

Adapting to Extreme Heat in New York State

October 31, 2024

Leo Matteo Bachinger, PhD

Office of Climate Change

New York State Department of Environmental Conservation

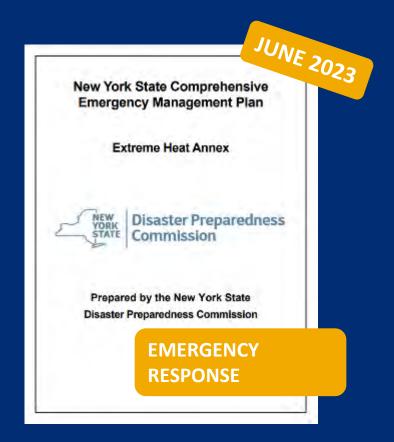
January 2022 – State of the State Directive

DEC and NYSERDA to develop the Extreme Heat Action Plan to address impacts in

- disadvantaged communities;
- areas of employment; and
- recreational zones across the state.

Help coordinate interagency investments to ensure that priority assistance goes to disadvantaged communities on the front lines of heat exposure.









PHASE 1: Interim Recommendations







Drafting teams



Surveying Resources, possible actions



Interim
Report &
Actions



Stakeholder engagement (focus groups)



FEB – MAR 2022

MAR – JUN 2022

JUN – SEP 2022







Interim Recommendations





- Defines future planning processes
- Summarizes key impacts
- Identifies 15 immediate actions
 - Coordination activities
 - Cooling in public spaces
 - Heat health warning systems, protocols
 - Community partnerships
 - Housing and cooling
 - Planning



Phase 2: Participatory Planning



Focus Group Meeting

Two round tables (local governments, community-based organizations) to help inform planning process.



Action Forums
1-2 meetings/month with State staff, community representatives, local government officials, experts.



Regional workshops

Seven reginal workshops to understand impacts across communities.



Advisory Panels

Iterative reviews of key EHAP deliverables, including final drafts.



Planning Forums



Phase 1: Goal Setting

Nov - Dec 2022



Phase 2: Assess Impacts and Vulnerabilities

Jan - Mar 2023



Phase 3: Develop Adaptation Actions

Mar – June 2023



Phase 4: Refine Adaptation Actions

July – Aug 2023



Phase 5: Draft EHAP

Sept – Oct 2023



Phase 6: Review and Routing

Nov 2023 – May 2024



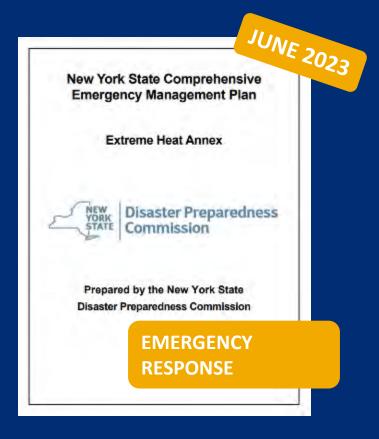
Phase 7: Release of the EHAP

June 2024

 Collaborative Planning Forums: 211 unique participants including representatives of 45 communitybased organizations and 30 members of municipalities participated in forums to develop the EHAP.



The Extreme Heat Annex



- Led by DHSES
- Released June 2023
- Emergency response based on existing resources and capabilities





Phase 1: Goal Setting

Nov - Dec 2022



Phase 2: Assess Impacts and Vulnerabilities

Jan - Mar 2023



Phase 3: Develop Adaptation Actions

Mar – June 2023

Regional Community Workshops



Phase 4: Refine Adaptation Actions

July – Aug 2023



Phase 5: Draft EHAP

Sept – Oct 2023



Phase 6: Review and Routing

Nov 2023 – May 2024



Phase 7: Release of the EHAP

June 2024

• Regional Community Workshops Participants: 180 people attended 7 in-person workshops across NYS, held to hear extreme heat challenges.





Phase 1: Goal Setting

Nov - Dec 2022



Phase 2: Assess Impacts and Vulnerabilities

Jan – Mar 2023



Phase 3: Develop Adaptation Actions

Mar – June 2023

DRAFTING THE PLAN



Phase 4: Refine Adaptation Actions

July – Aug 2023



Phase 5: Draft EHAP

Sept – Oct 2023



Phase 6: Review and Routing

Nov 2023 – May 2024



Phase 7: Release of the EHAP

June 2024

- EHAPWG Drafting Teams: Throughout the summer, agency staff evaluate strategies and options for applicability in NYS, assess feasibility for implementation, and draft the EHAP.
- Three rounds of review: The plan is further developed over three round of review (pre-review in summer 2023, full review in early fall 2023, and final review of draft in spring 2024.





Phase 1: Goal Setting

Nov - Dec 2022



Phase 2: Assess Impacts and Vulnerabilities

Jan – Mar 2023



Phase 3: Develop Adaptation Actions

Mar – June 2023



Phase 4: Refine Adaptation Actions

July – Aug 2023



Phase 5: Draft EHAP

Sept – Oct 2023

Advisory Panels, Finalizing the plan



Phase 6: Review and Routing

Nov 2023 – May 2024



Phase 7: Release of the EHAP

June 2024

- Community Advisory Panel (CAP): 20 NYS community-based environmental justice and advocacy organizations provided input and review to develop the EHAP.
- Scientific Advisory Panel (SAP): Convened by SUNY, a panel of 11 academic experts provided feedback on the EHAP.

EXTREME HEAT ACTION PLAN





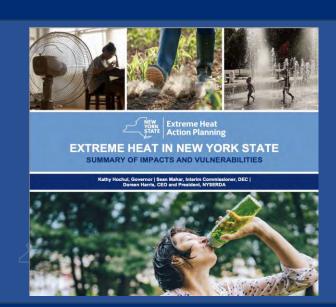
Putting Adaptation into Action

- Missions, goals, and principles
- 49 strategies in four action tracks
- Short- and mid-range goals
- Implementation and evaluation

SUMMARY REPOR

EXTREME HEAT IN NEW YORK STATE

- Summarizes impacts and vulnerabilities
- Identifies vulnerable and exposed communities



EHAP Mission

The Extreme Heat Action Plan aims to

- equitably reduce the impacts of extreme heat;
- help local communities adapt to extreme heat in a changing climate; and
- support local capacity to act.

Go to page 34

TABLE OF CONTENTS

MESSAGE FROM THE GOVERNOR	5
ACKNOWLEDGMENTS	6
ABBREVIATIONS, INITIALISMS, AND ACRONYMS	7
I. INTRODUCTION	0
II. EHAP ACTIONS AT A GLANCE	2
III. EXTREME HEAT IN A CHANGING CLIMATE	6
IV. MISSION, GOALS, AND PRINCIPLES	0
V. PLAN DEVELOPMENT	4
The Extreme Heat Action Plan Work Group	
VI. EXISTING EXTREME HEAT RESPONSE 2 Building a Sustainable and Resilient New York State 28 Advancing Climate Adaptation 29 Responding to Heat Emergencies 30	8
VII. EXTREME HEAT ADAPTATION ACTIONS	3
VIII. IMPLEMENTATION AND EVALUATION9	3
IX. NEXT STEPS 9	9
APPENDIX I – Definitions	2
APPENDIX II – Members of the CAP and SAP10	5
APPENDIX III – Extreme Heat Planning Tools	6
APPENDIX IV – Key Programs Supporting Local Extreme Heat Adaptation10	
REFERENCES	



Action Track Overview

49 actions are represented in the following 4 action tracks.

TRACK 1

ADAPTATION
PLANNING AND
IMPLEMENTATION

Build Capacity for Adaptation Planning and Implementation

> Promote Research, Development, and Innovation

TRACK 2

PREPAREDNESS, COMMUNICATION, AND WORKERS' SAFETY

Coordinate Preparedness and Pre-event Communication

Protect Workers' Health and Safety

TRACK 3

BUILT ENVIRONMENT, INFRASTRUCTURE, AND MANAGED SPACES

Support Resilient Built Environments

Advance Adaptation in Educational, Institutional, and Congregate Settings

Develop Resilient and Equitable Infrastructure

TRACK 4

ECOSYSTEM-BASED ADAPTATION

Prioritize Ecosystembased Adaptation and Green Infrastructure Solutions



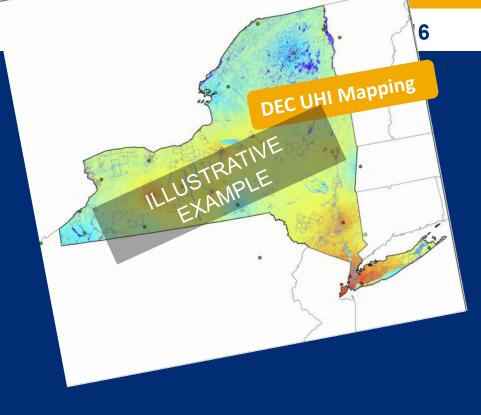
EXPOSURE MAPPING

TRACK 1

ADAPTATION
PLANNING AND
IMPLEMENTATION

Build Capacity for Adaptation Planning and Implementation

> Promote Research, Development, and Innovation





EXPOSURE MAPPING

TRACK 1

ADAPTATION
PLANNING AND
IMPLEMENTATION

Build Capacity for Adaptation Planning and Implementation

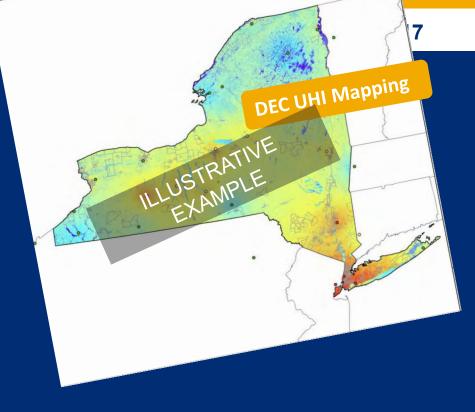
> Promote Research, Development, and Innovation

Action T1.02

Support development of regional community resilience networks and community resilience hubs

Leading Agency DEC

Supporting DHSES, DOH, HCR, OGS





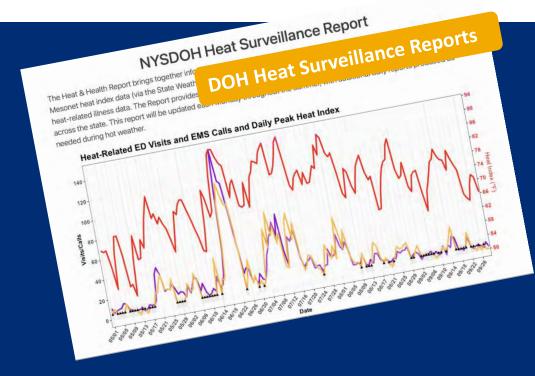
HEAT SURVEILLANCE

TRACK 2

PREPAREDNESS, COMMUNICATION, AND WORKERS' SAFETY

Coordinate Preparedness and Pre-event Communication

Protect Workers' Health and Safety





HEAT SURVEILLANCE

TRACK 2

PREPAREDNESS, COMMUNICATION, AND WORKERS' SAFETY

Coordinate Preparedness and Pre-event Communication

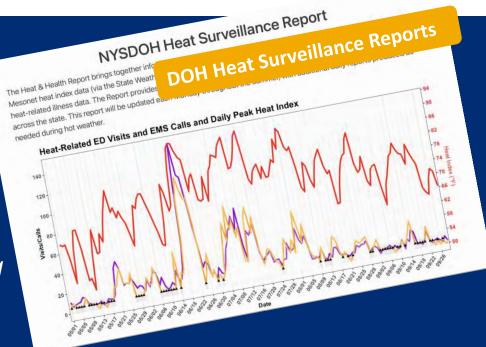
Protect Workers' Health and Safety

Action T2.03

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

Leading AgencyOPRHP

Supporting DOH, DOS, DASNY





EMPLOYER GUIDANCE

TRACK 2

PREPAREDNESS, COMMUNICATION, AND WORKERS' SAFETY

Coordinate Preparedness and Pre-event Communication

Protect Workers' Health and Safety

Action T2.10

Protect workers' health through engagement with local partners in focused outreach activities.

Leading Agency DOL

Supporting DOH





COOL SCHOOLS

TRACK 3

BUILT ENVIRONMENT, INFRASTRUCTURE, AND MANAGED SPACES

Support Resilient Built Environments

Advance Adaptation in Educational, Institutional, and Congregate Settings

Develop Resilient and Equitable Infrastructure





COOL SCHOOLS

TRACK 3

BUILT ENVIRONMENT, INFRASTRUCTURE, AND MANAGED SPACES

Support Resilient Built Environments

Advance Adaptation in Educational, Institutional, and Congregate Settings

Develop Resilient and Equitable Infrastructure

Action T3.01

Expand access to affordable cooling through additional funding for cooling equipment, expanded reimbursement under medical insurance.

Leading Agency OTDA, DOH





COOL SCHOOLS

TRACK 3

BUILT ENVIRONMENT, INFRASTRUCTURE, AND MANAGED SPACES

Support Resilient Built Environments

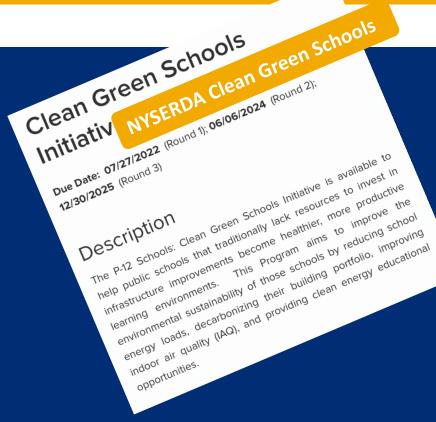
Advance Adaptation in Educational, Institutional, and Congregate Settings

Develop Resilient and Equitable Infrastructure

Action T3.19

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

Leading Agency DOT, Thruway





EXPOSURE MAPPING

TRACK 1

ADAPTATION
PLANNING AND
IMPLEMENTATION

Build Capacity for Adaptation Planning and Implementation

> Promote Research, Development, and Innovation

TRACK 4

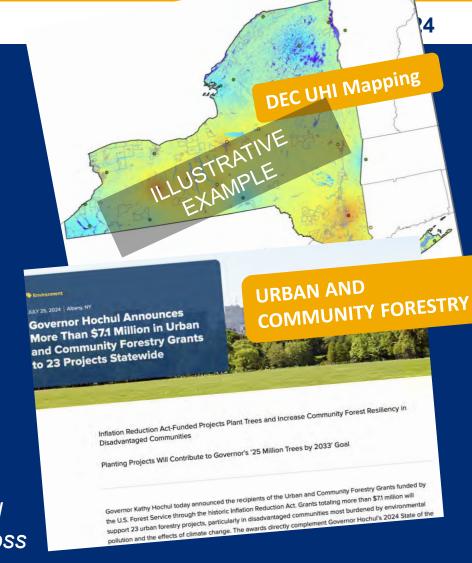
ECOSYSTEM-BASED ADAPTATION

Prioritize Ecosystembased Adaptation and Green Infrastructure Solutions



Accelerate the implementation and maintenance of EbA solutions across the State.

Leading Agency DEC





EHAP Implementation

- Through the EHAPWG, DEC and NYSERDA are working with lead and support agencies to implement EHAP actions.
- The EHAPWG will monitor and evaluate the implementation of the plan and its specific actions to ensure outcomes are met.
- Pre-summer readiness updates will be made available yearly to share implementation progress and support extreme heat adaptation.



Provide Feedback to Inform Implementation

- The New York State Extreme Heat Action Plan is a "living document," meaning it will be updated to guide ongoing extreme heat adaption efforts.
- The State invites **continued public input** to inform future updates to this plan.
- Your input can help ensure that New York State and its communities can respond effectively to current and future impacts of extreme heat.

Scan to Submit Feedback Online



ON.NY.GOV/EXTREMEHEAT



Thank You

Leo Matteo Bachinger
DEC Office of Climate Change
Leo.Bachinger@dec.ny.gov

CONTACT EHAP: extreme-heat@dec.ny.gov



EHAP Working Group (EHAPWG) Members

EHAPWG Members		
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)		

EHAP – A PLAN FOR ACTION



Highlighted Actions: T1.05

Action Track 1

Adaptation Planning and Implementation

Action Track 2

Preparedness, Communication, and Workers' Safety

Action Track 3

Built Environment, Infrastructure, and Managed Spaces

Action Track 4

Ecosystem-Based Adaptation

Build Capacity for

Adaptation Planning ---and Implementation

Promote Research, Development, and Innovation

Action T1.05

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

Leading Agency DEC



Highlighted Actions: T1.07

Action Track 1

Adaptation Planning and Implementation

Action Track 2

Preparedness, Communication, and Workers' Safety

Action Track 3

Built Environment, Infrastructure, and Managed Spaces

Action Track 4

Ecosystem-Based Adaptation

Build Capacity for Adaptation Planning and Implementation

Promote Research, Development, and Innovation

Action T1.07

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

Leading AgencyDOH

Supporting DEC



Highlighted Actions: T2.03

Action Track 1

Adaptation Planning and Implementation

Action Track 2

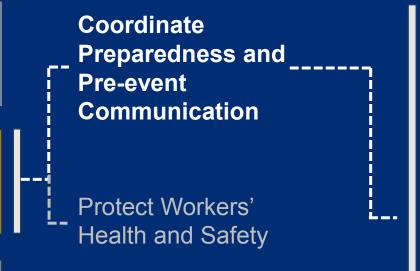
Preparedness, Communication, and Workers' Safety

Action Track 3

Built Environment, Infrastructure, and Managed Spaces

Action Track 4

Ecosystem-Based Adaptation



Action T2.03

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

Leading Agency OPRHP

Supporting DOH, DOS, DASNY



Highlighted Actions: T2.10

Action Track 1

Adaptation Planning and Implementation

Action Track 2

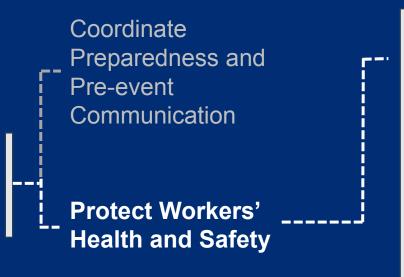
Preparedness, Communication, and Workers' Safety

Action Track 3

Built Environment, Infrastructure, and Managed Spaces

Action Track 4

Ecosystem-Based Adaptation



Action 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.

Leading Agency DOL

Supporting DOH



Highlighted Actions: T3.01

Action Track 1

Adaptation Planning and Implementation

Action Track 2

Preparedness, Communication, and Workers' Safety

Action Track 3

Built Environment, Infrastructure, and Managed Spaces

Action Track 4

Ecosystem-Based Adaptation

Support Resilient -- Built **Environments** Advance Adaptation in Educational, Institutional, and Congregate Settings Develop Resilient and Equitable Infrastructure

Action T3.01

Expand immediate access to affordable cooling through additional funding for cooling equipment, expanding reimbursement under medical insurance, and continued advocacy.

Leading AgencyOTDA

Supporting DOH



Highlighted Actions: T3.12

Action Track 1

Adaptation Planning and Implementation

Action Track 2

Preparedness, Communication, and Workers' Safety

Action Track 3

Built Environment, Infrastructure, and Managed Spaces

Action Track 4
Ecosystem-Based Adaptation

Support Resilient **Built Environments Advance Adaptation in** Educational, Institutional, and Congregate **Settings** Develop Resilient and Equitable Infrastructure

Action T3.12

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

Leading Agency

NYSERDA

Supporting

NYSED, DEC



Highlighted Actions: T3.20

Action Track 1

Adaptation Planning and Implementation

Action Track 2

Preparedness, Communication, and Workers' Safety

Action Track 3

Built Environment, Infrastructure, and Managed Spaces

Action Track 4

Ecosystem-Based Adaptation

Support Resilient
Built Environments

Advance Adaptation in Educational, Institutional, and Congregate Settings

Develop Resilient and Equitable Infrastructure

Action T3.20

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

Leading Agency

MTA

Supporting

DEC, DOT, NYPA, NYSERDA



Highlighted Actions: T4.06

Action Track 1

Adaptation Planning and Implementation

Action Track 2

Preparedness, Communication, and Workers' Safety

Action Track 3

Built Environment, Infrastructure, and Managed Spaces

Action Track 4

Ecosystem-Based Adaptation

Prioritize Ecosystembased Adaptation and ----Green Infrastructure Solutions

Action 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 to reduce extreme heat impacts.

Leading Agency DEC

Supporting

AGM, DOCCS, DOS, DOL, OCFS, OPRHP



Community Advisory Panel (CAP) Members

CAP Member Organizations		
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 NYCHA Branch	



Scientific Advisory Panel (SAP) Members

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



Action Track 1: Adaptation Planning and Implementation

	Promote Research, Development, and Innovation		
Code	Action Title		
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 response.		
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		
Code	Action Title		
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.		

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

	Protect Workers' Health and Safety		
Code	Action Title		
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		
Code	Action Title	
T3.01	Expand immediate access to affordable cooling through additional funding for cooling equipment, expanding reimbursement under medical insurance, and continued advocacy.	
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 the 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 and outreach to enable the voluntary use of heat-mitigating design measures and strategies, with a focus on disadvantaged communities.	

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

Advance Adaptation in Educational, Institutional, and Congregate Settings		
Code	Action Title	
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.	



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

Develop Resilient and Equitable Infrastructure		
Code	Action Title	
T3.18	Explore options for strengthening consumer protections during heat waves.	
T3.19	Incorporate extreme heat considerations in key transit 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	
Code	Action Title	
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 ecosystem-based adaptation 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 ecosystem-based adaptation to address extreme heat impacts.	
T4.08	Initiate a demonstration project communication campaign on best practices for green infrastructure and ecosystem-based adaptation solutions to extreme heat.	