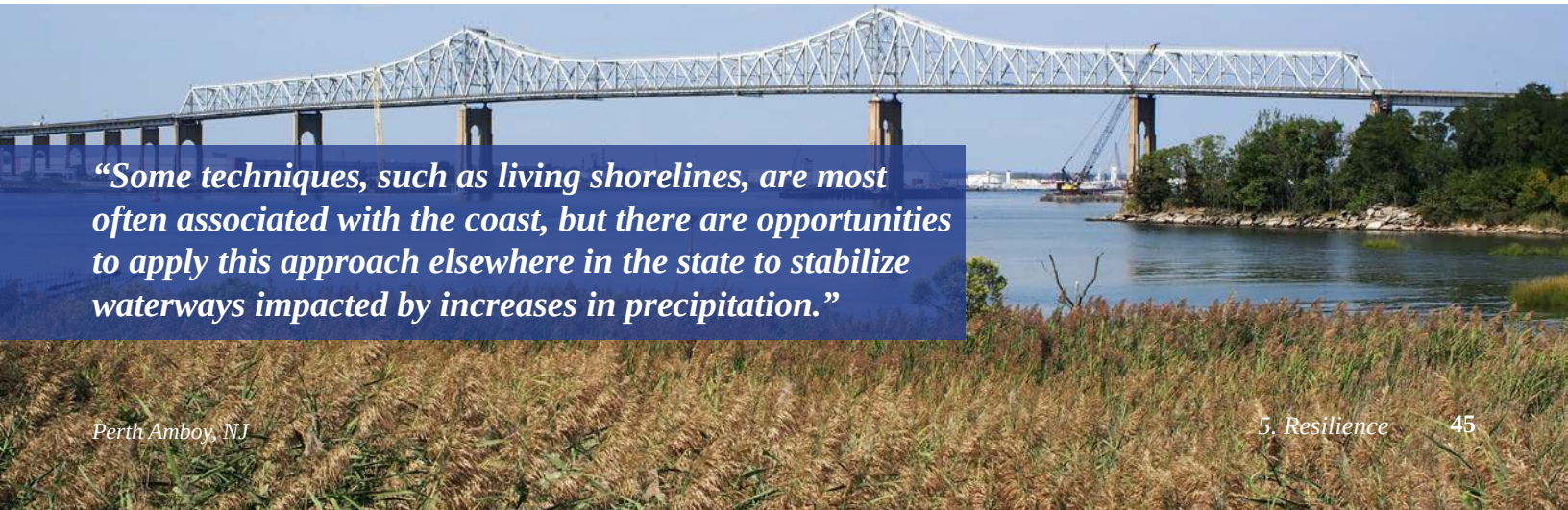
5.2.3.11 Promote Nature-Based Solutions

Nature-based solutions can complement or act as alternatives to gray or hard infrastructure projects. These softer methods are frequently more cost-effective and can even outperform traditional approaches. Nature-based solutions often offer the additional benefit of providing ecosystem services beyond their primary use, including beautification, carbon sequestration, habitat creation, heat reduction, and recreational opportunities. Some techniques, such as living shorelines, are most often associated with the coast, but there are opportunities to apply this approach elsewhere in the state to stabilize waterways impacted by increases in precipitation. The State can also encourage nature-based measures beyond its own asset management, policies, and investments. A concerted homeowner assistance program consisting of education, technical assistance, and financial incentives would help raise awareness of nature-based solutions and encourage their widespread application. In addition to education and outreach, NJDEP could include grants for designing projects and other financial incentives, such as tax credits, which are already offered in several states.

NJDEP will:

Partner with New Jersey Sea Grant Consortium and other state universities to advance knowledge and stewardship of the state's marine and coastal environment and develop and manage a resilience design pipeline to identify and advance natural and nature-based projects in overburdened communities.	Ongoing
In partnership with New Jersey Sea Grant Consortium and Kean University, establish and support green infrastructure workforce development initiatives, including a nature-based solutions professional credentialing program and a green infrastructure entrepreneurship program.	Ongoing
Expand and enhance the Coastal Ecological Restoration and Adaptation Planning (CERAP) Tool to act as a nature-based solutions project portal.	Ongoing

Lead program: WLM



Perth Amboy, NJ

5.2.3.12 Develop Marine Fisheries Guidance

In addition to warming air temperatures, global and regional sea surface temperatures are also rising, causing shifts in marine life distribution along our coast and altering habitat suitability. Evidence of new southern species may present new fishing opportunities but may also require new regulations. The loss of cold-tolerant species to the north may reduce some species' availability and affect fisheries markets and communities (processors, ports, bait and tackle shops, etc.). Warming waters due to climate change may also alter marine ecosystems and ecological function. On-going fisheries and enhanced habitat monitoring and modeling will help identify or predict these types of impacts.

NJDEP will:

Participate in Mid-Atlantic Fisheries Management Council (MAFMC) and Atlantic States Marine Fisheries Commission (ASMFC) collaborative efforts to assess how climate change is affecting stock distribution, availability, and other aspects of east coast marine fisheries and inform the development of near- and long-term management priorities and policy recommendations, and identify data gaps, research priorities, and monitoring needs.	Short-term
Support scientific research into the impacts of climate change on fisheries, as well as research into the most beneficial mitigation strategies.	Medium-term, ongoing
Work with partners to support training and marketing activities that explore/expand new fisheries and markets, develop and test novel gears that maintain harvest while reducing discard mortality, and promote new fishery products.	Medium-term, ongoing
Continue to strive for inclusivity of overburdened communities in the decision-making process, with the goal of a zero-sum loss of accessibility to healthy fish stocks.	Medium-term, ongoing
Continue ecosystem and fishery monitoring programs that track ecosystem and species trends.	Ongoing

Lead program: F&W

5.2.3.13 Account for Sea-Level Rise in Supplemental Environmental Projects (SEPs)

SEPs are environmentally beneficial projects those that have violated New Jersey environmental rules and regulations voluntarily agrees to perform as a condition of their enforcement action. When evaluating a SEP proposal, NJDEP should consider whether the proposed location may be subject to future inundation and whether, and to what extent, that would impact the project's long-term viability.

NJDEP will:

Incorporate the Climate and Flood Resilience Program's guidance as a discretionary factor in evaluating a proposed SEP that that may be subject to future inundation as part of its initiative to revise the Standard Operating Procedures for Incorporating Supplemental Environmental Projects into Settlement Agreements.	Short-term

Lead program: Chief Enforcement Officer

5.2.3.14 Preserve and Enhance Working Waterfronts

Water-dependent industries are critical to the state's economy and residents, playing a key role in recreation, fishing, trade, renewable energy development, and many other industries. These industries face environmental and infrastructure-related challenges due to climate change. Particularly in South Jersey communities, there is growing concern that sea level rise could prohibit access to these water-dependent uses. To ensure these working waterfronts remain resilient in the face of climate change, development pressures, and shifting uses, NJDEP will explore regulatory changes that support working waterfronts, including changes that consider climate change impacts and offshore wind development needs while prioritizing the wants and needs of the communities hosting these industries. This will require research to identify the different types of working waterfronts, understand their specific challenges, needs, and risks from climate change, and develop strategies to ensure equity in their operations.

NJDEP will:

Contract with an outside research entity to identify the various types of working waterfronts in New Jersey's coastal zone and research environmental and infrastructure-related challenges.	Medium-term
Establish a more formal definition of "working waterfront" in New Jersey.	Medium-term
Engage with local leaders and community members to identify needs and opportunities and explore further planning opportunities and opportunities to address equity considerations.	Ongoing

Lead program: WLM

Maurice River Township, NJ

5.2.4 INVEST IN STATE RESILIENCE PROJECTS

The Division of Resilience Engineering and Construction (DREC) oversees large-scale coastal and fluvial flood protection projects, beach renourishment, and flood risk analysis. The Department helps communities across New Jersey to become more resilient to storms, flooding, and other climate change impacts. State funds are also invested in upgrading critical infrastructure, such as dams, to ensure safety and integrity of these structures, protecting people and property.

NJDEP will:

Prioritize construction of flood protection projects that maximize flood benefits to a project area and incorporates community co-benefits.	Short-term
Improve Operation and Maintenance processes in constructed resilience assets and ensure the long-term financial sustainability of these systems.	Medium-term
Ensure resilience projects integrate community input, Language Access Plans and environmental justice considerations at all phases of feasibility, design and construction.	Ongoing
Continue efforts to upgrade dams and disseminate funding/low-interest loans through the NJDEP's Dam Restoration and Inland Waters Loan Program.	Ongoing
Evaluate, in coordination with USACE, the engineered beach and dune renourishment designs to consider the changing climate conditions.	Ongoing
Continue to map coastal resilience projects to prioritize connecting projects, increasing the level of protection throughout communities.	Ongoing
Invest in staff time to apply for funding opportunities at the State and Federal level to construct and maintain flood protection projects.	Ongoing

Lead program: WLM

6. NATURAL & WORKING LANDS

Cranberry bogs in southern New Jersey

Natural and working lands, including forests, wetlands, developed lands, and agricultural lands, play a major role in climate change mitigation by removing carbon dioxide (CO_2) from the atmosphere through long-term accumulation in vegetation and soils. By protecting New Jersey's existing carbon sinks, as well as enacting well-informed land restoration and management strategies, the State can dramatically increase the potential of natural and working lands to store and sequester carbon. By effectively utilizing the State's natural and working lands, NJDEP will be one step closer to meeting its carbon sequestration goals.

6.1 THOUGHT LEADERSHIP

New Jersey's 80x50 Report, released in October 2020, lays out strategies designed to reduce the State's CO_2 emissions to 80% below 2006 levels by 2050. The Report emphasized the need for coordination across sectors and highlighted carbon sequestration as an essential factor for success. To that end, the 80x50 Report recommended the development of a statewide carbon sequestration plan that: (1) expands upon existing State plans that address climate resilience in natural and working lands, (2) establishes 2030 and 2050 sequestration targets, and (3) improves current carbon sequestration estimates through additional research and monitoring.

The first two recommendations were accomplished in the development of the Natural and Working Lands Strategy (NWLS). The NWLS, which was developed in partnership with the New Jersey Department of Agriculture (NJDA) is designed to identify and prioritize land management strategies and targets for land managers, including the state land managers at NJDEP. The NWLS will help mitigate climate change impacts through carbon storage and sequestration in New Jersey's natural and working lands. The NWLS identifies near-term recommendations that are cost-effective and pragmatic, such as natural resource stewardship and management, as well as longer-term goals that require more effort and

funding, including potential programmatic changes. Each recommendation also considers co-benefits, such as an increase in ecological services, economic opportunities, and community resilience, in addition to carbon sequestration benefits. NJDEP's existing Coastal Ecological Restoration and Adaptation Plan (CERAP) can also assist in identifying areas for ecological projects to help meet the carbon sequestration goals of the NWLS while increasing community resilience and ecosystem health.

Meadowlands, NJ

6.2 POLICY DEVELOPMENT & INCENTIVES

6.2.1 DEVELOP COASTAL ECOLOGICAL RESTORATION & ADAPTATION PLAN

NJDEP will continue and expand efforts to identify areas that are ecologically vulnerable to climate change and in need of resilience improvements or restoration along New Jersey's tidally influenced bodies of water. A diverse coalition of state agency, non-governmental organization and academic partners is collaborating to develop a Coastal Ecological Restoration and Adaptation Plan (CERAP) for New Jersey's coastal marshes, estuaries and back-bays. The CERAP is a critical component of building a continuous pipeline of climate resilience and mitigation projects, some of which can be funded using Regional Greenhouse Gas Initiative (RGGI) funding for forests and coastal wetland (blue carbon) projects. To support this effort, this same coalition built the NJ Restoration Tool Organization Suite (NJResTOrS) to provide a more seamless integration of web-based decision support tools so that users can work directly from project scoping through evaluation. The NJResTOrS workflow proceeds from the statewide perspective of the CERAP tool to a landscape scale evaluation of the marsh landscape with the Marsh Explorer and Living Shorelines Explorer tools to more detailed site level assessment and guidance provided by the Wetlands Assessment Tool for Condition & Health (WATCH) and the Living Shoreline Feasibility Model (LSFM).

NJDEP will:

Build the NJ Restoration Tool Organization Suite (NJResTOrS).	Complete
Complete and update the CERAP on a five-year cycle.	Ongoing
Identify critical habitats or habitat features threatened by sea-level rise and develop and incentivize implementation of scientifically-sound strategies and methodologies in insulate or adapt these resources to future conditions.	Ongoing
Encourage Habitat Connectivity and ecosystem health in State funding decisions to assist wildlife and facilitate their movement across the landscape through wildlife-friendly road crossings, enhanced habitat corridors, and encourage planting of native plant species and wildlife gardens.	Medium-term
Prioritize coastal nature-based projects for ecosystem value, carbon sequestration, and community resilience based on project goals and objectives.	Medium-term

Lead program: WLM/Division of Science and Research (DSR)

6.2.2 SUPPORT CARBON SEQUESTRATION

Carbon sequestration is the process of removing carbon from the atmosphere and storing it in natural sinks, such as forests and wetlands. While carbon sequestration is an important component of New Jersey's GHG inventory and management, with carbon sinks sequestering 8% of New Jersey's net GHG emissions in 2018, New Jersey's continued development has caused a decline in natural ecosystems. By rethinking its land use policies and conservation efforts and promoting science-supported land restoration and management strategies to protect existing carbon sinks, the State can sequester 10.8 million metric tons of CO_2e, a major step toward achieving its 80x50 goal.

6.2.2.1 Implement Natural and Working Lands Strategy

The NWLS used the expertise of subject matter experts and the best available science to develop recommendations, actions, and targets that will most effectively bring New Jersey's climate goals to fruition. The NWLS built off the current progress of state entities and presents a set of statewide policy and land management recommendations for implementation by 2030 and 2050. These actions identified in the Strategy will not only sequester carbon, but can also build ecosystem and community resilience, and protect and enhance New Jersey's economy. NJDEP and the NJDA released the first version of the NWLS in September 2024 after gathering input from stakeholders, but it is expected to evolve over time as new science emerges.

NJDEP will incentivize participation in the NWLS by:

Using RGGI funding to develop carbon sequestration projects and monitor the carbon sequestration benefits of the projects.	Ongoing
Leveraging funding from the 319h water quality restoration grant program for coastal wetland restoration projects that increase carbon sequestration within these resources.	Ongoing
Supporting wetland monitoring and restoration projects that will improve biodiversity while also increasing carbon sequestration of the wetlands.	Ongoing
Using the NJDEPs Blue Acres program to conduct buyouts in floodplain areas that will be conserved as natural lands and potentially restored to more productive carbon sequestration use.	Ongoing
Establishing a grant program to provide funding to applicants for projects that match up with the recommendations set forth in the NWLS (e.g., urban forestry, nature based coastal projects).	Medium-term

Lead programs: Climate Change, Clean Energy & Sustainability Element (CCCES) (Implementation)

6.2.3 EXPAND FOREST PROTECTION THROUGH SCIENCE-BASED MANAGEMENT TECHNIQUES

Forests effectively and efficiently sequester carbon. Sustainable stewardship and management of all New Jersey's forests ensures that forests remain as forests, thus protecting above and below-ground carbon pools as well as continuing beneficial carbon transfer into those pools through forest growth. Proper management of forests can increase resilience in the face of change from threats such as pests, invasive species, diseases, and wildfire that could lead to catastrophic releases of carbon. Restoration and replanting of forested areas that have been impacted by such threats increases the number of trees available to absorb CO_2 and produce oxygen or sequester carbon and reduce greenhouse gas emissions. Coordinated tree planting efforts in urban and community forests and urban wood reuse increases these beneficial processes. Additionally, forests can continue to provide locally sourced durable wood products which sequester carbon for the long-term life of that product.

NJDEP will:

Continue engagement with Legislative leaders and stakeholders to plan, develop, and implement strategies that support the State's best management of its forests to fight climate change, minimize and mitigate the impacts of wildfire, improve ecosystems, and protect soil and water quality.	Short-term
Inventory 40,000 acres per year of state-owned forested land.	Short-term
Maintain current inventory agreement with the United States Department of Agriculture's (USDA) Forest Inventory and Analysis program (FIA); NJDEP maintains a 5-year measurement cycle and the urban FIA intensity in the Trenton metro area.	Short-term
Continue to contribute data to the USDA Forest Service's forest health damage causing agent detection surveys to appraise insect infestations, disease conditions, and other man-made stresses affecting forest to inform quick responses to forest health threats.	Short-term
Strategically manage forests to reduce tree stress/competition to address and hinder invasive insect outbreaks and wildfire risk.	Medium-term

Develop a carbon model to provide projected forest carbon estimates statewide under a variety of simulated management scenarios relative to New Jersey's greenhouse gas emissions targets. The model will also provide optimized carbon storage and sequestration solutions among the simulated results to accurately assess carbon tradeoffs associated with a multitude of forest management strategies and policies.	Medium-term
Enroll more private landowners into stewardship program to better maintain New Jersey's forest.	Medium-term
Identify and prioritize the restoration or enhancement of degraded forests to efficiently capture and store carbon for the long-term.	Medium-term
Identify appropriate degraded non-forested lands and plan to restore to a forested condition to efficiently capture and store carbon long-term.	Medium-term
Maintain and increase carbon storage through durable forest products sourced from local forests and support and foster the enhanced use of locally sourced wood products in place of concrete and steel in building codes and projects.	Medium-term
Explore a universal "no-net-loss of trees" requirement for projects funded by State dollars so that it also applies to any other government-funded project.	Medium-term
Create external guidance documents following input from local Shade Tree Commissions, Environmental Commissions, stakeholders, and collaborators on forest management practices.	Medium-term

Lead program: SPFHS

6.2.4 IMPLEMENT WILDFIRE RISK REDUCTION ACTIVITIES

An average of 1,000 wildfires impact over 7,000 acres of New Jersey forests annually. Fire, as a disturbance mechanism, can have a positive impact for some species and habitats and can provide a natural catalyst for forest regeneration. However, in excess, in the wrong areas, or when uncontrolled, wildfire can damage or destroy forest resources, serve as an increasing source of air pollution, and pose a threat to life and property; all risks that far outweigh any potential ecological benefits.

As a leading agency responsible for protecting lives, property, and the state's forest resources, the New Jersey Forest Fire Service works to safely and efficiently manage these risks and limit wildfire losses, while also recognizing the ecological role of fire. The goal is to limit the number of wildfires to fewer than 1,400 fires per year and the acreage burned to less than one half of one percent (0.5%) of the 3.15 million acres protected, or 15,750 acres. To address the need for controlled fire disturbance in maintaining healthy forest ecosystems, prescribed burning is employed as an essential tool for forest stewardship. Educating the public about wildfire risks and the benefits of prescribed burning, enhancing community resilience and preparedness, equipping and training volunteer fire companies, managing forest ecosystems and fuel load to reduce risk, and empowering a highly skilled workforce are all key strategies employed by the NJDEP in pursuit of achieving these goals.

NJDEP will:

Support community preparedness through grant programs such as Wildfire Risk Reduction (WRR) and Community Wildfire Defense Grants (CWDG).	Short-term
Prioritize and implement projects that target risk reduction in the Wildland Urban Interface (WUI), the zone of transition between unoccupied land and human development.	Short-term
Seek opportunities to maintain and expand fuel reduction activities (i.e., remove enough vegetation (fuel) to lessen the severity of a wildfire and make in more manageable) that promote healthy and resilient forests.	Medium-term
Analyze data, run fuel models, and map risk to prioritize and target areas at higher risk for wildfires.	Medium-term

Provide continual technical support for the development of Community Wildfire Protection Plans and Firewise Community designation.	Long-term
Develop rules to implement prescribed burn legislation in order to expand capacity.	Long-term

Lead program: SPFHS

6.2.5 PROTECT, RESTORE, AND EXPAND CRITICAL WETLANDS

New Jersey has approximately a million acres of wetland habitat, including more than 200,000 acres of tidal wetlands and marshes. Both tidal and non-tidal wetlands face adverse impacts from climate change. Additional research is needed to understand and quantify these effects and inform future policies and protection strategies. New Jersey's wetland habitats provide numerous ecosystem services that benefit humans and wildlife, including carbon sequestration, buffering against sea-level rise and storm surge, and flood control, all of which are also important in mitigating climate impacts and building resilience. The threat of sea-level rise to New Jersey's wetland ecosystems is further exacerbated by the limits of wetland migration in heavily developed areas.

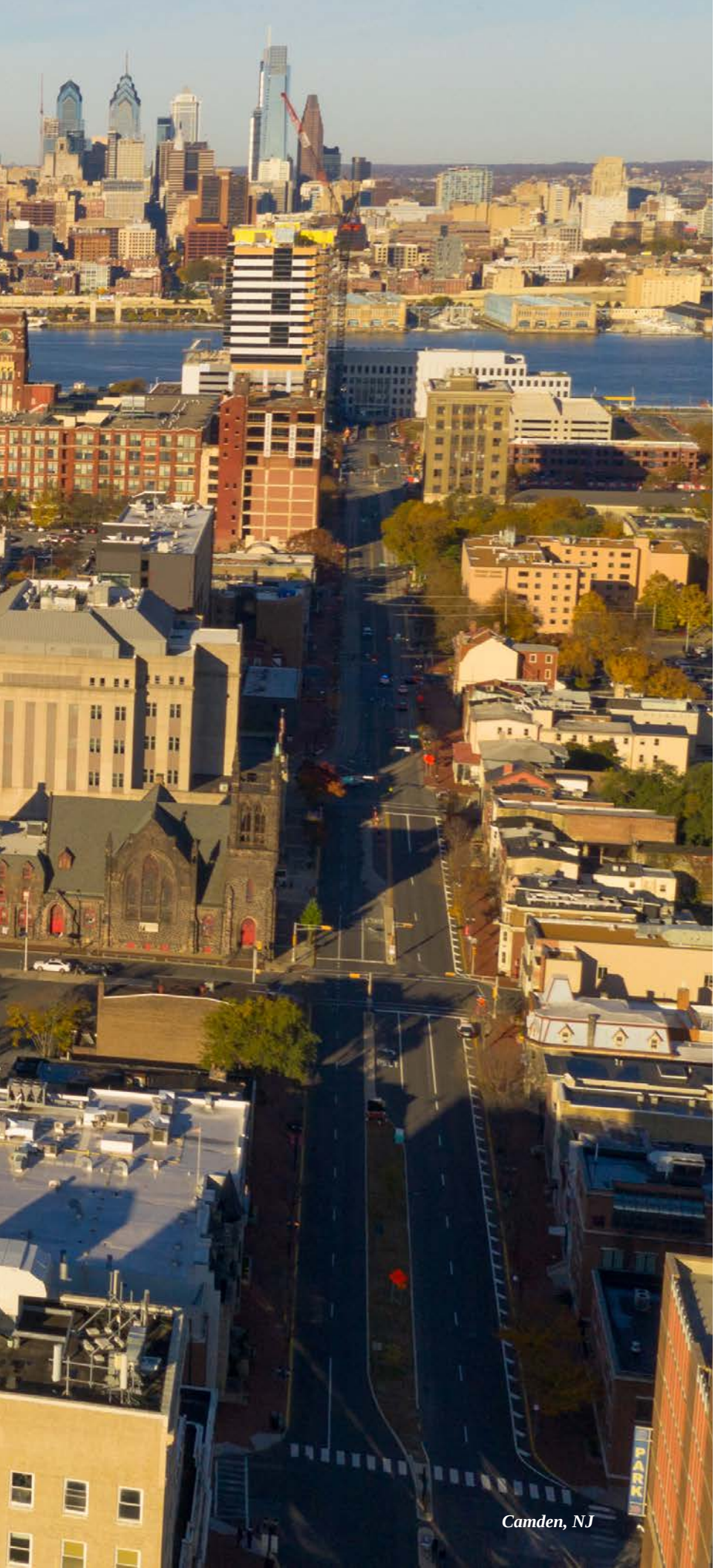
New Jersey must protect its wetlands and ensure the continuation of their ecosystem services by instituting a monitoring, maintenance, and restoration program analogous to NJDEP's robust forestry program.

NJDEP will:

Support Blue Carbon projects, which promote the restoration and enhancement of tidal wetlands to maximize carbon sequestration.	Short-term
Explore further resource-based enforcement initiatives to address unauthorized encroachments on protected wetlands.	Short-term
Establish baseline information on the patterns of accretion and loss of coastal wetlands, assess feasible mitigation strategies for vulnerable coastal areas, and develop improved techniques and policies to stem wetland loss, facilitate accretion, and support restoration.	Medium-term
Create a Non-Tidal Wetlands Monitoring Program/Network to track the condition of non-tidal wetlands in the state and their response to climate change.	Medium-term
Support the New Jersey Tidal Wetlands Monitoring Network, which tracks the response of tidal wetlands to climate change.	Ongoing
Monitor and quantify carbon sequestration benefits of Blue Carbon projects.	Ongoing

Lead programs: WLM/DSR/OCR

7. CLIMATE EQUITY



Camden, NJ

The State of New Jersey has the opportunity to promote equity as a leader in the national formation and implementation of innovative climate change policies. Low-income communities and communities of color in New Jersey and across the United States are burdened with disproportionately high pollution, increasing flood risk, and more intense heat waves as compared to wealthy, White communities due to decades of redlining and community disinvestment. NJDEP remains committed to redressing these inequalities by creating and incorporating policies in all programs that alleviate adverse environmental and public health impacts within New Jersey's overburdened communities (OBCs).

7.1 THOUGHT LEADERSHIP

Governor Murphy signed Executive Order 23 during his first 100 days in office, directing all the executive branch agencies to ensure that the principles of environmental justice, equal access to environmental benefits and protection from environmental hazards, are at the heart of the State's programs and policies. On October 1, 2020, NJDEP issued Furthering the Promise: A Guidance Document for Advancing Environmental Justice Across State Government. This document provides a path for New Jersey's executive agencies to weave the principles of environmental justice into their core functions, including development of Environmental Justice (EJ) action plans, with an Environmental Justice Interagency Council (EJIC) coordinating efforts to steer the State's whole-of-government approach. NJDEP continues its Environmental Justice work through both an extensive self-assessment and improvement initiative as well as with other agencies on the EJIC.

Additionally, on September 18, 2020, Governor Phil Murphy signed New Jersey's Environmental Justice Law, N.J.S.A. 13:1D-157 (EJ Law). The EJ Law requires that NJDEP conduct a comparative analysis to determine whether facilities subject to the law (e.g., major sources of air pollution, solid waste and sewage treatment facilities)

applying for certain EJ-regulated permit types (e.g., Title V) to construct and/or operate in OBCs would disproportionately contribute to environmental or public health stressors in that community. Critically, the EJ Law expands the NJDEPs jurisdiction from review of discrete aspects of an operation to a more fulsome consideration of facility-wide impacts.

The EJ Law defines OBCs as those census block groups with:

1. At least 35% of the households qualify as low-income households (at or below twice the poverty threshold as determined by the United States Census Bureau);
2. At least 40% of the residents identify as minority or as members of a State-recognized tribal community; or
3. At least 40% of the households have limited English proficiency (without an adult that speaks English "very well" according to the United States Census Bureau).

As part of its efforts to craft implementing regulations under the EJ Law, NJDEP developed a companion online tool, the Environmental Justice Mapping, Assessment and Protection Tool (EJMAP), that identifies those OBCs that are subject to disproportionate environmental and public health stressors when compared to their non-OBC counterparts.

As a threat multiplier, climate impacts such as flooding, sea-level rise and extreme heat are likely to have even greater effects in communities already overburdened by pollution. That also includes threats from co-pollutants (e.g., volatile organic compounds (VOCs), oxides of nitrogen (NO_x), fine particulate matter) emitted alongside greenhouse gases, which have localized health effects. Therefore, while NJDEP works diligently on statewide climate action, it will continue to explore avenues to reduce pollution in overburdened communities.

7.2 POLICY DEVELOPMENT & INCENTIVES

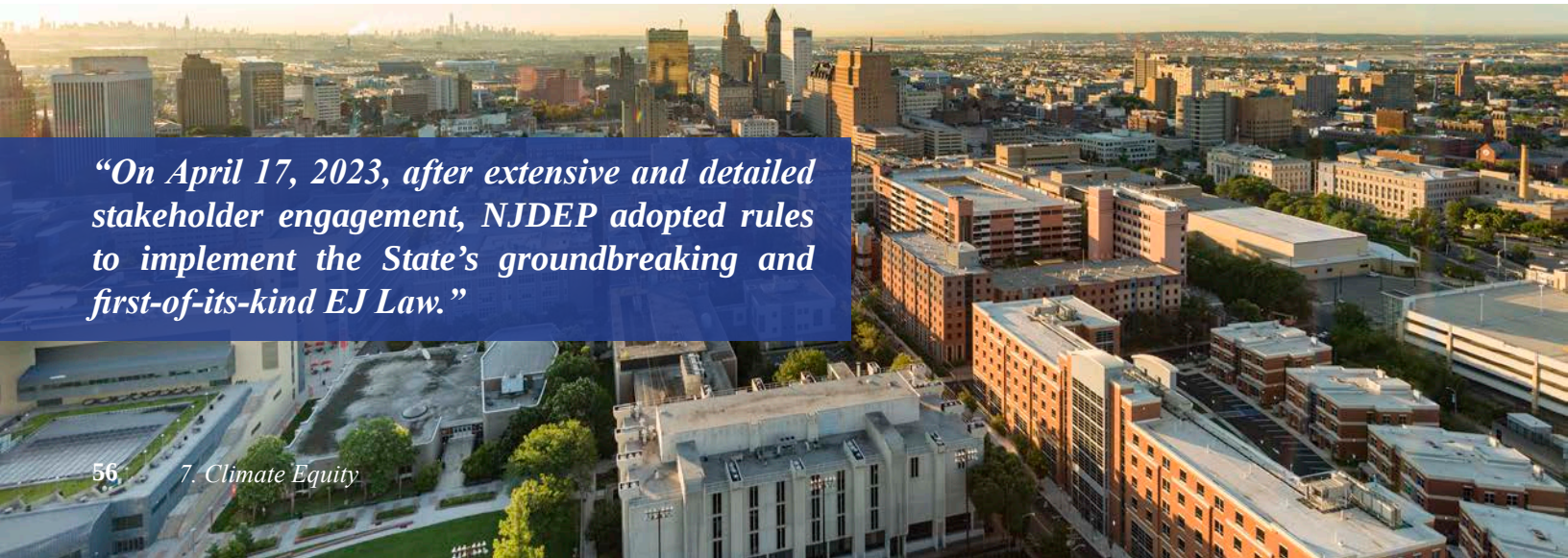
7.2.1 IMPLEMENT THE ENVIRONMENTAL JUSTICE LAW

On April 17, 2023, after extensive and detailed stakeholder engagement, NJDEP adopted rules to implement the State's groundbreaking and first-of-its-kind EJ Law. The rules set forth the process for NJDEP review of permit applications to better address localized impacts and consider 26 environmental and public health stressors. All of the EJ stressors could either be made worse by climate impacts (e.g., ones related to air and water quality, flooding) or themselves worsen climate impacts (e.g., impervious cover, lack of open space or tree cover, combined stormwater outfalls). As facilities applying for EJ Law-subjected permits in OBCs are required to reduce their impacts on these stressors, NJDEP expects to not only see direct, localized public health and environmental benefits, but also improvements to the community's greenhouse gas contributions and resilience to climate impacts, as a result of its implementation of the EJ Law.

NJDEP will:

Ensure that permits or approvals issued to facilities subject to the EJ Law include conditions as appropriate to avoid or minimize environmental or public health stressors on the OBC, consistent with applicable statutes and regulations.	Ongoing

Lead program: Department-wide



"On April 17, 2023, after extensive and detailed stakeholder engagement, NJDEP adopted rules to implement the State's groundbreaking and first-of-its-kind EJ Law."

7.2.2 CONTINUE TO PRIORITIZE GREENHOUSE GAS MITIGATION PROJECTS IN OBCS

Implementing projects designed to reduce greenhouse gas emissions will simultaneously reduce both criteria air pollutants (such as particulate matter and ozone precursors) and air toxics (e.g., dioxins, benzene, mercury). This is especially true in OBCs which already bear the burden of these air pollutants in their communities. Both types of air pollutants are known to have localized impacts on human health, including cancer and respiratory illness like asthma. Therefore, greenhouse gas reduction project will improve air quality in these disproportionately affected communities, as well as throughout the State.

NJDEP will:

Explore and pursue statutory, regulatory, or policy changes needed to implement appropriate measures to reduce harmful emissions in OBCs, including exploration of targeted emission reduction requirements.	Short-term
Continue to prioritize initiatives as part of tri-annual RGGI Strategic Funding Plans, which benefit communities disproportionately impacted by environment degradation and climate change.	Ongoing
Continue to make air quality data more transparent and useful to the public, through applications like the "What's in my Community" GIS application.	Ongoing
Engage with communities establishing local air quality monitoring networks to ensure data collection consistency and help analyze and interpret the data to inform actions.	Ongoing
Evaluate and identify all Department funding programs for opportunities to incorporate consideration of climate and equity with focus on prioritizing funding in adversely impacted OBCs.	Ongoing

Lead program: AEMS

7.2.3 IMPLEMENT MANDATORY OBC CONSIDERATIONS IN PERMITTING AND POLICY DECISIONS

To effectively redress the historic inequities in treatment of overburdened communities with respect to facility siting, and consistent with Executive Order 23, the State and NJDEP will consider the presence and impacts to OBCs and their residents in planning endeavors and policy developments. This mandate is further heightened by EPA's emerging guidance on the utilization of Title VI of the Civil Rights Act to further deep consideration of disproportionate impacts in policy, funding and permitting decisions.

Develop EJ guidance to inform municipal planning efforts, including incorporation into their Plan Endorsement process.	Short-term
Develop Title VI guidance to inform Department decision making in accordance with EPA direction.	Short-term
Explore requirements for state agencies to include analyses of implications on OBCs in state plans.	Medium-term

Lead program: Office of Environmental Justice (OEJ)

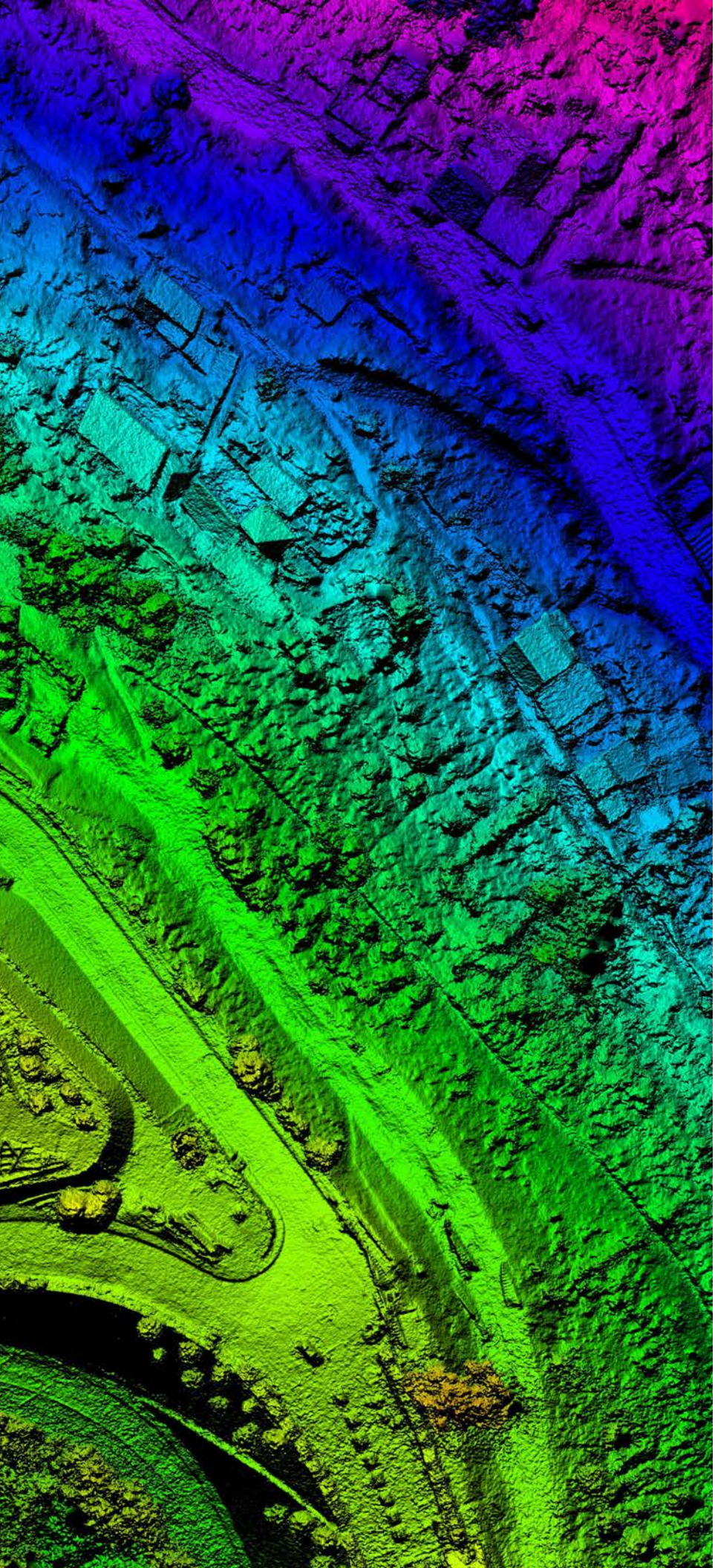
7.2.4 INCLUDE THE ENVIRONMENTAL JUSTICE CONSIDERATIONS IN ALL RULEMAKING

To ensure uniform and consistent analysis of environmental justice, including climate justice, considerations in all rulemaking, NJDEP intends to develop update guidance to require its specific inclusion in formal rulemaking.

Develop internal guidance for rulemaking teams to consider environmental justice in all rulemaking.	Short-term

Lead program: OEJ

8. UPDATING SCIENCE & ECONOMIC INFORMATION



New Jersey's residents and businesses have already experienced many climate change impacts, including increasingly mild winters, more frequent and intense rains and heat waves, flooding along inland streams and rivers, and more "sunny day" tidal flooding along areas of the coast. These impacts threaten public health and safety, destroy property, endanger ecosystems and habitats, undermine critical infrastructure, and disrupt and damage New Jersey's economy, especially the vibrant tourism industry supported by our waterfront communities. As we well know, climate change threats can wreak long-lasting economic damage.

8.1 THOUGHT LEADERSHIP

NJDEP published its first ever New Jersey Scientific Report on Climate Change in June 2020. This report is New Jersey's first comprehensive effort to assemble the latest and most reliable scientific information on the current and predicted future impacts of climate change on the natural and built environments. Chapter 6 of the New Jersey Scientific Report on Climate Change is dedicated specifically to highlighting known knowledge and data gaps and next steps for existing research and data collection. Addressing these knowledge and data gaps is essential to building a comprehensive and up-to-date understanding of the climate change impacts that New Jersey could expect in the near-and long-term. Current, reliable information also ensures the development of well-informed rules, plans, and guidance to deal with a changing climate.

The items listed below identify near-term recommendations for state-of-the-art, New Jersey-specific science that can be applied directly through State programs. Longer term goals that require the dedication of more time and funding, including potential programmatic changes, are also included. Each recommendation considers several co-benefits, including ecological, economic, and community resilience. As such, the items listed below are expected to apply not just to NJDEP programs, but also to partner agencies and external groups working to prepare for a

changing climate. External groups may include landowners and land managers, non-profit organizations, universities, and policymakers.

8.2 POLICY DEVELOPMENT & INCENTIVES

8.2.1 IMPLEMENT A CLIMATE RESEARCH AGENDA

NJDEP recognizes the science of climate change will continue to evolve. By cooperating with agency partners and academic experts, NJDEP will continue to monitor and track new developments in our understanding of climate scientific and economic impacts across the state.

As laid out in Strategy 4.4 of the State's Climate Change Resilience Strategy, NJDEP will develop a Collaborative Climate Research Agenda across state agencies and with experts from several universities and academia to ensure the State response to climate change is based on current, sound scientific data. The Agenda will also help State government properly prioritize resources that support further research and data collection.

NJDEP will:

Identify knowledge and data gaps to help the State better understand and respond to the impacts of climate change, including the effectiveness and impacts of potential GHG reduction strategies.	Ongoing
Continue outreach to academic institutions as well as other specialized research entities to identify climate experts who can help inform the State on ongoing climate research initiatives as well as research gaps across multiple disciplines.	Ongoing
Improve ongoing partnerships and foster new collaborations to update the New Jersey Scientific Report on Climate Change and its Climate Change Impacts on Human Health and Communities Addendum.	Ongoing

Lead program: DSR

8.2.2 HOST A CLIMATE CHANGE SCIENCE RESEARCH FORUM

To better reach all possible research partners, NJDEP will convene a research forum that will better foster collaboration on relevant topics. The forum will provide the opportunity for NJDEP and external researchers to present their completed, ongoing, and planned research and share outstanding needs. It will also provide an opportunity to identify active climate researchers and establish prospective partnerships.

NJDEP will:

Organize a research forum among academic research institutions and other research entities.	Medium-term

Lead program: DSR

8.2.3 IDENTIFY GRANTS TO SUPPORT CLIMATE RESEARCH

NJDEP does not have the capacity to conduct all necessary climate change research on its own. Research grants will help further the research goals of NJDEP, address gaps and establish and expand partnerships.

NJDEP will:

Identify grants to support research that would fill gaps and support updates to the Scientific Report on Climate Change and its Human Health and Communities Addendum, the New Jersey Protecting Against Climate Threats (NJPACT) rules, Department guidance, and other program area needs.	Ongoing

Lead program: DSR

8.2.4 UPDATE 2019 SEA-LEVEL RISE & COASTAL FLOODING PROJECTIONS

NJDEP will periodically review and update sea-level rise projections as science advances with new observational data, technological developments, and improved modeling capabilities. When new studies and reports are generated that provide implications specific to New Jersey's sea-level rise and coastal flooding projections, the NJ Science and Technical Advisory Panel (STAP) is consulted to consider reevaluating the current scenarios and ensure the State is utilizing current and best available scientific information.

NJDEP will:

Update sea-level rise and coastal flooding information specific to New Jersey.	Short-term

Lead program: DSR

8.2.5 UPDATE 2021 EXTREME PRECIPITATION PROJECTIONS

NJDEP will periodically review and update extreme precipitation projections as science advances with new observational data, technological developments, and improved modeling capabilities. Updated projections will align with the release of regional updates to the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 precipitation values to ensure the State is utilizing current and best available scientific information.

NJDEP will:

Update projected changes in extreme rainfall information specific to New Jersey.	Medium-term

Lead program: DSR

8.2.6 CHARACTERIZE THE IMPACTS AND RISKS FROM INVASIVE SPECIES

Climate change will increase the susceptibility of New Jersey's natural areas to conditions that foster the introduction of non-native invasive species. Invasive species are plants, animals, fungi, and pathogens that through intentional or accidental introduction by humans, or natural dispersion, take hold in a habitat to which they are not native, competing with native species for resources or significantly altering the established ecosystem. The introduction or presence of these non-native organisms could cause economic or environmental harm, or harm to human health. The resultant effect of the introduction or presence of invasive species is often the loss of native species and decreased biodiversity.

The increased proliferation, abundance, and density of these non-native organisms, including aquatic species, weeds, pests, and insects, will continue to stress and threaten New Jersey's natural resources. These impacts will be seen not only in our forests, coastal wetlands, marine systems, agricultural systems, and fisheries, but also in our communities with the increase of vector-borne diseases and by direct predation on or displacement of our native natural resources by these organisms.

NJDEP will:

Develop a New Jersey invasive species website to reflect current guidance and practices.	Complete
Incorporate input from a diverse set of invasive species managers, experts, and stakeholders to create a scientifically sound strategy for revising the 2009 NJ Strategic Management Plan for Invasive Species and devise actionable strategies that can be successfully implemented.	Complete
Create an aquatic invasive species management plan to provide updated information on the species identified as being the most harmful and those that are an emerging threat to New Jersey ecosystems, guide detection and monitoring, and establish oversight and coordination to better protect vulnerable natural resources, prevent new species introductions, rapidly respond to emerging threats, and control new species proliferation more effectively.	Complete
Consult with New Jersey experts to develop effective strategies for invasive plant control on NJDEP properties.	Ongoing

Manage forests in areas of strategic importance to reduce tree stress and competition with specific intent to address and hinder invasive insect outbreaks.	Medium-term

Lead program: DSR/SPFHS/F&W

8.2.7 CONTINUE RESEARCH & MONITORING IN SUPPORT OF OFFSHORE WIND DEVELOPMENT

New Jersey's current efforts to reduce greenhouse gas emissions rely on the decarbonization of the electric generation sector, primarily through renewable energy production. Research on the potential environmental, ecological, and socioeconomic impacts, both positive and negative, of renewable energy development is therefore necessary to guide the State's clean energy transition efforts while upholding our mandate to protect and responsibly manage New Jersey's natural resources. This work is already well underway in the realm of offshore wind (OSW) energy development. Consistent with the State's Offshore Wind Economic Development Act, Executive Order 8 and Executive Order 92, and the State's Energy Master Plan, New Jersey has established the OSW Research & Monitoring Initiative (RMI), jointly administered by the NJDEP and the Board of Public Utilities (BPU). The RMI addresses the need for regional research and monitoring of marine and coastal resources during OSW development, including preconstruction, construction, operation and decommissioning, as recommended in the New Jersey Offshore Wind Strategic Plan.

NJDEP will:

Produce scientifically rigorous reports and clearly communicate findings and conclusions.	Ongoing
Collaborate with research entities to ensure efforts are consistent and complementary among regional states.	Ongoing
Maintain a list of highest-priority environmental research and monitoring needs for OSW in New Jersey.	Ongoing
Facilitate and fund research consistent with established RMI principles and objectives in partnership with the BPU.	Ongoing
Convene stakeholders to ensure communication and information sharing among fishing interests, conservation communities, and state and federal agencies.	Ongoing
Collaborate with the OSW industry to develop environmental monitoring and mitigation plans that meet regional standards and are consistent across wind projects.	Ongoing

Lead program: DSR/F&W

8.2.8 CHARACTERIZE & QUANTIFY CLIMATE IMPACTS ON WATER SUPPLY

Climate change is projected to affect temperature, precipitation, and sea-level in New Jersey. NJDEP's understanding of these impacts will evolve over time as the State continually assesses the impact of these changes. This research is critical to ensuring the quantity and quality of surface and groundwater resources across the State can meet New Jersey's needs.

NJDEP will:

Re-evaluate the data inputs for the Drinking Water Supply Indicators.	Short-term
Create guidance with specific metrics to track the effects of climate change on water supply (e.g., rainfall extremes, drought occurrences, changes to groundwater recharge and reservoir safe yield), water quality (e.g., ground water salinity, frequency of water quality impacts such as Harmful Algal Blooms (HABs) and turbidity on water availability and drinking water treatment processes), and water demands (e.g. extended growing season, increased potable demands, changing water use patterns).	Medium-term
Develop a plan to continuously improve the assessment of climate change impacts on water supply that includes monitoring, modeling, and research to update and revise action items and policy recommendations.	Medium-term

Update statewide water availability estimates to address impacts of climate change.	Ongoing, Medium-term
Continue to evaluate climate change impacts on water supply as part of the Water Supply Plan update process.	Ongoing, Medium-term
Annually update New Jersey's Extreme Temperature and Precipitation charts.	Ongoing
Assess changing state and regional temperature and precipitation patterns to inform adaptation and mitigation responses.	Ongoing
Continue to monitor the Drinking Water Supply Indicators on bi-weekly basis or more frequently as needed. Expand/modify indicators as needed.	Ongoing

Lead program: WRM

8.2.9 CHARACTERIZE & QUANTIFY CLIMATE IMPACTS ON GROUND & SURFACE WATERS

Beyond its impact on water supply, climate change is expected to significantly impact the quality of surface and groundwater in New Jersey through changes in air temperature, precipitation patterns, and sea level rise. Warmer water can lower dissolved oxygen levels, harming aquatic life and promoting harmful algal blooms. Changes in precipitation may cause intense rainfall, increasing pollutant runoff.

With additional resources, NJDEP could enhance the Ambient Nutrient Monitoring Network, with additional sampling stations to increase spatial coverage for Estuarine and Ocean Acidification. Nutrient data and water quality parameters associated with acidification, such as pH and alkalinity, are collected at sampling stations. Additional parameters could include dissolved inorganic carbon, a key measure of acidification.

As extreme precipitation events worsen over time, stormwater runoff, carrying nutrients, pathogens and other pollutants will increase discharges to New Jersey's water bodies. The expansion of existing continuous water quality monitoring would support critical evaluation of the effect of increased nutrient loads to State waters, of the onset and duration of cyanobacterial or "harmful algal" blooms (HABs), and of pH conditions throughout the diurnal (daily) cycle, and storm events. This information is critical to effective management as climate conditions change. Furthermore, due to increased runoff, there is likely a need for expansion of tools that can assist with special pollution source track down studies to identify key areas that are impacted by nutrients and other water quality parameters during storm events. This type of study leads to essential and preventative remediation efforts in areas that can help reduce HABs, eutrophication, and the potential pH changes due to eutrophication, all of which threaten recreation use of waterbodies, as well as drinking water.

NJDEP will:

Evaluate existing data and identify gaps in key parameters for the monitoring networks.	Short-term
Annually analyze existing data to evaluate and characterize locations where water quality is impacted by storm conditions, such as rainfall and tides, to prioritize areas for monitoring.	Medium-term
Evaluate the existing continuous water quality monitoring data with precipitation events to identify where storms impact HAB formation and water quality changes related to HABs and algal blooms. Also evaluate the daily changes in water quality that may inform when to collect samples.	Medium-term
Annually evaluate existing network water quality data to identify areas where water quality is impacted by storm events.	Long-term

Lead program: WRM

Climate change increases the frequency and severity of extreme weather conditions that could facilitate the need for road salt (melt/refreeze conditions). An analysis of data from 1971 to 2011 at four sites shows an upward trend at each location for chloride and specific conductance and an upward trend in three of the sites for total dissolved solids (TDS). NJDEP will

continue a project started in 2017 to assess road salt application effects on water quality through continuous year-round monitoring of specific conductance as a surrogate measure for road salt chemicals. NJDEP will examine the critical high specific conductance levels observed in the winter data and the duration of these elevated levels and will compare those to baseline levels and normal fluctuations throughout the year in a variety of New Jersey's non-tidal, freshwater streams.

NJDEP will:

Assess levels of specific conductance in relation to winter precipitation/snow events.	Short-term
Develop a database to allow for better assessment of whether the application of road salt before, during, and after snowfall events and below freezing temperatures has a significant impact on water quality.	Short-term
Determine if additional study or a modification of the current study is necessary to effectively assess impacts of road salt operations on stream water quality.	Short-term
Develop a white paper on road salt impacts on water quality.	Short-term
Develop a policy document with stakeholder input.	Short-term
Prepare a state-wide Total Maximum Daily Load (TMDL) to address the 39 TDS impairments and 8 Chloride impairments identify by data analysis.	Medium-term
Assess the severity of potential impacts to inform and develop specific education and outreach materials and best practices to minimize impacts of road de-icing.	Medium-term

Lead program: WRM

8.2.10 CHARACTERIZE & QUANTIFY CLIMATE IMPACTS ON MARINE WATER QUALITY – ECOSYSTEMS, FISHERIES & AQUACULTURE

As natural carbon sinks, the oceans are projected to continue to take up large amounts of carbon from the atmosphere in response to ongoing greenhouse gas emissions. This will result in major changes in seawater chemistry (e.g., ocean acidification) and have potentially serious consequences to marine ecosystems. In addition, increased nutrient inputs to estuaries and the ocean due to changing precipitation patterns can lead to algal blooms and eutrophic conditions that will alter the carbonate chemistry and result in lower pH levels. Understanding the effects of climate change to marine environments is thus a crucial component of the NJDEP's adaptation and mitigation efforts.

NJDEP will:

Identify gaps in monitoring, including geospatial gaps and data availability, for useful metrics.	Short-term
Identify certified laboratories to allow for consistent analysis of alkalinity and/or dissolved inorganic carbon and fund staff for NJDEP lab expansion or for contract laboratories.	Short-term
Develop New Jersey's first Ocean Acidification Action Plan through research and engagement to coordinate and expand actions that address impacts of ocean acidification.	Short-term
Inventory existing data resources related to acidification, pH, alkalinity, and dissolved organic carbon.	Medium-term
Develop New Jersey's first Ocean Acidification Action Plan through research and engagement to coordinate and expand actions that address impacts of ocean acidification.	Medium-term
Develop a central repository for all data generated by all partners.	Long-term
Identify funding for expansion and use of continuous water quality monitoring (e.g., slocum gliders, buoys), including research for new technologies to monitor carbonate chemistry.	Long-term
Identify funding for research to evaluate water quality and links to biological impacts and impairments.	Long-term
Document and assess range expansions or contractions of native species and changes to habitat conditions.	Ongoing

Lead program: DSR/WLM/CRO/MRA

8.2.11 PROVIDE SUPPORT TO EDUCATORS, SCHOOLS & COMMUNITIES FOR STATEWIDE IMPLEMENTATION OF THE K-12 CLIMATE CHANGE EDUCATIONAL STANDARDS

As the lead scientific contributor to the creation and implementation of New Jersey's nation-leading K-12 Climate Change Educational Standards, NJDEP will continue to work closely with the Department of Education (DOE) and the Office of the First Lady to identify opportunities and resources to support educators, schools, and communities in climate change education. Based on the K-12 Climate Change Education Needs Report, NJDEP will continue its work to address key needs in the areas of professional learning, curricular resources, and community-based education.

NJDEP will:

Identify overlap between Department/Program initiatives and climate change education.	Short-term
Promote the New Jersey Climate Change Education Hub, which provides New Jersey-specific climate educational resources, lessons, and materials for teacher use.	Short-term
Create an educator summary of the New Jersey Scientific Report on Climate Change and its Human Health and Communities Addendum as a climate change tutorial for New Jersey teachers.	Medium-term
Provide and expand climate change speakers, exhibitors and videos for schools, communities, and businesses proactively and by request.	Medium-term
Evaluate the effectiveness of NJDEP's education program materials.	Long-term, ongoing
Ensure NJDEP climate websites and publications are accurate, understandable, and present current data and science.	Ongoing
Work closely with DOE and partner agencies and organizations to fulfill statewide climate change education goals.	Ongoing

Lead program: Communications

8.2.12 URBAN PARKS DEVELOPMENT

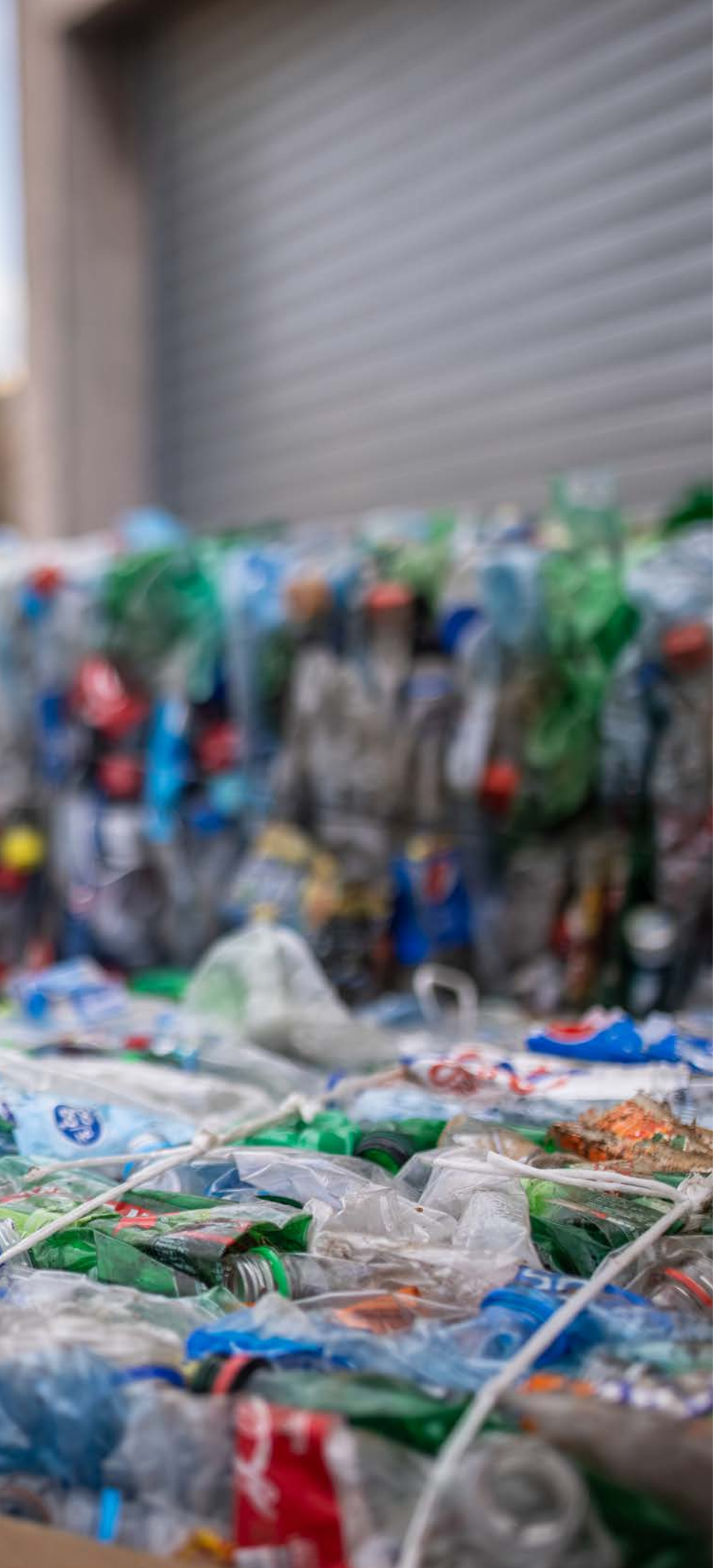
As one of the most densely populated states in the country, New Jersey is particularly vulnerable to various environmental stressors, including the urban heat island effect, flooding from extreme rainfall events and reduced air quality. Through the targeted development of urban parks, particularly in overburdened communities (as defined by the New Jersey Environmental Justice Law, N.J.S.A. 13:1D-157), New Jersey can integrate green spaces to enhance resilience and quality of life. These open spaces can help reduce localized heat and flooding, improve air and water quality, and reduce greenhouse gas emissions and/or sequestering carbon, while also providing both outdoor recreational and alternative transportation opportunities. Furthermore, the development of urban parks is well understood to serve as a catalyst for environmental improvements and economic development. To this end, NJDEP is actively working on the development of two urban parks projects, the Greenway and Liberty State Park, while further prioritizing open space funding in urban and overburdened communities.

NJDEP will:

Explore opportunities during the development of urban park assets to mitigate climate impacts by improving stormwater management, reducing heat island effects, expanding tree canopy, maintaining habitats and bird/pollinator pathways, and implementing green infrastructure along with other appropriate actions.	Ongoing
Continue to prioritize funding and identify additional acquisition opportunities in urban and overburdened communities.	Ongoing

Lead program: SPFHS/Community Investment & Economic Revitalization (CIER)/OCR

9. SUSTAINABLE WASTE MANAGEMENT & RECYCLING



According to New Jersey's Global Warming Response Act 80x50 Report (80x50 Report), waste management is the largest contributor of greenhouse gas emissions in the state after energy-related sources. Waste management includes municipal solid waste (MSW) management and wastewater treatment, both of which produce methane and carbon dioxide (CO_2) emissions. For more information, see Chapter 5, Waste and Agriculture, of the 80x50 Report. Disposal of municipal solid waste in landfills generates methane and CO_2 primarily due to the decomposition of food waste and other organic materials. Greenhouse gas emissions from municipal solid waste have grown 4.2% from 2006-2018 and are projected to continue to increase.

Sustainable materials management is important to conserve resources, reduce emissions, and lessen the environmental impact of goods. NJDEP will continue to evaluate more sustainable materials and waste management strategies and focus on reducing, reusing, and recycling to achieve the associated greenhouse gas benefits. This section outlines the legislative, regulatory, and policy actions required to help advance these goals. As explained in the 80x50 Report, reducing current food waste disposal in landfills 50% by 2030 alone would eliminate 1.6 MMT CO_2e annually by 2050.

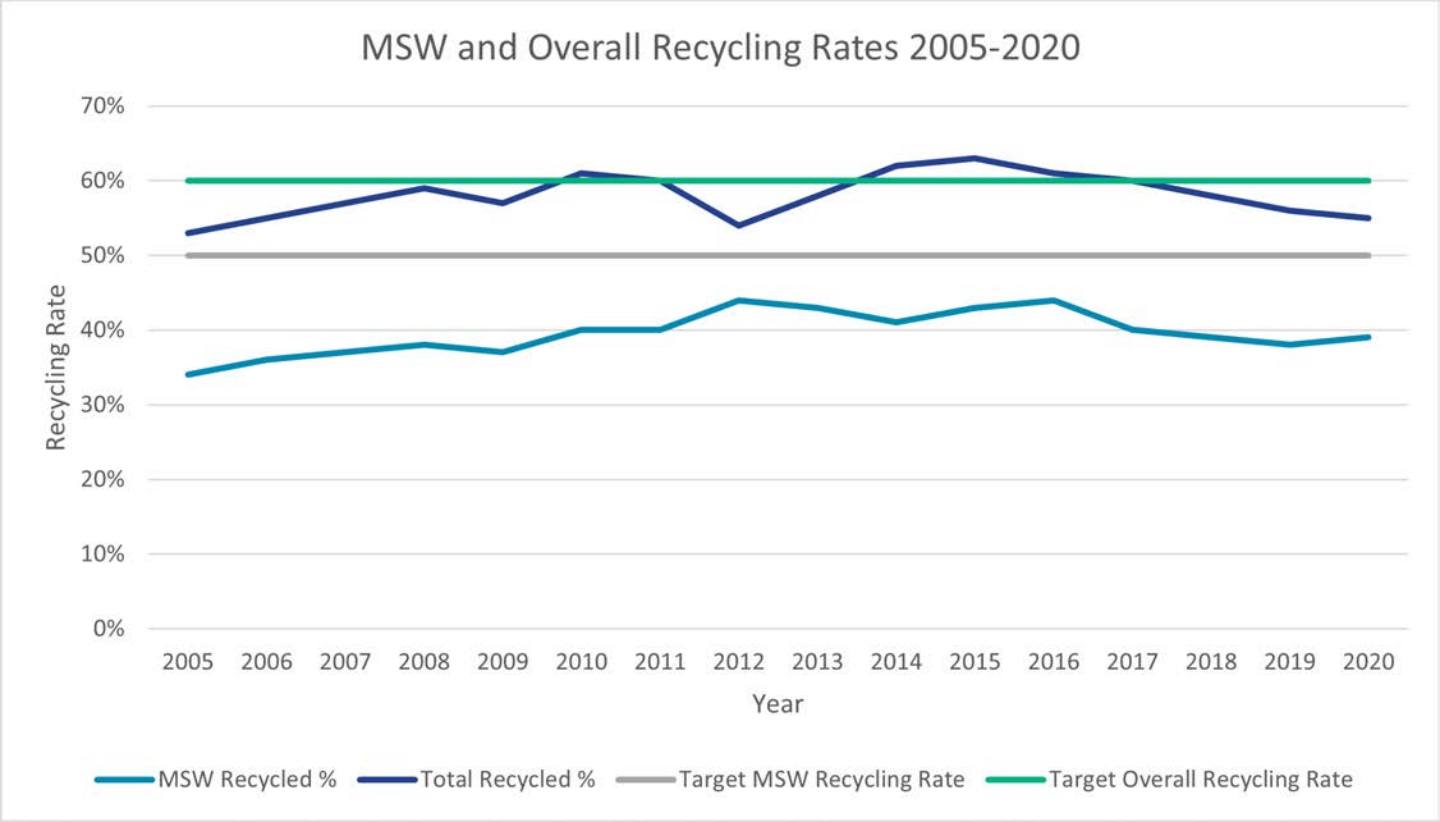
9.1 THOUGHT LEADERSHIP

In 1992, the New Jersey Legislature amended the "New Jersey Statewide Mandatory Source Separation and Recycling Act" (Recycling Act) to increase the State's recycling goal to 50% of the MSW stream and 60% of the overall waste stream by the end of 1995. MSW is defined as waste originating in the community consisting of household waste from private residences; commercial waste which originates in wholesale, retail, or service establishments, such as, restaurants, stores, markets, theaters, hotels, and warehouses; and institutional waste material originated in schools, hospitals, research institutions, and public buildings. In contrast, the overall waste stream factors in all other waste sources such as construction and debris.

In 2021, the year most recent data is available, the MSW recycling rate was 37% and the overall recycling rate was 54%. These recycling rates fluctuate year-to-year based on end markets, oil prices, and economic forces. Between 2016 to 2020, two of the five years within the range met or exceeded the 60% overall waste recycling target. After 2017, recycling rates slumped due to China's waste import ban, which dramatically reduced end markets for materials. In recent years, markets have bounced back, and NJDEP expects recycling rates to improve as a result. As shown in the table below, available trends between 2010 to 2020 demonstrate how recycling rates fluctuate with a low of 38% MSW (2019) and 54% overall (2012) and a high of 44% MSW (2012 & 2016) and 63% overall (2015).

As demonstrated above, recycling laws and programs have been effective in managing the New Jersey waste stream; however, consistent improvement in recycling rates has been elusive. As recycling rates fluctuate due to world markets, fossil fuel costs, and other factors, there is a valid concern regarding the sustainability of the current model. USEPA's non-hazardous materials and waste management hierarchy ranks the various management strategies from most to least environmentally

Figure 5: MSW and Overall Recycling Rates 2005-2020



preferred and remains the most valid approach in sustainable waste management efforts. The hierarchy places emphasis on reducing, reusing, recycling, and composting as key to sustainable materials management and reflects the understanding that the greatest and most efficient environmental benefit comes from reducing the source of the waste and reusing waste material. It is therefore imperative to focus on source reduction and reuse, which NJDEP is already doing as it implements the Single-Use Plastic Reduction Law that reduces plastic bags, polystyrene, and plastics straws.

Finally, New Jersey's Recycled Content Law creates demand for recycled materials by requiring manufacturers to meet minimum recycled content standards for regulated containers and packaging products sold or offered for sale in the State. The creation of demand in this manner increases the resilience of the recycling industry as it stabilizes one of many factors that impact the industry.

9.2 POLICY DEVELOPMENT & INCENTIVES

9.2.1 REIMAGINE SUSTAINABLE WASTE MANAGEMENT

NJDEP recognizes that recycling initiatives alone are not sufficient to manage the State's waste. Instead, NJDEP will implement a multi-faceted system with a renewed focus on reducing single-use products as a source of solid waste. NJDEP will continue implementing and expanding its reduction programs, including the minimum recycled content standards described above.

NJDEP will:

Explore deliberate and systematic methods to reduce all waste sectors.	Short-term
Develop lead-by-example approaches to integrate sustainable waste management solutions into Department and statewide practices.	Short-term
Evaluate innovative solid waste and recycling strategies locally and abroad.	Medium-term
Develop new reduce, reuse, recycle models, zero waste initiatives, and circular economy concepts.	Medium-term
Develop and support recycling markets with assistance from the recycling community and stakeholders.	Medium-term
Pursue statutory authority as needed through amendments to enabling legislation.	Long-term

Lead program: AEMS

9.2.2 FOOD WASTE

New Jersey's Food Waste Reduction Act (P.L. 2017, c.136) required NJDEP to develop a Food Waste Reduction Plan to encourage food waste reduction among consumers and businesses and to recommend ways for large food waste generators to reduce the amount of food waste they generate by 50% by 2030. This is in alignment with EPA's Wasted Food Scale, which prioritizes actions that prevent and divert wasted food from disposal, and NJDEP's own "Erase Food Waste" campaign. This document builds upon the expertise and work done by other agency partners such as the New Jersey Economic Development Authority (EDA) and the New Jersey Department of Agriculture (NJDA).

NJDEP will:

Publish the Food Waste Reduction Plan.	Complete
Disseminate emerging management practices to reduce wasted food.	Short-term
Educate the public about the environmental, financial, and societal implications of wasted food.	Short-term
Publish an organics and composting policy guidance document.	Short-term
Promote programs targeting the supply chain for incentivizing food donation and conduct waste audits.	Medium-term
Create guidelines and recommendations for county siting and streamlined State planning and permitting of food waste recycling facilities.	Long-term
Promote the School Food Waste Guidelines developed pursuant to P.L. 2018, c.210.	Long-term
Implement statewide recurring solid waste composition audits.	Long-term
Study and monitor State's progress in meeting food waste reduction goals.	Ongoing

Lead program: AEMS

9.2.2.1 Recycle Food Waste

After food waste reduction strategies are implemented, the next step is to divert any unavoidable food waste from landfills and incinerators. Pursuant to New Jersey's Food Waste and Food Waste-to-Energy Law (P.L. 2020, c. 24), large food waste generators located within 25 road miles of an authorized food waste recycling facility are required to source-separate their food waste from the rest of their solid waste and recycle the food waste portion subject to specific parameters identified within the Law. This process adheres to New Jersey's Renewable Portfolio Standards (RPS), which classifies electricity generated by the combustion of methane gas from anaerobic digestion facilities as a Class I renewable energy.

NJDEP will:

Propose a community composting rule to streamline the approval process across NJDEP.	Short-term
Propose rules necessary to implement the New Jersey's Food Waste and Food Waste-to-Energy Law.	Medium-term
Promote community composting programs at the residential level.	Medium-term
Create incentives to site organic waste recycling, composting, or anaerobic digestion operations.	Long-term
Support the development of Regional Composting Facilities that function free of off-site odors for equine manure and incentives for smaller on- and off-farm composting facilities.	Long-term
Work with the NJDA to provide guidelines for soil management and agricultural practices to reduce greenhouse gas emissions or connect farmers with facilities that accept food waste.	Long-term

Lead program: AEMS

9.2.3 REDUCE SINGLE-USE PLASTICS

Pursuant to New Jersey's Single-Use Plastic Reduction Law (P.L. 2020, c. 117), NJDEP is restricting the use of single-use plastic carryout bags, single-use plastic straws, polystyrene foam food service products, and single-use paper carryout bags. No person or food service business is allowed to provide or sell single-use plastic carryout bags, and no grocery store is allowed to provide or sell single use paper bags. Single-use plastic straws in New Jersey are by request only, and no person or food service business is permitted to provide or sell polystyrene foam food service products.

NJDEP will:

Promote the Get Past Plastic Campaign in collaboration with the New Jersey Business Action Center, New Jersey Clean Communities Council, and the New Jersey Food Council.	Complete
Promulgate rules regarding the implementation of P.L. 2020, c.117	Complete
Consider findings of the Plastics Advisory Council's First-Year Report to improve effectiveness and implementation of the law.	Ongoing
Continue to implement and enforce the Single-Use Plastic Reduction Law.	Short-term
Hold stakeholder meetings to gain input from the regulated community on rules.	Short-term
Develop and report on measures of success in the significant reduction of single-use plastics.	Long-term

Lead program: AEMS

9.2.4 IMPLEMENT RECYCLED CONTENT LEGISLATION

New Jersey's Recycled Content Law (N.J.S.A. 13:1E-99.135 et seq.) establishes minimum requirements for the percent of recyclable material used in the manufacture of certain plastic, glass, and paper packaging material and bans the use of polystyrene packing peanuts. The Law is designed to significantly reduce the use of virgin materials as contemplated in the reduce, reuse, recycle model.

NJDEP will:

Promote awareness of the Recycled Content Law in the regulated community.	Short-term

"According to New Jersey's Global Warming Response Act 80x50 Report (80x50 Report), waste management is the largest contributor of greenhouse gas emissions in the state after energy-related sources."

Hold stakeholder meetings to gain input from the regulated community on rules.	Short-term
Implement an online manufacturer registration process for all.	Short-term
Promulgate rules regarding the implementation of the law.	Medium-term
Evaluate the efficacy of the Law by reporting on industry compliance.	Long-term
Continue to implement and enforce the Law.	Ongoing

Lead program: AEMS

9.2.5 ELECTRONIC WASTE (E-WASTE) MANAGEMENT & EXTENDED PRODUCER RESPONSIBILITY

The State's "Electronic Waste Management Act" (EWMA), P.L. 2007, c.347 as amended by P.L. 2008 c.130 and P.L. 2016, c.87 (N.J.S.A. 13:1E-99.94 et seq.) (the EWMA) implements is a the regulatory concept implementation of Extended Producer Responsibility, which assigns requires manufacturers to accept the financial and physical responsibility for a product through to it's end-of-life management to the manufacturer of that product, rather than passing it onto consumers and/or taxpayers. Under the EWMA, electronics manufacturers are required to establish and finance a free, convenient, and environmentally sound recycling program for covered electronic devices. Electronics manufacturers must assure the Department that covered electronic devices are recycled in compliance with all applicable federal, state, and local laws, regulations, and ordinances, and that those devices are not exported for disposal in a manner that poses a risk to public health or the environment. The EWMA also imposes a disposal ban on covered electronic devices. Amendments to the law strengthened the manufacturer-driven system and provided the Department with greater control over the management of E-waste in New Jersey.

The Department will:

Research and evaluate Extended Producer Responsibility and model legislation in New Jersey and nationwide.	Short-term
Establish a working group with the recycling community and industry to prepare for upcoming legislative discussion on this topic.	Short-term
Promulgate rules to address rulemaking for EWMA amendments.	Medium-term

Lead program: AEMS

9.2.6 EVALUATE THE VULNERABILITY OF LANDFILLS

Another climate change-related stressor on New Jersey's communities and their infrastructure is the possible release of contaminated water, ground water, leachate, sediment, and other materials from landfills. This is of particular importance in a changing climate. Increased extreme precipitation, sea-level rise and even extreme heat can impact the function and integrity of landfills. NJDEP recognizes the importance of planning for and responding to these types of impacts across the State.

NJDEP will:

Evaluate the need for extending post-closure care periods for landfills to enable NJDEP to retain regulatory oversight of previously closed landfills in the event it is necessary to prepare for and mitigate the effects of climate-related disasters.	Medium-term
Engage stakeholders in the evaluation, development, and proposal of necessary regulatory reforms to include climate change and resilience considerations in solid waste planning and permitting and hazardous waste permitting. This will include potential amendments to require landfills to evaluate their vulnerability to sea-level rise as well as fluvial and stormwater flooding and assess potential impacts to surrounding communities in the event that water, ground water, leachate, sediment or other material is released into populated areas.	Medium-term

Lead program: AEMS/OCR

9.2.7 EVALUATE THE VULNERABILITY OF CONTAMINATED SITES

NJDEP recognizes that as a result of climate change, increased extreme precipitation, more frequent and intense storms, and sea-level rise could cause the release of contaminated water, soil, and sediment from remediation sites, or the movement of contamination that was previously controlled. Because New Jersey is a coastal state with the highest population density and over 13,000 contaminated sites, planning for and responding to these risks at contaminated sites is a top priority. In September 2023, Administrative Guidance for Green Sustainable and Resilient Remediation was published.

NJDEP formally encourages the use of green and sustainable remediation practices during the remediation of contaminated sites in Administrative Requirements for the Remediation of Contaminated Sites (ARRCS) at N.J.A.C. 7:26C-14.3(b)1iv. When selecting a cleanup remedy, remediating parties should account for issues, such as future impacts from sea level rise, increased flooding and wind damage due to more frequent severe storm events, as well as increased wildfires due to less overall rainfall, and increasing temperatures. The remediating party should also have emergency protocols in place in the event of a weather-related impact or a catastrophic event.

In addition, NJDEP is working towards the inclusion of climate adaptation and resiliency elements as part of brownfield redevelopment.

NJDEP will:

Evaluate the vulnerability of contaminated sites from climate risks, including sea-level rise and fluvial and stormwater flooding. These evaluations should include an assessment of potential impacts to surrounding communities should contaminants be released into populated areas.	Medium-term
Evaluate regulations and policy guidance, including the "Technical Guidance: Planning for and Response to Catastrophic Events at Contaminated Sites," to identify modifications needed to ensure resilience of remedial measures to effects of climate change.	Long-term

Lead program: Contaminated Site Remediation & Redevelopment (CSRR)/OCR

“Because New Jersey is a coastal state with the highest population density and over 14,000 contaminated sites, planning for and responding to these risks at contaminated sites is a top priority.”

10. COMMUNITY INVESTMENT & ECONOMIC REVITALIZATION

Asbury Park, NJ

NJDEP's Community Investment & Economic Revitalization (CIER) program strengthens the NJDEP's overall investments in natural capital and community development to support sustainable economic growth that restores, preserves, and protects New Jersey's natural, cultural, recreational, and historic resources consistent with NJDEP's principle and priorities.

10.1 THOUGHT LEADERSHIP

Recognizing that the NJDEP's mission sits at the intersection of environmental, health, social, and economic improvement, the Commissioner reorganized aspects of NJDEP between 2021 and 2022, establishing the CIER program within the Commissioner's Office.

Through the formal creation of CIER, NJDEP coalesced its Green Acres Program, Office of Natural Resource Restoration, Historic Preservation Office, Local Government Assistance, Community Collaborative Initiative, and Office of Economic Analysis and Development to ensure the unification of the NJDEP's natural capital and community development investments It was through this organization that two new programs were borne: the Youth Inclusion Initiative and Uniting Financial Resources. CIER's goal is to direct efforts towards revitalizing communities, managing and promoting natural and historic resources, mitigating and responding to climate change, and safeguarding New Jersey's water resources, all to protect public and environmental health. By doing so, CIER aims to ensure that all residents of New Jersey can continue to benefit from the clean, healthy, and equally accessible natural capital that provides essential public services.

10.2 POLICY DEVELOPMENT & INCENTIVES

10.2.1 CONTINUE CCI INVOLVEMENT WITH LOCAL COMMUNITIES

The Community Collaborative Initiative (CCI) is a place-based partnership between NJDEP and certain urban communities that seeks to align community, economic, and natural resource needs and opportunities and facilitate improvements that promote quality of life, community revitalization, and equitable economic development in New Jersey's overburdened communities (OBCs). CCI strives to continually evolve the NJDEP's role as a regulator by engaging these communities as partners. By building and maintaining mutually beneficial relationships between NJDEP, the community, and local governmental partners, CCI allows for and facilitates regional collaboration and supports the design and implementation equitable projects that incorporate climate impacts.

Through these partnerships, regional collaboration, and equitable projects, CCI ensures the communication and prioritization of NJDEP's mission principles, and priorities. CCI staff seek to connect and coordinate communities with subject matter experts. This is overwhelmingly important as it relates to climate change impacts, since the impact to these communities is exacerbated by historical disinvestment. By communicating, listening, understanding, and bridging gaps of environmental knowledge with communities, CCI connects these communities with the knowledge and tools they need for revitalization and climate resilience planning and implementation. These efforts bring positive change to overburdened communities and lead to transformative government practices focused on community engagement, equity, and environmental and climate justice.

NJDEP will:

Regionalize CCI communities to identify municipal capacity gaps and prioritize communities most in need while better communicating regional impacts and issues, including climate change.	Short-term
Institutionalize the CCI program to bridge the gap of social, economic, and environmental improvements within the municipalities while focusing on Departmental priorities, including to reduce and respond to climate change.	Medium-term
With the help of agency partners, identify and implement equitable investments to improve the quality of life in the CCI communities.	Ongoing

Lead program: CIER

10.2.2 INCORPORATE CLIMATE & EQUITY CONSIDERATIONS INTO NJDEP FUNDING PROGRAMS

Between 2021-2023, the NJDEP awarded an average of about $200M for environmental projects to entities furthering community and economic investment and revitalization. This funding provides a tremendous opportunity to further facilitate and incentivize the NJDEP's key climate and equity priorities, particularly in water infrastructure. To fully leverage its spending power, NJDEP is undertaking a comprehensive evaluation of its funding programs, including grants, loans, purchases, and investments, looking for opportunities to incorporate climate mitigation, resilience, and equity considerations into decision-making. Once NJDEP identifies those opportunities, it will undertake necessary modifications to rules, guidance documents, solicitations, and other policy mechanisms to support these priorities.

NJDEP will:

Evaluate and identify all Department funding programs for opportunities to incorporate consideration of climate and equity, with focus on prioritizing funding in adversely impacted OBCs and other underserved communities, including assessment of the Federal Justice40 Initiative.	Short-term
Incorporate climate risk analysis into the decision-making processes of asset management, capital funding, and grant programs.	Medium-term

Lead program: CIER

10.2.3 EVOLVE APPROACH TO LAND PRESERVATION

NJDEP is committed to building on its past successes and utilizing its key land acquisition tools to better promote climate resilience, protect New Jersey's natural resources, and advance its environmental, social, and economic priorities. Investing in the preservation, protection, and enhancement of the natural environment through a system of open spaces and recreational land will ensure that future generations of New Jerseyans are protected from the effects of climate change and are able to use and enjoy the state's historic, scenic, natural, and recreational resources.

To address the climate crisis, NJDEP must more carefully identify its priorities and strategically invest its acquisition funds and efforts to ensure New Jersey's safety and vitality. The Green Acres Program will both broaden and refine the criteria used to evaluate lands to acquire, ensuring we focus on those that serve to further the State's overall policy priorities. In this process, NJDEP will engage with stakeholders, identify key assets, coordinate internally, and utilize the Climate Resilience Strategy to guide investments in infrastructure and ecosystems. The Green Acres State Land Acquisition program will use these enhanced priorities to better guide investments for climate resilience, ensure safe and healthy communities, better prepared for storms and storm recovery, and make certain New Jersey's investments have economic, ecological, and social benefits.

NJDEP will:

Adjust internal policy to broaden the basis for selecting properties for acquisition and account for climate change mitigation and resilience, e.g., carbon sequestration and storage.	Short-term
Implement the action items identified in Outside, Together! New Jersey's Statewide Comprehensive Outdoor Recreation Plan completed in 2023.	Ongoing

Lead program: CIER

"CIER's goal is to direct efforts towards revitalizing communities, managing and promoting natural and historic resources, mitigating and responding to climate change, and safeguarding New Jersey's water resources, all to protect public and environmental health."

Stephens State Park, NJ