NEW YORK STATE | Extreme Heat Action Planning

EXTREME HEAT ACTION PLAN

ADAPTATION AGENDA FOR 2024–2030

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MESSAGE FROM THE GOVERNOR

New York State is committed to addressing extreme heat and mitigating its impacts across New York State, and especially in vulnerable and disadvantaged communities. My administration has prioritized making our communities more resilient, reducing the urban heat island effect, keeping workers of all backgrounds safe, and ensuring equitable access to cool and green spaces.

The *New York State Extreme Heat Action Plan* provides a roadmap for whole-of-State-government action, starting with 49 initiatives by 29 State agencies and authorities to address extreme heat and help communities adapt. This plan will guide State action to be carried out in partnership with local communities and prioritize those most vulnerable to extreme heat. The State intends to support local champions and to work with communities on addressing extreme heat impacts, responding to emergent challenges and needs, and taking advantage of opportunities that can help our communities flourish as we adapt to extreme heat.

This plan takes a holistic approach to extreme heat adaptation: It defines actions in four tracks to build community capacity and support local leadership, protect the most vulnerable and make workplaces safe, prioritize nature-based solutions, and enhance the resilience of our buildings and infrastructure. This plan features ambitious goals and targets, but also the actions required to realize them—resulting in a forward-looking plan to ensure that the State meets its targets and helps affected communities successfully adapt to extreme heat. This plan continues the State's commitment to advance adaptation equitably through collaboration with communities, organizations and individual leaders on the frontlines of extreme heat impacts.

I want to thank the numerous frontline community organizations, local government champions, experts, partners from other states, and numerous State staff who contributed to this plan. It is through their dedication and expertise that we will continue to lead by example, guided by a roadmap that will help build partnerships for action and inspire others to follow.

Kathy Hochul
Governor

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The New York State Department of Environmental Conservation (DEC), New York State Energy Research and Development Authority (NYSERDA), and the Extreme Heat Action Plan Work Group (EHAPWG) wish to express their deep gratitude for the community leaders, experts, and State staff who shaped and enhanced this plan with their invaluable contributions and, through service to their communities, make New York State more resilient each day.

This plan represents the input, ideas, expertise, and innovative thought leadership of countless local champions that advance the solutions needed to address extreme heat in their communities each day. The long-standing leadership of local community organizations, individual community leaders, and local government representatives continues to be the foundation of extreme heat adaptation across New York State. Their input was invaluable and helped staff identify impacts, understand vulnerabilities and capacities, scope solutions, and define priorities for this plan.

We thank the numerous external partners who lent their expertise in helping shape the plan:

- The members of the Community Advisory Panel (CAP) for their commitment to advancing equitable solutions that address extreme heat and its impacts. CAP members provided invaluable insight for this plan, helped ensure it remains focused on advancing solutions equitably, and were crucial in helping understand local impacts and opportunities for solutions, including by hosting State staff for regional community workshops and by reaching out to community members to help further inform this plan.
- The members of the Scientific Advisory Panel (SAP), convened by State University of New York-University at Buffalo (SUNY-UB), who helped develop resources that were critical for developing this plan, including identifying best practices from across the U.S. and internationally, inventorying evaluation indicators, and providing review of and feedback on the plan.
- The more than 200 participants from 45 community-based organizations (CBOs) and 30 local government partners who helped inform this plan by attending monthly planning forums and participating in interviews and local workshops.

Finally, we are deeply grateful to the more than 80 State staff representing 29 agencies and authorities for their expertise, dedication, and commitment to collaboration that enabled this plan to be solution oriented. Special recognition is due to the following individuals:

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Co-Chair, DEC

Erika Jozwiak, Jenny Sing-Bock
Co-Chairs, NYSERDA

ABBREVIATIONS, INITIALISMS, AND ACRONYMS

AEM	Agricultural Environmental Management
AGM	Department of Agriculture and Markets
AQI	Air Quality Index
BOCES	Boards of Cooperative Educational Services
BRACE	Building Resilience Against Climate Effects
CAP	Community Advisory Panel
CBO	Community-based organization
CDC	Centers for Disease Control and Prevention
CEI	Clean Energy Initiative
CEMP	Comprehensive Emergency Management Plan
CJWG	Climate Justice Working Group
Climate Act	Climate Leadership and Community Protection Act
COSH	Council for Occupational Safety and Health
CRF	Climate Resilient Farming
CRRA	Community Risk and Resiliency Act
CSC	Climate Smart Communities
DASNY	Dormitory Authority of the State of New York
DCJS	Division of Criminal Justice Services
DEC	Department of Environmental Conservation
DHSES	Division of Homeland Security and Emergency Services
DOCCS	Department of Corrections and Community Supervision
DOH	Department of Health
IPAWS	Integrated Public Alert and Warning System
LHD	Local health department
LMI	Low-to-moderate income
MAC	Multiagency coordination
MTA	Metropolitan Transportation Authority
M&E	Monitoring and evaluation
NPS	Nonpoint source
NWS	National Weather Service
NYC	New York City
NYCRR	New York Codes, Rules, and Regulations
NYPA	New York Power Authority
NYS	New York State
NYSED	New York State Education Department
NYSERDA	New York State Energy Research and Development Authority
OASAS	Office of Addiction Services and Support
OCC	Office of Climate Change
OCFS	Office of Children and Family Services
OEM	Office of Emergency Management
OFA	Office for the Aging
OGS	Office of General Services
OMH	Office of Mental Health
OPRHP	Office of Parks, Recreation and Historic Preservation

DOL	Department of Labor
DOS	Department of State
DOSH	Division of Safety and Health
DOT	Department of Transportation
DPS	Department of Public Service
EAP	Energy Affordability Policy
EbA	Ecosystem-based adaptation
ECL	Environmental Conservation Law
ED	Emergency department
EFC	Environmental Facilities Corporation
EHAP	Extreme Heat Action Plan
EHAPWG	Extreme Heat Action Plan Work Group
EJ	Environmental justice
EMO	Emergency Management Office
EO	Executive Order
ESD	Empire State Development
FEMA	Federal Emergency Management Agency
GHG	Greenhouse gas
GIS	Geographic Information System
HCR	New York State Homes and Community Renewal
HFC	Hydrofluorocarbon
HVI	Heat Vulnerability Index
IAQ	Indoor Air Quality
ICARWG	Interagency Climate Adaptation and Resilience Work Group
OPWDD	Office for People with Developmental Disabilities
OSHA	Occupational Safety and Health Administration
OTDA	Office of Temporary and Disability Assistance
PESH	Public Employee Safety and Health
PSC	Public Service Commission
REP	Regional Emphasis Program
SAP	Scientific Advisory Panel
SBC	System Benefits Charge
Scoping Plan	Climate Action Council Scoping Plan
SEHP	School Environmental Health Program
SEOC	State Emergency Operations Center
SFA	School Facilities Association
SHMP	State Hazard Mitigation Plan
SOTS	State of the State
SUNY-ESF	State University of New York College of Environmental Science and Forestry
SUNY-UB	State University of New York University at Buffalo
SUNY-Upstate	State University of New York Upstate Medical University
SWCC	Soil and Water Conservation Committee
SWCD	Soil and Water Conservation District
Thruway	Thruway Authority
UHI	Urban heat island
U.S.	United States
USDN	Urban Sustainability Directors Network
WAP	Weatherization Assistance Program

ICSA	Inclusive Community Solar Adder
IHANS	Integrated Health Alerting and Notification System
WBGT	Wet Bulb Globe Temperature

I. INTRODUCTION

New York State is taking action to address current and future extreme heat impacts. This plan was developed pursuant to Governor Kathy Hochul's 2022 State of the State (SOTS) directive to DEC and NYSERDA to develop the EHAP to address extreme heat impacts in disadvantaged communities, areas of employment, and recreational zones across the state.[1] Governor Hochul directed the plan to help coordinate interagency action and investments to ensure that priority assistance goes to disadvantaged communities on the front lines of heat exposure. Pursuant to the Governor's directive, DEC and NYSERDA convened the EHAPWG, comprising 29 State agencies and authorities. As a whole-of-State-government effort, the EHAPWG has begun coordinating a statewide response to extreme heat through immediate action, extreme heat emergency response, climate adaptation planning, and studying and monitoring heat-related risks (Table 1). Governor Hochul reaffirmed her commitment to addressing the impacts of extreme heat in the 2024 SOTS address by expanding access to indoor and outdoor cooling for disadvantaged communities and at-risk populations through investments in swimming infrastructure, expanded funding to Clean Green Schools to install cooling systems in schools that can serve as community cooling centers, and adding coverage for air conditioning for the medically vulnerable to the New York State of Health Essential Plan.

The EHAPWG is releasing the *Extreme Heat Action Plan: Adaptation Agenda for 2024–2030* as a roadmap for whole-of-State-government action to equitably address extreme heat and its impacts, reduce vulnerability, and build community capacity. This plan is designed as a living plan for action and will be updated to ensure progress toward its desired outcomes and that EHAP actions respond to emergent and changing conditions, needs, and impacts. This plan is focused on adaptation to extreme heat and is not an emergency management plan. For a description of the State's extreme heat emergency response, please see *the New York State Comprehensive Emergency Management Plan* and its "Extreme Heat Annex."[2] Climate adaptation is more than bouncing back after a disaster. It aims to strengthen adaptive capacity, enhance community resilience to reduce the impacts of climate change, and proactively prepare for future conditions while furthering the well-being of impacted communities. The impacts of climate change can emerge from abrupt, acute, or slowly unfolding shifts that affect the state and its communities. No individual adaptation action or single plan on its own would be able to fully realize the goals outlined in this document. Rather, the EHAP provides a long-term vision to guide extreme heat adaptation.[3] The plan will be integrated in and coordinated with the State's future activities, including the development of a comprehensive climate change adaptation and resilience plan as announced by Governor Hochul in the 2024 SOTS address.[4] The EHAP also provides a framework for coordinated implementation and regular evaluation. The State intends to undertake an evaluation and update of the full EHAP by 2030, followed by updates at least every five years.

[1] New York State 2022b, New York State of the State 2022.
[2] DHSES developed an extreme-heat specific appendix to the State's *Comprehensive Emergency Management Plan*. See https://www.dhses.ny.gov/system/files/documents/2024/03/final-nys-extreme-heat-annex-wv-march-2024.pdf.
[3] U.S. White House 2023, 4.
[4] New York State 2024.

Table 1. New York State extreme heat action planning initiatives

Take immediate action	In July 2022, the EHAPWG released its ***Interim Recommendations report***[5] with recommendations for immediate actions the State could take to address acute impacts with existing resources and capacities.
Respond to emergencies	In June 2023, the Division of Homeland Security and Emergency Services (DHSES) released the "**Extreme Heat Annex**"[6] to the State *Comprehensive Emergency Management Plan* (CEMP) to coordinate the State's response to declared extreme heat emergencies.
Adapt to current and future conditions	This document, the **State's *Extreme Heat Action Plan***, aims to increase New York State's resilience and capacity to adapt to extreme heat. The EHAP describes actions for the State to implement, timeframes and anticipated outcomes of these actions, and opportunities for building on these actions in future updates.
Support evidence-based planning	As companion to the plan, the EHAPWG has developed a report titled ***Extreme Heat in New York State*** that examines current and projected extreme heat conditions, impacts, and vulnerabilities. It is intended to help local governments and partners with extreme heat planning.

[5] New York State 2022a, EHAPWG *Interim Recommendations*.
[6] New York State 2023a, *State Comprehensive Emergency Management Plan*.

II. EHAP ACTIONS AT A GLANCE

This plan includes descriptions of 49 planned actions the State intends to take to enhance the resilience and adaptive capacity to extreme heat across New York State. The actions are organized in four goal-oriented tracks to support extreme heat adaptation planning and implementation (Track 1), enhance preparedness, communication, and workers' safety (Track 2), enhance the resilience of built environments, infrastructure, and managed spaces (Track 3), and advance ecosystem-based adaptation, or EbA (Track 4).

Table 2. Extreme Heat Adaptation Actions

ACTION TRACK 1: Adaptation Planning and Implementation	**Build Capacity for Adaptation Planning and Implementation**	
	T1.01	Support scaled implementation through regional planning and coordination processes.
	T1.02	Support the development of regional community resilience networks.
	T1.03	Publish statewide high-resolution extreme heat exposure maps and fund capital projects that mitigate extreme heat and the urban heat island (UHI) effect.
	T1.04	Develop decision-support tools and services for State and local adaptation action.
	T1.05	Deepen climate resilience and extreme heat adaptation collaborations with frontline CBOs, prioritizing schools, youth leaders and youth organizations.
	T1.06	Engage and consult with Indigenous Nations and Peoples on extreme heat and climate change adaptation.
	Promote Research, Development, and Innovation	
	T1.07	Evaluate the existing Heat Vulnerability Index (HVI) and explore opportunities to use HVI factors to improve program and resource targeting.
	T1.08	Evaluate excess heat risk thresholds and assess the feasibility of region-specific extreme heat responses.

	T1.09	Support innovation for passive, resilient, and safe cooling.
	T1.10	Conduct essential research on the impacts of extreme heat.

ACTION TRACK 2: Preparedness, Communication, and Workers' Safety		
	Coordinate Preparedness and Pre-event Communication	
	T2.01	Support development and implementation of regional and local heat emergency plans.
	T2.02	Expand coverage of and improve access to cooling centers.
	T2.03	Expand access to safe swimming and address equity gaps with recreational opportunities for communities facing extreme heat.
	T2.04	Explore the ability of temporary emergency shelters to serve as emergency cooling centers.
	T2.05	Evaluate opportunities for improvements to the Cooling Center Finder.
	T2.06	Review, assess, and update existing statewide extreme heat communication, and research ways to improve public health messaging and targeting related to extreme heat.
	Protect Workers' Health and Safety	
	T2.07	Support actionable research to inform risk assessments and decision-making.
	T2.08	Prevent heat-related injury and illness through easily accessible guidance and recommendations for employers and employees in the private sector, identifying best practices and leaders.
	T2.09	Develop and support guidance and recommendations for heat-related injury prevention and incorporate them into employee safety manuals for public workers.
	T2.10	Protect workers' heat health through engagement with local partners in focused outreach activities, leveraging existing touchpoints to provide services and protections, including know-your-rights information.

ACTION TRACK 3: Built Environment, Infrastructure, and Managed Spaces		
	Support Resilient Built Environments	
	T3.01	Expand immediate access to affordable cooling through additional funding for cooling equipment, expanded reimbursement under medical insurance, and continued advocacy for additional federal HEAP funding.
	T3.02	Explore the State's long-term ability to mitigate energy cost burdens associated with cooling and electrification.
	T3.03	Coordinate thermal resilience, weatherization, and decarbonization for residential buildings across State programs.
	T3.04	Incorporate protection from cooling-related cost shifting into existing renter protection programs.
	T3.05	Identify appropriate State-owned facilities in which to install demonstration heat-mitigation solutions.
	T3.06	Enhance home energy assessments to incorporate resilience.
	T3.07	Support installation of renewable sources of power and backup storage at public housing, group homes, assisted living facilities, and shelters.
	T3.08	Support installation of renewable sources of power and backup storage at community centers, schools, libraries, and other community settings.

	T3.09	Strengthen State building codes to account for extreme heat.
	T3.10	Develop model zoning overlays, technical support, and guidance for local land-use laws that consider extreme heat.
	T3.11	Develop requisite guidance, training, and outreach to enable the voluntary use of heat-mitigating design measures and strategies, with a focus on disadvantaged communities.
	Advance Adaptation in Educational, Institutional, and Congregate Settings	
	T3.12	Fund facility improvements, thermal resilience, and decarbonization at educational institutions.
	T3.13	Support the development and implementation of facility-specific heat response plans and reporting for certain educational facilities.
	T3.14	Incorporate thermal resilience into State planning standards for educational facilities.
	T3.15	Identify and implement best practices to promote student, faculty, and staff safety at educational institutions, with a focus on protecting student athletes and preventing pediatric heatstroke.
	T3.16	Support facility-specific heat response plans and develop and refine procedures, protocols, planning, and staff training on extreme heat in institutional and congregate settings.
	T3.17	Assess cooling in congregate settings.
	Develop Resilient and Equitable Infrastructure	
	T3.18	Explore options for strengthening consumer protections during heat waves.
	T3.19	Incorporate extreme heat considerations in key transportation policies, protocols, guidance, specifications, and official issuances.
	T3.20	Accelerate the transition of internal combustion bus and agency fleets to electric propulsion to reduce heat and ozone exposure along bus routes.
	T3.21	Prioritize deployment of zero-emission buses in transit routes serving disadvantaged communities

ACTION TRACK 4: Ecosystem-based Adaptation	**Prioritize Ecosystem-based Adaptation and Green Infrastructure Solutions**	
	T4.01	Create an interagency committee to coordinate State programs that fund and implement green infrastructure and ecosystem-based adaptation to address extreme heat.
	T4.02	Regularly map and monitor land-cover changes in UHIs to improve adaptive interventions.
	T4.03	Develop and disseminate best practices and guidance for maximizing ecosystem- and community-adaptation benefits of green infrastructure and ecosystem-based adaptation implementation.
	T4.04	Develop risk assessments and planning tools under the State's Agricultural Environmental Management (AEM) Framework for natural resource professionals and farmers to address extreme heat on farms.
	T4.05	Accelerate the implementation and maintenance of ecosystem-based and green infrastructure solutions across the state to reduce extreme heat impacts.

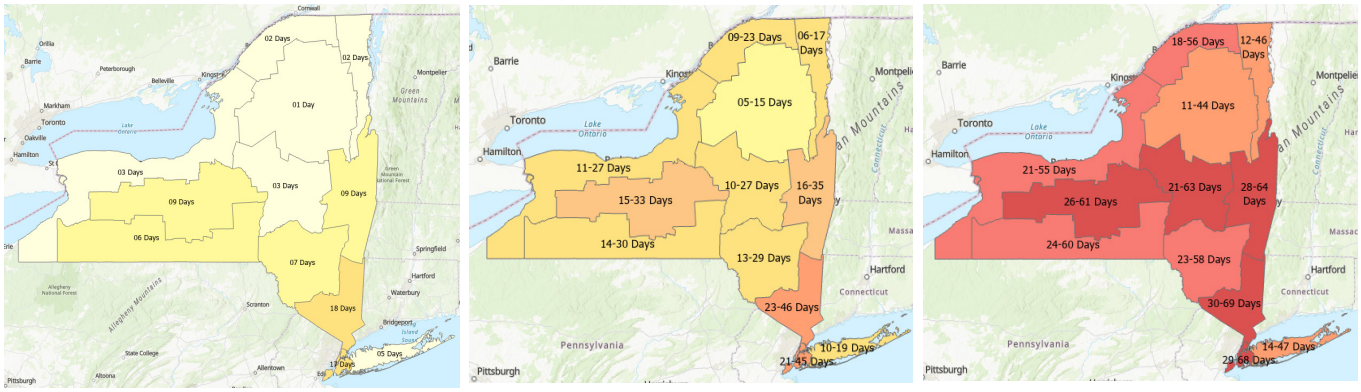
	T4.06	Fund and train arborists, foresters, youth conservation corps, and other conservation staff who will plan, install, and maintain green infrastructure and EbA to reduce extreme heat impacts.
	T4.07	Scale the production of heat-adapted trees and seed supply, including increasing the number of, and collaboration among, nurseries needed for implementing EbA to address extreme heat impacts.
	T4.08	Initiate a demonstration project communication campaign on best practices for green infrastructure and EbA solutions to extreme heat.

III. EXTREME HEAT IN A CHANGING CLIMATE

Current and Future Impacts

Extreme heat is the leading cause of death from hazardous weather events in the United States.[7] While many of New York State's diverse communities are experiencing significant extreme heat impacts on their health and well-being today, these events are projected to become widespread, more frequent and severe, and prolonged as climate change progresses.[8] Extreme heat events are becoming more common across the state, including in regions that were less likely to experience them in the past (Figure 1).[9]

Figure 1. Projected increases in days above 90°F by 2050 and 2080 in New York State compared to the baseline



Left: Number of days above 90°F during base period (1981–2010). Middle: Additional days above 90°F by the 2050s, showing middle range (25th–75th percentile) 30-year mean values from model-based outcomes. Right: Additional days above 90°F by the 2080s, showing the middle range of values.[10]

Regions that already experience frequent extreme heat impacts will likely experience increases in their severity, frequency, and duration. By the 2050s, New York City (NYC) is expected to experience approximately 30–46 days per year with the heat index reaching 95°F or above, compared to an average of six such days annually between 1981 and 2010. The Saint Lawrence Valley currently experiences extreme heat events infrequently but is projected to experience approximately three to eight annual heat waves by the 2080s.[11] Regional projections of frequency, severity, and duration of extreme heat days and events are discussed in the companion report

[7] CDC n.d.
[8] NYSERDA is releasing a comprehensive climate impacts assessment to support the State and local communities in understanding, anticipating, planning for, and adapting to climate change; see *New York State Climate Impacts Assessment: Understanding and Preparing for Our Changing Climate.* 2024. The EHAPWG is releasing a synthesis report on extreme heat-specific projections, impacts, and vulnerabilities (https://dec.ny.gov/environmental-protection/climate-change/effects-impacts/extreme-heat).
[9] Tuzzo et al. 2018.
[10] NYSERDA 2023.
[11] *New York State Climate Impacts Assessment: Understanding and Preparing for Our Changing Climate.* 2024.

"Extreme Heat in New York State," and statewide impacts are further described in the New York State Climate Impacts Assessment.[12]

Extreme heat has severe impacts on the health and well-being of New Yorkers. Its impacts, such as heat-related illness, heat stroke, and even death, unfold unevenly across New York State's communities and are exacerbated by socioeconomic status, the surrounding environment and ecosystems, age- and health-related conditions, and other factors that compound vulnerabilities. The direct health impacts include heat-related illness, heat stroke, and death. Heat deaths occur primarily among certain vulnerable groups, including communities of color, Indigenous Peoples, low-income communities, and people living in isolation. Exposed indoor and outdoor workers, people experiencing homelessness and housing insecurity, seniors, young children, and pregnant women are particularly vulnerable. Indirect impacts are wide-ranging and can be short-term (e.g., infrastructure damage and disruptions, deteriorating water quality, reduced air quality) or long-term (e.g., impacts on food security, changing ecosystem composition, long-term health impacts due to continued exposure).[13]

Extreme heat is also associated with significant economic impacts, including increased health care spending, decreased workforce productivity, increased work site injuries and illness, and disrupted business operations. Heat-related decreases in labor productivity alone are estimated to cost approximately $100 billion annually in the U.S.[14]

Without adaptation, the expected increases in severity, frequency, and duration of extreme heat events will likely lead to significant impacts across the state's communities. Regions that do not frequently experience extreme heat events may face additional risks due to their limited adaptive capacity. Urban areas face unique challenges as the urban built environment amplifies extreme heat exposure, while impacts on rural communities and agricultural economies are exacerbated by occupational heat exposure, energy poverty, inefficient weatherization and cooling of housing, lack of access to medical care, and limited solutions for heat adaptation that consider the unique local character of New York State's rural communities.[15]

Identifying Vulnerable Communities

Extreme heat disproportionately affects certain vulnerable communities across the state. Residents of low-income and Indigenous communities, people of color, certain indoor and outdoor workers, older adults and young children, expecting mothers, people with certain preexisting conditions such as diabetes and heart disease, people with disabilities, users of certain drugs and medication, justice-involved individuals, immigrants, people facing language barriers, and people experiencing housing insecurity are at elevated risk of heat-related health effects.

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[12] See *New York State Climate Impacts Assessment: Understanding and Preparing for Our Changing Climate.* 2024. Regional projections, as provided for the *Climate Impacts Assessment*, are available online at nysclimateimpacts.org/wp-content/uploads/2023/09/Appendix-Projections_Tables.pdf.

[13] https://dec.ny.gov/environmental-protection/climate-change/effects-impacts/extreme-heat

[14] Atlantic Council 2021.

[15] A focus on heat adaptation strategies "specific to urban areas has resulted in the under-prioritization of solutions tailored for rural areas. Some solutions feasible for urban areas—such as cooling centers—cannot be effectively implemented in rural areas, given differences in population density and the robustness of community lifelines." Duke Nicholas Institute for Energy, Environment & Sustainability n.d.

Several tools exist to help State and local planners, practitioners, and the public understand and identify vulnerability to extreme heat and identify disproportionately impacted populations. These tools include New York State disadvantaged communities maps,[16] the federal extreme heat vulnerability mapping tool,[17] and the Centers for Disease Control and Prevention (CDC) Heat & Health Tracker.[18] Appendix IV provides a list of additional resources.

The New York State Department of Health (DOH) developed the HVI to identify geographic areas with populations that may be more vulnerable to extreme heat in the state (Figures 2 and 3); NYC has developed its own HVI.[19] The HVI can help direct adaptation resources based on the characteristics of vulnerable populations in each community and can inform long-term heat adaptation planning efforts in those communities.[20] DOH HVI maps display the HVI for each census tract and are available statewide and for individual counties. Maps are available for the overall compound HVI and each of the individual factor groups (e.g., language vulnerability, socioeconomic vulnerability, environmental/urban vulnerability, and elderly vulnerability).[21]

[16] NYS DEC, "Disadvantaged Communities Criteria" maps (Version 1.0, 2023), https://climate.ny.gov/resources/disadvantaged-communities-criteria/.
[17] ESRI, "NOAA Future Heat Events and CDC Social Vulnerability Index 2018", https://geoxc-apps2.bd.esri.com/Climate/HeatVulnerability/index.html (last visited Dec. 28, 2023).
[18] CDC, "Heat & Health Tracker", https://ephtracking.cdc.gov/Applications/heatTracker/ (last visited Dec. 28, 2023).
[19] NYC, "Environment & Health Data Portal", https://a816-dohbesp.nyc.gov/IndicatorPublic/key-topics/climatehealth/hvi/ (last visited Dec. 28, 2023).
[20] NYSDOH, "Heat Vulnerability Index", https://www.health.ny.gov/environmental/weather/vulnerability_index/ (last updated July 2023).
[21] NYSDOH, "New York State HVI maps", https://www.health.ny.gov/environmental/weather/vulnerability_index/nys_maps.htm (last updated July 2017).

Figure 2. New York State Heat Vulnerability Index map[22]

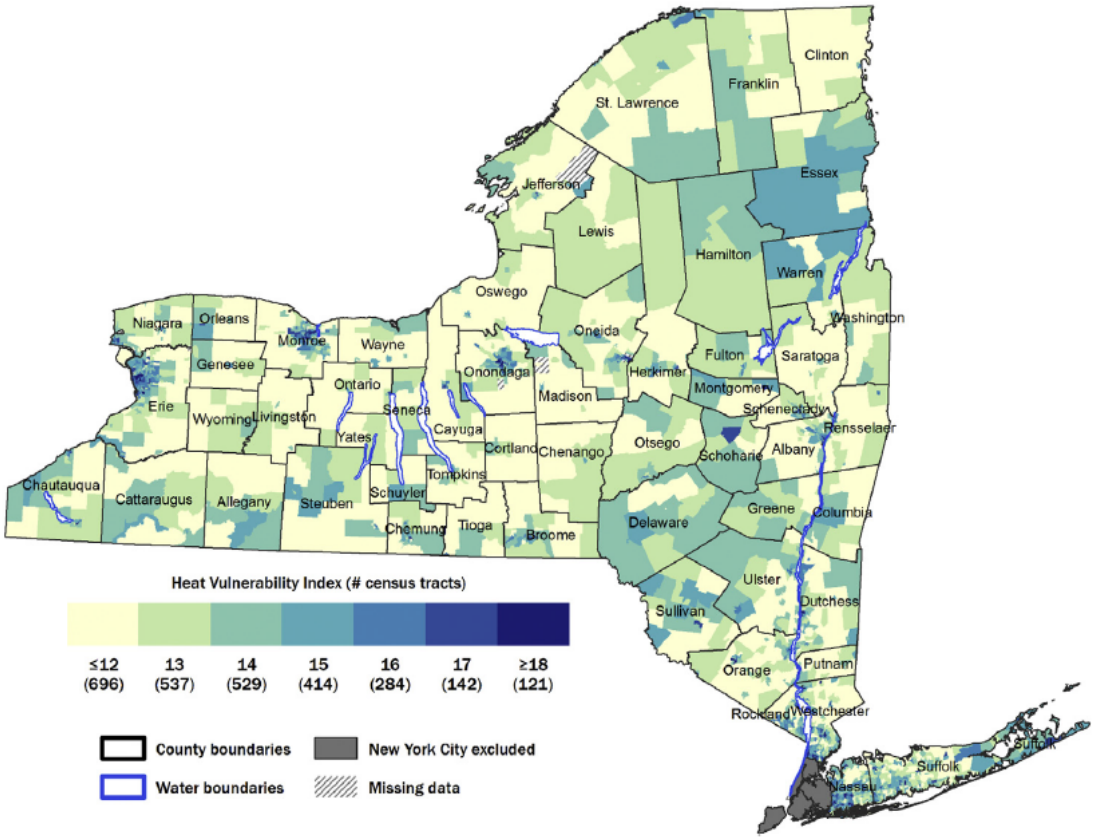
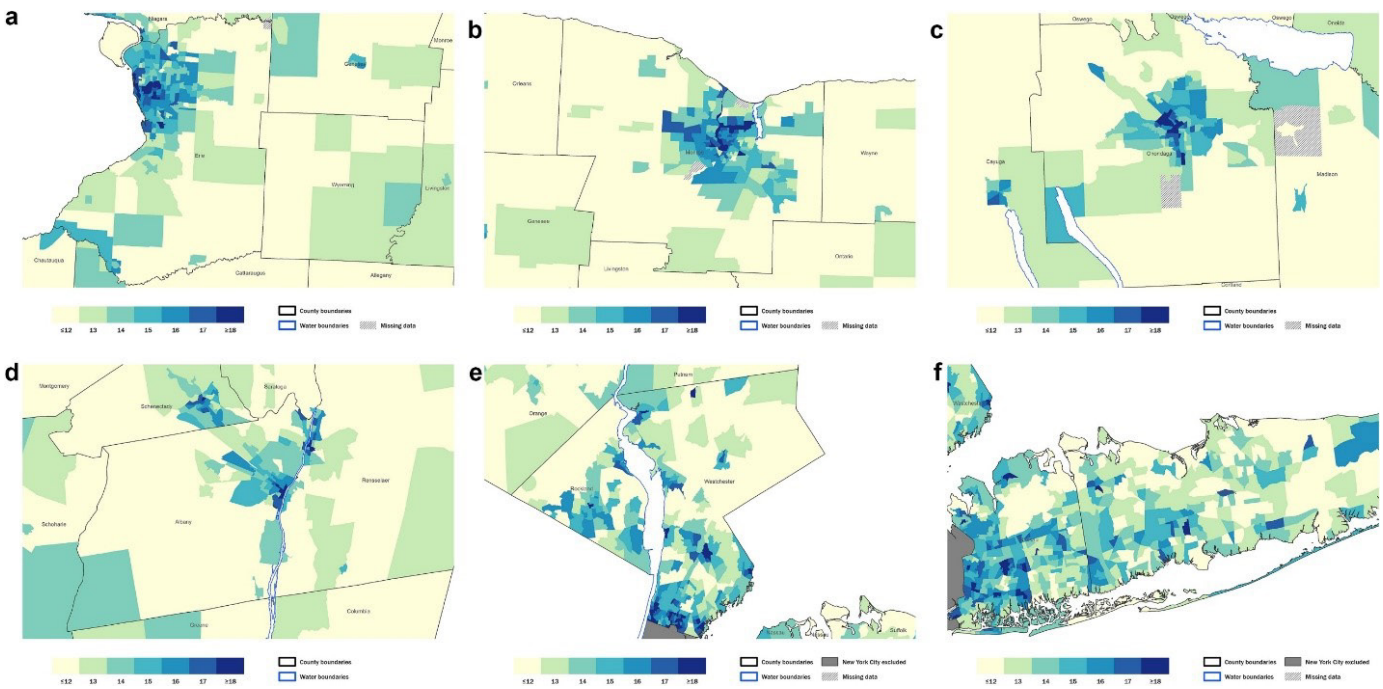


Figure 3. Heat Vulnerability Index in selected metropolitan areas in New York State, outside NYC[23]



a: Buffalo; b: Rochester; c: Syracuse; d: Albany; e: Westchester; f: Long Island

[22] Nayak et al. 2018.
[23] Nayak et al. 2018.

IV. MISSION, GOALS, AND PRINCIPLES

The mission, cross-cutting principles, and goals for extreme heat adaptation were guided by the scientific literature and best practices for heat adaptation. Frontline community members, local government partners, experts from academia, and State staff guided the development of the plan, and will inform implementation.

Mission

The EHAP aims to reduce the impacts of extreme heat, help local communities adapt to extreme heat in a changing climate, and support local capacity to act. In the long term, the EHAP supports an overall mission to

- address the current and future impacts of extreme heat through specific and equitable actions in a timely manner and reduce historical and present injustices;
- plan, coordinate, implement, and evaluate State action to address the present and future impacts of extreme heat in disadvantaged communities, on Indigenous Nations and Peoples, in areas of employment, and in recreational zones through actions that maintain and, wherever possible, improve the health, well-being, and quality of life of people, their communities, and the places they live, now and as climate change progresses; and
- aid in the coordination of interagency investments to ensure that priority assistance goes to disadvantaged communities on the front lines of heat exposure.

This approach to people-first adaptation, prioritizing human and community well-being, and enshrining equity in adaptation planning draws on key principles for overall equitable climate action, as outlined in the Climate Action Council Scoping Plan (Scoping Plan).[24] The EHAP mirrors the Climate Leadership and Community Protection Act's (Climate Act's) and the Scoping Plan's priorities for a just transition and emphasizes ensuring that frontline communities have a path to participate in and benefit from climate adaptation.

Goals

The overarching goal of the EHAP is to define specific recommended actions the State plans to take to adapt to current and future extreme heat conditions, prevent adverse effects on the health and well-being of New Yorkers and their communities, and ensure coordinated implementation of those actions. The EHAP is guided by five interlinked priority goals that center around equity and improving the health, well-being, and quality of life of people in their communities and environments.

[24] NYS Climate Action Council 2022.

Goal 1:	Ensure and promote the whole-of-community health, well-being, and resilience of New Yorkers.
Improve the whole-of-community health, well-being, and resilience of communities by strengthening access to community resources and lifelines; emphasizing partnerships with community organizations to strengthen capacity; and recognizing compounding factors, such as environmental burden, health inequities, and multiple-hazard exposures (e.g., extreme heat and poor air quality).	
Goal 2:	**Empower local communities to equitably adapt by strengthening, promoting, and supporting community capacity.**
Emphasize and empower local adaptation by enabling local and regional networks to advance planning and implementation of adaptation, supporting training and capacity initiatives for EbA, and developing tools and resources in support of communities.	
Goal 3:	**Create built environments that are healthful, equitable, resilient, and that further the well-being and quality of life of the people who inhabit them.**
Manage how built environments regulate temperature through construction materials, zoning, codes, and planning; improved access to cooling at home and in congregate settings; and advancing green infrastructure and EbA.	
Goal 4:	**Strengthen community lifeline infrastructure to be healthful, equitable, and resilient and to further the health, well-being, and quality of life of the people who rely on it.**
Enhance the resilience of infrastructure where it plays a critical role for the heat-health and well-being of communities (e.g., grid resilience, access to cooling, mobility) and foster social infrastructure by supporting neighbor-to-neighbor networks and building the capacity of community lifelines.[25]	
Goal 5:	**Safeguard and preserve ecosystems, biodiversity, and ecosystem services and ensure that all New Yorkers have access to and equitably benefit from these life-sustaining benefits.**
Expand equitable access to the benefits of ecosystem services by expanding implementation of EbA and green infrastructure and building capacity in communities to care for and maintain their environment and local ecosystems.	

[25] Federal Emergency Management Agency (FEMA) n.d.

Cross-cutting Adaptation Principles

This section defines cross-cutting principles (Table 3) that apply across action tracks. All recommended actions within the EHAP support advancing these principles.

Table 3. Cross-cutting principles for extreme heat adaptation

Principle	Description
Advance equity and justice	Actions should advance equity and justice for all people affected by extreme heat, with a focus on mitigating the impacts experienced by communities most vulnerable to extreme heat, including disadvantaged communities, Indigenous Nations and Peoples, and other vulnerable populations. Actions should also enhance equitable opportunities to adapt and ensure benefits reach the most heat-vulnerable communities, population groups, and individuals.
Reduce barriers and burdens	Actions should actively reduce barriers to access and burdens of implementation for disadvantaged communities and at-risk individuals. Actions should include exploring new and expanding existing mechanisms to encourage partnership among State and local governments and community-based organizations (CBOs).
Prioritize people's health and well-being	Actions should prioritize people's health and well-being from current and future adverse impacts of extreme heat, minimize adverse extreme heat-related health outcomes, and reduce vulnerability.
Increase resilience	Actions should apply a whole-of-community approach that reduces vulnerability and increases the resilience of people, their communities, the built environment, infrastructure, and surrounding ecosystems.
Prioritize local adaptive capacity and empower local action	Actions should enhance local adaptive capacity by empowering the State, local governments, and other partners to work together to implement holistic solutions through education and training, technical assistance, funding, and promoting generative partnerships.
Avoid maladaptation	Actions should avoid maladaptation to the greatest extent feasible. Maladaptation refers to strategies and actions that (a) shift risks and vulnerabilities from one geography, community, or group of people onto others; (b) increase the resilience of one group at the cost of increasing the vulnerabilities of another; (c) increase greenhouse gas (GHG) emissions or reduce the ability of natural lands to sequester carbon; (d) reduce resilience to other climate hazards or impacts by increasing resilience to extreme heat; (e) create unwanted path dependencies or technological lock-ins; or (f) increase existing or create new inequities or injustices experienced by one or more groups.[26]
Promote ecosystem-based adaptations	Actions should incorporate ecosystem- and nature-based adaptations to the greatest extent feasible.

[26] Schipper 2020.

Principle	Description
Promote co-benefits and take advantage of opportunities	Actions should use existing, and create new, opportunities for local communities, particularly for disadvantaged and other vulnerable communities. Actions should create co-benefits to ensure heat adaptation strategies and programs increase community resilience and adaptive capacity in response to numerous climate change impacts and hazards.
Improve the collection of and access to scientific information and data	Actions should use the best available scientific data and information to inform implementation. This science and data should be publicly available and easily accessible to enhance local communities' ability to anticipate, plan, and act in an equitable manner.
Report, evaluate, and update	Actions should have clear implementation plans and defined metrics to facilitate monitoring and evaluation (M&E). DEC and NYSERDA should regularly report on the implementation of the EHAP, evaluate the implementation and progress toward advancing the goals of the EHAP, and update the EHAP to ensure continued advancement toward achieving adaptation goals. The implementing agencies and authorities should regularly report relevant information needed for DEC's and NYSERDA's reporting, evaluation, and updates.

V. PLAN DEVELOPMENT

The Extreme Heat Action Plan Work Group

DEC and NYSERDA convened the EHAPWG, comprising 29 State agencies and authorities, to develop this plan and coordinate implementation (Table 4). The EHAPWG intends to continue to serve as a deliberative body and support implementation of the actions, facilitate reporting, and provide regular updates to the plan.

The EHAPWG provides a forum for interagency coordination; however, agencies are individually responsible for ensuring their policies and guidance are consistent with the actions included in the EHAP. The EHAPWG emphasizes action based on consensus and advances adaptation through collaboration across its members.

Table 4. Members of the New York State Extreme Heat Action Plan Work Group

Department of Environmental Conservation (DEC) – Co-Chair	New York State Energy Research and Development Authority (NYSERDA) – Co-Chair
Department of Agriculture and Markets (AGM)	Metropolitan Transportation Authority (MTA)
Department of Corrections and Community Supervision (DOCCS)	New York Power Authority (NYPA)
Department of Health (DOH)	Office for the Aging (OFA)
Department of Labor (DOL)	Office of Addiction Services and Support (OASAS)
Department of Public Service (DPS)	Office for People with Developmental Disabilities (OPWDD)
Department of State (DOS)	Office of Children and Family Services (OCFS)
Department of Transportation (DOT)	Office of General Services (OGS)
Division of Criminal Justice Services (DCJS)	Office of Parks, Recreation and Historic Preservation (OPRHP)
Division of Homeland Security and Emergency Services (DHSES)	Office of Mental Health (OMH)
Dormitory Authority of the State of New York (DASNY)	Office of Temporary and Disability Assistance (OTDA)
Education Department (NYSED)	State University of New York-University at Buffalo (SUNY-UB)
Environmental Facilities Corporation (EFC)	Thruway Authority (Thruway)
Empire State Development (ESD)	Upstate Medical University (SUNY-Upstate)
Division of Homes and Community Renewal (HCR)	

Collaborative Community Planning

Figure 4. Participants in a regional community workshop provide input on the New York State Extreme Heat Action Plan. Photograph by Sarah Pezdek.

The EHAPWG used a broad, collaborative community planning approach to develop the EHAP. This approach adopted key components of co-design planning processes. These processes were designed to incorporate participants' various perspectives and forms of expertise to examine impacts and develop adaptation strategies more fully, and to continue the State's efforts for comprehensive collaborative and co-design planning processes pursuant to key recommendations of the New York State Disadvantaged Communities Barriers and Opportunities Report. Participation of frontline communities is foundational to effective and equitable adaptation planning. Partnering with communities throughout the adaptation planning process is critical for two interrelated reasons:[27]

- **Collaborative community planning processes, including co-design, are effective tools for addressing complex and dynamic societal challenges such as climate change**. Adaptation planning should draw on a wide range of perspectives and their situated knowledge to effectively address complex and dynamically unfolding societal challenges such as climate change and extreme heat.
- **Collaborative community planning further strives to ensure procedural justice**, a core tenant of the State's climate justice policies and goals. Co-design processes enable impacted communities to participate in shaping policies, plans, and strategies that directly affect them.

In New York State local governments provide most government services, make important land-use decisions, and are broadly the point of delivery for many services and, therefore, play an important role in building community resilience to extreme heat.[28] Local stakeholders play a critical role in

[27] Haraway 1988; Baibarac and Petrescu 2017; Blomkamp 2018; David, Sabiescu, and Cantoni 2013.
[28] Department of State n.d.

advancing actions that make communities more resilient. In addition to consulting frontline community-based organizations, the EHAPWG engaged with local government champions to ensure the plan supports local communities in advancing meaningful actions to address current and future impacts of extreme heat.

The EHAP emphasizes a community health and people-first approach to equitable climate change adaptation, furthering the New York State Climate Action Council's priorities for "enshrining equity objectives in State investments, program design, and internal and external engagement strategies."[29]

The EHAPWG follows the model of the Climate Act and the Scoping Plan in prioritizing actions to benefit residents of disadvantaged communities and other vulnerable communities who are impacted most by climate change, including through procedural and distributive injustice. The Scoping Plan underscores the importance of climate justice and states that "the inclusion of climate adaptation measures and climate-related hazard risk reduction in the *New York State Disadvantaged Communities Barriers and Opportunities* report demonstrates the Climate Act's intent to embed equity within both State clean energy and climate resilience programs."[30] The Scoping Plan states that "a person's race and wealth are the two most predictive factors" in "identifying those who bear a disproportionate burden of the impacts of climate change and pollution."[31]

External Advisory Panels

DEC and NYSERDA convened two advisory panels to provide external reviews of the plan throughout the development stages. These panels helped ensure that the EHAP prioritizes equity in adaptation, addresses local needs, supports local capacity to adapt, and draws on the best available science.

Community Advisory Panel

The CAP comprised representatives of community-based environmental justice (EJ) and advocacy organizations from across the state. CAP members represented their organizations and the core constituents their organizations primarily serve. They provided input and review at key points in the development of the EHAP, including on draft actions developed by the planning forums, and the complete draft of the plan. Appendix III lists the organizations represented on the CAP.

Scientific Advisory Panel

The SAP is an interdisciplinary panel of leading experts in their fields from across the nation. SUNY-UB convened the SAP, which provided critical expertise throughout the development of the plan, including providing systemic literature review on best practices on extreme heat adaptation, as well as expert feedback on the draft actions developed by the planning discussions, on the full plan, and on the final draft. Appendix III lists the members of the SAP.

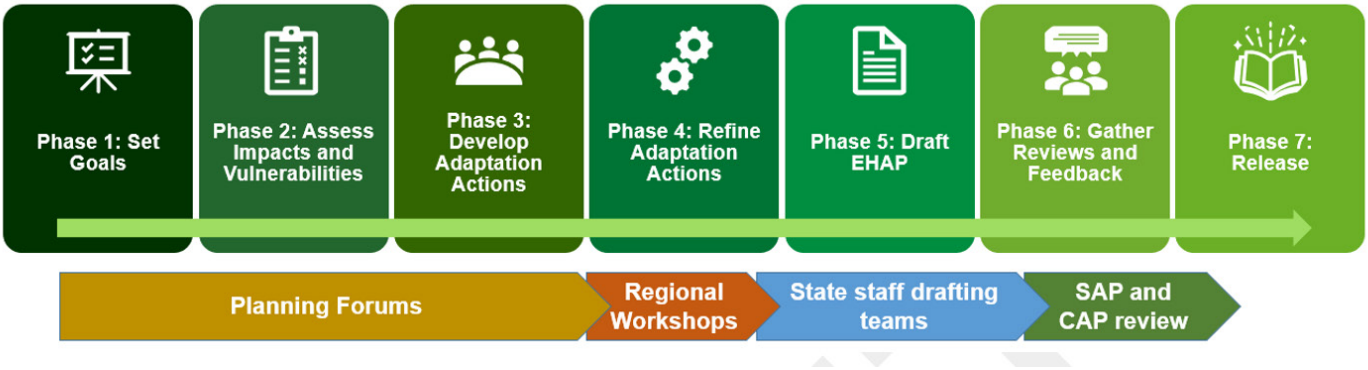
[29] NYS Climate Action Council 2022, 58.
[30] NYS Climate Action Council 2022.
[31] NYS Climate Action Council 2022, 67.

Development Approach and Participation Opportunities

The EHAPWG developed the EHAP and its actions in close collaboration with subject-matter experts from academia and the 29 member agencies and authorities, local officials, informal community leaders, and representatives of CBOs serving disadvantaged and otherwise heat-vulnerable communities. The EHAPWG used several engagement methods to provide opportunities for input from a wide range of stakeholders (see Appendix V).

The EHAP integrates lived experiences and situated knowledge with the best available science on extreme heat adaptation. It was informed by the expertise of community-serving organizations convened as the CAP, and an interdisciplinary panel of academic experts, convened as the SAP. Participants expanded and contextualized impacts, vulnerabilities, and adaptation strategies by participating in planning forums and other engagement opportunities. Regional community workshops ensured that unique regional perspectives are considered in the plan. As Figure 5 illustrates, the EHAPWG followed a collaborative community-involved planning process, with the planning forums serving as the main vehicle for the development of specific plan components. The SAP and CAP reviewed and provided substantive input to the draft plan before finalization.

Figure 5. Overview of the process for developing the New York State Extreme Heat Action Plan



VI. EXISTING EXTREME HEAT RESPONSE

The State already applies considerable resources and capabilities to protect New Yorkers from current and future impacts of extreme heat. The State is also taking proactive action to address present and future impacts of extreme heat, to tackle prevailing extreme heat inequities, and to reduce the disproportionate impacts extreme heat has on the most vulnerable communities across the state.

Building a Sustainable and Resilient New York State

New York State is embarking on a once-in-a-generation opportunity to transition from reliance on fossil fuels while increasing the resilience of homes, communities, and businesses to climate change impacts. Resilience and decarbonization activities are mutually supportive: strategies such as electrification, energy efficiency retrofits (emphasizing high performance envelopes), demand flexibility, and on-site energy generation and storage support both active resiliency and passive survivability during extreme weather events.

Electrification will intrinsically increase access to cooling when buildings incorporate heat pump conversions, and efficiency improvements enable buildings to maintain safe indoor temperatures longer during a loss of power or an extreme heat wave or cold event. Throughout the clean energy transition, the State is enacting policies to insulate the most vulnerable households from rising energy prices while advancing the transition to lower emissions.

The 2019 Climate Act is one of the most ambitious climate laws in the nation. The Climate Act's nation-leading goals and requirements, including actions to achieve a reduction in economy-wide GHG emissions of 40% by 2030 and 85% by 2050 from 1990 levels, will put New York State on a path toward carbon neutrality while ensuring equity, system reliability, and a just transition from a fossil fuel economy to a robust clean energy economy.[32] The 2022 Scoping Plan provides a framework for how New York State should reduce GHG emissions and achieve net zero emissions, increase renewable energy, and ensure all communities equitably benefit from the clean energy transition while adapting to climate change and enhancing resilience. The Scoping Plan outlines bold actions for communities, infrastructure, and systems to adapt to and build resilience to a changing climate, including extreme heat.

Governor Hochul's 2023 SOTS address committed $200 million for targeted electric bill relief to 800,000 households as well as $200 million for modernizing low-income homes via the EmPower+ program. Through this program, EmPower+ will help 20,000 low-income families improve their homes by adding insulation, upgrading to energy efficient appliances, and switching from polluting fossil fuel heating to clean, efficient electric alternatives.

[32] DEC adopted regulations under 6 NYCRR Part 496, Statewide Greenhouse Gas Emission Limits, establishing limits on the emission of GHGs in 2030 and 2050, as a percentage of 1990 emissions. A number of regulations already in effect are helping achieve the GHG emissions limits outlined in the Climate Act, such as 6 NYCRR Part 203, Oil and Natural Gas Sector; 6 NYCRR Part 242, CO2 Budget Trading Program (also known as the Regional Greenhouse Gas Initiative, or RGGI); 6 NYCRR Part 218, Advanced Clean Cars II and Advanced Clean Trucks regulations to accelerate the transition to zero-emission vehicles; 6 NYCRR Part 350, Food Donation and Food Scraps Recycling Law; and 6 NYCRR Part 494, Hydrofluorocarbon (HFC) Standards and Reporting, which prohibits specific HFCs in certain refrigerants, aerosol propellants, and foam-blowing agents. These regulations are leading to tangible reductions in GHG emissions across the state.

Adapting infrastructure to a changing climate involves working with utilities to prepare for climate impacts, including stronger storms and increased flooding. In 2022, Governor Hochul signed a law requiring each major electric utility to submit to the New York State Public Service Commission (PSC) a climate change vulnerability study detailing changes the utility can make to better prepare to respond to, reduce damage from, and reduce restoration costs of future extreme weather events and the impacts of climate change.[33] DEC has policies and programs in place such as Commissioner's Policy 49 (Climate Change and DEC Action), Division of Air Resources Policy 21 (Climate Act and Air Permit Applications), and DEC program policy DEP-24-1 (Permitting and Disadvantaged Communities Under the Climate Act). Finally, DEC and NYSERDA are currently developing an economy-wide cap-and-invest program to reduce harmful climate-altering GHG emissions, improve public health, and help combat climate change while advancing environmental justice and investing in disadvantaged communities statewide. These efforts are key to developing a cleaner, more reliable, resilient, and affordable energy system for all New Yorkers.

Advancing Climate Adaptation

Existing State programs and initiatives provide the foundation for an integrated State response to extreme heat, including through delivering programs and services, coordinating new and existing investments; scaling existing initiatives to better benefit disadvantaged and heat-vulnerable communities, Indigenous Nations and Peoples, and vulnerable population groups; removing barriers for disadvantaged communities to access existing resources; and creating new opportunities that build capacities in affected communities while mitigating risks. Several State agencies have leadership responsibilities in addressing extreme heat (Table 5).

The EHAPWG serves as the coordinating body for extreme heat adaptation. The EHAPWG coordinated closely with DHSES to incorporate actions and capabilities developed as part of the EHAP into the State Hazard Mitigation Plan (SHMP).[34] DHSES also incorporated guidance, recommendations, and best practices for extreme heat adaptation into the SHMP to ensure local government entities can effectively include them in their local hazard mitigation planning. DOH is a key partner in supporting the State's adaptation planning; leads and supports research on heat health; and maintains the HVI, the Cooling Center Finder application, and county heat-health profiles.

[33] Chapter 45 of the Laws of 2022.

[34] The goal of both hazard mitigation and climate adaptation planning is to reduce risks of hazards through deliberate, long-term actions. Both plans overlap and are complementary to each other but have the ability to stand alone. Hazard mitigation planning is federally mandated and includes emergency managers as stakeholders. Hazard mitigation planning has traditionally relied on analysis of historical events to consider future changes, while climate adaption employs projection of future conditions derived from global climate models to characterize risk (Higbee 2014). Climate adaptation planning can follow numerous frameworks, usually materializing at the local level and focusing on incremental or slow-onset climatic changes. DHSES continues to be an active member of the EHAPWG, leading the development of the Extreme Heat Annex. Response efforts must be prioritized during extreme heat events, relying on State partners to supplement long-term planning efforts. In addition, various hazard mitigation projects that address extreme heat are scoped or in progress as part of local hazard mitigation efforts. More information on the SHMP, including the 2023 update, is available at https://mitigateny.org/.

Table 5. New York State agency responsibilities for extreme heat adaptation, mitigation, and emergency response

Function	Description
Extreme Heat Adaptation	The EHAPWG will support agency coordination on extreme heat planning and implementation. DEC and NYSERDA act as the convenors and co-chairs of the EHAPWG. The structure of this work group will be evaluated as state adaption planning efforts evolve.
Hazard Mitigation, Emergency Response	DHSES is the emergency management and response agency for New York State. During declared emergencies, DHSES coordinates the State's emergency response across all agencies. DHSES also leads the State's hazard mitigation planning and supports local hazard mitigation planning.
Heat Health	DOH has a central role in supporting State agencies in understanding heat-health related impacts. DOH leads and supports research and maintains several heat-health related resources, including the HVI, the Cooling Center Finder application, and county heat-health profiles.

Local leadership is critical in addressing climate change impacts, building resilience, and enhancing adaptive capacity. Site- and community-specific strategies, informed by knowledge of the surrounding environment and the affected communities, are essential to successful and equitable adaptation. The State supports local leadership on climate change adaptation through several programs, highlighted in Appendix VI.

Responding to Heat Emergencies

DHSES serves as the primary response and recovery agency for the State and is a central partner for local communities in their emergency planning and response efforts. DHSES applies an all-hazards approach in planning for and responding to emergencies, including extreme heat. To enhance the State's coordinated response to a declared extreme heat emergency, DHSES developed a hazard-specific annex to the State CEMP, which was released in July 2023 and updated in March 2024.[35]

State Emergency Response

The State, coordinated by DHSES and involving all State agencies and authorities, takes an all-hazards approach to emergency management and has established plans, procedures, and systems to effectively respond to an emergency of any type, including

- consistent communication and information sharing across State agencies and jurisdictions;
- comprehensive emergency response planning and procedures as outlined in the CEMP; and

[35] New York State 2023a, *State Comprehensive Emergency Management Plan Extreme Heat Annex* https://www.dhses.ny.gov/system/files/documents/2024/03/final-nys-extreme-heat-annex-wv-march-2024.pdf.

- interagency and cross-jurisdictional response coordination, including conducting multi-agency coordination (MAC) calls, activating the State Emergency Operations Center (SEOC), responding to requests for assistance from local communities, and rapidly deploying field teams and resources.

When an incident is significant enough to warrant a coordinated State response, DHSES may use one or more key capabilities to support the response, as outlined in the CEMP. When DHSES initiates a tiered activation of the SEOC, DHSES will also activate the appropriate Emergency Support Functions, which are grouped by functional areas (e.g., transportation, public health and medical services, energy, and public safety and security) to further streamline a response. SEOC activation and response level are informed by available information, resources, and consequence thresholds. Each county has similar response procedures and processes for coordinating local emergency response. Counties also have access to "New York Responds," which is the mechanism county emergency managers use to request State assistance as needed.

Communication and Outreach

The National Weather Service (NWS) issues heat advisories, excessive heat warnings, and excessive heat watches along with related communications that inform State and local emergency response and preparations. Definitions of advisories, warnings, and watches are provided in Appendix II. NWS provides guidance to local Weather Forecast Offices on appropriate thresholds for issuing heat advisories and warnings. Weather Forecast Offices are also encouraged to work with local officials to define locally appropriate alert thresholds and messaging.[36] DOH has worked with NWS to tailor heat warnings and advisories in New York State based upon associations between heat and health outcomes. DEC meteorologists provide a daily forecast for the Air Quality Index (AQI) and issue an advisory when air quality is expected to reach levels that are unhealthy for sensitive groups. DEC coordinates with NWS to include AQI advisories in its messaging.

DOH, in coordination with DHSES, works with local health departments (LHDs) and county emergency management agencies to maintain a map of cooling centers and other places to stay cool during extreme heat.[37] The functionality of the New York State Cooling Center Finder has been enhanced to allow for more efficient updating. Local agencies are encouraged to submit cooling center information to be added to the Finder. In addition, many counties maintain vulnerable population lists, and the State is in the process of cataloging these lists. Counties and cities should utilize the lists during an emergency event. The State provides assistance as needed. DOH also conducts an extreme heat outreach campaign for areas outside NYC that focuses on vulnerable ZIP codes to help New Yorkers prepare for and stay safe during extreme heat events. Outreach resources include funding specifically set aside to be used during extreme heat events for increased media saturation in vulnerable areas. DOH also disseminates heat alerts to hospitals and other health care facilities. The EHAP recommends enhancing these functions, and DOH should work with other State agencies to coordinate outreach.

[36] Hawkins, Brown, and Ferrell 2017.
[37] In addition to the NYS Cooling Center Finder, the NYC Office of Emergency Management (OEM) maintains a cooling center finder specific to NYC.

Most counties and NYC are authorized authorities of the Federal Emergency Management Agency (FEMA) Integrated Public Alert and Warning System (IPAWS), which includes Wireless Emergency Alerts broadcast to cell phones in a geographical area, and Emergency Alert System notifications, broadcast over TV and radio. NWS sends certain weather-related notifications based on pre-established criteria, and the State, many counties, NYC, and some local jurisdictions that are registered alerting authorities, may send separate emergency alerts at their discretion to their jurisdictions (e.g., communication about power outages, shelters).

In addition to sending its own IPAWS emergency alerts to New Yorkers, the State can provide backup support to counties and NYC for IPAWS alerts. The State, some counties, and NYC have additional communication tools, including reverse-automated calling and user sign-up programs. Some State agencies can issue alerts to their regulated partners and local stakeholders in the event of an emergency. DOH uses the Integrated Health Alerting and Notification System (IHANS) to issue emergency notifications to LHDs and health care facilities. In the event of a major heat-related incident, DOH can issue an IHANS alert to critical public health response partners.

VII. EXTREME HEAT ADAPTATION ACTIONS

This section overviews actions to enhance the resilience and adaptive capacity to extreme heat across New York State. Continued collaborative efforts are critical to ensure successful and consistent implementation of the plan. Although New York State continues to act at the State level, federal action and continued cooperation at the regional and local levels are vital to effective adaptation. This document describes planned actions, but the State may reassign resources to other programs and actions as needed in response to changing priorities.

The actions are organized in four goal-oriented tracks. Table 6 provides an overview of the four action tracks and the areas of action captured within each track. It should be noted that the boundaries between tracks are not "fixed"; most actions support extreme heat adaptation across action tracks and were organized into the action track where they are expected to have the greatest impact.

In collaboration with State experts, community partners, planners, adaptation practitioners, the CAP, and the SAP, the EHAPWG has further developed a set of opportunities for future enhancement of the plan. These opportunities are recommendations for action that could be taken by State and local partners as new capabilities and resources become available and implementation of the EHAP progresses. These recommendations are listed at the end of this chapter.

Table 6. Overview of New York State Extreme Heat Action Plan action tracks

TRACK 1 ADAPTATION PLANNING AND IMPLEMENTATION	TRACK 2 PREPAREDNESS, COMMUNICATION, AND WORKERS' SAFETY	TRACK 3 BUILT ENVIRONMENT, INFRASTRUCTURE, AND MANAGED SPACES	TRACK 4 ECOSYSTEM-BASED ADAPTATION
Build Capacity for Adaptation Planning and Implementation	Coordinate Preparedness and Pre-event Communication	Support Resilient Built Environments	Prioritize Ecosystem-based Adaptation and Green Infrastructure Solutions
Promote Research, Development, and Innovation	Protect Workers' Health and Safety	Advance Adaptation in Educational, Institutional, and Congregate Settings	
		Develop Resilient and Equitable Infrastructure	

Action Track 1: Build Capacity for Adaptation Planning and Implementation

Action Track 1 principally supports Goal 2 of the plan, which is to empower local communities to equitably adapt by strengthening, promoting, and supporting community capacity.

This action track focuses on supporting local communities, and especially disadvantaged and heat-vulnerable communities, Indigenous Nations and Peoples, and other impacted communities, to plan effectively and to catalyze local, regional, and statewide implementation of extreme heat adaptation strategies. Actions in this track emphasize fostering regional climate adaptation networks, building community capacity, developing statewide tools and resources, and addressing historic inequities and barriers to effective climate adaptation to build extreme heat resilience.

Building on the EHAP development process, the EHAPWG identified several critical factors to help ensure Action Track 1 addresses current and historical inequities and empowers vulnerable community members and disadvantaged communities. The following list outlines these findings, which inform the actions contained in this track and should be part of future evaluations of the plan.

- Prioritize regions with high concentrations of disadvantaged and heat-vulnerable communities.
- Alleviate capacity constraints and support resource sharing by promoting a regional approach and network building, which would benefit smaller organizations and local governments.
- Fund and technically assist communities with the greatest needs in terms of resources, capacities, risks, and vulnerabilities.
- Target programs and resources according to the New York State HVI, disadvantaged communities criteria, and sociodemographic data related to the prevalence of specific vulnerability characteristics. DEC's UHI mapping, once available, could help further target programs to support communities with the highest exposure risks.
- Funding support should avoid reimbursement-based funding, especially as related to smaller communities, CBOs, and other institutions with modest financial resources and administrative capacity.
- Leverage implementation projects, including pilot projects, to build local capacity by supporting existing initiatives and frontline community organizations; by extension, such projects should avoid replacing existing community-led initiatives and projects.
- Reduce administrative barriers and burdens to help smaller CBOs access otherwise unattainable resources in support of local adaptation.
- Identify and better quantify impacts on vulnerable population groups and disadvantaged communities through research, helping address persistent and emergent needs.

BUILD CAPACITY FOR ADAPTATION PLANNING AND IMPLEMENTATION			
Code	**Action Title**	**Lead Agency[38]**	**Involved Agencies**
T1.01	Support scaled implementation through regional planning and coordination processes.	DEC	DHSES, DOS, NYSERDA
T1.02	Support the development of regional community resilience networks.	DEC	DHSES, DOH, HCR, OGS
T1.03	Publish statewide high-resolution extreme heat exposure maps and fund capital projects that mitigate extreme heat and the UHI effect.	DEC	SUNY College of Environmental Science and Forestry (SUNY-ESF)
T1.04	Develop decision-support tools and services for State and local adaptation action.	DEC	DHSES, DOS, Interagency Climate Adaptation and Resilience Work Group (ICARWG)
T1.05	Deepen climate resilience and extreme heat adaptation collaborations with frontline CBOs, prioritizing schools, youth leaders, and youth organizations.	DEC	
T1.06	Engage and consult with Indigenous Nations and Peoples on extreme heat and climate change adaptation.	DEC	

PROMOTE RESEARCH, DEVELOPMENT, AND INNOVATION			
Code	**Action Title**	**Lead Agency**	**Involved Agencies**
T1.07	Evaluate the existing HVI and explore opportunities to use HVI factors to improve program and resource targeting.	DOH	DEC
T1.08	Evaluate excess heat risk thresholds and assess the feasibility of region-specific extreme heat response.	DOH, DHSES	
T1.09	Support innovation for passive, resilient, and safe cooling.	NYSERDA	DEC
T1.10	Conduct essential research on the impacts of extreme heat.	NYSERDA	DEC, DOH, DOS, OGS, OTDA, SUNY

[38] While this plan lists lead and involved agencies in support of individual actions, the State may engage with additional partners as part of the implementation of individual actions.

T1.01 Support scaled implementation through regional planning and coordination processes.

Implementation lead: DEC **Involved agencies:** DHSES, DOS, NYSERDA

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Enhance existing processes and tools that support regional and local planning for climate change and extreme heat adaptation. • Prepare planning tools and guidance that help communities identify and connect with resources for EHAP implementation. • Update relevant grant program actions and funding opportunities. • Assess and understand current regional climate planning and local heat initiatives by continuing engagement with local governments and disadvantaged communities.	• Initiate, fund, and complete implementation planning processes. • Evaluate and refine planning processes related to scaled climate adaptation projects.

Description of Action: DEC, in coordination with DHSES, DOS, NYSERDA, and other EHAPWG agencies as appropriate, intends to support regional processes that are geared toward coordinating and advancing local climate adaptation projects. The objective of this action is to support regions in identifying, prioritizing, and implementing local extreme heat adaptation projects or enhancing existing local initiatives, plans, or adaptation projects. To that end, this action focuses on convening CBOs that serve disadvantaged communities, government entities, and other local stakeholders to build on existing plans (such as comprehensive plans, hazard mitigation plans, climate adaptation plans, community resilience plans) and coordinate, plan, and implement relevant climate adaptation initiatives using existing mechanisms (e.g., Climate Smart Communities, or CSC, program) and new processes (e.g., community resilience networks, see T1.02). DEC's CSC program offers an inclusive community engagement primer to support community engagement in implementing CSC actions, including planning for extreme heat.[39] Community resilience networks (T1.02) are designed to enhance and complement existing local and regional resilience and adaptation planning processes through ongoing, inclusive, and community-participatory processes.

Many local communities across the state already exemplify leadership in taking climate adaptation and extreme heat resiliency action. Existing funding is available to support local planning processes, and DEC intends to enhance local planning for extreme heat. DEC currently supports regional planning processes and funds heat adaptation planning and implementation projects through existing programs and services, including the CSC program. CSC coordinators provide technical assistance to municipalities, including climate adaptation planning.

DEC intends to strengthen and support local implementation actions and support learning from leaders in action. DEC plans to update relevant guidance to inform local planning, convene planning initiatives, help identify relevant funding options, and support local action through

[39] NYS DEC 2021.

technical assistance. In addition, DEC plans to strengthen regional and local collaboration and coordination on extreme heat and climate adaptation action (see regional community resilience networks, T1.02). DEC and DHSES expect to further integrate the EHAP with the SHMP to support local implementation-focused planning and to continue incorporating related planning resources, capabilities, and actions across the SHMP and the EHAP, and DHSES will continue to support local hazard mitigation through grant programs.

In the short term, DEC expects to specify existing funding opportunities available through CSC grants to support best adaptation practices and project types. Subsequently, DEC would release guidance and information to support local communities in identifying extreme heat adaptation projects and associated funding opportunities, while providing related planning tools and resources to the public and CSC coordinators. These resources could enhance support for local implementation-focused planning processes, including those facilitated or supported by the CSC coordinators. Local planning processes should be geared toward identifying adaptation projects and should address regional and local impacts. These planning processes should support communities in implementing projects strategically, while prioritizing highest-impact areas lacking the necessary resources and capacity to adapt on their own. DEC intends to conduct targeted outreach to heat-vulnerable disadvantaged communities as relevant data (e.g., UHI mapping) become available.

In the intermediate timeframe, DEC intends to review relevant planning activities funded as CSC certification actions, and project types funded by the CSC grants program to ensure consistency between the CSC program and EHAP goals. Where possible, DEC could also continue to collaborate with other programs and State partners to support CBOs and local governments.

NYSERDA would provide input and consulting support to this action. In the future, this action could be enhanced by providing standards and recommendations to ensure quality of planning and evaluation of plans.

Existing Programs, Resources, and Initiatives: CSC program, DHSES-supported hazard mitigation planning

T1.02 Support the development of regional community resilience networks.

Implementation lead: DEC

Involved agencies: DHSES, DOH, HCR, OGS, NYSERDA

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Analyze pathways for establishing and implementing pilot programs to support regional community resilience networks; explore pilot projects and funding opportunities. • Fund local communities to establish resilience networks and resilience hubs through current programs. • Identify areas with heightened exposure, vulnerability, and resource needs for pilot projects. • Develop draft model guidance for creating community resilience networks, community resilience hubs, and neighbor-to-neighbor networks.	• Initiate pilot projects pending available resources, with a goal of four to five pilot projects targeting a diversity of frontline communities.

Description of Action: The State intends to support local frontline community initiatives while enabling peer-to-peer learning for adaptation leaders on the regional and local levels. To do so, the State plans to create regional[40] community resilience networks, community resilience hubs, and neighbor-to-neighbor networks by enhancing existing programs. The State intends to engage with local partners in advancing such initiatives regionally and locally.

As an interagency effort led by DEC, and in partnership with frontline communities, the State expects to develop new and expand existing initiatives for building local capacity and supporting local champions to build community resilience to climate hazards, including extreme heat. The State would support creation of new and expansion of existing communities of practice, regional planning networks that support planning and implementation, and networks of community resilience hubs and neighbor-to-neighbor networks. Specifically, DEC would coordinate with relevant EHAPWG members in supporting the following sets of local and community-led initiatives as resources permit:

- **Community Resilience Networks:** In implementing this action, DEC seeks to support communities in coordinating actions to address extreme heat on regional and local levels.[41] To do so, DEC intends to convene regional partnerships of faith- and tribal-based communities, frontline CBOs, nonprofit organizations, local community-serving businesses, conservation groups and organizations, local human health and social services, local government entities, and academic institutions. The State intends to provide technical assistance and support coordination of the community resilience networks as resources permit. The principal

[40] The regional scale of the networks will be defined as part of the program development and in consultation with local partners and could mirror NYSERDA's *Climate Impacts Assessment* climate regions, DEC regional definitions, or other regional, cross-jurisdictional geographic organization.

[41] DEC intends to convene networks on a regional (e.g., county or watershed) level. Networks would include stakeholders from local communities across regions.

functions of the networks are to coordinate existing efforts to reduce the effects of extreme heat and other climate hazards, enhance resource sharing, support new and existing collaborations in providing services to communities during acute events, identify gaps and needs to better respond to current and future conditions, identify new and enhance existing projects that address extreme heat, and develop regional plans for long-term hazard mitigation and climate change adaptation planning. The networks could also provide a direct line for communities to engage in related local and State planning processes (see T1.01). These networks could connect larger organizations with administrative capacity for grant procurement and smaller organizations working directly in and for frontline communities. A locally based, regionally oriented network would enable coordination while creating more equitable implementation pipelines and building local administrative capacity for grant applications and management. DEC plans to develop this approach through pilot tests and engagement with frontline community stakeholders, to ensure the approach effectively prioritizes the most vulnerable and under-resourced communities in implementing adaptation solutions.

- **Community Resilience Hubs:** The State plans to develop a network of community resilience hubs in community spaces, including by supporting building and other upgrades to ensure community spaces can serve as energy efficient cooling spaces open to the community, and by supporting services and programming provided through the hubs.[42] Such hubs ideally would be located in areas with high extreme heat exposure, vulnerability, and resource needs, prioritizing exposed disadvantaged communities that lack access to cooling. Resilience hubs would be sources of year-round climate, adaptation, and disaster preparedness programming and would serve as centers for community-based neighbor-to-neighbor networks to help protect vulnerable residents and as physical spaces to support local and regional entities in adaptation planning and implementation.

- **Neighbor-to-Neighbor Resilience Networks:** The State intends to support local communities to establish neighbor-to-neighbor networks, including helping partners to identify vulnerable community members and conducting check-ins upon activation during extreme heat and other hazardous events. Neighbor-to-neighbor networks provide community-driven and -led communication about acute and emergency events and help distribute critical information about available resources and programs with community benefits during regular operation. These networks serve as local extension services to reach vulnerable individuals in the community, while connecting communication among diverse community members, extreme weather resource centers, heat relief, community planning and coordination networks, local and State government, and other key stakeholders.

[42] DEC has adopted regulations that prohibit certain HFCs in specified uses (such as commercial refrigeration and large air-conditioning equipment as part of 6 NYCRR Part 494). DEC is proposing to revise these regulations to impose additional requirements on products and equipment, including commercial refrigeration and large air-conditioning equipment. The proposed rulemaking would reduce HFC emissions and support the requirements of the Climate Act to reduce statewide GHG emissions. Executive Order (EO) 22 builds upon progress and sets new goals for the State's lead-by-example sustainability efforts and provides directives for State agencies. EO 22 directs State agencies to adopt a sustainability and decarbonization program. See https://www.governor.ny.gov/executive-order/no-22-leading-example-directing-state-agencies-adopt-sustainability-and. The GreenNY procurement guidance contains information on refrigerant-containing equipment, available at https://ogs.ny.gov/greenny/refrigerant-containing-equipment.

DEC would convene the EHAPWG regularly to coordinate implementation of this action, resource development, and pursuit of federal and State funding opportunities. Involved State agencies should collaborate by identifying funding opportunities and local collaboration initiatives. Involved agencies should further explore providing technical assistance and administrative support for pilot projects. In developing the pilot initiatives, the involved agencies could engage with local partners across communities to ensure the initiatives leverage and build local capacity, facilitate mutual support across local partners, and meet local capacity and implementation needs.

Existing Programs, Resources, and Initiatives: CSC program, DHSES-supported hazard mitigation planning, 2-1-1 networks, Urban Sustainability Directors Network (USDN) resilience hubs guidance, NYSERDA Regional Clean Energy Hubs, NYSERDA Energy Equity Collaborative

T1.03 Publish statewide high-resolution extreme heat exposure maps and fund capital projects that mitigate extreme heat and the UHI effect.

Implementation lead: DEC **Involved agencies:** SUNY-ESF

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Develop statewide static extreme heat exposure maps. • Update UHI geospatial model for past and future scenarios. • Develop static and dynamic extreme heat exposure maps that incorporate key factors (e.g., heat index, Wet Bulb Globe Temperature, or WBGT) and make publicly available. • Consider mechanisms to directly fund construction of capital projects.	• Develop public-facing tools to model local exposures and identify high-impact locations for UHI mitigation projects. • Create case studies for select disproportionately exposed urban disadvantaged communities that include design recommendations for UHI mitigation projects. • Consider pathways to provide technical assistance for communities to develop capital projects that mitigate UHIs. • As appropriate and applicable, fund implementation of capital projects identified to mitigate the UHI effect.

Description of Action: In September 2022, Governor Hochul signed a law requiring DEC to conduct a study on the impacts of the UHI effect on disadvantaged communities and recommend actions to mitigate the UHI.[43] DEC is working with SUNY-ESF to develop maps that identify areas of high temperatures in New York State. DEC and SUNY-ESF intend to engage with stakeholders and expert staff across agencies, including DOH, in developing the maps and associated tools to ensure these meet stakeholder needs and to create synergies with existing heat-mapping efforts in communities across New York State.

These maps will represent areas where residents are likely to be exposed to temperatures greater than those in surrounding areas and could integrate geospatial information on sensitivity to inform an overall risk and vulnerability analysis, especially within urban disadvantaged communities. While explicitly addressing UHIs, the maps are intended to identify locations with increased risk for extreme heat exposures statewide, including urban, suburban, and rural communities. The maps

[43] Chapter 563 of the Laws of 2022.

and tools would enable users to consider exposure maps with other relevant data layers, such as criteria for identifying disadvantaged communities, or NYC and DOH HVIs.

DEC and SUNY-ESF will work together to characterize and map episodes and areas of extreme heat for the entire state under past and future scenarios, with a particular focus on identifying UHIs across the state. These entities will deploy a model to estimate air temperature and humidity by simulating the water and energy balance over different land cover, building properties, and weather patterns, to deepen the analysis and strengthen outputs. DEC and SUNY-ESF will develop an online interface that enables the public to interact with model outputs and explore how best practices in heat mitigation affect the predicted extreme heat metrics.

To advance UHI mitigation initiatives, DEC plans to develop informational resources to help local stakeholders identify existing funding opportunities, such as the CSC grants; Clean Water, Clean Air, and Green Jobs Environmental Bond Act (Bond Act) funds; or other programs[44] (see action T1.01). In addition, and to complement existing opportunities, DEC intends to develop a targeted program to fund planning and implementation of UHI mitigation projects, especially those benefiting disadvantaged and otherwise heat-vulnerable communities as identified through the modeling project. DEC would further provide technical assistance for local communities to use the SUNY-ESF UHI modeling tool for identifying and developing projects that address the UHI effect and that could be supported through this program. In funding local UHI mitigation projects, this program should prioritize ecosystem-based and green infrastructure adaptation projects and identify high-priority locations and project designs for reducing UHIs in disadvantaged communities. DEC should consider implementing approaches used by existing programs, including the Resilient NY Streams program. Developing such a program may be conditional on availability of modeling tools, funding, and program staff. In addition to potentially implementing a program to fund UHI mitigation projects, the UHI maps developed by DEC through this initiative should inform many other State and local projects and actions.

Existing Programs, Resources, and Initiatives: CSC coordinators, CSC program, Bond Act, UHI mapping project

T1.04 Develop decision-support tools and services for State and local adaptation action.

Implementation lead: DEC **Involved agencies:** DHSES, DOS, ICARWG

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Develop a set of prototype tools for local adaptation support. • Prepare planning tools and guidance that help communities identify and connect with resources for implementing the EHAP.	• Identify additional tool needs and continue developing and releasing prototypes. • Begin refining prototypes based on user feedback and tool adoption.

[44] Chapter 563 of the Laws of 2022 (directs DEC in its UHI study to "include existing and/or recommended funding available to address such impacts, including but not limited to projects eligible pursuant to paragraph e of subdivision 1 of section 58-0703 of the environmental conservation law").

Description of Action: Through the ICARWG and its committees, and in collaboration with existing services and programs, the State plans to further develop existing templates and prototypes for planning. These planning tools would be developed as publicly available resources that support local and regional extreme heat adaptation planning and implementation in communities across the State.

When implementing this action, DEC intends to catalog and organize existing tools that support extreme heat adaptation, including tools developed and used by local stakeholders, identify gaps and needs for additional tools, and develop needed tools for use by State staff and local stakeholders.

DEC plans to engage DHSES and the ICARWG to further develop prototypes and leverage existing planning and implementation processes for field-testing and refining. In addition, DEC intends to continue engaging with local partners, including frontline CBOs serving disadvantaged communities, in identifying existing tools and their use by practitioners, and to assess gaps and needs for development of new tools. This action may further inform and support future climate adaptation planning by the State. Development of new tools should be focused on closing gaps in needed tools based on what is available and currently in use by local adaptation practitioners including frontline CBOs.

The State should facilitate the use of existing tools and other resources in local planning support services, programs, and initiatives. DEC would coordinate with the EHAPWG to further scope and identify additional local planning and implementation tool and service needs. This should include the development of additional decision-support tools, including a climate impacts chain analysis tool. Developing tools such as these would assist county and local governments in generating stronger extreme heat adaptation plans and strategies to improve ecosystem and community resilience, including for disadvantaged communities.

This action may further include a resource guide for funding local adaptation action, a climate impacts chain or climate impacts nexus tools to support local planning, a database of best extreme heat adaptation practices, and a vulnerability and impacts identification tool to support local planning.

Existing Programs, Resources, and Initiatives: A committee of the ICARWG provides interagency support for developing community support tools for climate adaptation. DEC local climate change adaptation and resilience plan template and planning process, CSC program, New York State Climate Change Impacts Assessment, Regional Clean Energy Hubs, Energy Equity Collaborative, EFC Community Assistance Teams, State Hazard Mitigation Plan

T1.05 Deepen climate resilience and extreme heat adaptation collaborations with frontline CBOs, prioritizing schools, youth leaders, and youth organizations.

Implementation lead: DEC

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Engage with relevant organizations working with youth to deepen existing and create new collaborations. • Identify frontline CBOs and youth-led groups and engage them on climate change adaptation, including by participating in relevant youth convenings and symposia.	• Engage with frontline community and youth leaders and relevant organizations on potential pathways, needs, and opportunities for hosting a statewide climate youth symposium.

Description of Action: In many frontline communities across the state, extreme heat and its solutions deeply impact young people, yet young New Yorkers often find fewer immediate and direct opportunities to shape solutions across climate change policy arenas. This action would seek to engage with organizations supporting young people in engaging on climate change issues, especially in frontline communities and heat-vulnerable communities. DEC would engage with frontline community CBOs, youth climate organizations, educational organizations, and other local and State partners to better understand young people's climate action priorities as they relate to extreme heat and engage young people on further refining the EHAP, identifying new needs, and defining priorities for improvement in EHAP updates.

DEC intends to deepen existing collaborations with youth climate and environmental organizations, work through the EHAWPG with State agencies and partners to identify additional engagement opportunities, and develop relationships with existing organizations and initiatives that support climate youth leadership to better inform extreme heat and climate adaptation strategies that impact young New Yorkers. DEC would also engage with individual EHAPWG member agencies that work with and serve heat-vulnerable communities. In the long term, DEC should explore opportunities to participate in and support youth climate symposia and regional convenings and could explore supporting a statewide convening of youth climate leaders as a conduit for informing State and local climate action.

Existing Programs, Resources, and Initiatives: New York State has various partnerships that support engagement with frontline community organizations and youth climate leadership, including CSC program participation in youth climate summits sponsored by the Wild Center, NYSERDA Energy Equity Collaborative, Disadvantaged Communities Stakeholder Services Pool, and Regional Clean Energy Hubs.

T1.06 Engage and consult with Indigenous Nations and Peoples on extreme heat and climate change adaptation.

Implementation lead: DEC

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Begin engagement with Indigenous Nations on the extreme heat adaptation plan and conduct surveys on emergency responses and interest in collaboration with New York State.	• To be determined based on consultation and engagement with Indigenous Nations.

Description of Action: DEC intends to engage and consult with State and federally recognized Indigenous Nations around climate adaptation, including extreme heat. Leadership of these parties should set goals for this engagement. These goals should include appropriate collaborations to address the impacts of extreme heat, and the needs of Indigenous Peoples, and should recognize Indigenous leadership, rights, and sovereignty. DEC's Commissioner Policy 42 provides guidance and specifies practices and procedures for consulting with Indigenous Nations and Peoples.

Existing Programs, Resources, and Initiatives: DEC Office of Indian Nations Affairs, DEC Office of Environmental Justice

T1.07 Evaluate existing HVI and explore opportunities to use HVI factors to improve program and resource targeting.

Implementation lead: DOH **Involved agency:** DEC

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Evaluate and update existing HVI.	• Integrate updated HVI into other programs.

Description of Action: DOH intends to update the HVI to ensure the most accurate data are informing targeting of State programs and resources. The evaluation of the existing HVI should take disadvantaged communities, the CDC Social Vulnerability Index, temperature, heat mortality, and morbidity into account. DOH would develop strong indicators that allow targeting at different program levels and based on intervention goals (e.g., reducing vulnerabilities, reducing exposures, increasing adaptive capacity).

DOH's current HVI is available publicly online.[45] DOH's HVI can inform DEC, NYSERDA, and OTDA in focusing outreach about cooling benefits, and OPRHP or local planning agencies in focusing efforts to create green space. The HVI can help enhance campaigns to increase awareness about extreme heat and climate change (climate and health adaptations and mitigations) for neighborhoods with high HVI and promote awareness of the Home Energy Assistance Program (HEAP) cooling benefit.

Existing Programs, Resources, and Initiatives: DOH HVI

[45] NYS DOH n.d., "Heat Vulnerability Index," https://www.health.ny.gov/environmental/weather/vulnerability_index/.

T1.08 Evaluate excess heat risk thresholds and assess the feasibility of region-specific extreme heat response.

Implementation lead: DOH

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Evaluate the NWS HeatRisk tool to ensure thresholds correspond with and accurately reflect extreme-heat impacts observed in New York State. • Assess and begin incorporation HeatRisk and thresholds in relevant policies, procedures, guidance, and strategies that shape extreme heat response and community preparedness activities by the State. • Coordinate with T2.05 to integrate the tool, if adopted, into State communications strategies.	• Supported by the EHAPWG, develop a strategy that coordinates State activities across agencies based on the different thresholds of the tools.

Description of Action: DHSES, DOH, and the EHAPWG are advancing a range of measures to enhance and complement the State's and local jurisdiction's efforts to address heat-health risks through emergency response, long-term community preparedness, and communication efforts. In addition to existing activities conducted in partnership among State agencies and local partners, the State is taking steps to coordinate communications activities (see T2.05), support localities in expanding access to cooling centers (T1.02, T2.02), and assist local planning for extreme heat (T2.01).

Many of those activities, from proactive communication to local planning, rely on effective thresholds that can guide response, preparedness, and planning activities across State and local partners. NWS and CDC have developed the NWS HeatRisk tool, an experimental, color-numeric-based index to forecast heat risks.[46] The tool considers how unusual heat is for the time of year, duration of the heat, and heat vulnerability factors. This tool provides risk guidance for decision-makers and heat-vulnerable populations based on color-coded thresholds (green—little to no risk; yellow—minor risks, orange—moderate risks, red—high risks, magenta—extreme risks). These thresholds could inform communication strategies and activities across State agencies and local communities, as well as other response activities.

Implementation of thresholds should be based on epidemiological and public health metrics and should first ensure any new thresholds enhance outcomes of response, long-term preparedness, and climate adaptation planning. DHSES and DOH plan to evaluate the NWS HeatRisk tool for its potential application in New York State. The EHAPWG will further collaborate with DHSES, DOH, and other partners to identify and develop guidance for its use in informing appropriate local and State planning, communications, long-term preparedness, and response activities.

[46] National Weather Service n.d.

DOH plans to conduct an analysis of the NWS HeatRisk tool based on New York State climate regions and with a focus on heat-vulnerable and disadvantaged communities. DOH plans to brief other agencies on the index and participate in discussions about the feasibility of implementing its thresholds for extreme heat action response. Other actions of the EHAP should reference these extreme heat thresholds as appropriate and informed by DHSES and DOH assessments of the index to inform their implementation and program prioritization, including the development of communication strategies (T2.05).

Existing Programs, Resources, and Initiatives: DOH vulnerability maps and relevant studies, NWS HeatRisk tool

T1.09 Support innovation for passive, resilient, and safe cooling.

Implementation lead: NYSERDA **Involved agency:** DEC

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Initiate study and launch initial design challenges, including the Innovation Challenge "Green Cooling for Extreme Heat" (part of NYSERDA's Natural Carbon Solutions initiative).	• Complete study and design challenges. • Assess benefits of innovative cooling solutions to vulnerable and disadvantaged communities. • Identify additional development needs for innovative cooling. • Integrate new approaches that were de-risked by innovation challenges into statewide programs, as appropriate.

Description of Action: This action focuses on supporting the development of novel approaches for personal cooling at home that are low-cost, low-maintenance and use little to no electricity, and prioritizes mitigating the impacts of extreme heat on heat-vulnerable and disadvantaged communities while providing other environmental, health, and economic co-benefits. For example, as part of the Natural Carbon Solutions initiative, NYSERDA is launching an innovation challenge called "Green Cooling for Extreme Heat" to support novel technologies, business models, and community engagement strategies that facilitate scaling of nature-based solutions for passive cooling. These solutions are targeted to deliver benefits, including potential lower cooling costs, to disadvantaged communities. Another application of this action is fostering technological solutions to reduce grid burden and enhance resilience in the case of blackouts during heat waves (see action T3.02 for energy cost burden considerations) while providing cooling (and heating) options for thermal resilience and decarbonization for difficult-to-adapt sectors and major emitting facilities (e.g., prison facilities).

To advance this action, NYSERDA will implement design challenges in partnership with frontline community partners to promote innovation in addressing extreme heat. Examples of such challenges could include design of low-cost cooling and cold storage solutions; study or development of low-tech cooling technologies that could serve as alternatives to air conditioning and cool public spaces without increasing GHG emissions and electricity consumption; and identifying priority needs (e.g., personal cooling devices, cold storage solutions available for use during blackouts and daytime peak, emergency cooling for medical needs) and vulnerable

population groups most in need of personal emergency cooling. Upon completion of these challenges and studies, NYSERDA will identify and support additional development needs for innovative cooling approaches. DEC will have a support and consultation role, including to help assess any emissions impacts of various technologies along with any implications of DEC's regulations. This action intersects with use of nature-based approaches to passive cooling areas where co-benefits of storm water management, improved air quality, and health benefits would also occur.

Existing Programs, Resources, and Initiatives: Existing NYSERDA innovation challenges (Natural Carbon Solutions Innovation Challenge), HeatSmart programs

T1.10 Conduct essential research on the impacts of extreme heat.

Implementation lead: NYSERDA **Involved agencies:** DEC, DOH, DOS, OGS, OTDA, SUNY

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Initiate research projects as needed to explore developing definitions, guidelines, and potential recommendations based on findings.	• To be determined, based on results of initial research.

Description of Action: NYSERDA plans to conduct research on different elements of extreme heat to inform health and safety, buildings, infrastructure, and operational best practices. This research could include development of definitions and guidance for maximum allowable indoor temperature, humidity, and heat characteristics for workplaces, public facilities, institutions, and homes (e.g., heat index, apparent temperature, ambient heat, ambient humidity, and indoor air quality, or IAQ). In addition to informing definitions and guidance for maximum allowable indoor temperatures, this research should also consider the ability of relevant buildings (including workplaces, public facilities, institutions, and homes) to cool based on their overall cooling infrastructure. This research should further consider the variability of climate parameters in regional locations across the state (e.g., temperatures, consecutive hot days, hot conditions). This research could address various dimensions of the lived experiences of extreme heat through community-university partnerships.

At the infrastructure scale, NYSERDA could identify and conduct additional studies to explore infrastructure-related extreme heat considerations as necessary. Potential research topics include solar photovoltaic study looking at degradation of efficiency, asset-specific degradation potential from increased electrification and extreme heat, impact on generation, vulnerability studies and PSC-approved risk reduction plans by regulated utilities, distributed solar benefits to reducing congestion and line losses, and net benefit of mitigation activities and efforts.

This research effort would include one or more project advisory committees comprising numerous State agencies and other institutions with relevant expertise. These project advisory committees would help explore development of definitions, guidelines, and potential recommendations and best practices based on the research findings. Relevant members of the EHAPWG can be

engaged during development as needed, including, but not limited to, DEC, DOH, DOS, OGS, OTDA, and SUNY. Upon completion of this research, State agencies would explore next steps, including identifying additional research needs or pathways to developing guidelines or policy based on project outcomes.

Existing Programs, Resources, and Initiatives: NYSERDA Environmental Research Program, vulnerability studies, and PSC-approved risk reduction plans by regulated utilities

Action Track 2: Preparedness, Communication, and Workers' Safety

Action Track 2 principally supports Goal 1 of this plan, which is to ensure and promote the whole-of-community health, well-being, and resilience of New Yorkers.

This action track works to enhance coordination among State agencies and local community preparedness, communication, and worker safety entities. Actions in this track seek to support capability and capacity building across State agencies, authorities, and local communities to identify extreme heat events and unfolding impacts earlier, anticipate events and impacts, and identify short- and long-term pre-event actions to reduce impacts and prepare communities. This track also includes actions focused on enhancing emergency preparedness, protections, and outreach at the workplace and in support of workers' health.

Building on the EHAP development process, the EHAPWG identified several critical factors that will help ensure Action Track 2 addresses current and historical inequities and empowers vulnerable community members and disadvantaged communities. The following list outlines these findings, which inform the actions contained in this track and should be part of future evaluations of the plan.

- Communication and coordination efforts for building local preparedness should draw on and enhance existing local initiatives.
- Improving coordination should ensure relevant information reaches vulnerable population groups and disadvantaged communities, closes information gaps, and supports local preparedness.
- Implementation should recognize that local governments may not have the necessary resources, capacity, and capabilities to anticipate and prepare for extreme heat events prior to their onset or before impacts overwhelm local resources.
- Building partnerships to support local initiatives and organizations that communicate with hard-to-reach population groups would enhance communication while building the capacity of local organizations.
- Planning and implementation support, including funding and technical assistance, should support communities with the greatest need in terms of resources, capacities, risks, and vulnerabilities.
- Reducing administrative barriers and burdens could help smaller CBOs and local governments access otherwise unattainable resources in support of local adaptation.

- Providing key services (e.g., water donation and hydration stations, disseminating public health information, charging electronic devices) at cooling locations can enhance benefits of such locations.
- Communication resources should emphasize language accessibility and cultural appropriateness; linguistically and culturally appropriate materials should be developed and provided in consultation with relevant stakeholders.

COORDINATE PREPAREDNESS AND PRE-EVENT COMMUNICATION			
Code	**Action Title**	**Lead Agencies**	**Involved Agencies**
T2.01	Support development and implementation of regional and local heat emergency plans.	DEC, DHSES, DOH	
T2.02	Expand coverage of and improve access to cooling centers.	DOH	DOT, OFA
T2.03	Expand access to safe swimming and address equity gaps with recreational opportunities for communities facing extreme heat.	OPRHP	DOH, DOS, DASNY
T2.04	Explore the ability of temporary emergency shelters to serve as emergency cooling centers.	EHAPWG	
T2.05	Evaluate opportunities for improvements to the Cooling Center Finder.	DOH	OFA
T2.06	Review, assess, and update existing statewide extreme heat communication, and research ways to improve public health messaging and targeting related to extreme heat.	EHAPWG	

PROTECT WORKERS' HEALTH AND SAFETY			
Code	**Action Title**	**Lead Agencies**	**Involved Agencies**
T2.07	Support actionable research to inform risk assessments and decision making.	DOH	DOL
T2.08	Prevent heat-related injury and illness through easily accessible guidance and recommendations for employers and employees in the private sector, identifying best practices and leaders.	DOH, DOL	
T2.09	Develop and support guidance and recommendations for heat-related injury prevention and incorporate them into employee safety manuals for public workers.	DOL	DOH
T2.10	Protect workers' heat health through engagement with local partners in focused outreach activities, leveraging existing touchpoints to provide services and protections, including know-your-rights information.	DOL	DOH

T2.01 Support development and implementation of regional and local heat emergency plans.

Implementation leads: DEC, DHSES, DOH

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Assess current and future levels of heat action planning and identify gaps. • Expand use of existing funding opportunities, technical assistance, and training to expand regional and local extreme heat planning. • Communicate updates and resources for considering extreme heat planning to local emergency managers, planners, and other key stakeholders involved in planning processes.	• Ensure all New York State counties have extreme heat plans or can reference a jurisdictional extreme heat plan.

Description of Action: The State intends to continue supporting local planning for extreme heat. Many local communities already lead in action to address extreme heat emergencies, including by developing local response procedures, strengthening community support services, and planning for extreme heat emergencies. The State supports local communities in developing local and regional heat emergency plans and intends to further enhance local emergency, community preparedness and hazard mitigation planning while also supporting cross-community learning from local leaders and experiences. The State encourages an all-hazards approach in local planning processes and seeks to create additional synergies among short-term preparedness, hazard mitigation, and climate adaptation planning.

Based on an assessment of planning gaps and needs, the State plans to further enhance local planning by funding local government entities to develop local or regional heat emergency plans through the CSC grants program or other programs, encouraging the consideration of extreme heat in county hazard mitigation plans using existing processes and resources as available and appropriate, and support LDHs in developing and implementing climate and health adaptations and specific emergency, response, and communication plans, e.g., through the Building Resilience Against Climate Effects (BRACE) program and the Public Health Emergency Preparedness program. To the extent feasible, the State should encourage continued planning approaches that include and collaborate with impacted stakeholders, including frontline community organizations.

DHSES is currently updating the hazard mitigation planning process by incorporating resources developed in the State's extreme heat action planning process and is proactively incorporating emergency capabilities and planning resources throughout its planning assistance and support. As part of this recommended action, DEC plans to also update relevant planning resources and templates to streamline planning while ensuring resources, templates, and tools are available for comprehensive and extreme heat-specific adaptation planning. Funding notices and resource guides could further support communities in leveraging existing resources. DEC, DOH, and DHSES should consider developing interagency training for counties to assist in developing heat emergency plans.

Existing Programs, Resources, and Initiatives: CSC program; DHSES technical assistance, funding, and implementation support for county hazard mitigation planning; DOH BRACE grants; CDC Public Health Emergency Preparedness grant

T2.02 Expand coverage of and improve access to cooling centers.

Implementation lead: DOH

Involved agencies: DHSES, DOT, HCR, NYSED, OFA, OGS

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Develop guidance on cooling center operations for partners. • Assess need for cooling center branding and other resources. If applicable, develop templates for use by local partners. • Inventory existing cooling centers and options, summarize coverage gaps, and develop workplan for addressing gaps, with a focus on heating, ventilating, and air conditioning (HVAC) system upgrades. • Develop plan to increase uptake of air-conditioner filter usage among cooling centers. • Review current transportation options and develop plan to improve transportation options for vulnerable populations.	• Make resources available online and promote them. • Provide technical assistance to those who need help using materials. • Review guidance annually and update as needed. • Implement plan to address gaps in cooling center coverage. • Assess funding sources for additional potential upgrades. • Implement plan to improve transportation options.

Description of Action: Cooling centers are critical to protect public health during extreme heat events. The State intends to undertake several interrelated activities to support local governments in operating cooling centers, raising awareness of these facilities, and addressing the barriers to community members accessing and using these centers.

- **Assess cooling center coverage and existing services and formulate strategies to address gaps.** DOH would assess current cooling center coverage, develop recommendations for State and local partners to improve coverage and address gaps, and formulate strategies to address coverage gaps and barriers to cooling center access. This assessment would include, for example, review of different levels and types of cooling centers (including operational hours, available cooling equipment, facility upgrade potential, and target audience served), review of transportation options, identifying clean air centers,[47] and planning for pets and service animals. DOH would work with other State agencies to assess capacity to operate State-owned facilities as cooling centers, especially in areas that do not have coverage. DOH would work with county LHDs and emergency management offices (EMOs) to coordinate with municipal transportation agencies to resolve transportation gaps and barriers. This action should ensure consistency with—and avoid duplication of—local initiatives, programs, and procedures.

[47] Clean air centers could be, for example, cooling centers or other public facilities with clean, filtered air to protect communities from wildfire smoke and other pollutants.

- **Developing cooling center guidance.** DOH, in collaboration with the involved agencies, would develop guidance for cooling centers—including different options for facility types, cooling center operations, and considerations for at-risk groups—to support county and municipal governments in establishing and operating them. This guidance could include providing users with resources to apply for other programs, identifying other resources for those who do not have air conditioning, increasing comfort and amenities in cooling centers, and creating cooling center spaces that improve neighborhood and community cohesion.[48] Additional guidance could include developing processes for identifying and incorporating State-run emergency cooling shelters; providing health care-informed support for people seeking shelter in public spaces with cooling; preventing expulsion of individuals seeking cooling at public spaces without adequate shelter alternatives; and developing and providing adequate guidance, information, and training to building managers, safety and security personnel, and police and public safety officers—and providing instruction, direction, or guidance where such authority exists.
- **Improving awareness of cooling centers.** DOH would improve the marketing, outreach, promotion, and awareness of cooling centers for New York State residents and visitors. To do so, DOH would assess interest among local governments and cooling center facilities in using a standard branding for cooling centers; create consistent signage, promotional material, and other branded materials to facilitate identification of cooling centers; and provide templates for easy printing of posters, flyers, postcards, and newsletters to facilitate production by municipal sign and print shops. In addition, DOH would work with LHDs and EMOs to create messaging that is effective and targeted to the local communities they serve. DOH will recommend that local agencies consider languages spoken among their constituents in developing signage. Improved awareness of cooling centers is particularly important for disadvantaged and hard-to-reach communities and should be sensitive to language preferences and other considerations.

In addition, through this action, the State would assess the accessibility of cooling centers for those using public transportation; review transportation to cooling centers and transportation options and support for individuals who may not be able to transport themselves to cooling centers; work with transit operators to incorporate up-to-date transit schedules in DOH's Cooling Center Finder; notify transit operators if extra capacity for buses is needed during emergencies; explore the feasibility of providing shuttle buses to cooling centers, pools, and parks that are not easily accessible via public transit; and explore reimbursement or voucher models for use of public transit to cooling centers.

Existing Programs, Resources, and Initiatives: DOH Cooling Center Finder, DOH partnerships with LHDs and EMOs, NYS Executive Order 22

[48] Cooling center guidance should include recommendations compliant with regulations under 6 NYCRR Part 494 (which DEC is currently proposing to revise to impose additional requirements on products and equipment, including commercial refrigeration and large air-conditioning equipment), EO 22 (directs State agencies to adopt a sustainability and decarbonization program at https://www.governor.ny.gov/executive-order/no-22-leading-example-directing-state-agencies-adopt-sustainability-and), and the GreenNY procurement guidance provides information on refrigerant-containing equipment at https://ogs.ny.gov/greenny/refrigerant-containing-equipment).

T2.03 Expand access to safe swimming and address equity gaps with recreational opportunities for communities facing extreme heat.

Implementation lead: OPRHP **Involved agencies:** DOH, DOS, DASNY

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Issue funds for transportation to swimming lessons through Connect Kids Transportation grant. • Determine implementation pathway for other grant and reimbursement programs.	• Implement grant and reimbursement programs.

Description of Action: As recommended by the EHAPWG, access to outdoor cooling opportunities is vital for disadvantaged communities and high-risk populations that do not have access to indoor cooling. In the 2024 SOTS address, Governor Hochul launched an ambitious agenda to safely connect more New York State families to the water, the New York Statewide Investment in More Swimming (NY SWIMS).[49]

One component of NY SWIMS is a competitive capital grant program, overseen by OPRHP and administered by DASNY, that will make up to $90 million available in grants to facilitate the renovation and construction of pools in high-need neighborhoods across the State.

In time to celebrate the OPRHP Centennial, a historic set of investments into public swimming facilities will reverse a long-term trend of cuts in swimming that led to decades of closures and cutbacks. These investments into access to swimming opportunities will be further supported by increasing swim lessons and water safety instruction programs offered by OPRHP. State Parks will lever the Connect Kids Field Trip Transportation grant program to launch the “Connect Kids to Swimming Instruction Transportation Grant.”

To address the shortage of lifeguards and provide safe swim time, DOS will offer a grant program to reimburse municipalities for expenses related to lifeguard compensation to help expand operating hours, increase staffing levels for swim programs, and widen access to public beaches and pools.

Existing Programs, Resources, and Initiatives: NYS Parks Learn to Swim program, Connect Kids Transportation Grant program

[49] New York State 2024, New York SOTS 2024, p. 74.

T2.04 Explore the ability of temporary emergency shelters to serve as emergency cooling centers.

Implementation lead: EHAPWG[50]

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Inventory shelters and their suitability to serve as emergency cooling centers and distribute inventory to relevant agencies.	• Set, monitor, and track a goal for the percentage of people who have access to cooling in emergency situations.

Description of Action: The State expects to coordinate with county and local jurisdictions using existing relationships and methods (e.g., CEMP Emergency Support Function #6: Mass Care, Emergency Assistance, Temporary Housing, and Human Services Annex) to identify county and local temporary emergency shelters that can serve as emergency cooling centers to provide additional capacity during heat waves and extreme heat incidents.[51] DHSES could share pre-event, identified emergency shelter locations with relevant EHAPWG members, including information about availability of on-site cooling. The relevant EHAPWG members would create an inventory of shelters and distribute the inventory to relevant State and local agencies. The inventory should note emergency shelters that are unsuitable to serve as cooling centers. EHAPWG agencies would further develop tools, resources, and monitoring capabilities to ensure equitable access to cooling in an emergency across the state. This action would also develop language and dedicated signage placement for local governments to use for communication during extreme heat events, which would increase the speed of response when an extreme heat event is identified and enable better communication to community members.

Existing Programs, Resources, and Initiatives: DOH Cooling Center Finder

T2.05 Evaluate opportunities for improvements to the Cooling Center Finder.

Implementation lead: DOH **Involved agency:** OFA

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Develop website evaluation plan. • Engage with LHDs and EMOs for recommendations to improve usability of Cooling Center Finder. • Incorporate cooling centers that can also serve during poor air quality events into Cooling Center Finder.	

Description of Action: The State expects to explore opportunities for improvements to the Cooling Center Finder and provide local offline versions for outreach partners. DOH should develop a website evaluation plan and conduct outreach to State agencies that work with

[50] The EHAPWG intends to form a subcommittee of relevant agency representatives (DEC, DHSES, DOH, OTDA) to lead implementation of this action.
[51] Emergency shelters and potential emergency cooling centers are facilities that provide access to shelter and cooling during a declared emergency and upon activation but are not available for year-round or routine access during nonemergency events.

vulnerable populations, to solicit feedback on the tool and connect DOH to community groups and nongovernmental organizations that could offer insight into how their partners use (or do not use) the tool. In addition, DOH should consult with key heat-vulnerable groups to identify additional information about individual locations to enhance usefulness of the Cooling Center Finder.

After the website has been evaluated, DOH would implement recommended adjustments and conduct outreach to improve the efficacy of the tool, including by engaging State agencies to link to the Cooling Center Finder from their websites, integrating the site with other tools used for family reunification, embedding mapping and geographic information system (GIS)-friendly interfaces to improve integration with mobile apps, and working with private partners to enhance tools and capabilities.

Existing Programs, Resources, and Initiatives: DOH Cooling Center Finder

T2.06 Review, assess, and update existing statewide extreme heat communication, and research ways to improve public health messaging and targeting related to extreme heat.

Implementation lead: EHAPWG[52]

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Evaluate, assess, and update existing communication products and make them available to State agencies and authorities. • Collate existing communication and information resources into communication tool kits to be made available for the public in an online repository. • Develop draft temperature thresholds to inform response and communication for pilot phase. • Conduct initial literature review of communication methods used by New York State communities and other State or federal agencies.	• Evaluate and address gaps in communication pathways and resources. • Develop new and enhance existing partnerships with local trusted communicators to close key gaps. • Continue updating and coordinating communication across State agencies. • Pilot proactive communication approach and evaluate process and outcomes. • Continuously refine and update pre-event communication measures and activities through relevant EHAPWG members. • Develop study design to pilot and measure select communication methods.

Description of Action: Under this action, the EHAPWG intends to survey, assess, streamline, and improve accessibility for existing and new communication strategies that can be used to improve communications related to extreme heat, including by coordinating statewide communications and better defining communication pathways to reach heat-vulnerable population groups, developing communication tool kits, streamlining pre-event heat-health outreach and communications, and creating corresponding tools.

Consistent, coordinated, and targeted communication about heat health and available public health resources is critical for the safety and well-being of New Yorkers. Different State agencies and authorities have responsibility to communicate with the public regarding elements of extreme heat.

[52] The EHAPWG intends to form a subcommittee of relevant agency representatives (DEC, DHSES, DOCCS, DOH, NYSED, NYSERDA, OASAS, OFA) to lead implementation of this action.

Local communities have their own plans, procedures, and protocols in place and communicate proactively within their communities to avoid extreme heat impacts. The State intends to support consistency in communication, expand access to heat communications, and ensure critical information about extreme heat reaches vulnerable community members.

Prior to a declared extreme heat event, DOH and other EHAPWG members work to provide clear and relevant information regarding heat safety and best practices to the public. Once an event or emergency has been declared, DHSES is responsible for managing communication during response to that event (see Section VII). This action addresses only pre-event communication, which would not supplant existing communication activities coordinated through DHSES during a declared emergency. DHSES would continue to coordinate communications during a declared emergency, pursuant to its statutory requirements.

DEC would convene the EHAPWG to coordinate this action. This action would review and draw on existing federal resources, including the CDC and NWS HeatRisk tool and relevant communication resources. DEC, DOH, and DHSES intend to coordinate on developing a relevant online repository for information sharing that is not duplicative of existing efforts. DOH would evaluate messaging for consistency and accuracy and would engage relevant agencies (e.g., OFA, NYSERDA, DOCCS, OASAS, NYSED, OTDA) and county governments to develop appropriate communications to specific population groups (e.g., seniors, people with mental illnesses, people with addiction, people experiencing houselessness and housing insecurity, people experiencing poverty, incarcerated and justice-involved individuals, students, and student athletes). EHAPWG members would be requested to provide existing communication materials, identify communication pathways to specific vulnerable population groups, and review updated material provided through the repository pursuant to updating and enhancing their communications.

After developing this online repository of approved communications, the EHAPWG could pilot an effort to use these materials in heat-related communications. To do so, the EHAPWG would identify thresholds at which different State partners should initiate proactive communication to targeted population groups through internal and external communication, identify and define outreach channels that should be mobilized for proactive communication, draw on and tailor developed communication resources for the purposes of proactive communication, and initiate proactive communication based on predetermined thresholds.

In addition, DOH could conduct a literature review of communication methods that are used by New York State communities, other states, and the federal government to ensure the State communication approach is aligned with public health best practices. Building on this inventory and study, DOH could explore analyzing the currently used communication pathways to determine how effective they are in reaching different populations. This could lead to research and a demonstration pilot that explores newer methods of communication (e.g., text messages, mobile device applications, push notifications, social media advertisements and notifications), and their ability to share important heat-health information. Later stages may explore integration of these communication techniques with existing communications systems (e.g., the national weather alerting system, emergency notifications, city data on cooling centers).

Existing Programs, Resources, and Initiatives: Existing communication materials and resources across EHAPWG agencies, OFA pilot program for notifications to older adults, DOH heat-health resources, DOH Cooling Center Finder, DEC climate adaptation resources and web portals, Mitigate NY, and other State repositories

T2.07 Support actionable research to inform risk assessments and decision-making.

Implementation lead: DOH **Involved agency:** DOL

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Complete data analysis, publication, and dissemination of research findings. • Develop injury prevention materials.	• Expand considerations of climate change impacts on workers' health from extreme heat to include climate change impacts more broadly, including exposure to superstorms, extreme cold and other weather-related health impacts on workers.

Description of Action: The State expects to perform research and collect data that will assist in the evaluation of heat-related occupational health risks by worker type and sector. The data would include information about heat exposures for both indoor and outdoor workers, provide a foundation for developing strategies to reduce those risks, and inform other relevant EHAP actions and initiatives.

The process would include recording extreme heat events, monitoring trends, and tracking workplace illnesses and fatalities from heat exposure. This action includes developing processes to improve the identification of heat-related illnesses in emergency department (ED) visits, hospitalizations, and fatalities via death certificates. This research would assist in the identification of vulnerable industries and occupations and in the development and refinement of codes, standards, and regulations. The data can point to specific heat-related vulnerabilities in disadvantaged communities and help inform strategies to mitigate such risks. The compiled data would be the foundation of future injury prevention activities to increase worker and employer awareness and reduce risks. Findings dissemination would include engagement with industry partners, worker advocates, unions, and listserv groups. DOH and DOL could engage current partners to prevent heat-related illness.

Existing Programs, Resources, and Initiatives: DOH Bureau of Occupational Health and Injury Prevention, DOL Public Employee Safety and Health (PESH) Bureau, DOL On-Site Consultation Program, DOL Worker Protection Unit

T2.08 Prevent heat-related injury and illness through easily accessible guidance and recommendations for employers and employees in the private sector, identifying best practices and leaders.

Implementation leads: DOH, DOL

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Create injury prevention guidance and recommendations in the form of tool kits, infographics, online postings on department websites, dissemination through listservs, and publications for indoor and outdoor workers.	• Support successful implementation via DOL On-Site Consultation Program and other techniques across the private sector.

Description of Action: This action aims to create injury prevention materials for use as guidance and recommendations to increase both employer and employee awareness of the hazards of extreme heat and humidity exposures, heat illness signs and symptoms, and the importance of implementing voluntary heat illness protection measures. Raising awareness of symptoms, preventive actions, and observation of coworkers and employees is critical to avoiding delays in treatment and survival measures.

The materials should be accessible, including for language, and may include tool kits, education and training materials, consultation services, e-tools, sample guidance procedures for employers, and other elements. The State could further explore using the DOL On-Site Consultation Program and DOH industrial hygiene consultations to evaluate the effectiveness of the hierarchy of controls (including engineering and administrative controls and strategies to ensure employee safety). This action specifically targets private sector workers who lack existing heat-related protective measures. These workers should be identified through the research in T2.06.

Existing Programs, Resources, and Initiatives: DOH Bureau of Occupational Health and Injury Prevention, DOL outreach and education departments, DOL On-Site Consultation Program, labor unions

T2.09 Develop and support guidance and recommendations for heat-related injury prevention and incorporate them into employee safety manuals for public workers.

Implementation lead: DOL **Involved agency:** DOH

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Support in-process Heat Emphasis Program at DOL PESH. Since no regulations exist, PESH has adopted the Occupational Safety and Health Administration (OSHA) emphasis program on extreme heat. • For every inspection, DOL should also inspect for extreme heat exposure.	

Description of Action: In addition to initiatives targeting private sector workers, DOL intends to coordinate a review of existing State and local government employee protections and support the incorporation of extreme heat safeguards for public workers and contracted personnel. This review would include DOL Public Employee Safety and Health (PESH) and DOH industrial hygiene consultations to evaluate the effectiveness of the hierarchy of controls, including engineering and administrative controls and implementation strategies to aide with employee safety.

Existing Programs, Resources, and Initiatives: The PESH Act extends federal occupational safety and health protections to public employees and requires that an employer furnish employees with a workplace free from recognized hazards and provide reasonable and adequate protection to the lives, safety, and health of its employees. PESH, a bureau of DOL, enforces the standards of the federal OSHA.

T2.10 Protect workers' heat health through engagement with local partners in focused outreach activities, leveraging existing touchpoints to provide services and protections, including know-your-rights information.

Implementation lead: DOL **Involved agency:** DOH

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Continue engagement with unions and worker advocacy groups like National Council for Occupational Safety and Health (COSH) to expand the existing OSHA Regional Emphasis Program (REP) for heat-related health hazards. • Use injury and illness prevention materials and relationships with stakeholders and partners to expand awareness of heat health and related services and protections. • DOL Worker Protection Unit disseminate know-your-rights information.	• Provide new outreach materials for workers regarding rights and protections against extreme heat. • Provide more annual outreach to specific workers who are most vulnerable to extreme heat. • Realize fewer workplace injuries and illnesses from targeted vulnerable workers who newly know their rights and protections from extreme heat.

Description of Action: Through this action, DOL would collaborate with community partners and trusted communicators to identify strategic targeted outreach opportunities to workers who are most vulnerable to extreme heat. Through collaboration and outreach, DOL and partners would aim to access highly vulnerable and historically disadvantaged workers to protect them from extreme heat. DOL Division of Health and Safety could work with labor union representatives and worker advocates, such as National COSH groups, to help with focused outreach activities, help build trust between workers and DOL, and connect DOL with specific groups of workers. Once partners are identified, DOL plans to collaborate with stakeholders to provide information about existing rights and protections, including know-your-rights information and communication campaigns. DOL intends to produce visual materials in several languages to ensure resources reach low-literacy or non-native English-speaking populations. Likewise, DOH could work with county and local health departments and leverage partnerships with CBOs and other stakeholders

who are working with indoor and outdoor workers in high-risk industries or occupations to ensure protection against extreme heat on the job. OSHA has an existing REP for outdoor heat-related health hazards. This action must complement and build upon this existing federal program.

The goal of this action would be to reach specific workers who are the most vulnerable to extreme heat. DOL and DOH could engage with partners such as migrant support organizations and worker advocacy groups, e.g., Cornell Farmworker Program or the New York Center for Agricultural Medicine and Health, to run outreach programs to specific groups of the most vulnerable. State agencies could also work with health and human services providers to create opportunities to engage particularly vulnerable workers by providing outreach materials and information at existing events run by the partner organizations and on work sites. This action can apply to numerous specific groups, such as temporary and part-time workers who do not have a stable position in a workplace; placement agency workers; day laborers; and, especially, unskilled young workers who do not yet have knowledge or conditioning for outdoor work.

The collaboration between State and external entities could occur through small grants; allocations to external on-the-ground organizations to conduct outreach, training, and education; or the use of other existing mechanisms based on available resources. The State should ensure partners can sustain outreach activities year-round (e.g., developing field-tested outreach materials and strategies).

Existing Programs, Resources, and Initiatives: DOL informal partnerships, DOL Division of Safety and Health (DOSH) or DOH worksite inspections, DOH relationships with local partners, existing DOL worker injury prevention outreach, Boards of Cooperative Educational Services (BOCES), Youth Builds, DOL extreme weather guidance

Action Track 3: Built Environment, Infrastructure, and Managed Spaces

Action Track 3 principally supports goals 3 and 4 of this plan, which are to create built environments (Goal 3) and strengthen community lifeline infrastructures (Goal 4) that are healthful, equitable, resilient, and that further the well-being and quality of life of the people who rely on and inhabit them.

This action track focuses on advancing extreme heat adaptation and resilience of the built environment, lifeline infrastructure, and managed spaces (i.e., educational, institutional, and congregate settings). Managed spaces share a common vulnerability, as people within those spaces often do not have the full ability to proactively seek relief from high temperatures. Actions throughout this track also seek to address the UHI effect in the built environment.

Building on the EHAP development process, the EHAPWG identified several critical factors that will help ensure Action Track 3 addresses current and historical inequities and empowers vulnerable community members and disadvantaged communities. The following list outlines these findings, which inform the actions contained in this track and should be incorporated in future evaluations of the plan.

- Actions should prioritize equitable access to indoor and outdoor thermal comfort.
- Building adaptations should avoid unintended effects, such as rent increases or gentrification pressures.
- Actions should prioritize communities and regions with high concentrations of disadvantaged and heat-vulnerable communities. The New York State HVI, disadvantaged community criteria, and sociodemographic data related to the prevalence of specific vulnerability characteristics can help target programs and resources.
- Planning and implementation support, including funding and technical assistance, should support communities with the greatest need in terms of resources, capacities, risks, and vulnerabilities.
- Implementation projects, including pilot projects, should likewise support existing initiatives and frontline community organizations and should avoid replacing existing community-led initiatives and projects.
- Building adaptations should maximize co-benefits associated with improved thermal comfort, improved air quality, building electrification, and emissions reductions.

SUPPORT RESILIENT BUILT ENVIRONMENTS			
Code	**Action Title**	**Lead Agency**	**Involved Agencies**
T3.01	Expand immediate access to affordable cooling through additional funding for cooling equipment, expanded reimbursement under medical insurance, and continued advocacy for additional federal HEAP funding.	OTDA	
T3.02	Explore the State's long-term ability to mitigate energy cost burdens associated with cooling and electrification.	DPS	DOS, HCR, NYSERDA, OTDA
T3.03	Coordinate thermal resilience, weatherization, and decarbonization for residential buildings across State programs.	HCR	DOS, DPS, NYSERDA, OGS, OTDA
T3.04	Incorporate protection from cooling-related cost shifting into existing renter protection programs.	HCR	DPS, NYSERDA, OTDA
T3.05	Identify appropriate State-owned facilities in which to install demonstration heat-mitigation solutions.	OGS	DOH, DASNY
T3.06	Enhance home energy assessments to incorporate resilience.	HCR, NYSERDA	
T3.07	Support installation of renewable sources of power and backup storage at public housing, group homes, assisted living facilities, and shelters.	HCR	DOH, DPS, NYSERDA, OCFS

SUPPORT RESILIENT BUILT ENVIRONMENTS			
Code	**Action Title**	**Lead Agency**	**Involved Agencies**
T3.08	Support installation of renewable sources of power and backup storage at community centers, schools, libraries, and other community settings.	NYSERDA	DOH, DPS, HCR
T3.09	Strengthen State building codes to account for extreme heat.	NYSERDA	DOS, DEC
T3.10	Develop model zoning overlays, technical support, and guidance for local land-use laws that consider extreme heat.	DEC	DOS, NYSERDA
T3.11	Develop requisite guidance, training, and outreach to enable the voluntary use of heat-mitigating design measures and strategies, with a focus on disadvantaged communities.	NYSERDA	DASNY, DEC, DOS, HCR, OGS

ADVANCE ADAPTATION IN EDUCATIONAL, INSTITUTIONAL, AND CONGREGATE SETTINGS			
Code	**Action Title**	**Lead Agency**	**Involved Agencies**
T3.12	Fund facility improvements, thermal resilience, and decarbonization at educational institutions.	NYSERDA	NYSED, DEC
T3.13	Support the development and implementation of facility-specific heat response plans and reporting for certain educational facilities.	NYSED	DOH, DOL, DOS
T3.14	Incorporate thermal resilience into State planning standards for educational facilities.	NYSED	DOH, DOS
T3.15	Identify and implement best practices to promote student, faculty, and staff safety at educational institutions, with a focus on protecting student athletes and preventing pediatric heatstroke.	DOH	OCFS, NYSED
T3.16	Support facility-specific heat response plans and develop and refine procedures, protocols, planning, and staff training on extreme heat in institutional and congregate settings.	EHAPWG	
T3.17	Assess cooling in congregate settings.	EHAPWG	

DEVELOP RESILIENT AND EQUITABLE INFRASTRUCTURE			
Code	**Action Title**	**Lead Agency**	**Involved Agencies**
T3.18	Explore options for strengthening consumer protections during heat waves.	DPS	DEC, DOH, NYSERDA, OTDA
T3.19	Incorporate extreme heat considerations in key transportation policies, protocols, guidance, specifications, and official issuances.	DOT	Thruway

DEVELOP RESILIENT AND EQUITABLE INFRASTRUCTURE			
Code	**Action Title**	**Lead Agency**	**Involved Agencies**
T3.20	Accelerate the transition of internal combustion bus and agency fleets to electric propulsion to reduce heat and ozone exposure along bus routes.	MTA	DEC, DOT, NYPA, NYSERDA
T3.21	Prioritize deployment of zero-emission buses in transit routes serving disadvantaged communities.	MTA	

T3.01 Expand immediate access to affordable cooling through additional funding for cooling equipment, expanded reimbursement under medical insurance, and continued advocacy for additional federal HEAP funding.

Implementation lead: OTDA **Involved Agencies:** DOH

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Supplement funding for the HEAP cooling equipment component in summer 2024. • Provide coverage for the installation of air conditioners in the NY State of Health Essential Plan (Essential Plan) for members with persistent asthma. • Continue to advocate for additional HEAP federal funding. • DOH continue to work with OTDA to promote the HEAP cooling benefit.	• Continue offering of expanded Essential Plan coverage for the purchase, delivery, and installation of air conditioners.

Description of Action: HEAP can help eligible New Yorkers heat and cool their homes. Specific to cooling, HEAP supports the purchase and installation of cooling equipment and other energy affordability programs, including benefits for energy bill assistance, weatherization, and energy efficiency services (see action T3.03).

In summer 2024, OTDA and NYSERDA are coordinating to further bolster HEAP cooling assistance by reallocating LIHEAP funding to the HEAP Cooling Assistance Component. These additional funds will expand access specifically for cooling equipment such as air conditioning units or fans to serve approximately 9,000 additional households. Enhanced immediate access to cooling resources will provide additional relief during the summer months while longer-term advocacy and efficiency upgrades are underway. The State plans to continue to advocate for additional federal funding for the HEAP cooling component emphasizing the critical role this assistance plays in safeguarding the health and well-being of communities vulnerable to extreme heat. Additionally, DOH will continue to work with OTDA to promote the cooling benefit as part of its annual extreme heat social media campaign, and the NYSERDA Regional Clean Energy Hubs will continue to promote the program to their network focusing on disadvantaged communities.

Additionally, as announced in the 2024 SOTS address, DOH aims to add coverage for the purchase, delivery, and installation of air conditioners for Essential Plan members with persistent asthma to reduce the public health risks posed by climate change. This program will provide access to life-saving cooling equipment to the medically vulnerable, who are likely to be more sensitive to the impacts of climate change.

Existing Programs, Resources, and Initiatives: HEAP, Essential Plan, DOH HEAP engagement, NYSERDA Regional Clean Energy Hubs ongoing engagement

T3.02 Explore the State's long-term ability to mitigate energy cost burdens associated with cooling and electrification.

Implementation lead: DPS **Involved agencies:** DOS, HCR, NYSERDA, OTDA

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Complete study of energy cost burdens to identify household energy burden associated with heating and cooling.	• Outcomes to be determined following the completion of the study.

Description of Action: The expansion of cooling and the longer-term potential for electrifying heating and cooling of homes will require consideration of energy burdens for low-income households. Current clean energy and affordability programs are not designed to support the electrification of heating or the provision of cooling at scale. Building on previous analysis on energy affordability for low-income customers, this action will leverage the directive from the PSC's Aug. 12, 2021, Order Adopting Energy Affordability Policy (EAP) Modifications and Directing Utility Filings, requiring NYSERDA to conduct a comprehensive Low-Income Energy Bill and Usage Study to inform the Commission's EAP, and related low-income energy programs.[53]

The scope of the study, launched in summer 2023, was developed with input from stakeholders in the EAP working group, includes an analysis of the typical impact on household energy burden and for heating and cooling, and identifies opportunities to align and leverage bill assistance and clean energy interventions to optimize the resources necessary to increase access to traditional air conditioning and electrified heating and cooling, while mitigating energy bill impacts for vulnerable low-income residents.

Based on the results of the study and as part of long-term heat adaptation planning, OTDA, HCR, DPS, and NYSERDA will identify a long-term strategy and associated funding mechanisms for providing access to sustainable, energy efficient, and affordable cooling solutions for heat vulnerable-households and communities.

[53] Department of Public Service, Case 14-M-0565, Order Adopting Energy Affordability Policy Modifications and Directing Utility Filings (issued Aug. 12, 2021).

Existing Programs, Resources, and Initiatives: Current mechanisms to mitigate or eliminate impacts of energy costs on low-to-moderate income (LMI) households include utility allowances, such as those used in public housing and in subsidized affordable housing subject to a regulatory agreement; HEAP; utility bill discount programs such as DPS's Energy Affordability Program; the Climate Affordability Study;[54] the Consumer Climate Action Account; and other potential components of the New York State economy-wide cap-and-invest program

T3.03 Coordinate thermal resilience, weatherization, and decarbonization for residential buildings across State programs.

Implementation lead: HCR **Involved agencies:** DOS, DPS, NYSERDA, OGS, OTDA

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Convene a coordination team made up of HCR and the supporting State agencies identified above, and other relevant State, city, and county organizations.	• Undertake processes and coordination to provide implementation, funding, and technical assistance.

Description of Action: The State seeks to continue to support existing State programs for increasing building thermal resilience, weatherization, and decarbonization in residential buildings, including public and affordable housing, housing for people with disabilities, private homes (including rental property), mobile and modular homes, workers' accommodations, and temporary housing for workers. This effort should build upon and not be duplicative of other statewide coordination efforts. The action would focus on improving coordination of funding across State programs for residential buildings by leveraging existing venues for coordination and incorporating new coordination work streams where necessary.

In implementing this action, agencies would prioritize disadvantaged communities by using existing outreach and marketing campaigns to promote energy-efficiency retrofit, weatherization, and electrification programs for disadvantaged communities, including messaging around resiliency benefits through HCR subgrantees and NYSERDA Regional Clean Energy Hubs' existing services, and exploring the potential for targeted marketing and community campaigns in heat-vulnerable communities using HVI/disadvantaged communities maps (see T1.07) and in consultation with community partners.

The NYS Weatherization Assistance Program (WAP), which is funded with both HEAP and DOE funds, is administered as one program through a network of community action agencies. These community action agencies both work and are located in the communities they serve. HCR works consistently to identify barriers to access and broaden opportunities in these communities. The NYS Weatherization Bipartisan Infrastructure Law (WAP BIL) Program is currently funding a statewide workforce development initiative with CUNY and SUNY campuses. This program provides a certification training course in weatherization and a six-month paid opportunity with a weatherization provider. The initial cohort of this program is currently underway at City College of New York.

[54] New York State 2023b, *New York State Climate Affordability Study*.

HCR, with the support of other identified agencies, could also increase program access to heat-vulnerable households, expanding upward the eligibility criteria where possible, and simplifying program application processes. HCR and other agencies could also explore the development of a common program application for weatherization and electrification programs; expand weatherization programs, with supporting outreach and marketing for relevant programs and target audiences; develop shared resources guides; and coordinate joint funding opportunities and announcements.

Existing Programs, Resources, and Initiatives: Empower+, WAP, Affordable Multifamily Energy Efficiency Program, HEAP, HCR Clean Energy Initiative (CEI), NYSERDA's Low Carbon Pathways program

T3.04 Incorporate protection from cooling-related cost shifting into existing renter protection programs.

Implementation lead: HCR **Involved agencies:** DPS, NYSERDA, OTDA

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Assess existing rent control policy to ensure tenant protection for cooling related costs. • Coordinate with new cooling funding programs and sources to ensure tenant protection rights are incorporated into program terms where applicable.	• Incorporate protection mechanisms into program design.

Description of Action: The State plans to develop or ensure existing protections for renters in regulated units, starting with applicable HCR policy and regulations to protect renters from rent increases associated with electrification-related building improvements. This could be included, for example, as part of funding agreements where recipients are owners of rental properties and funds are used to make electrification building improvements. The State will also explore expanding other New York State programs to include similar renters' protections within programmatic design, including electrification programs.

Existing Programs, Resources, and Initiatives: WAP

T3.05 Identify appropriate State-owned facilities in which to install demonstration heat-mitigation solutions.

Implementation lead: OGS **Involved agencies:** DOH, DASNY

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Identify State-owned facilities located in vulnerable communities that could be good locations for demonstrations.	• Complete assessment of heat-mitigation opportunities.

Description of Action: The State intends to identify State-owned facilities and buildings located in UHIs or disadvantaged communities in which to install heat-reducing facility upgrades, including demonstration projects such as waste-heat reuse, cool and green roofs, cool pavements, and

other green-infrastructure and heat-mitigating solutions. Where feasible, planning will consider public access and benefit options, such as rooftop community gardens. To identify facilities, OGS would compare the existing dataset of State facilities and buildings to the DOH dataset of heat vulnerability to identify facilities to target (see T1.07), with a particular focus on facilities in disadvantaged communities. Extreme heat exposure maps, currently under development by DEC (see action T1.03), could further help identify facilities once available. Once buildings are selected, OGS would identify the building owner and point of contact, and work with building owners to conduct an assessment, including opportunities for energy efficiency, potential heat mitigation, and community engagement.

Existing Programs, Resources, and Initiatives: Assessment funds may be available through NYSERDA's FlexTech program, Executive Order 22

T3.06 Enhance home energy assessments to incorporate resilience.

Implementation lead: HCR, NYSERDA

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Identify procedural barriers to incorporating resiliency into home energy assessments. • Identify near-term opportunities to pilot incorporating resiliency into home energy assessment programs.	• Create guidance for home energy assessments that includes climate risk and resilience measures. • Home energy assessment programs begin to incorporate resilience.

Description of Action: Following DOE's guidance, the WAP energy assessments can only fund measures that demonstrate cost savings or are part of health and safety measures. This action will pilot incorporating resilience into existing home energy assessments used by State agencies and use the assessments as an enrollment pipeline into key benefits and grant funding. Home energy and resilience assessments, which would include a climate risk and resilience component, can provide critical, statewide data on building stock on the individual home or household level and inform building owners and occupants about existing and future risks. This action should include identifying any procedural barriers to incorporating resiliency measures into relevant home energy assessment programs and developing a process for mitigation; this action should also integrate weatherization and resilience assessments as part of home energy assessments to improve thermal resilience and integrate resilience and decarbonization measures, starting with near-term program opportunities.

Existing Programs, Resources, and Initiatives: Comfort Home, Empower+, WAP, Residential Energy Assessment, Integrated Physical Needs Assessment

T3.07 Support installation of renewable sources of power and backup storage at public housing, group homes, assisted living facilities, and shelters.

Implementation lead: HCR **Involved agencies**: DOH, DPS, NYSERDA, OCFS

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Achieve scalable models for adding renewable sources of power and backup storage with grid disconnect in projects across the state in a variety of types and sizes.	• Achieve greater reliance on Grid Interactive Buildings, aiding in overall grid stability.

Description of Action: Installing renewable sources of power and backup storage is critical to the clean energy transition. This action involves several activities to facilitate this installation at public housing, group homes, assisted living facilities, and shelters, including assessing and addressing barriers to accessing NYSERDA NY-Sun Multifamily Affordable Housing Incentive funds for regulated, affordable multifamily housing; identifying opportunities for better targeting of programs to fund electric resiliency, including during extreme heat events; addressing existing barriers, including eligibility criteria; and leveraging approved solar contractors from the NYSERDA NY-Sun Multifamily Affordable Housing Incentive program.

In addition, HCR and partner agencies could explore the inclusion of energy backup and storage capabilities (including grid disconnect for emergency conditions) and overall enhanced sustainability, including an exploration of associated challenges (e.g., siting in NYC, high costs, and limited availability to provide power over long periods, especially if powering air-conditioning units). If energy backup, storage capabilities, and grid disconnects are not currently feasible (e.g., due to policies, restrictions, or funding), explore the multiyear outlook for assessing and incorporating these features into future residential building planning.

Existing Programs, Resources, and Initiatives: HCR WAP upgrades, NY-Sun Multifamily Affordable Housing Incentive program, utility demand response programs

T3.08 Support installation of renewable sources of power and backup storage at community centers, schools, libraries, and other community settings.

Implementation lead: NYSERDA **Involved agencies:** DOH, DPS, HCR

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Achieve scalable models for adding renewable power to projects across the state in a variety of project types and size.	• To be determined based on the outcome of the initial projects.

Description of Action: To complement the activities under T3.07, NYSERDA and other State agencies and authorities plan to support the installation of renewable energy sources and storage at community settings (e.g., community centers, schools, libraries). Support should include assessing and addressing barriers to accessing funds and identifying opportunities for better targeting of programs to fund electric resiliency, including during extreme heat events, and working toward addressing existing barriers, including eligibility criteria. NYSERDA and partner agencies

could leverage existing NYSERDA NY-Sun solar incentive programs, such as the Inclusive Community Solar Adder (ICSA) program, to install solar panels in community settings.

In addition, NYSERDA could use the Affordable Solar and Storage Predevelopment and Technical Assistance program to provide funding to address resource gaps and solve market barriers preventing the development of solar and energy storage installations benefitting LMI households. Entities that manage community settings could apply to the predevelopment program to identify microgrid solar and storage ready opportunities for buildings that primarily or fully benefit LMI households. The predevelopment program could identify sites that are ready for microgrid solar and storage installations.

Finally, NYSERDA plans to support the design of thermal energy networks. These networks use distribution pipes and heat pumps to move thermal energy from sources and sinks (such as the ground, air, surface water, wastewater, and waste heat) to provide cooling, heating, and hot water to connected buildings. These networks can include on-site renewable energy and storage to improve reliability. This approach can significantly reduce GHG emissions while strengthening thermal resiliency, including during high-heat events. NYSERDA will prioritize piloting of this approach in disadvantaged communities, including those highly vulnerable to extreme heat.

Due to present policy, market conditions, and funding limitations, incorporation of energy backup, storage, and grid disconnect capabilities may not be currently feasible. The action may potentially explore the multiyear outlook for assessing and incorporating these features into future congregate building planning.

Existing Programs, Resources, and Initiatives: ICSA, NY-Sun solar incentive programs, Affordable Solar and Storage Predevelopment and Technical Assistance program, Large Thermal Systems and Thermal Energy Networks program

T3.09 Strengthen State building codes to account for extreme heat.

Implementation lead: NYSERDA **Involved agencies:** DOS, DEC

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Require low-rise new construction be built to advanced energy efficiency standards, without fossil fuel combustion.	• Require all new construction be built to advanced energy efficiency standards, without fossil fuel combustion.

Description of Action: Strengthening the New York State building codes is an effective way to support long-term climate adaptation. The State building codes provide for the construction of safe, resilient, and energy efficient buildings throughout the state. To implement this action, NYSERDA would develop State building code recommendations which account for extreme heat. DOS could recommend changes to the State Fire Prevention and Building Code Council (Code Council) to update the State's building codes to account for extreme heat by requiring measures in new construction that create synergies among thermal resilience, overall resilience, energy efficiency, and emissions mitigation. These measures could include consideration of future conditions under climate change over the entire building life span, minimizing heat gain and enhancing passive

cooling, and for loss of power and effect on indoor thermal conditions. Specific strategies could include more insulation, better air sealing, required solar photovoltaic, among others.

Existing Programs, Resources, and Initiatives: NYS EO 22, complementary code enhancements recommended in the Scoping Plan, NYStretch Energy Code, relevant New York City Local Laws,[55] amendments to the State Energy Law and Executive Law (prohibiting, with some exemptions and exclusions, the installation of fossil fuel equipment and building systems in residential and commercial buildings, beginning on or after Dec. 31, 2025)

T3.10 Develop model zoning overlays, technical support, and guidance for local land-use laws that consider extreme heat.

Implementation lead: DEC **Involved agencies:** DOS, NYSERDA

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Inventory and assess existing local laws related to heat mitigation. • Develop and publish new model local laws as needed.	• Develop guidance for use of local laws and incorporation into local official training and other outreach.

Description of Action: The State plans to develop guidance materials to help county and municipal governments as they review their own zoning laws and consider how to incorporate climate resilience principles. To do so, DEC and partner State agencies intend to develop best practices and guidance to consider extreme heat in local land-use planning by inventorying and assessing local laws related to heat mitigation. Model zoning resolutions, technical support, and planning tool kits would inform local governments on implementation of heat mitigation measures for specific climate regions of the state and equip jurisdictions with the tools they need to update their zoning laws. Model local laws addressing extreme heat, such as extreme heat resilience zoning overlays, would help communities consider extreme heat exposure in their relevant land-use planning and decisions more consistently. DEC funds incorporation of resiliency considerations in local zoning and comprehensive planning through the agency's CSC program, which could support local jurisdictions in adopting model local laws addressing extreme heat.

The guidance developed by DEC would inform county and municipal governments on ways to ensure equitable implementation of their policies, including those for special areas with additional local rules and policies (e.g., manufactured home parks and homeowners' associations). This guidance would also include appropriate mitigation measures such as tree planting, cool roofs, reduced surface parking, and increased green space.

Existing Programs, Resources, and Initiatives: DOS Model Local Laws to Increase Resilience, NYSERDA Clean Energy Communities, CSC program

[55] NYC Local Law 32 of 2016 (requires NYC to adopt advanced energy code), NYC Local Law 154 of 2021 (prohibits new construction in NYC from emitting GHGs), NYC Local Law 97 (requires new buildings over 25,000 sq. ft. to meet new energy efficiency and GHG emissions limits by 2024).

T3.11 Develop requisite guidance, training, and outreach to enable the voluntary use of heat-mitigating building design measures and strategies with a focus on disadvantaged communities.

Implementation lead: NYSERDA

Involved agencies: DASNY, DEC, DOS, HCR, OGS

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Complete comprehensive guidance focused on climate resiliency design guidelines. • Prepare training materials for code officials and begin trainings.	• Require compliance with heat resiliency code measures.

Description of Action: The State seeks to develop training for code officials to support compliance with updated building code standards for extreme heat (see T3.09) and encourage voluntary additional heat-mitigation measures. This training would focus on those strategies most impactful to disadvantaged communities. NYSERDA intends to conduct a series of webinars for code officials on extreme heat-mitigation measures, develop training materials (checklists, manuals, audit templates) focused on codes-related extreme heat resilience, and host community-based webinars focused on the needs of disadvantaged communities. These training materials would be available statewide with prioritization of the needs of code officials in disadvantaged communities. Outreach would leverage and build upon existing NYSERDA training partnerships with relevant stakeholders, authorities with jurisdiction, and local code officials.

The State should lead by example to develop climate resiliency design guidelines, starting with State agencies. These guidelines would translate forward-looking climate science, including increasing temperatures and extreme heat events, into design strategies for new and existing buildings to mitigate heat and other climate hazards. When published, guidelines and trainings could be promoted through NYSERDA's Regional Clean Energy Hubs to enable focused community engagement in disadvantaged communities and explore opportunities for incentivizing use of design elements in disadvantaged communities most vulnerable to extreme heat.

Existing Programs, Resources, and Initiatives: NYSERDA Building Energy Exchange, Energy Equity Collaborative, Regional Clean Energy Hubs, and Clean Energy Communities program; HCR, WAP, and CEI programs; New York City Climate Resiliency Design Guidelines

T3.12 Fund facility improvements, thermal resilience, and decarbonization at educational institutions.

Implementation lead: NYSERDA **Involved agencies:** NYSED, DEC

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Issue a Bond Act-funded program opportunity through the Clean Green Schools Initiative and select up to 20 schools to receive funding.	• Continue planning assistance and funding coordination.

Description of Action: Funding thermal resilience and decarbonization upgrades at schools is critical to protect students, faculty, and staff. To do so, NYSERDA could identify and make available funds to under-resourced public schools (e.g., those schools with high needs[56] or located in disadvantaged communities) that lack adequate cooling and thermal resilience. Where possible, NYSERDA should reference the disadvantaged communities maps and DOH HVI maps (see T1.07) to identify high-priority localities for school facility upgrades.

NYSERDA's Clean Green Schools Initiative could be leveraged to help identify and evaluate opportunities to reduce energy costs and incorporate clean energy into capital planning. This initiative will fund building facility upgrades for weatherization, cooling, and resilience, including clean heating and cooling technologies (e.g., air source and ground source heat pumps). These funds should target under-resourced schools, including those located in UHIs. The Clean Green Schools Initiative has existing funds to cover studies at over 1,500 under-resourced schools and has funded installations at three; additional schools could be supported based on available resources.

Bond Act funds allow NYSERDA to expand the Clean Green Schools Initiative and provide additional funding for approximately 20 under-resourced public schools to implement construction projects that decarbonize and retrofit buildings. Additionally, NYSERDA may be able to leverage the federal Inflation Reduction Act and utility programs to implement school retrofits.

NYSERDA's FlexTech program could help schools not considered to be under-resourced to identify and evaluate opportunities to reduce energy costs and incorporate clean energy into schools' capital planning. Schools that pay into the System Benefits Charge (SBC) program and are not designated as public under-resourced schools would be eligible to apply to this program. However, no implementation or construction funding is available in this program. Schools could also self-fund facility upgrades through bonds and education improvement funds.

Existing Programs, Resources, and Initiatives: NYSERDA Clean Green Schools Initiative, NYSERDA FlexTech program, NYS Clean Heat, DOH School Environmental Health Program (SEHP), NYSED Building Aid program

[56] NYSERDA n.d. Clean Green Schools Initiative, https://www.nyserda.ny.gov/All-Programs/Clean-Green-Schools-Initiative.

T3.13 Support facility-specific heat response plans and reporting for certain educational facilities.

Implementation lead: NYSED **Involved agencies:** DOH, DOL, DOS

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Develop recommendations for schools to support the development of plans, including information on the measurement of heat levels (indoor or outdoor temperature using a heat index that incorporates humidity). • Require schools to develop action response plans and establish internal protocols that include thresholds, trigger points, and health response. • Require schools to establish a health care point of contact and report on plans developed by schools.	• Collect and analyze data on negative health outcomes. • Update best practices and guidance after five years.

Description of Action: To ensure students, faculty, and staff are safe during extreme heat events, NYSED intends to require facility-level extreme heat response and preparedness plans that identify and address population-specific vulnerabilities and impacts, including specific consideration for students with special needs; detail availability of cooling; and define strategies for when certain temperature thresholds are exceeded, as an annex to current school safety plans. These response and preparedness plans might include incorporating end-of-season reporting requirements such as health outcomes and extreme heat-related incidents in the existing school safety plan review and readoption process. These response plans should establish the director of school health services, who is the physician or nurse practitioner public schools must employ, as the health care point of contact. Other agencies may consider taking similar actions to enhance protections in childcare, daycare, and summer-camp settings.

For NYSED to require the additional heat response plans as a new requirement of the school safety plans, the State Legislature must pass authorizing legislation. As part of the plan, schools would complete a questionnaire seeking feedback on how to respond to extreme heat. The questionnaire would be an exercise to support schools in developing response plans and identifying specific vulnerabilities of the school. DOH, in conjunction with DOS and NYSED, would develop a list of best practices and guidance for helping schools develop an extreme heat response plan and identify best practices and requirements for response plans. School building facilities and equipment are reviewed every five years. This review cycle can be leveraged to identify cross-cutting opportunities to use facility upgrades to improve cooling and thermal resilience and align those improvements with heat response plans.

Existing Programs, Resources, and Initiatives: Current school safety plan requirements focus on responses to emergencies such as acts of violence and disasters through prevention;[57] the currently required structure and implementation pathway can be used as a framework for extreme heat events and the extreme heat response plans would be a new annex to school safety plans.

[57] NYS Education Law § 2801-a.

T3.14 Incorporate thermal resilience into State planning standards for educational facilities.

Implementation lead: NYSED **Involved agencies:** DOH, DOS

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Develop list of thermal resilience best practices and guidance to be included in facility planning standards. • Develop addendum, amendment, or update to NYSED Planning Standards around thermal resilience guidance for educational facilities.	• Through legislation or executive action, require thermal resilience in schools to expedite building improvements beyond new construction and renovations.

Description of Action: To support long-term climate adaptation implementation, NYSED should provide an addendum, amendment, or update to the NYSED Manual of Planning Standards to provide guidance regarding thermal resilience in acquisition, funding, management, construction, health, and safety in NYSED-regulated educational facilities. To do so, DOS and NYSED would coordinate in developing a list of thermal resilience best practices and guidance to be included in the planning standards and develop a public-facing document that explains to school districts and other stakeholders the benefits and importance of thermal resilience.[58] NYSED-regulated educational facilities would be required to consider the thermal resilience guidance included in the planning standards.

Funding would be necessary to provide schools with the resources required to implement thermal resilience improvements. Funding could be secured through either development of new mechanisms or pathways, or existing school building funding resources such as NYSED Building Aid. Additional future actions could be taken to ensure thermal resilience through a mandate (e.g., requiring thermal resilience best practices through a DOS code update, see T3.09). Additionally, future legislation or executive action could require thermal resilience in schools to expedite building improvements beyond new construction and renovations.

Existing Programs, Resources, and Initiatives: NYSERDA Clean Green Schools program, energy performance contracts, federal grant opportunities, New York State Pollution Prevention Institute

[58] NYSED thermal resilience guidance should include recommendations compliant with regulations under 6 NYCRR Part 494 (which DEC is currently proposing to revise to impose additional requirements on products and equipment, including commercial refrigeration and large air-conditioning equipment). EO 22 (directs State agencies to adopt a sustainability and decarbonization program at https://www.governor.ny.gov/executive-order/no-22-leading-example-directing-state-agencies-adopt-sustainability-and), and the GreenNY procurement guidance provides information on refrigerant-containing equipment at https://ogs.ny.gov/greenny/refrigerant-containing-equipment).

T3.15 Identify and implement best practices to promote student, faculty, and staff safety at educational institutions, with a focus on protecting student athletes and preventing pediatric heat stroke.

Implementation lead: DOH **Involved agencies:** OCFS, NYSED

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Develop and disseminate recommendations and best practices for schools. • Publish recommendations regarding artificial turf exposure. • Improve use of extreme heat services and resources among children.	• Develop strategies to track student and staff outcome metrics using available data. • Evaluate the effectiveness of heat-related education, best practices, and guidance. • Achieve reduction in heat-related injuries and deaths among children.

Description of Action: DOH, in collaboration with NYSED, plans to review and update existing best practices and recommendations for schools that address the impacts of extreme heat on learning outcomes, student behavior, student and teacher health, and school attendance from federal, State, non-governmental, and peer-reviewed research. DOH and NYSED should maintain a recognizable and accessible resource of current best practices that can be easily used by schools' stakeholders.

DOH and NYSED would disseminate annual heat recommendations to schools using a variety of channels (e.g., social media, seminars and webinars, proactive outreach and education, audience-specific messaging). Building on this engagement, the State should develop and provide enhanced student athlete safety training for involved school staff and require health and safety training for all school personnel working with at-risk groups, with a particular focus on pediatric heat stroke prevention. Close engagement with disadvantaged communities is critical to ensure this action is contextually relevant and implemented effectively. These programs may include public campaigns and messaging, the creation of informational materials, coordination with NYSED on school outreach (e.g., schools with early morning or after school programming), communication with athletic programs, and working with DOH to target community-based clinics and pediatric practices that participate in Child Health Plus and Children's Medicaid programs. Over time, DOH could track the effectiveness of this education and adjust the strategy accordingly.

As part of this action, DOH and NYSED expect to develop recommendations and best practices to limit exposure to artificial turf and ensure student and student athlete safety. These recommendations should raise awareness, provide guidance, and build on existing educational materials around the impacts of artificial turf and extreme heat.[59]

[59] The surface of synthetic (crumb rubber) turf in direct sunlight can be 40–70°F hotter than the ambient air. On clear, warm days, synthetic turf fields can be superheated to temperatures of 120–180°F. Playing on synthetic turf can melt shoes, blister hands and feet, and induce dehydration and heatstroke.

Existing Programs, Resources, and Initiatives: BOCES, American Academy of Pediatrics, New York State Children's Environmental Health Centers, teachers' groups, New York State United Teachers and other labor unions representing school personnel, parent-teacher associations, New York State School Facilities Association (SFA), New York State Public High School Athletic Association, SEHP, NY Environmental Public Health Tracking program, outreach and education group within Center for Environmental Health

T3.16 Support facility-specific heat response plans and develop and refine procedures, protocols, planning, and staff training on extreme heat in institutional and congregate settings.

Implementation lead: EHAPWG[60]

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Develop a template for facility-level response plans and corresponding extreme heat protocols for institutional and congregate settings. • Develop templates for training curriculums and extreme heat protocols, response planning, and management. • Distribute guidance on preparation of response and preparedness plans to agencies, including structure and reporting. • Monitor and assist facilities as they develop plans and response protocols.	• Implement plans and protocols. • Support authorities having jurisdictions in the use of provided templates and resources to update their health and safety manuals and implementing training opportunities.

Description of Action: To protect individuals living in congregate settings, relevant State agencies and authorities that own, operate, manage, or regulate congregate facilities intend to require or recommend facility-level extreme heat response and preparedness plans that identify groups served in specific settings, address population-specific vulnerabilities and impacts, detail the availability of cooling, plan for improving access to cooling as necessary and appropriate, develop contingency plans for power outages and their impacts, and define strategies for when extreme heat thresholds are exceeded.

In addition, the EHAPWG plans to develop support material such as training on procedures to address the impacts of extreme heat on staff and occupants. The EHAPWG would support development of templates to help authorities with jurisdiction expand staff training and improve relevant plans and protocols. These trainings would focus on preparing staff to manage extreme heat conditions inside facilities that provide congregate or institutional care. Agencies with jurisdiction would be responsible for adopting and enhancing the training to address situations specific to their facilities. Staff would learn how to implement a heat response action plan in their facility. The EHAPWG would coordinate the relevant agencies in developing example curricula for use by the agencies with jurisdiction.

[60] The EHAPWG intends to form a subcommittee of relevant agency representatives (DOCCS, DOH, DOL, NYSED) to lead implementation of this action.

Alternatively, the State could support implementation of certification programs, including those offered by third parties, across regulated facilities. Some training on recognition of heat exhaustion, heat stroke, and heat-related illness should be provided to staff at relevant facilities (e.g., Emergency Care and Safety Institute training, American Red Cross training). State agencies having jurisdiction over institutional and congregate care settings should explore options to require trainings for staff selected from their facilities, as appropriate.

Funding needed for this action would depend upon the extent of training within and size of a congregate setting. Awareness training for all staff within a congregate setting may be appropriate; therefore, staff effort may be adjusted according to the size of the setting.

Existing Programs, Resources, and Initiatives: Existing mandated training for each State agency and setting, existing infrastructure for training State employees, OSHA training opportunities, State corrections facility emergency plans

T3.17 Assess cooling in congregate settings.

Implementation lead: EHAPWG[61]

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Conduct baseline assessment to gather information about current planning, cooling needs, physical infrastructure, and other factors.	• Continue to increase number of cooling areas as needed and as funding allows.

Description of Action: Cooling is critical during extreme heat events. To ensure cooling is available to individuals in congregate settings, relevant EHAPWG agencies intend to assess the availability of cooling in congregate settings that are owned, operated, managed, or regulated by the State.[62] State agencies plan to collaborate to assess the need for cooling improvements in congregate settings, and funding needed to implement improvements. Types of congregate settings and buildings vary significantly, and authorities with jurisdiction should assess cooling needs at relevant facilities. Some facilities house people who are particularly vulnerable to extreme heat, for example those that house older adults, people with preexisting medical conditions or mental illnesses, children, and young adults, and expecting mothers. The involved agencies, coordinated through the EHAPWG, would outline a resource document of best practices to assess cooling needs and options, with input by relevant agencies. This baseline assessment would be used to determine needs and develop subsequent strategies to address them.

[61] The EHAPWG intends to form a subcommittee of relevant agency representatives (DOCCS, DOH, NYSED) to lead implementation of this action.
[62] Assessments should be compliant with regulations under 6 NYCRR Part 494 (which DEC is currently proposing to revise to impose additional requirements on products and equipment, including commercial refrigeration and large air-conditioning equipment), EO Number 22 (directs State agencies to adopt a sustainability and decarbonization program at https://www.governor.ny.gov/executive-order/no-22-leading-example-directing-state-agencies-adopt-sustainability-and), and the GreenNY procurement guidance contains information on refrigerant-containing equipment at https://ogs.ny.gov/greenny/refrigerant-containing-equipment).

Funding needs would be dependent upon locations and number of cooling areas in congregate settings and the capital improvements necessary to modify or improve buildings. Costs of individual projects would vary widely due to the wide variety of congregate settings. This action may require additional State staff to review and execute plans. Additional State staff may be needed to oversee cooling areas, depending upon congregate setting and size.

Existing Programs, Resources, and Initiatives: Not applicable

T3.18 Explore options for strengthening consumer protections during heat waves.

Implementation lead: DPS **Involved agencies:** DEC, DOH, DOS, NYSERDA, OTDA

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Determine appropriate thresholds for regulated utilities to implement protections.	

Description of Action: To strengthen consumer protections during heat waves, DPS and partner agencies would focus on adopting uniform criteria and language for utility policies and procedures regarding utility disconnections for nonpayment during extreme heat events. Investor-owned electric utilities currently have processes to suspend the disconnection of service when defined heat criteria, such as certain temperature thresholds, are met. The criteria vary, as they are defined within each utility's respective joint proposal, as agreed upon in individual rate case proceedings and approved by the PSC.

In this action, DPS would identify options and associated procedural paths to develop consistent criteria for suspension of utility disconnections during extreme heat events. The State agencies would work with utilities and other program administrators to identify programmatic and other support to improve energy affordability for venues that provide critical community services and benefits during periods of extreme heat. DPS would coordinate with State agencies, electric utilities, and stakeholders on the advancement of this action.

Existing Programs, Resources, and Initiatives: The Home Energy Fair Practices Act includes provisions that outline requirements for utilities regarding the disconnection of service for households during cold weather periods. For more information about hot and cold weather-related utility consumer protections, please visit: www.nyserda.ny.gov/consumer-protections.

T3.19 Incorporate extreme heat considerations in key transportation policies, protocols, guidance, specifications, and official issuances.

Implementation lead: DOT

Involved agency: Thruway

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Devise and implement a strategy to update policies, protocols, guidance, and specifications to account for extreme heat in construction and operations and aim to reduce extreme heat effects. • Revise existing handbooks, guidance documents, and other materials to include refences to extreme heat considerations and mitigation. • Promote awareness and use of revised documents, handbooks, policies, and other materials to local transportation departments and other relevant stakeholders.	• Continue engagement with local transportation departments and relevant stakeholders to assess efficacy of new guidance; update and revise based on stakeholder feedback. • Based on continued extreme heat research and real-world events and incidents, continue to modify and revise guidance, policies, handbooks, and supporting documents. • Incorporate guidance, regulations, and specifications into DOT-led or -supported construction processes and operations. • Develop and maintain a library of heat-mitigating best practices, including related design details.

Description of Action: The State seeks to mitigate extreme heat impacts, especially on disadvantaged and heat-vulnerable communities, by incorporating relevant considerations into transportation infrastructure related policies, protocols, guidance, design details, and issuances.

DOT and Thruway plan to review relevant policies, protocols, and guidance to identify opportunities to harden infrastructure against extreme heat where necessary and mitigate extreme heat to the maximum extent feasible in operations and construction, especially by reducing the use of low-albedo surfaces and by expanding use of natural and porous surfaces. This review would serve as the basis for development and implementation of a strategy for heat-mitigating updates.

The approach would be broad, entailing an analysis and enhanced awareness of the potential for material choices, construction techniques, and site-restoration decisions to contribute to UHIs and extreme heat events. It would identify opportunities to design projects to preserve green space, and proactively reduce heat exposure and the UHI effect through the use of green infrastructure and EbA solutions. In streetscape design, it would identify priority corridors for shading, conversion of paved medians to planted, use of shade structures, and cooling enhancements to bus shelters such as drinking fountains.

This approach would include analysis and awareness of the importance of considering the well-being of construction workers, field staff, others on the right of way, and vulnerable communities during and after construction. Cost-effectiveness and maintenance implications must be a prime consideration to ensure proposed solutions are sustainable—such as use of drought-resistant plant species where water is not readily available.

Relevant policies, guidance, specifications, and official issuance documents already incorporate numerous green considerations. However, given the scope and scale of projects and the vast amount of pavement and other materials used in transportation infrastructure projects, the potential

is great for even incremental changes in materials and techniques to have a marked effect on alleviating heat impacts. Available tools could be enhanced and expanded to specifically address extreme heat in construction and operations and to maximize the reduction of existing extreme heat burdens where possible, especially in urban disadvantaged communities. This action could include research into new materials, techniques and designs related to mitigating heat effects to proactively reduce heat exposure and the urban heat island effect.

In addition to updating existing documents, DOT and the Thruway Authority may issue extreme heat-specific guidance for relevant projects in coordination with related actions taken by other EHAPWG members. The EHAPWG should continue to provide a forum for coordination and joint development of standards and guidance documents and coordinate with the involved agencies and authorities.

T3.20 Accelerate the transition of internal combustion bus and agency fleets to electric propulsion to reduce heat and ozone exposure along bus routes.

Implementation lead: MTA **Involved agencies:** DEC, DOT, NYPA, NYSERDA

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Acquire and deploy zero-emission buses.	• Continue acquisition and deployment of zero-emission buses. • Consider installation of indoor bus shelters.

Description of Action: Transit bus fleets across New York State are switching from internal combustion engines to electric motors. This transition is critical to supporting initiatives to mitigate extreme heat and air pollution exposures, especially in heat-vulnerable communities. Exhaust from combustion engines contributes to poor air quality, which is exacerbated by extreme heat and can worsen respiratory illnesses, such as asthma or lung disease.[63]

The State encourages public transit providers to accelerate the electrification of bus fleets, especially in heat-vulnerable disadvantaged communities (see also action T3.21). Several State agencies can serve as a model for the accelerated deployment of electrified bus fleets. For example, MTA is advancing electrification in accordance with the *MTA Zero-Emission Bus Transition Plan*.

The strategies and implementation mechanisms used to support bus fleet electrification may also be applicable to the electrification of State, county, and city non-revenue fleets. This transition requires an initial investment to purchase new buses, to retrofit depots and other bus facilities, and to train vehicle technicians. Additional resources would increase the pace of transition. In addition to buses, this action could include the electrification of non-revenue fleets for MTA, DOT, and transit agencies and authorities. The strategies and implementation mechanisms used to support bus fleet electrification may also be applicable to the electrification of State and municipal non-revenue fleets.

[63] https://dec.ny.gov/environmental-protection/climate-change/effects-impacts/extreme-heat

This action requires coordination among county and municipal transportation departments and their operating entities based on ownership of bus fleets and bus depots, stops, and stations. This action may also include reviewing which bus depots are easier to electrify, such as where utilities are well-positioned to support depot electrification, to increase the rate of statewide deployment of electric buses. Transit agencies should explore both State and federal funding sources to support this effort (e.g., U.S. Department of Transportation, Federal Transit Administration, U.S. Department of Energy).

Existing Programs, Resources, and Initiatives: NY Truck Voucher Incentive Program, DOT, federal funding programs

T3.21 Prioritize deployment of zero-emission buses in transit routes serving disadvantaged communities.

Implementation lead: MTA

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Acquire and deploy zero-emission buses (T3.19). • Implement MTA's EJ scoring system to prioritize transit routes.	• Deploy buses along identified transit routes that serve disadvantaged communities.

Description of Action: Urban disadvantaged communities often face higher instances of impacts from both adverse air quality and extreme heat exposures. Concentrations of UHIs can be more common in disadvantaged communities, which may also face additional air pollution burdens. In addition to the effect of exhaust on air quality, waste heat from combustion engines can directly contribute to the UHI effect.

The State plans to prioritize deployment of electric bus fleets in heat-vulnerable disadvantaged communities and encourages public transit operators across the State to similarly prioritize deployment in heat-vulnerable communities.

Transit operators and metropolitan planning organizations can draw on existing models for prioritizing deployment in heat-vulnerable disadvantaged communities. For example, MTA plans to prioritize deployment of zero-emission buses in transit routes that serve disadvantaged communities, reducing burdens on disadvantaged communities by reducing air pollution and waste heat along transit routes.

For the MTA Zero Emission Fleet Transformation Plan,[64] MTA developed an EJ framework that incorporates EJ priorities into the deployment phasing process and supports a more sustainable and inclusive transit system. The EJ Score is applied at both the route level and the depot level to facilitate decision-making and prioritization for the zero-emission fleet rollout, to ensure that the benefits of the rollout accrue to those communities most impacted.

[64] MTA *2024 Zero-Emission Transition Plan*: https://new.mta.info/document/138261

MTA also created geographic “Areas of Concentrated Need” for prioritizing equity in project planning. These areas were identified through a three-step process. First, eight metrics representing a spectrum of demographic characteristics were identified and weighted as described in the table below. Second, a combined score from 0 to 100 was established for each census block group in NYC, based on the percent rank for each metric and the established weights. Third, all census blocks with a score greater than 50 were identified as areas of concentrated need.

In support of this action, MTA will implement the EJ and equity-focused fleet electrification actions contained within the Transformation Plan. Other transit agencies are encouraged to also prioritize deployment in disadvantaged communities and could use the EJ Score framework as guidance to potentially support their route electrification planning and prioritization of disadvantaged communities.

Existing Programs, Resources, and Initiatives: MTA Zero Emissions Fleet Transformation Plan

Action Track 4: Ecosystem-based Adaptation

Action Track 4 principally supports Goal 5 of this plan, which is to safeguard and preserve ecosystems, biodiversity, and ecosystem services, and to ensure that all New Yorkers have access to and equitably benefit from these life-sustaining benefits.

This action track emphasizes the importance of EbA and green infrastructure in adapting to extreme heat. EbA leverages the services and benefits provided by ecosystems to address impacts and reduce vulnerabilities and provides flexible and cost-effective approaches to adaptation through improved management, conservation, and restoration of ecosystems. This track emphasizes the importance of including local community leaders and especially Indigenous knowledge holders in ensuring ecological health and equitable access to the ecosystem services is grounded in traditional ecological knowledge. Leveraging biodiversity and ecosystem services, EbA helps communities adapt to negative impacts and typically provides numerous health and adaptation-related benefits, including improved air quality; carbon sequestration; enhanced community well-being and quality of life; and reduced impacts of stormwater runoff, flooding, and extreme heat.

EbA is a particularly important tool for adapting to extreme heat, as it reduces overall impacts and is critical for reducing the UHI effect. EbA is a means to reduce the prevalence of heat-trapping construction materials and reverse loss and degradation of open and green space in urban environments. The actions in this track focus on enabling the State and local communities to invest in EbA and build capacity to preserve such programs.

Building on the EHAP development process, the EHAPWG identified several critical factors that will help ensure Action Track 4 addresses current and historical inequities and empowers vulnerable community members and disadvantaged communities. The following list outlines these findings, which inform the actions contained in this track and should be incorporated in future evaluations of the plan.

- Planning and implementation support, including funding and technical assistance, should support communities with the greatest need in terms of resources, capacity, risks, and vulnerabilities.
- Actions should prioritize disadvantaged and heat-vulnerable communities. The New York State HVI, disadvantaged community criteria, and sociodemographic data related to the prevalence of specific vulnerability characteristics can help target programs and resources.
- Implementation projects, including pilot projects, should support existing initiatives and frontline community organizations.
- EbA and its benefits should be equitably distributed, which may require new approaches for assessing ecosystem service benefit and cost flows. Inequities in access to and distribution of ecosystem service benefits are closely linked to historical legacies of exclusion, marginalization, and racism, including redlining.
- Avoiding green gentrification should be a critical implementation consideration across all actions.
- EbA is a key cooling solution at the building level but requires building-owner action to implement; therefore, renters may not have access to the benefits of EbA solutions without additional support.
- In agricultural settings, both urban and rural adaptive measures can be taken to mitigate impacts of extreme heat on farm operations (people, crops, animals, and infrastructure).

ACTION TRACK 4: PRIORITIZE ECOSYSTEM-BASED ADAPTATION AND GREEN INFRASTRUCTURE SOLUTIONS			
Code	**Action Title**	**Lead Agency**	**Involved Agencies**
T4.01	Create an interagency committee to coordinate State programs that fund and implement green infrastructure and ecosystem-based adaptation to address extreme heat.	DEC	AGM, DOS, DOT, EFC
T4.02	Regularly map and monitor land-cover changes in UHIs to improve adaptive interventions.	DEC	
T4.03	Develop and disseminate best practices and guidance for maximizing ecosystem- and community-adaptation benefits of green infrastructure and ecosystem-based adaptation implementation.	DEC	AGM, DOS, DOT, EFC, HCR, MTA, OGS, OPRHP
T4.04	Develop risk assessments and planning tools under the State's AEM framework for natural resource professionals and farmers to address extreme heat on farms.	AGM, Soil and Water Conservation Committees (SWCCs)	DEC

ACTION TRACK 4: PRIORITIZE ECOSYSTEM-BASED ADAPTATION AND GREEN INFRASTRUCTURE SOLUTIONS			
Code	**Action Title**	**Lead Agency**	**Involved Agencies**
T4.05	Accelerate the implementation and maintenance of ecosystem-based and green infrastructure solutions across the state to reduce extreme heat impacts.	DEC	DOH, DOS, DOT, EFC, HCR, OGS, OPRHP, SUNY, Thruway
T4.06	Fund and train arborists, foresters, youth conservation corps, and other conservation staff who will plan, install, and maintain green infrastructure and EbA to reduce extreme heat impacts.	DEC	AGM, DOCCS, DOS, DOL, OCFS, OPRHP
T4.07	Scale the production of heat-adapted trees and seed supply, including increasing the number of, and collaboration among, nurseries needed for implementing EbA to address extreme heat impacts.	DEC	AGM, DOCCS, DOS, DOT, OPRHP
T4.08	Initiate a demonstration project communication campaign on best practices for green infrastructure and EbA solutions to extreme heat.	OPRHP	DEC

T4.01 Create an interagency committee to coordinate State programs that fund and implement green infrastructure and ecosystem-based adaptation to address extreme heat.

Implementation lead: DEC **Involved agencies:** AGM, DOS, DOT, EFC

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Interagency ecosystem committee meets regularly.	• Committee has successfully coordinated and implemented actions from the EHAP related to EbA.

Description of Action: DEC, in coordination with the EHAPWG, will convene an interagency ecosystem committee comprising State staff from key programs that fund, support, or provide technical assistance for EbA, green infrastructure, and urban forestry projects, and that can address extreme heat impacts on ecosystem services essential to local communities. The ecosystem committee would create an EbA extreme heat coordination strategy document that identifies key natural resources and ecosystem services impacted by extreme heat, lists key State programs that could be used to advance heat-related EbA implementation, identifies key State staff who lead these programs, identifies gaps and needs for new programs or revisions to existing programs, and develops a strategy to coordinate implementation of effective heat-related EbA actions through existing State programs. This strategy should provide recommendations for how to prioritize distributive equity and equitable access to ecosystem service benefits in implementing green infrastructure and EbA solutions, for example, by drawing on UHI mapping (see T1.03), the DOH HVI, and criteria for identifying vulnerable communities.

The coordination strategy should also identify ways to maximize effectiveness and enhance synergies of resources and State staff capacities resulting from increased coordination, such as coordinating funding announcements, release dates, implementation pathways, and outreach to targeted groups. This coordination strategy could explore options for reducing burdens and barriers to access to extreme heat-related EbA programs, especially for disadvantaged communities, prioritizing access to and support for disadvantaged communities with ecosystem services that have existing and future exposure to extreme heat and other climate change impacts.

Existing Programs, Resources, and Initiatives: ICARWG, CSC program, DEC urban and community forestry programs, DEC EJ grants

T4.02 Regularly map and monitor land-cover changes in UHIs to improve adaptive interventions.

Implementation lead: DEC

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Identify data sources and develop data sharing processes across relevant programs. • Generate baseline map for tracking purposes. • Incorporate reporting into the EHAP dashboard.	• Establish a mechanism for streamlined data sharing across programs. • Incorporate relevant data as overlays to the UHI maps (see T1.03). • Begin sharing outcomes across programs.

Description of Action: DEC is developing heat exposure maps and identifying disadvantaged communities impacted by the UHI effect (see T1.03). The exposure maps incorporate statewide land-cover data to facilitate tracking changes in land cover and assessing the effect of those changes on the prevalence and severity of localized UHIs.

DEC would enhance land-cover change data by integrating data from State programs that support implementing EbA and green infrastructure solutions and overlaying relevant data with the DEC heat exposure maps. DEC could use these data to track, monitor, and analyze the relationship between extreme heat exposures, UHI formation, and land-cover change across New York State communities. Analysis could track and differentiate land-cover changes within disadvantaged communities and other vulnerable geographical areas compared to overall changes and exposures. This action, and the resulting data and analyses, could help improve the targeting of investments and benefits and inform related planning activities such as the State Reforestation Plan and the Open Space Plan.

Existing Programs, Resources, and Initiatives: CSC coordinators, CSC program, Bond Act

T4.03 Develop and disseminate best practices and guidance for maximizing ecosystem- and community-adaptation benefits of green infrastructure and ecosystem-based adaptation implementation.

Implementation lead: DEC

Involved agencies: AGM, DOS, DOT, EFC, HCR, MTA, OGS, OPRHP

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Develop and disseminate guidance on selection and use of EbA best practices.	• Assess the uptake of guidance in support of local planning activities and update the guidance periodically.

Description of Action: DEC and partner agencies plan to assemble a list of existing high-impact best practices for adapting to extreme heat through EbA, based on recent available research. DEC would develop a new guidance document for selecting and implementing high-impact green infrastructure and EbA best practices that maximize effectiveness for significantly improving ecological integrity, biodiversity, ecosystem services, and community-adaptation benefits in the face of extreme heat. The new or updated guidance document should be included in the Community Risk and Resiliency Act (CRRA) guidance documents series and should be actively disseminated and periodically updated.

Existing Programs, Resources, and Initiatives: Existing guidance documents issued under CRRA, CSC program

T4.04 Develop risk assessments and planning tools under the State's AEM framework for natural resource professionals and farmers to address extreme heat on farms.

Implementation lead: AGM, SWCC

Involved agencies: DEC

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Review available research and existing best practices and resources to address extreme heat impacts on farms. • Soil and Water Conservation Districts (SWCDs) in partnership with AGM and the Soil and Water Conservation Councils (SWCCs) begin to incorporate extreme heat factors into AEM Planning Resources. • SWCDs work with AGM and SWCC on piloting AEM plans that incorporate extreme heat factors across a diverse set of farm types statewide.	• Conduct outreach on extreme heat impacts to build awareness with hundreds of farms statewide. • Track the number of farms that have had AEM plans developed that address climate impacts, including extreme heat, in order to continually build on planning efforts over time. • Existing programs, such as the Climate Resilient Farming (CRF) Program, begin to highlight cost-share assistance available for adaptation and resilience measures to address extreme heat.

Description of Action: Develop AEM tools for natural resource professionals and farmers, including urban and community growers. AEM tools will include background information related to extreme heat impacts, risk assessment factors, planning considerations, and best practices to increase farm resilience to extreme heat and other climate impacts. Working in partnership with the SWCC and SWCDs, AGM will further integrate risk assessments and planning tools into AEM Tier 3 planning protocols.

Existing Programs, Resources, and Initiatives: AEM Program, CRF Program, Agricultural Nonpoint Source (NPS) Abatement and Control Program

T4.05 Accelerate the implementation and maintenance of ecosystem-based and green infrastructure solutions across the state to reduce extreme heat impacts.

Implementation lead: DEC

Involved agencies: DOH, DOS, DOT, EFC, HCR, OGS, OPRHP, SUNY, Thruway

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Identify actionable strategies to incorporate green infrastructure into existing State programs.	• Undertake highly visible demonstration projects of best practices for implementation, maintenance, and monitoring of EbA and green infrastructure projects for extreme heat that also provide other ecosystem services and community benefits, such as job creation, and improve urban design. • Disseminate guidance for maintenance and monitoring of green infrastructure and EbA.

Description of Action: EbA and green infrastructure can reduce the impacts of extreme heat, especially in areas affected by extreme heat, while providing additional ecosystem services to communities.

New York State is taking action to strengthen nature-based solutions, address inequities in access to ecosystem services, scale the implementation of EbA and green infrastructure solutions, and support communities in maintaining and monitoring ecosystems. The State is prioritizing support for expanding the availability of green infrastructure and EbA solutions in communities that face disproportionate impacts, inequities in access to ecosystem services and benefits, and that are especially vulnerable to climate effects, including extreme heat.

DEC intends to mobilize existing programs and grant funding streams, and establish new programs to advance implementation of EbA and green infrastructure projects, prioritizing projects that address UHIs and provide other ecosystem service benefits to disadvantaged communities and heat-vulnerable communities. Activities pursuant to this action would further prioritize vulnerable communities that face inequities in access to ecosystems and the services and benefits they provide. Pursuant to the 2024 SOTS “25 million trees” initiative, this action will include activities to expand and maintain the tree canopy, including in disadvantaged communities. The EHAPWG is convening an interagency committee to coordinate efforts across existing State programs that

support implementation and maintenance of EbA and green infrastructure solutions, including community-led initiatives and partnerships (see action T4.01).

In close collaboration with State agencies, local governments, land banks, private industry, and not-for-profit organizations, this action further establishes a process and criteria to identify State lands, municipal lands, rights of way, parks, abandoned properties, and other public and private lands suitable for implementing EbA and green infrastructure projects. Siting locations should prioritize disadvantaged communities and UHIs.

In addition, DEC should compile and disseminate guidance on best practices for maintaining and monitoring installed green infrastructure and EbA projects, including tree care, to mitigate extreme heat in disadvantaged and other vulnerable communities (see T4.03). Such guidance should also address the interactions of shade deserts, drought, and extreme heat, and their effects on ecosystems' ability to provide related ecosystem services. This guidance should identify other benefits and ecosystem services and help avoid green gentrification. Demonstration projects would be shared to promote best practices and provide successful examples that can be replicated.

Existing Programs, Resources, and Initiatives: DOT projects, DEC Urban and Community Forestry Grants, DOS and DEC Smart Growth Grants, DOS Downtown Revitalization Initiative grants, NYS EO 22, Sustainable Urban Forestry Initiative, CSC grants, Onondaga Earth Corps, NYC food gardens and extensive green infrastructure projects, existing State green infrastructure projects, existing CRRA guidance documents

T4.06 Fund and train arborists, foresters, youth conservation corps, and other conservation staff who will plan, install, and maintain green infrastructure and ecosystem-based adaptation projects to reduce extreme heat impacts.

Implementation lead: DEC

Involved agencies: AGM, DOCCS, DOS, DOL, OCFS, OPRHP

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Develop staff capacity to create and implement training programs.	• Expand existing training programs and develop new training programs in use of best practices for EbA; green infrastructure; and urban forestry implementation, maintenance, and monitoring to address extreme heat. • Train urban forestry professionals to incorporate best practices for EbA, green infrastructure, and urban forestry in all projects to increase tree planting success rate and canopy cover to reduce the UHI effect.

Description of Action: A trained local workforce is critical to improving implementation, maintenance, and monitoring of green infrastructure and EbA projects to reduce extreme heat impacts. Supporting urban forestry programs with tree planting and maintenance, and monitoring of existing mature trees would reduce community tree canopy loss essential for reducing UHIs and impacts from extreme heat, including in heat-vulnerable and disadvantaged communities.[65]

DEC intends to compile and evaluate existing training programs of the current and future green infrastructure and EbA workforce, and identify needs, gaps, and opportunities for training in best practices for EbA, green infrastructure, and urban forestry, leveraging existing successful training models where applicable.

With partner agencies, DEC would develop high-quality training programs for future foresters, arborists, youth conservation corps, and other EbA conservation professions to provide baseline skills that lead to apprenticeship programs or EbA conservation career paths with prevailing and livable wages. This action would prioritize creating opportunities for and recruiting youth from disadvantaged communities, justice-involved individuals (in coordination with DEC's Division of Lands and Forests, as well as OCFS, DOCCS, and DCJS), and individuals from other underrepresented groups for training and apprenticeship programs, and should consider strategies for addressing barriers and inequities that limit successful participation, including by working with BOCES and other school-related programs. DEC should establish a program to provide local governments with temporary initial funding to hire well-paid, highly trained staff as arborists, foresters, youth conservation corps, and other EbA conservation staff. This action would be implemented based on available resources and in coordination with relevant agencies.

Existing Programs, Resources, and Initiatives: DEC Urban and Community Forestry Grants and EJ Grants, DOS NYS Smart Growth program, Onondaga Earth Corps, New York ReLeaf, American Forests Arboriculture Pre-Apprenticeship Curriculum, New York City Urban Forestry Workforce Training

[65] The Scoping Plan's Land Use Chapter recommended the development of a statewide reforestation plan with the goal of "establish[ing] and maintain[ing] 1.7 million acres of forest" to increase carbon sequestration. Climate adaptation-based tree and forest establishment, including tree canopy expansion in response to extreme heat, will support this concurrent goal.

T4.07 Scale the production of heat-adapted trees and seed supply, including increasing the number of, and collaboration among, nurseries needed for implementing ecosystem-based adaptation to address extreme heat impacts.

Implementation lead: DEC **Involved agencies:** AGM, DOCCS, DOS, DOT, OPRHP

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Provide feedback and support in the development of the New York State Reforestation Plan, which will describe strategies for scaling tree and seed supply to meet urban and community forestry and other needs in regard to extreme heat adaptation. • Create guidance for land managers to compare and select heat-adapted tree species. • Create a program that can scale up tree seed collection across the state.	• Enhance collaboration among public and private nurseries and tree planting programs to ensure an adequate supply of trees for use with extreme heat adaptation projects. • Create a program to track and label point of origin of all seeds and trees to ensure use in proper climatic and seed zones. • Plan for increasing the number of nursery facilities to increase seed processing and tree production. • Increase support for tree planting projects and tree maintenance in communities, including disadvantaged communities and other communities vulnerable to extreme heat.

Description of Action: National and statewide tree seed supplies are insufficient to meet the demand for the hundreds of thousands of heat-adapted trees that will be needed in urban and community forests to achieve New York State's goals under the Climate Act, help communities adapt to extreme heat, reduce the effects of UHIs, reduce energy demand during extreme heat events, and adapt to other climate risks. In the 2024 SOTS address, Governor Hochul announced "a goal of planting 25 million trees by 2033 and invigorate our state's tree planting efforts."[66] Governor Hochul further announced a major reinvestment to modernize the Colonel William F. Fox Memorial Saratoga Tree Nursery. Investing in the nursery will enhance seed collection, seed processing, seed production, and seed supply for the state and will boost production of available tree seedlings. Additional scaling and collaboration with private nurseries will be needed to reach the State's goals.

DEC is developing a statewide reforestation plan, which will include a strategy to scale up production of tree and seed supplies and increase the number of native tree nurseries. This expansion will help meet urban forestry, green infrastructure, and EbA project needs in addressing extreme heat impacts and reducing the effects of UHIs.

The Reforestation Plan will include an assessment of current and future demand for seed and tree supplies in the state, with a focus on State and local government demand; an assessment of the production capacities of existing native tree and seed nurseries and the future need for expanded or additional nurseries; and an assessment of current and future labor and employee training needs for tree nurseries. The plan will also address tree seed collection and processing, seed storage, seed and tree distribution for use on public lands, the benefits of establishing and re-establishing new seed orchards, exploring the potential use of tissue culture to increase production

[66] New York State 2024

of trees, and enhancing collaboration among nurseries and tree and seed production programs. DEC should also research and evaluate heat-resilient tree species appropriate for planting as part of ecosystem-based extreme heat adaptation initiatives.

To implement this action, agencies should consider leveraging DEC, OPRHP, DOCCS, and other State-owned nurseries and greenhouses, supporting Indigenous-led, -owned, and -operated nurseries, and collaborating with community partners and the private sector for producing, outplanting, and distributing tree seedlings that could be used in extreme heat adaptation projects. Implementation should include various public-private business models, funding needs and grant resources, and identification of local small-business opportunities for establishing new or expanded tree nurseries, especially small businesses located within disadvantaged communities, benefit corporations, worker cooperatives, and community nonprofit enterprises. DEC should include other partners as appropriate, such as local municipalities, SWCDs, cooperative extensions, land trusts, green banks, and other CBOs representing disadvantaged communities.

Existing Programs, Resources, and Initiatives: Urban and Community Forestry, Trees for Tribs, Buffer in a Bag, NYS Smart Growth, Regenerate NY, DOT rights-of way, Water Quality Improvement Program, OCC adaptation and resilience projects, DEC watershed programs and projects (e.g., Hudson River Estuary, Great Lakes, Mohawk River, Finger Lakes watershed programs; Upper Susquehanna Coalition), CSC program, AGM NPS Abatement and Control Program, CRF programs, New York State Partnerships for Invasive Species Management, Invasive Species Grant Program, OPRHP nurseries, potential collaboration with SUNY-ESF and other colleges (e.g., space, workforce, education and training programs)

T4.08 Initiate a demonstration project communication campaign on best practices for green infrastructure and EbA solutions to extreme heat.

Implementation lead: OPRHP **Involved agencies:** DEC

Short-range (1–2 years) goals	Mid-range (3–5 years) goals
• Conduct demonstration projects installed at key parks. • Develop language and media for EbA education campaign by OPRHP and DEC. • Develop that media and public posting. • Expand the campaign to other agencies.	• Expand the campaign and increase the number of sites involved. • Expand number of partners engaged in the campaign. • Develop and publish language and media for EbA education campaign. • Provide educational materials to educators for presentations to school groups.

Description of Action: To grow awareness of extreme heat and protect New York State parks, OPRHP plans to develop an extreme heat adaptation demonstration project communication initiative at key parks targeted to users and local government officials. These projects would provide location-specific extreme heat and ecosystem service-related examples of implemented best practices with related education campaign signage. An assessment would be made to determine the best platform for public education. If signage is considered, the signs may use informal or humorous messages to increase the awareness of extreme heat adaptation benefits

and ecosystem services of greenspaces and parks. Examples include, “These recently planted shade trees offer a free cooling space during heat waves, with temperatures 10°F lower here in the shade than in the surrounding area.”

In the intermediate timeframe, this action could expand to include additional partners and new and engaging educational materials and target additional sites. OPRHP could seek partnerships and activities that engage educators to involve students and other community youth in building extreme heat awareness, knowledge regarding ecosystems, and the importance of environmental stewardship.

Existing Programs, Resources, and Initiatives: Existing environmental education programs, SUNY, other State agencies with direct public engagement expertise

VIII. IMPLEMENTATION AND EVALUATION

Implementation

Implementation of the extreme heat action plan will be dependent on effective communication, coordination, and collaboration among federal, State, and local partners. Numerous State agencies share leadership responsibilities in addressing extreme heat. The agencies and authorities participating in the EHAPWG will implement the EHAP, with responsibilities designated in individual actions as “lead” and “support.”

An implementation committee, comprised of core agency staff, will meet regularly to coordinate implementation and support agencies and authorities as they implement their individual actions, as well as receive, consider, and incorporate any public feedback on an ongoing basis.

This committee would identify priorities for advancing implementation, coordinate on EHAP-related activities that support local communities and State agencies through the summer months, identify emergent or changing needs and impacts, and identify potential opportunities for enhancement to extreme heat adaptation. The committee would make publicly available an annual pre-summer update to share implementation progress and pre-summer readiness activities and resources.

The structure, activities, and cadence of the EHAPWG and the implementation committee are intended to evolve to complement the goals of statewide climate resilience efforts, including other state adaptation planning processes, and will be continuously evaluated.

Prioritizing Disadvantaged and Heat-vulnerable Communities

This equity-first plan prioritizes addressing extreme heat impacts in communities most impacted by and vulnerable to extreme heat. All actions have been designed with the intent to prioritize disadvantaged and heat-vulnerable communities. Certain actions, and programs within those actions, are designed specifically to support ongoing engagement and community-involved planning, such as actions T1.01, T1.02, T1.05, and T1.06.

Frontline community organizations have unique expertise and experience on extreme heat impacts and can engage in action-specific implementation through processes identified by agency leads, through established engagement structures (such as NYSERDA’s interagency frontline community advisory group, the Energy Equity Collaborative, and the CJWG), and by providing feedback on this plan that will be regularly reviewed and considered in implementation. Lessons learned from these community-centered models can be shared and implemented more broadly where applicable.

To support State agencies in equitably targeting adaptation initiatives to address extreme heat impacts, this plan specifies overarching principles to which all agencies should adhere in implementing EHAP actions (see Section III). In addition, agencies and authorities are encouraged to use available planning tools to identify current and future projected increases in exposure to extreme heat and community vulnerabilities that are related to extreme heat (see Appendix III – Extreme Heat Planning Tools).

Monitoring and Evaluation

To ensure effective and equitable implementation of the EHAP, and to inform future EHAP updates, the EHAPWG will monitor and evaluate the implementation of the plan and its specific actions. M&E will help ensure outcomes and targets are met, resources are generating desired outcomes, and relevant information is available to support future updates. Evaluation enables evidence-based decision-making and is necessary for assessment of individual actions and the overall plan for the outcomes they generate. EHAP evaluation planning draws on the BRACE framework for evaluation. DEC will coordinate monitoring of key indicators (See tables 7–10) in collaboration with the EHAPWG to provide the data for plan evaluation as part of and in support of regular plan updates every five years.

A robust evaluation approach is critical to ensure that the actions of the EHAP are targeted and achieve desired outcomes. Community members, academic experts, and other partners consistently emphasized the importance of a strong evaluation and reporting program in support of the EHAP and its actions. The SAP provided critical input to an initial evaluation, monitoring, and reporting approach in support of the EHAP. State staff recommended incorporating existing reporting requirements and targets, including reporting related to the Climate Act, EO 22, and the Bond Act, to ensure consistency with other State initiatives and synergy across agencies and authorities.

The SAP, through SUNY-UB, supported the development of the baseline M&E program by reviewing extreme heat adaptation-related indicators from 26 U.S. federal adaptation plans, 23 local government plans, and 10 New York State regional sustainability plans. It also assessed seven extreme heat adaptation plans from other states and countries and reviewed the peer-reviewed literature.

The EHAPWG will support monitoring of key impacts and potential indicators (Tables 7–10) relevant for local and State extreme heat action planning in support of future updates to the EHAP. DEC plans to draw on publicly available data for the key indicators listed below. The selected indicators measure extreme heat outcomes across the State, regionally, and at the community level. DEC will track relevant public data and coordinate with the EHAPWG to share key data online.

Table 7. Implementation indicators, New York State Extreme Heat Action Plan

Implementation Progress: This set of indicators tracks progress toward implementation of the actions in the EHAP.				
Indicator	**Description**	**Availability**	**Reporting Level**	**Data Source**
EHAP actions progress	Action progress as a qualitative measure, with metrics as applicable per action	Statewide	Program	EHAPWG, as available
Benefits to disadvantaged communities	The percentage investment to disadvantaged communities in relevant programs, over the entirety of plan implementation	Statewide	Reported as a component of statewide reporting process in accordance with the NYS DAC Investment and Benefits Reporting Guidance	Agencies administering programs
Regional distribution of projects	The distribution of projects, investments, and support on the action level	Statewide	Action	EHAPWG, as available

Table 8. Heat exposure indicators, New York State Extreme Heat Action Plan

Extreme Heat Occurrence: This set of exposure indicators tracks the frequency, severity, and intensity of extreme heat at different geographic scales. This indicator identifies the distribution and recurrence of exposure over time and across geographies.				
Indicator	**Description**	**Availability**	**Reporting Level**	**Data Source**
Surface temperature	Measure of absolute temperature on the surface	Statewide	Census tract	Landsat-8
Heat Index	Measure of absolute temperature and humidity	Under development, to become available in the future		
UHIs	DEC is developing exposure maps for extreme heat and will identify intensity and severity of UHIs. This indicator is also expected to measure mitigation of anthropogenic drivers of extreme heat.	Under development, to become available in the future		
Number of days greater than 90°F and 95°F per year	Reports the annual number of days above certain temperatures at a regional level	Statewide	Individual NWS weather stations	NWS

Extreme Heat Occurrence: This set of exposure indicators tracks the frequency, severity, and intensity of extreme heat at different geographic scales. This indicator identifies the distribution and recurrence of exposure over time and across geographies.				
Indicator	**Description**	**Availability**	**Reporting Level**	**Data Source**
Number and duration of heat waves	Reports number of heat waves and their duration on an annual basis, as well as the counties affected	Statewide	Individual NWS weather stations	NWS
Number of NWS watches, warnings and advisories issued, and number of counties affected, per year	Reports the number of NWS-issued watches, warnings, and advisories on a regional level	Statewide	County level	NWS
AQI in areas under NWS watch, warning, or advisory	Reports the AQI for geographies on an annual basis, based on number of advisories issued per area	Statewide	Regional	DEC

Table 9. Vulnerability indicators, New York State Extreme Heat Action Plan

Vulnerability: This list includes several indicators that assess vulnerability and identify vulnerable populations and communities. These indicators are provided on a geographical scale and should be further developed in the future to better incorporate vulnerabilities, vulnerable communities, and individuals who are not readily captured by the listed indicators.				
Indicator	**Description**	**Availability**	**Reporting Level**	**Data Source**
Disadvantaged communities	Identifies disadvantaged communities	Statewide	Census tract	Climate Justice Working Group (CJWG)
HVI	The HVI can assist in directing adaptation resources based on characteristics of vulnerable populations in that community	Statewide	Census tract	DOH
Language vulnerability	Variables representing minority populations with language barriers	Statewide	Census tract	DOH
Socioeconomic vulnerability	Variables representing economic disadvantage	Statewide	Census tract	DOH
Environmental/urban vulnerability	Variables representing urban and metropolitan areas with older homes	Statewide	Census tract	DOH
Elderly vulnerability	Includes the elderly and elderly individuals living alone (one-person household)	Statewide	Census tract	DOH

Table 10. Outcome indicators, New York State Extreme Heat Action Plan

Outcomes	Indicator	Description	Reporting Level	Data Source
Heat-health outcomes	Number of heat-related deaths	Reports the number of heat-related deaths	Statewide	Various
	Number of ED visits	Reports the number of ED visits due to heat-related illnesses	Statewide	Various
	Number of hospitalizations	Reports the number of heat-related hospitalizations	Statewide	Various
	Number of heat-related reported incidents (workers' health)	Reports the number of heat-related workplace incidents	Statewide	Various
Change in exposure risk factors	Modeled and actual temperature reduction (UHI model)	Compare modeled (using UHI tool, once available) and achieved temperature changes pre- and post-project implementation, to be used for evaluating select projects.	Census tract	DEC UHI mapping (forthcoming)
	Change in tree inequity score	Reports the change in tree inequity over time for mapped locations	Available for select locations	American Forests Tree Equity Finder
	Net tree canopy change	Reports the net tree canopy change based on remote sensing data (see action T4.01)	Census tract	DEC
	Access to transportation	Assesses vehicle access or work commuting method	Census tract	U.S. Census
	Number of municipalities, CBOs, and individuals involved in outreach and training	Reports number of outreach engagements by organization type based on implementation reporting by EHAPWG members	N/A	EHAPWG, as available

Outcomes	Indicator	Description	Reporting Level	Data Source
Planning	Number of municipal or county plans (hazard mitigation plans, climate adaptation plans, extreme heat plans) that consider extreme heat	Assesses the existing municipal and county plans that consider extreme heat. This assessment will be provided irregularly based on capacity to complete the analysis. It will separately report newly funded plans as part of the EHAP.	Municipal and county	EHAPWG, as available
	Number of State agencies and authorities with guidance on facility-level heat response plans, corresponding to EHAP action commitments	Several actions included in the EHAP seek to support development of facility-level heat response plans. This indicator reports overall prevalence of facility-level plans.	Individual facilities	EHAPWG, as available

IX. NEXT STEPS

Leveraging and Coordinating Funding

As part of the 2022 State of the State address, Governor Hochul directed DEC and NYSERDA to manage and coordinate investments to ensure that priority assistance goes to disadvantaged communities. Governor Hochul also signed legislation requiring DEC to study, identify, and recommend actions, and make recommendations for funding to address the impacts of UHIs, particularly in disadvantaged communities.[67] To that end, the EHAPWG

- is developing tools to help local communities identify available resources for extreme heat adaptation;
- leverages synergies among existing State and federal funding programs, organizational resources, public-private partnerships, and other working solutions to implement the actions identified in the EHAP; and
- intends to pursue federal and other funding opportunities to enhance actions and the EHAP throughout implementation and in future updates to the EHAP.

The State has developed a new funding-finder tool to support matching of funding sources to eligible projects from a wide variety of sources. This tool, which is available online,[68] includes funding from sources including, but not limited to, programs using funds from the Bond Act.

The EHAPWG plans to coordinate use of the Environmental Protection Fund, Bond Act, and various State and federal programs to support research, project planning, and implementation through local partners and community leaders, and direct action by the State, particularly actions that can provide co-benefits. The EHAPWG intends to encourage exploration of mechanisms to reduce the burden on not-for-profit and CBOs interested in working with the State to address climate adaptation.

The Environmental Protection Agency (EPA) Region 2 Environmental Justice Thriving Communities Technical Assistance Center which is managed by WE ACT, an environmental justice organization based in NYC, is an available resource for community organizations throughout New York State.[69] The center provides training and technical assistance to help organizations develop their capacity to navigate grant application systems, write strong grant proposals, and effectively manage grants for state and local climate resilience funding.

[67] Chapter 563 of the Laws of 2022.
[68] https://environmentalbondact.ny.gov/pages/funding-opportunities.
[69] https://www.weact.org/tctac/.

Opportunities for Future Enhancement

Adaptation is an iterative process that leverages new capabilities, responds to emergent challenges, and shifts as needs and impacts evolve. The recommendations listed below are opportunities for local and State action that further enhance extreme heat adaptation, build on the actions listed in the EHAP, and create new capabilities and capacities that should become available through implementation of the actions described in the EHAP. Local partners could consider these actions in their planning, and the State should consider taking action to address these needs, now and in the future.

- **Build on ongoing initiatives to deepen community partnerships and support local and community-led extreme heat initiatives.** Several EHAP actions aim at expanding upon and deepening collaborations with community-led initiatives. For example, actions in this plan would strengthen community resilience networks and support community-run resilience hubs and resource centers (T1.02), expand partnerships with communities in communicating about heat-health risks and improving heat-health services to vulnerable populations (T2.02), or support facility upgrades to community lifelines and community-serving facilities (T3.08). The State should continue building upon this work by reducing barriers for CBOs and local governments to access funding that can support facility upgrades to serve as cooling centers. The State should also enhance opportunities to strengthen heat-relief services provided by community-serving organizations and reduce barriers to contracting between State agencies and CBOs to implement climate adaptation activities.

- **Continue scaling the implementation of EbA while avoiding maladaptive effects such as displacement risks and green gentrification.** This plan includes a range of actions to scale EbA to address extreme heat, mitigate UHIs, and adapt to climate risks more broadly (T4.01-T4.10). The State should further enhance the scaled adoption of EbA to address extreme heat and other climate risks (e.g., exploring alternative use models for vacant and abandoned properties and brownfields, expanding shading options at public transit waiting areas; expanding the construction of cool and green roofs, and green facades on buildings, preserving forests and open space in heat-vulnerable communities, and increasing urban tree canopy). As the State continues to implement EbA at scale, it should develop strategies to avoid maladaptive effects, including displacement risks and green gentrification.[70]

[70] Green gentrification relates to such cases where improvements to a community's ecosystems lead to displacement, when large and necessary investments in mitigation, adaptation, and resilience measures inadvertently price out low-income residents by making these communities more appealing to high-income renters and buyers.

- **Understand baseline needs and remove barriers to implementing cooling measures for congregate buildings across the state.** Congregate facilities house highly vulnerable populations and have varied needs and cooling capacities. For the purposes of the EHAP, “congregate settings” refers to those State- or privately owned facilities that contain sleeping units and shared facilities such as prisons, jails, residential senior centers, assisted living facilities, homeless shelters, temporary housing, and mental health facilities. A wide range of tenant needs, highly complex regulatory environments, aging facilities, and varied ownership arrangements require tailored solutions for access to resilient and sustainable cooling. New York State should begin by performing an assessment of the existing cooling availability at congregate settings (see initiative T3.17) that will lay the groundwork for the next phase of prioritizing programming, outreach, and funding for these critical facilities.
- **Continue to broaden access to heat-health services, including mobile and on-site services, to vulnerable workers.** This plan includes several actions to address heat-health impacts on vulnerable workers (T2.06 to T2.09). These actions also seek to enhance on-site outreach and expansion of services for vulnerable workers. In October 2023, a DOH-funded Occupational Health Clinic Network site secured private foundation funding for the purchase of a mobile occupational clinic that will serve the 18-county Eastern Region of New York State, from the Canadian border south to Greene and Ulster counties. The State could encourage and support local partners in expanding service initiatives such as the deployment of mobile occupational health units in support of vulnerable workers, including seasonal and migrant workers.
- **Expand research and adopt strategies to address impacts on rural and suburban communities.** Research that identifies and evaluates extreme heat adaptation solutions for rural and suburban communities is limited, with much of the current research prioritizing urban communities. The State should support and expand research to identify strategies that target rural and suburban communities to inform future updates of this plan. Detailed assessments of rural geographies should identify exposures, vulnerabilities, and adaptive capacities and formulate corresponding strategies, including deployment of dedicated resources, to address the impacts in a strategic and coordinated manner.

APPENDIX I – Definitions

Adaptation (climate) refers to the adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects. It refers to changes in processes, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change, while eliminating aspects of human systems that contribute to climate change or contribute to vulnerabilities.

Adaptive capacity refers to the positive features of people, communities, the built environment, infrastructure, and ecosystems that may reduce the risk posed by a certain hazard.

Albedo, high and low refers to the reflectivity of a surface. If something has a high albedo, it reflects larger amounts of solar radiation back into the atmosphere, while a low albedo surface absorbs most of the solar radiation energy and therefore traps heat and radiates it back out over time (contributing to the UHI effect).

Community-based organization (CBO) refers to a not-for-profit, human, or community service organization that has its origins in the geographic area or community it serves.

Community lifelines enable the continuous operation of critical government and business functions and are essential to human health, safety, or economic security. Lifelines are the most fundamental services in the community that, when stabilized, enable all other aspects of society to function.[71] Community lifelines may include informal networks and hyperlocal lifelines that support and enable the functioning of local communities.

Congregate settings are, for the purposes of the EHAP, those State- or privately owned facilities that contain sleeping units and shared facilities, such as prisons and jails, residential senior centers and assisted living facilities, homeless shelters and temporary housing, and mental health facilities.

Disadvantaged communities are defined in ECL Section 75-0101(5) and identified by the CJWG pursuant to ECL Section 75-0111.[72]

Distributive justice refers to the fair and just distribution of resources and benefits.

Ecosystem-based adaptation involves the conservation, sustainable management, and restoration of ecosystems and the ecosystem services and benefits they provide to reduce the harmful impacts of climate change and climate hazards. EbA is an adaptation-specific subset of nature-based solutions, which is an umbrella term for conservation, restoration, and sustainable use of nature to address societal challenges; EbA looks at the challenge of climate change adaptation and is also different from conservation in general, as EbA responds to particular risks and vulnerabilities that have been assessed in a systematic way.

[71] More information on FEMA's definition of community lifelines and related tools is available at https://www.fema.gov/emergency-managers/practitioners/lifelines.
[72] NYS DEC, "Disadvantaged Communities Criteria" maps (Version 1.0, 2023), https://climate.ny.gov/resources/disadvantaged-communities-criteria/.

Energy burden is the proportion of gross household income spent on energy costs.

Equity refers to fairness and justice and is distinguished from equality. Whereas equality refers to providing something equally to all, equity acknowledges imbalances and recognizes that not everyone starts at the same place.

Exposure refers to the inventory of elements, e.g., people, property, and functions, in an area in which hazard events may occur. Exposure informs the overall risk profile for an individual or community.

Exposure to heat refers to the distributive occurrence of extreme heat conditions.

Extreme heat event refers to various conditions of extreme heat that pose risks, including heat waves, heat domes, heat spells, and individual days of extremely high temperatures.

Green gentrification may be considered a special form of climate gentrification in which large and necessary investments in mitigation, adaptation, and resilience measures that protect new and existing structures, infrastructure, and the natural environment can price out low-income residents by making these communities more appealing to high-income renters and buyers. In this context, green gentrification specifically relates to such cases where improvements to a community's ecosystems lead to displacement.

Greenhouse gas (GHG) means carbon dioxide, methane, nitrous oxide, HFCs, perfluorocarbons, sulfur hexafluoride, and any other substance in the atmosphere that causes a gain of energy in the climate system.

Green infrastructure refers to natural systems and their ecosystem benefits, including forests, floodplains, wetlands, and soils, that provide additional benefits for human well-being.

Heat advisories, warnings, and watches are issued by the NWS.

- **Heat advisories** are issued at the county level when the heat index is predicted to remain above 95°F for two hours (upstate New York) or between 95 and 99°F for two consecutive days or between 100 and 104°F for any duration (NYC). A heat advisory means that people can be affected by heat if precautions are not taken. The issuance of a heat advisory is important to raise public awareness that individuals should take precautions. Heat advisories are also used to trigger other actions and regulations based on existing local or State plans and policies.
- **Excessive heat warnings** are issued at the county level when the heat index is at or above 105°F for two hours or more at any location within the affected county or counties. A heat warning means that some people can be seriously affected by heat if precautions are not taken. Mortality begins to increase as the heat increases or stays above a heat index of 104°F.
- **Excessive heat watches** are issued one to two days in advance of when the probability that the excessive heat warning criteria will be met is 50–79%.

Heat index is a measure indicating the level of discomfort the average person is thought to experience because of the combined effects of temperature and humidity.

Heat wave refers to three or more consecutive days with temperatures at or above 90°F.

Maladaptation refers to such strategies and actions that (a) shift risks and vulnerabilities from one geography, community, or group of people onto others; (b) increase the resilience of one group at the cost of increasing the vulnerabilities of another; (c) increase GHG emissions or reduce the ability of natural lands to sequester carbon; (d) reduce the resilience to other climate hazards or impacts by increasing resilience to extreme heat; (e) create unwanted path dependencies or technological lock-ins; or (f) increase existing or create new inequities or injustices experienced by one or more groups.

Mitigation (climate) refers to efforts to reduce or prevent GHG emissions.

Procedural justice focuses on the ways in which impacted communities can fairly and proactively participate in decision-making processes that affect them.

Resilience refers to the ability of a system to anticipate, absorb, accommodate, or recover (or bounce back) from the effects of a hazardous event in a timely manner. Resilience is the ability of a system to restore and recover from outside system shocks (restoring the system to the pre-shock status), while adaptation includes changes to systems themselves in the context of changing conditions and circumstances.

Risk signifies the possibility of adverse effects in the future, as an interaction of social and environmental processes and the combination of physical hazards and the vulnerabilities of exposed elements.

Urban heat island (UHI) refers to urbanized areas that experience higher temperatures than outlying areas.

Vulnerability refers to the propensity of exposed elements such as human beings, their livelihoods, and assets to suffer adverse effects when impacted by hazard events. Vulnerability is commonly understood as a function of exposure to hazards, individual, community, or system sensitivity to that exposure, and the capacity to adapt.

Wet Bulb Globe Temperature (WBGT) is a measure of heat stress in direct sunlight. WBGT incorporates temperature, humidity, wind speed, sun angle and cloud cover.

Whole-of-community health approaches, also referred to as Health Across All Policies or One Health, have the goal to improve community health and wellness, recognizing that a community's greatest health challenges are complex and often linked with other societal issues that extend beyond health care and traditional public health activities.

APPENDIX II – Members of the CAP and SAP

Table 11. Organizations represented on the Community Advisory Panel

AARP New York	First Circle	NYC Environmental Justice Alliance
BlocPower	Groundwork Hudson Valley	PEACE Inc.
BluePrint Geneva, Inc.	Healthy Schools Network	Radix Ecological Sustainability Center
Climate Solutions Accelerator of the Genesee-Finger Lakes Region	Ibero-American Action League	South Bronx Unite
Coalition of the North East Associations	Joseph's House and Shelter	Staten Island Justice Center
Cornell Farmworkers Program	Mohawk Valley Latino Association	UPROSE Inc.
El Puente	NAACP NYS Conference	

Table 12. Members of the Scientific Advisory Panel

Name	Title	Department	Institution
Deborah Aller	Extension Associate	Soil Health program	Cornell University
Mikhail Chester	Professor	Civil, Environmental, and Sustainable Engineering	Arizona State University
Susan Clark	Assistant Professor	Environment and Sustainability	SUNY-UB
Daniel Conklin	Master's Student	Sustainability Leadership	SUNY-UB
Paul Coseo	Assistant Professor	The Design School, Herberger Institute for Design and the Arts	Arizona State University
Dana Habeeb	Assistant Professor	Informatics	Indiana University Bloomington
Zoé Hamstead	Assistant Professor	City and Regional Planning	University of California at Berkeley
Meghan Holtan	Ph.D. Student	Urban and Regional Planning	SUNY-UB
David Hondula	Associate Professor	Geographical Sciences and Urban Planning	Arizona State University
Nick Rajkovich	Associate Professor	Architecture	SUNY-UB
Augusta Williams	Assistant Professor	Public Health and Preventive Medicine	SUNY-Upstate

APPENDIX III – Extreme Heat Planning Tools

RESOURCES AND TOOLS

UNDERSTANDING CURRENT AND FUTURE EXPOSURE TO EXTREME HEAT

***New York State Climate Impacts Assessment*:** The *New York State Climate Impacts Assessment* provides a science-based analysis of what to expect from climate change in New York State.[73]

Mitigate NY: Interactive New York State hazard mitigation planning website with several tools and resources to support local hazard mitigation planning for extreme heat. [74]

New York State Hazard Mitigation Plan – Extreme Heat Hazard Profile: Provides a detailed, hazard-specific profile for extreme heat, information about State capabilities, and several additional resources related to hazard mitigation planning for extreme heat. [75]

ASSESSING AND MAPPING VULNERABILITIES

Disadvantaged community criteria: The CJWG developed criteria to identify disadvantaged communities. Online static and dynamic maps to identify disadvantaged communities are available.[76]

Climate and Economic Justice Screening Tool: This tool by the U.S. federal government helps communities identify overburdened and underserved census tracts. [77,78]

DOH Heat Vulnerability Index: Maps that identify areas in the state where people are vulnerable to heat based on community and individual characteristics. The maps represent vulnerabilities, not exposure.[79]

DOH Cooling Center Finder: A cooling center finder to help communities and their residents identify the nearest air-conditioned facility to cool down during extreme heat. The tool is not available during the colder months of the year. [80]

DOH County Heat-health Profiles: Resources to help counties identify vulnerabilities to extreme heat and provide them with important data. [81]

Mitigate NY: The interactive New York State hazard mitigation planning website has several tools and resources to support local hazard mitigation planning for extreme heat. [82]

New York State Hazard Mitigation Plan – Extreme Heat Hazard Profile: This profile provides a detailed, hazard-specific profile for extreme heat. [83]

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[73] *New York State Climate Impacts Assessment: Understanding and Preparing for Our Changing Climate*. 2024.
[74] New York State Mitigate NY, *2019 New York State Hazard Mitigation Plan,* https://hazardmitigation.ny.gov/ (last visited Jan. 4, 2024).
[75] New York State Mitigate NY, "New York State Hazard Mitigation Plan 2023 Update," https://shmpdemo.netlify.app/hazard_profiles/extreme_heat/extreme_heat_resources (last visited Jan. 4, 2024).
[76] NYS DEC, "Disadvantaged Communities Criteria" maps (Version 1.0, 2023), https://climate.ny.gov/resources/disadvantaged-communities-criteria/ (last visited Jan. 4, 2024).
[77] U.S. Council on Environmental Quality, "Climate and Economic Justice Screening Tool" (Version 1.0), https://screeningtool.geoplatform.gov/en/#7.92/16.333/-70.354 (last updated Nov. 22, 2022).
[78] The White House, "Justice40: A Whole of Government Initiative," https://www.whitehouse.gov/environmentaljustice/justice40/ (last visited Jan. 4, 2024)

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[79] NYS DOH, "Heat Vulnerability Index," https://www.health.ny.gov/environmental/weather/vulnerability_index/ (last updated July 2023).
[80] NYS DOH, "Cooling Center Finder," https://www.health.ny.gov/environmental/weather/cooling/ (last updated Sept. 2023). Please note that the Cooling Center Finder is only active during the warmer months of the year.
[81] NYS DOH, "County Heat and Health Profile Reports," https://www.health.ny.gov/environmental/weather/profiles/#:~:text=County%20Heat%20and%20Health%20Profiles,list%20some%20available%20adaptation%20resources.(last updated Dec. 2021).
[82] New York State Mitigate NY, "2019 New York State Hazard Mitigation Plan," https://hazardmitigation.ny.gov/ (last visited Jan. 4, 2024).
[83] New York State Mitigate NY, "New York State Hazard Mitigation Plan 2023. Update," https://shmpdemo.netlify.app/hazard_profiles/extreme_heat/extreme_heat_resources (last visited Jan. 4, 2024).

APPENDIX IV – Key Programs Supporting Local Extreme Heat Adaptation

.KEY STATE PROGRAMS	
Environmental Justice Grants Programs	**STATE AGENCY:** Department of Environmental Conservation **DESCRIPTION:** The DEC Office of Environmental Justice (OEJ) offers competitive grants to support and empower communities as they develop and implement solutions that significantly address environmental issues, harms, and health hazards; build community consensus; set priorities; and improve public outreach and education.
Climate Smart Communities (CSC) Program	**STATE AGENCY:** Department of Environmental Conservation **DESCRIPTION:** The program provides matching grants to cities, towns, villages, counties, or boroughs (referring only to Bronx, Queens, Brooklyn, and Staten Island) residing within New York State for eligible climate change mitigation, adaptation, and planning and assessment projects.
Hazard Mitigation Assistance Grants	**STATE AGENCY:** Division of Homeland Security and Emergency Services **DESCRIPTION:** FEMA's hazard mitigation assistance provides funding for eligible mitigation measures that reduce disaster losses.
Smart Growth Countywide Resilience Program	**STATE AGENCY:** Department of State **DESCRIPTION:** Grants support the creation of countywide resiliency plans that primarily address climate change risks and vulnerabilities associated with an increase in frequency and severity of storm and precipitation events, sea level rise, storm surge, flooding, drought, extreme heat, and other climate hazards.
Urban and Community Forest Grants	**STATE AGENCY:** Department of Environmental Conservation **DESCRIPTION:** Grants are available for tree inventories, community forest management plans, tree planting, and tree maintenance to improve the health of urban and community forests and increase the sustainability of forestry programs.
Urban Farms and Community Gardens Grants	**STATE AGENCY:** Department of Agriculture and Markets **DESCRIPTION:** Supports community growing spaces and recognizes their impact on local food resiliency and food security. Successful projects will develop and enhance urban farms, school gardens, and community gardens in New York State.
Community Forest Conservation Grants	**STATE AGENCY:** Department of Environmental Conservation **DESCRIPTION:** Funds municipal land acquisition for community forests, which are vital for wildlife habitat, UHI and flood mitigation, recreational opportunities, mental health, air quality, water quality, and to meet the obligations outlined in the Climate Act.

.KEY STATE PROGRAMS	
Clean Green Schools Initiative	**STATE AGENCY:** Energy Research and Development Authority **DESCRIPTION:** Provides funding for under-resourced P-12 schools to complete planning activities and projects that reduce energy use, decarbonize building portfolios, improve indoor air quality, and create clean energy educational opportunities. The Clean Green Schools Initiative aims to create healthier, more productive learning environments while advancing the State's clean energy and climate goals.
Comfort Home Program	**STATE AGENCY:** Energy Research and Development Authority **DESCRIPTION:** Provides incentives to homeowners in select markets toward "seal and insulate" packages that help solve common problems like drafts, uncomfortable temperatures, and ice dams. Additional rebates are available for installing heat pumps.
New Construction Program	**STATE AGENCY:** Energy Research and Development Authority **DESCRIPTION:** Provides guidance on best practices and funding opportunities to advance building efficiency and decarbonization in new residential and commercial construction.
Green Jobs – Green New York	**STATE AGENCY:** Energy Research and Development Authority **DESCRIPTION:** Provides access to energy assessments, installation services, low-interest financing, and pathways to training for various green-collar careers for residents, small businesses, not-for-profits, and multifamily building owners.
Residential Energy Assessment Program	**STATE AGENCY:** Energy Research and Development Authority **DESCRIPTION:** Residential energy assessments (also referred to as home energy assessments) are often the first step in determining how efficient a home is and where it might be wasting energy. Assessments will help the homeowner understand which parts of the home are working well already and provide recommendations on measures intended to save energy and improve efficiency, comfort, and safety of the home.
Regional Clean Energy Hubs	**STATE AGENCY:** Energy Research and Development Authority **DESCRIPTION:** Funds regionally operated clean energy hubs that facilitate outreach, education, and engagement on behalf of NYSERDA at the local level, so all New Yorkers can benefit from awareness of and access to NYSERDA's clean energy programs and initiatives. Each hub works directly with its local community to facilitate the development of an inclusive statewide clean energy economy and achieve the Climate Act goal of ensuring that 35% of the benefits associated with clean energy and energy efficiency investments are realized in historically disadvantaged communities.
Empower+ Program	**STATE AGENCY:** Energy Research and Development Authority **DESCRIPTION:** Offers no-cost and low-cost energy efficiency services such as insulation, air sealing, and installation of energy efficient lighting and appliances to low- and moderate-income homeowners and renters.

.KEY STATE PROGRAMS	
Home Energy Assistance Program (HEAP)	**STATE AGENCY:** Office of Temporary and Disability Assistance **DESCRIPTION:** Can help eligible New Yorkers heat and cool their homes. This may include a cooling assistance benefit for eligible New Yorkers to purchase and install an air conditioner or fan.
Weatherization Assistance Program (WAP)	**STATE AGENCY:** Division of Homes and Community Renewal **DESCRIPTION:** Assists income-eligible homeowners and eligible renters in New York State by reducing heating and cooling costs through energy-conservation measures, while also addressing health and safety concerns in their homes.

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