



DRAFT

California Climate Adaptation Strategy

May 2024

Public comment period ends July 12, 2024

Options to submit written input include:

Mail:

California Natural Resources Agency,

715 P Street, Sacramento, CA 95814

Email: climateresilience@resources.ca.gov

Additionally, we will hold regional workshops, public meetings, webinars, and tribal listening sessions to solicit input on the draft. Details will be posted on the [California Climate Adaptation Strategy](#) web page.

Note to Readers

Thank you for your review of the draft 2024 California Climate Adaptation Strategy! It was informed by the contributions of people across California, updated legislative direction enacted through [AB 1384](#) (Gabriel, 2022), and collaboration among dozens of state entities.

California State government is statutorily required to update our climate adaptation strategy every three years ([AB 1482](#), Gordon, 2015). Our approach to the 2024 California Climate Adaptation Strategy (Strategy) is designed to accelerate climate adaptation action across regions and sectors in California; identify how key state agency actions fit together to achieve the State's six climate resilience priorities; and build on successes and lessons learned.

This draft builds on the overhaul of our approach to this Strategy undertaken in 2021, when we delivered a more integrated framework reflecting key elements of the State's latest sector-specific plans; success metrics and timeframes for achieving them to increase transparency and accountability; and a dynamic format that reflects the evolving nature of climate adaptation. All metrics and timeframes presented in the draft are an area of focus for further development between this draft and the final 2024 Strategy. We welcome specific recommendations on ways to make the metrics and timeframes more specific, measurable, and actionable.

The actions and success metrics in the Strategy include:

1. Direct actions State government is taking to improve climate resilience through its responsibilities for managing landscapes and infrastructure, among other assets and resources; and
2. State resources, such as tools, funding, and guidance, that support on the ground capacity for others to advance resilience planning and projects.

This range of activities reflects the diverse avenues to strengthen climate resilience through direct action as well as partnerships and support for local and regional partners.

California's current Climate Adaptation Strategy is available at this [California Climate Adaptation Strategy website](#) rather than presented in traditional document form. We welcome input on how to improve the website layout, organization, and content to drive traction and make it easier to use and navigate.

This document includes all proposed changes to the current Adaptation Strategy. It lists the Strategy's existing climate adaptation goals, actions, and success metrics and indicates where new or updated actions or success metrics are proposed. For new metrics, a link to the relevant website is provided when possible. For existing and largely unchanged actions and metrics, more detail can be found on our existing [website](#).

Many state entities have successfully piloted new processes and partnerships to advance resilience since the 2021 strategy, including improvements to engagement, consultation, technical assistance, and capacity building. As a result, several success metrics in this draft have an "Ongoing" or "Annual" timeframe, reflecting the continued integration of these practices into the State's resilience efforts moving forward. These procedural improvements

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

are a step forward in the State's pursuit of equitable climate action through transparent and inclusive processes and are by no means an endpoint of this work. Even for these ongoing and annual metrics, we welcome feedback to improve upon these processes so we can continue to advance resilience, particularly in California's most vulnerable communities.

This draft also integrates key actions from the California's latest climate adaptation plans and initiatives, such as the update to our [Extreme Heat Action Plan](#) and the release of "[California's Water Supply Strategy, Adapting to a Hotter, Drier Future.](#)"

Thank you again for your engagement and interest. We invite you to submit public comment through July 12, 2024. Additionally, we will hold tribal listening sessions and public workshops to solicit input on the draft. For further information on our work to update the Climate Adaptation strategy and details on upcoming opportunities to learn more and provide feedback, please visit the California Natural Resources Agency's [California Climate Adaptation Strategy](#) web page as well as the main [California Climate Adaptation Strategy website](#).

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Table of Contents

PRIORITY: Strengthen Protections for Climate Vulnerable Communities	6
GOAL A: Engage with and build capacity in climate vulnerable communities	7
GOAL B: Improve understanding of climate impacts on California's communities, including what drives vulnerability	13
GOAL C: Build resilience in climate vulnerable communities through state programs.....	15
PRIORITY: Bolster Public Health and Safety to Protect Against Increasing Climate Risks	25
GOAL A: Reduce urgent public health and safety risks posed by climate change	26
GOAL B: Consider future climate impacts in governmental planning and investment decisions.....	34
GOAL C: Improve infrastructure's climate resilience to protect public health and safety..	39
PRIORITY: Build a Climate Resilient Economy	42
GOAL A: Expand economic opportunities for California by building climate resilience	43
GOAL B: Deepen understanding of climate change effects on California's economy.....	47
PRIORITY: Accelerate Nature-Based Climate Solutions and Strengthen Climate Resilience of Natural Systems	49
GOAL A: Increase pace and scale of nature-based climate solutions	49
GOAL B: Increase landscape connectivity and establish climate refugia	54
GOAL C: Integrate nature-based climate solutions into relevant infrastructure and investments	57
GOAL D: Accelerate state processes to support implementation of nature-based climate solutions	59
PRIORITY: Make Decisions Based on the Best Available Climate Science	62
Goal A: Support actionable climate science.....	62
Goal B: Operationalize climate science into decision making	68
PRIORITY: Partner and Collaborate to Leverage Resources	74
GOAL B: Increase awareness of climate adaptation and resilience issues	79

Planned Landing Page Updates..... 82

Landing Page: Regions..... 82

Landing Page: Tribes..... 82

Landing Page: A Timeline of California's Climate Adaptation Policy 82

PRIORITY: Strengthen Protections for Climate Vulnerable Communities

Reducing risks from climate change requires strengthening protections and increasing the resilience and resources of communities and people to prepare, respond, recover, and adjust to climate-related impacts. Yet, some communities face compounding vulnerabilities and experience disproportionate impacts, such as low-income, rural communities, and tribal nations. These compounding vulnerabilities are the legacy of disenfranchisement and underinvestment that can begin to unravel through equitable processes that center lived experience, needs, and solutions identified by vulnerable communities.

[Climate vulnerability](#) describes the degree to which natural, built, and human systems are at risk of exposure to climate change impacts. The most climate vulnerable communities experience heightened risk and increased sensitivity to climate change and have less capacity and fewer resources to cope with, adapt to, or recover from climate impacts. These disproportionate risks are caused by physical (built and environmental), social, political, and/or economic factor(s), which are exacerbated by climate impacts. These factors include, but are not limited to income inequality, racism, and discrimination based on national origin, gender, and sexual orientation and identification.

A resilient California can help all communities weather and adjust to climate change and can help all communities thrive. A climate resilient “California for All” requires focused support for those communities most vulnerable to climate threats and experiencing compounding inequities. Therefore, one of California’s climate adaptation priorities is to strengthen climate resilience in communities most vulnerable to the climate crisis. Achieving this priority requires an approach of both procedural equity, where vulnerable communities are empowered to influence planning and investment decisions, as well as distributional equity, where vulnerable communities are prioritized for adaptation action to make up for past under-investment. Through this Strategy, California is charting a new course in its processes to build trust and strengthen relationships with vulnerable communities so our path to a climate resilient future is also one that advances equity and justice.

Note to Readers - Highlights and Trends from the 2021 to 2024 Update: This draft of the Strategy reflects the integration of equity-centered practices into state processes with the shift of numerous success metrics to ongoing and annual implementation timeframes. These success metrics include practices like early engagement and consultation, establishing meaningful partnerships, prioritizing language access, creating set-aside funding, and providing technical assistance for vulnerable communities and tribes. This Priority also includes new success metrics contributed by a recently established state entity, the Office of Community Partnerships and Strategic Communications. The Office manages California’s highest priority community engagement and public awareness efforts, including climate justice, water conservation, and extreme heat. By directly engaging Californians, including those experiencing the greatest health and social inequities, with culturally competent and actionable information, the Office plays a significant role in centering vulnerable communities in California’s climate response.

GOAL A: Engage with and build capacity in climate vulnerable communities

Action 1: Support California Native American tribes' development of climate change and health equity resilience planning tools and capacity.

- **Success Metric:** Tribal health or environmental programs accessing technical assistance resources for leadership and planning.
 - Timeframe: Annually
 - Agency/Agencies: Health and Human Services Agency - Department of Public Health
- **Success Metric:** Plans, tools, and resources developed by tribes or tribal programs receiving technical assistance.
 - Timeframe: Annually
 - Agency/Agencies: Health and Human Services Agency - Department of Public Health | Governor's Office of Planning and Research, Planning and Policy, Strategic Growth Council
- **Success Metric:** Develop and implement early and often consultation strategies with California Native American tribes involving shared decision-making and a focus towards long-term management agreements that build climate resilience.
 - Timeframe: Ongoing
 - Agency/Agencies: All relevant state agencies
- **Success Metric:** Incorporate Traditional Ecological Knowledges and tribal expertise into land and resource management practices and decisions to build climate resilience.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency

Action 2: Support state resources and promote partnerships to expand the capacity of under-resourced communities, including California Native American tribes, to lead and implement climate change mitigation, adaptation, and resilience plans, programs, and projects.

- **Success Metric:** Under-resourced communities, including rural, disadvantaged, and tribal communities, have increased success in accessing state climate resilience funding.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Planning and Research, Planning and Policy, Strategic Growth Council
- **Success Metric:** Increased participation and leadership in climate adaptation decision-making processes and projects by climate vulnerable communities and community organizations.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Planning and Research, Planning and Policy, Strategic Growth Council | Environmental Protection Agency | Natural Resources Agency – San Francisco Bay Conservation and Development Commission, Coastal Commission
- **Success Metric:** Increased engagement and input of Delta communities likely to be most affected by climate change, including through sharing vulnerability assessment findings and developing an adaptation strategy.
 - Timeframe: 2022-2025

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- Agency/Agencies: Natural Resources Agency – Delta Stewardship Council, State Lands Commission
- **NEW! Success Metric:** Incorporate tribal priority and/or set-asides into all programs, or create tribal specific programs to build capacity for natural resources conservation and stewardship.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Conservation
 - For More Details: Under Review

Action 3: Prioritize social equity, tribal nations, and disadvantaged communities in climate adaptation planning and strategies.

- **Success Metric:** Support for land use planning and decisions that address climate change and prioritize communities and residents most vulnerable to the climate crisis.
 - Timeframe: 2025 and ongoing
 - Agency/Agencies: Natural Resources Agency – State Lands Commission
- **Success Metric:** Support for programs, planning documents, and investments that address climate threats and prioritize the most climate vulnerable communities and residents.
 - Timeframe: 2024 and ongoing
 - Agency/Agencies: Natural Resources Agency
- **Success Metric:** Grant funding for communities and residents that are most vulnerable to climate impacts; portion of grants that support community involvement and partnership activities.
 - Timeframe: 2024 and ongoing
 - Agency/Agencies: Natural Resources Agency – State Coastal Conservancy | Governor's Office of Planning and Research, Planning and Policy
- **Success Metric:** Resources are prioritized to address the impact of sea-level rise on contaminated sites in climate vulnerable communities.
 - Timeframe: 2024
 - Agency/Agencies: Environmental Protection Agency – Department of Toxic Substances Control, State Water Resources Control Board

UPDATED! Action 4: Increase community participation in planning transportation projects to build climate resilience and to establish landscape linkages and habitat connectivity.

- **Success Metric:** Cultivate partnerships with, and build capacity of, community-based organizations and residents who engage in state transportation programs and project development.
 - Timeframe: Ongoing
 - Agency/Agencies: State Transportation Agency – Caltrans
- **Success Metric:** Update the California Transportation Plan's Public Participation Plan, modal plans, Public Engagement Plans, and Regional Transportation Plan Guidelines to ensure outreach strategies include equitable practices.
 - Timeframe: Under review
 - Agency/Agencies: State Transportation Agency – Caltrans

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Under-resourced communities have a greater participation in key decision-making processes in planning transportation projects that build resilience and provide landscape linkages and habitat connectivity.
 - Timeframe: Ongoing
 - Agency/Agencies: State Transportation Agency – High-Speed Rail Authority, Caltrans
- **Success Metric:** Transportation facilities are planned and designed to support vibrant livable places, with a focus on addressing the needs and concerns of underserved communities.
 - Timeframe: Ongoing
 - Agency/Agencies: State Transportation Agency – High-Speed Rail Authority, Caltrans

Action 5: Partner with underserved communities, including tribal communities in California, to build coastal and ocean climate resilience.

- **Success Metric:** Availability and accessibility of multilingual sea-level rise interpretive and educational materials.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Parks and Recreation, Coastal Commission, State Lands Commission, State Coastal Conservancy
- **Success Metric:** Develop and update tribal consultation policies to engage in meaningful consultations with California Native American tribes regarding policies that may affect tribal communities.
 - Timeframe: Ongoing
 - Agency/Agencies: All relevant state agencies
- **Success Metric:** Incorporate Traditional Ecological Knowledges and tribal expertise into land and resource management practices and decisions.
 - Timeframe: Ongoing
 - Agency/Agencies: All relevant state agencies
- **Success Metric:** Support opportunities through existing and new grant and other funding programs to advance tribal nations' cultural and environmental priorities.
 - Timeframe: Ongoing
 - Agency/Agencies: All relevant state agencies

Action 6: Support Technical Assistance, through providers such as the University of California Division of Agriculture and Natural Resources, to make climate smart agricultural knowledge and incentives available to Socially Disadvantaged Farmers and Ranchers and disadvantaged communities.

- **Success Metrics:** At least 25% of technical assistance consultations are made with Socially Disadvantaged Farmers and Ranchers through the Climate Smart Agriculture Technical Assistance grant program.
 - Timeframe: Ongoing
 - Agency/Agencies: Department of Food and Agriculture

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metrics:** Number of non-English language outreach materials prepared by technical assistance providers.
 - Timeframe: 2024
 - Agency/Agencies: Department of Food and Agriculture
- **Success Metrics:** Number of applications submitted by socially disadvantaged farmers.
 - Timeframe: Annual Reporting
 - Agency/Agencies: Department of Food and Agriculture

Action 7: Enhance adaptive capacity of communities through increased climate-related service and volunteerism.

- **Success Metric:** In Frontline climate vulnerable communities: Number of service hours provided by California Climate Action Corps fellows; number of tribes, Community Based Organizations and local government partners supported; number of volunteers engaged; number of people provided with climate-related educational information; number of trees planted, maintained, or given away; number of structures protected from wildfire, pounds of organic waste diverted, and edible food recovered and redistributed.
 - Timeframe: Ongoing (Program timeline/tracking in sync with Fellow cohorts serving September-August each year)
 - Agency/Agencies: California Volunteers
- **NEW! Success Metric:** Establishment of the Ocean Corps Pilot Program, in collaboration California Conservation Corps (CCC) and with local conservation corps and partners, to enhance coastal climate resilience and provide equitable opportunities for young adults.
 - Timeframe: 2024 and ongoing
 - Agency/Agencies: Natural Resources Agency -- Ocean Protection Council
 - For More Details: [Consideration and Approval to Disburse Funds to Establish a Pilot Ocean Conservation Corps Program](#)

UPDATED! Action 8: Engage and foster community collaborations to conduct health studies of air pollution, wildfire smoke, and heat, with a concerted effort to minimize health disparities in marginalized communities.

- **Success Metric:** Number of outreach events to engage the community and other stakeholders in the research process; tracking the incorporation of community concerns, perspectives and priorities in the health studies; and track publications and their application for advancing the understanding of disparities, vulnerabilities, and positive mitigation outcomes.
 - Timeframe: Biennial evaluation of progress starting in 2023
 - Agency/Agencies: Environmental Protection Agency – Office of Environmental Health Hazard Assessment

Action 9: Engage with communities most likely to be affected by state climate adaptation planning decisions.

- **Success Metric:** Engage with key stakeholders who participated in the 2020 Analysis of Impediments to Fair Housing Choice that represent climate vulnerable groups and regions to review action steps related to disaster recovery, resilience, mitigation and fair housing;

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

particularly action steps to address impediment #7, Climate and Environmental Vulnerabilities.

- Timeframe: 2024
- Agency/ Agencies Business, Consumer Services and Housing Agency – Department of Housing and Community Development
- **Success Metric:** Engage with and develop tools to support groundwater sustainability agencies and the diverse communities they affect to implement the Sustainable Groundwater Management Act.
 - Timeframe: Ongoing
 - Agency/ Agencies Natural Resources Agency – Department of Water Resources | Department of Food and Agriculture | California Environmental Protection Agency – State Resources Control Water Board

NEW! Action 10: Support public awareness campaigns that build upon current efforts to bolster extreme heat event preparedness, drought preparedness, water conservation, and other actions to support climate adaptation.

- **Success Metric:** Increase in public engagement and awareness through social media reach and website traffic.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy, California Volunteers | Governor's Office of Emergency Services | Environmental Protection Agency – State Water Resources Control Board | Labor and Workforce Development Agency – Workforce Development Board, Department of Industrial Relations Division of Occupational Safety and Health | Natural Resources Agency | Health and Human Services Agency – Department of Public Health | Department of Food and Agriculture | Department of Education
 - For More Details: [Office of Community Partnerships and Strategic Communications - Office of Planning and Research](#); ["Heat Ready CA" Will Help Californians Stay Safer From Extreme Heat | California Governor](#); ["Heat Ready CA" Will Help Californians Stay Safer From Extreme Heat | California Governor](#)
- **Success Metric:** Percentage increase in participation in extreme heat preparedness workshops or events.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy, California Volunteers | Governor's Office of Emergency Services | Environmental Protection Agency – State Water Resources Control Board | Labor and Workforce Development Agency – Workforce Development Board, Department of Industrial Relations Division of Occupational Safety and Health | Natural Resources Agency | Health and Human Services Agency – Department of Public Health | Department of Food and Agriculture | Department of Education
 - For More Details: [Extreme Heat and Community Resilience Program Summary of Public Comments: Workshops and Listening Sessions April – June 2023 \(ca.gov\)](#)
- **Success Metric:** Reduction in heat-related illnesses and fatalities as a result of increased awareness.
 - Timeframe: Ongoing

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy, California Volunteers | Governor's Office of Emergency Services | Environmental Protection Agency – State Water Resources Control Board | Labor and Workforce Development Agency – Workforce Development Board, Department of Industrial Relations Division of Occupational Safety and Health | Natural Resources Agency | Health and Human Services Agency – Department of Public Health | Department of Food and Agriculture | Department of Education
- For More Details: Forthcoming
- **NEW! Success Metric:** Number of community-based organizations funded, number reached disaggregated by tactics, population, geographic areas, etc.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy, Office of Community Partnerships and Strategic Communications
 - For More Details: [Office of Community Partnerships and Strategic Communications](#)
- **NEW! Success Metric:** Number of impressions, website visits, conversion rate, and press engagements related to priority statewide campaigns on water conservation and extreme heat.
 - Timeframe: Ongoing
 - Agency/ Agencies: Governor's Office of Planning and Research – Planning and Policy, Office of Community Partnerships and Strategic Communications | California Environmental Protection Agency – State Resources Control Water Board | Governor's Office of Emergency Services | Health and Human Services Agency – Department of Public Health
 - For More Details: [Heat Ready California](#), [Save Our Water](#)

NEW! Action 11: Support community care and health care settings for vulnerable populations, such as older adults, people with disabilities, health care patients, infants, and children, to prepare for and maintain safe temperatures in extreme heat events.

- **Success Metric:** Provide education and resources to mitigate heat and heat-related citations to appropriate and impacted childcare, children's residential care, and adult and senior care facilities licensed by the Department of Social Services' Community Care Licensing Division.
 - Timeframe: 2022-2025
 - Agency/Agencies: Health and Human Services Agency – Department of Social Services
 - For More Details: [California Health and Human Services – California Health and Human Services](#)
- **Success Metric:** Conduct an outreach campaign and train California health care facilities and licensing surveyors on extreme heat risks, and proactively mitigate heat risks to help them keep patients safe in extreme heat events.
 - Timeframe: 2024-2026
 - Agency/Agencies: Health and Human Services Agency –Department of Public Health
 - For More Details: CDPH Public Health Campaign: [Outreach and Communications](#)

NEW! Action 12: Bolster correctional facilities' resilience to extreme heat events.

- **Success Metric:** Improvement in extreme heat resilience metrics for correctional facilities.
 - Timeframe: Under Review
 - Agency/Agencies: Department of Corrections and Rehabilitation
 - For More Details: Department of Corrections and Rehab: [Extreme heat prevention and response \(ca.gov\)](#)
- **Success Metric:** Reduction in heat-related issues and incidents in correctional facilities.
 - Timeframe: Under Review
 - Agency/Agencies: Department of Corrections and Rehabilitation
 - For More Details: [Extreme heat prevention and response \(ca.gov\)](#)
- **Success Metric:** Increase in emergency preparedness and response capabilities.
 - Timeframe: Under Review
 - Agency/Agencies: Department of Corrections and Rehabilitation
 - For More Details: [Extreme heat prevention and response \(ca.gov\)](#)

GOAL B: Improve understanding of climate impacts on California's communities, including what drives vulnerability

Action 1: Identify the most climate vulnerable communities in California to direct and inform actions across sectors and regions that reduce risk and build resilience.

- **Success Metric:** Launch a statewide and all-risk, web-based platform that identifies climate vulnerable communities. Ongoing revisions and updates, along with community engagement to review Vulnerable Communities Platform (VCP) data and solicit community input.
 - Timeframe: 2024-2025 for updates and revisions, following launch
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy, in coordination with all relevant state agencies
- **NEW! Success Metric:** Increased understanding of how climate impacts California's vulnerable communities through community insights and feedback.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy, Office of Community Partnerships and Strategic Communications
 - For More Details: [Office of Community Partnerships and Strategic Communications](#)
- **Success Metric:** Provide technical assistance support to ensure utilization of the platform in state and local decision-making.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy

Action 2: Improve and refine quantitative wildfire risk assessments across California to identify the most wildfire vulnerable communities and populations for inclusion in California's Vulnerable Communities Platform.

- **Success Metric:** Develop consistent wildfire risk assessment methodology through the California Fire Adapted Communities Work Group.
 - Timeframe: 2024 and ongoing

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- Agency/Agencies: Natural Resources Agency – Department of Forestry and Fire Protection | Governor's Office of Planning and Research – Planning and Policy
- **UPDATED! Success Metric:** Develop a statewide tool at the census block group that combines wildfire hazard and adaptive capacity to identify communities that may be especially vulnerable to these threats. Include tool in California's Vulnerable Communities Platform, as appropriate.
 - Timeframe: Under Review, release TBD
 - Agency/Agencies: Environmental Protection Agency – Office of Environmental Health Hazard Assessment

UPDATED! Action 3: Increase the collection, analysis, and reporting of data on climate-related health impacts, especially the health impacts from cascading climate risks, such as heat and wildfire smoke exposure.

- **Success Metric:** Indicators, models, and/or tools added to the Department of Public Health Climate Change and Health Vulnerability Indicators for California data visualization platform and/or available for public use in assessing and addressing the health effects of climate change. Indicators, models, and/or tools will be informed by community input regarding user needs.
 - Timeline: Annually
 - Agency/Agencies: Health and Human Services Agency – Department of Public Health
- **Success Metric:** Bibliography with plain language summaries of health outcome/epidemiological studies; number of published epidemiological studies examining human health impacts of climate-related stressors.
 - Timeline: Biennial updates to bibliography; biennial reporting out of published studies
 - Agency/Agencies: Environmental Protection Agency – Office of Environmental Health Hazard Assessment
- **Success Metric:** Incorporate indicators of impacts on human health in the *Indicators of Climate Change in California* report, as data become available.
 - Timeline: 2026 and every four years thereafter
 - Agency/Agencies: Environmental Protection Agency – Office of Environmental Health Hazard Assessment

Action 4: Support actionable, community-driven, and equitable research partnerships to inform and accelerate climate adaptation action based on best available climate science.

- **Success Metric:** Research informs climate action by community organizations, state agencies, tribes, local and regional governments, and others.
 - Timeframe: 2022-2026
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy, Strategic Growth Council | Natural Resources Agency – Energy Commission, Delta Stewardship Council | California Public Utilities Commission

Action 5: Assist emergency managers and planners in identifying, locating, and deploying resources to populations at greater risk from climate impacts.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Reliable access to quality, accurate data to ensure functionality of the California Access and Functional Needs Viewer (mapping tool) and other emergency planning tools.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Emergency Services

Action 6: Document the impacts of climate change on California Native American tribes, their communities, traditional foods, cultural resources, and ecosystems by collaborating with tribes to document, as part of the Indicators of Climate Change in California Report, their perspectives, expertise, and traditional knowledges on climate change-related stressors.

- **Success Metric:** Indicators of Climate Change in California Report released, including related materials on tribal impacts.
 - Timeframe: 2026 and every four years thereafter; tribal videos to be released in 2024
 - Agency/Agencies: Environmental Protection Agency - Office of Environmental Health Hazard Assessment

Action 7: Improve the understanding of climate change and its impacts on California's cultural heritage, including tribal nations.

- **UPDATED!** Success Metric: Develop a framework and conduct assessments of climate impacts to cultural heritage, sourced from the Cultural Resources Climate Change Task Force, partnerships, and community engaged efforts. Complete assessment of climate impacts on cultural heritage based on emerging understanding being discussed through the Cultural Resources Climate Change Taskforce.
 - Timeframe: 2024, and every year thereafter
 - Agency/Agencies: Natural Resources Agency – State Parks Office of Historic Preservation and participating Task Force agencies

NEW! **Action 8: Hold at least two (2) Public Health Workgroups of the California Climate Action Team as a public forum to discuss cross-cutting topics at the intersection of climate change and health equity; understand disproportionate impacts on communities facing inequities; and hear from communities on solutions.**

- **Success Metric:** Recording of at least two (2) Public Health Workgroups; increase understanding of community-driven climate health equity solutions; meeting recording available online.
 - Timeframe: 2024, and annually
 - Agency/Agencies: Health and Human Services Agency – Department of Public Health | Environmental Protection Agency – Air Resources Board
 - For More Details: Under Review

GOAL C: Build resilience in climate vulnerable communities through state programs

Action 1: Prioritize actions that reduce wildfire risks to tribal nations and climate vulnerable communities.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Carry out the 32 action items included in the “Strengthen Protection of Communities” chapter of the Wildfire and Forest Resilience Action Plan.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Forestry and Fire Protection | Governor's Office of Emergency Services | Governor's Office of Planning and Research – Planning and Policy
- **Success Metric:** Implement the community home hardening program to retrofit, harden, and create defensible space for homes at high risk to wildfires, with a focus on high social-vulnerability communities and providing financial assistance for low- and moderate-income households.
 - Timeframe: 2021-2025
 - Agency/Agencies: Governor's Office of Emergency Services | Natural Resources Agency – Department of Forestry and Fire Protection
- **Success Metric:** Produce a General Plan Evacuation Technical Advisory to help communities reduce risk and build resilience within their communities.
 - Timeframe: 2024
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy
- **Success Metric:** Percentage of neighborhoods with high saturation of home hardening and defensible space.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Forestry and Fire Protection | Governor's Office of Emergency Services | University of California Fire Advisors
- **Success Metric:** Percentage of community roads widened for fire safety and fire hydrants installed.
 - Timeframe: Ongoing
 - Agency/Agencies: Board of Forestry

UPDATED! Action 2: Support wildfire prone communities by expanding the Regional Forest and Fire Capacity Program throughout the state and increase local and regional governments' capacity to build and maintain a pipeline of forest health and fire prevention projects.

- **Success Metric:** Robust local collaboratives executing wildfire resilience projects.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency - Department of Conservation | California Wildfire and Forest Resilience Task Force
- **Success Metric:** Coordinate with state, federal, and non-profit partners to control and mitigate fire-promoting invasive species.
 - Timeframe: Ongoing
 - Agency/Agencies: Department of Food and Agriculture
- **NEW! Success Metric:** Expand Regional Forest and Fire Capacity Grants to cover all high-risk areas of the state.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resource Agency -- Department of Conservation
 - For More Details: [Regional Forest and Fire Capacity Program](#)
- **NEW! Success Metric:** Develop Regional Priority Plans to identify priorities and track project readiness.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- Timeframe: Ongoing
- Agency/Agencies: Natural Resource Agency -- Department of Conservation
- For More Details: [Regional Forest and Fire Capacity Program](#)
- **NEW! Success Metric:** Development of long-range queue of shovel ready projects in each of the Task Force Regions
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resource Agency -- Department of Conservation
 - For More Details: [Regional Forest and Fire Capacity Program](#)

Action 3: Review local government plans to meet housing needs (Housing Elements) with a lens toward climate resilience, adaptation, and protection of vulnerable communities to relevant climate impacts.

- **Success Metric:** Number of housing elements received, reviewed, and approved; status of compliance.
 - Timeframe: 2024
 - Agency/Agencies: Business, Consumer Services and Housing Agency – Department of Housing and Community Development | Natural Resources Agency – Board of Forestry
- **Success Metric:** Percentage of planned zoning in High/Highest Resource Areas (includes relative job centers) or near High Quality Transit Areas.
 - Timeframe: FY 2024–2025 following first major wave of housing element completions including housing element site inventories
 - Agency/Agencies: Business, Consumer Services and Housing Agency – Department of Housing and Community Development

Action 4: Strengthen protections for people who are experiencing homelessness and extremely vulnerable to climate risks through funding programs for permanent and interim housing.

- **UPDATED! Success Metric:** Permanent or interim housing units constructed, acquired, or rehabilitated, regardless of funding source, as the state encourages local, regional and federal action to support housing production and preservation.
 - Timeframe: Ongoing
 - Agency/Agencies: Business, Consumer Services and Housing Agency – Department of Housing and Community Development
- **Success Metric:** Number of cities, counties, and Continuums of Care in siting shelters in locations that are not prone to flooding and wildfires and/or are equipped for early warning/evacuation.
 - Timeframe: Ongoing
 - Agency/Agencies: Business, Consumer Services and Housing Agency – California Interagency Council on Homelessness
 - For More Details: [Listos California Disaster Ready Guide](#)
- **Success Metric:** Number of Continuums of Care, cities, and counties with Emergency Operations Plan specifically tailored to addressing people experiencing unsheltered homelessness and in shelter and other supportive housing settings.
 - Timeframe: Ongoing

- Agency/Agencies: Business, Consumer Services and Housing Agency – California Interagency Council on Homelessness

Action 5: Invest Community Development Block Grant funds in long-term disaster recovery and resilience building that targets the unmet housing recovery needs of low and moderate-income households in a way that mitigates disaster risk and reduces future losses among vulnerable communities.

- **Success Metric:** Number of households assisted by housing replacement/ rehabilitation and served through mitigation projects.
 - Timeframe: Implemented following Presidentially Declared Disasters
 - Agency/Agencies: Business, Consumer Services and Housing Agency – Department of Housing and Community Development
- **Success Metric:** Number of households and facilities that have been mitigated from future disaster.
 - Timeframe: Implemented following Presidentially Declared Disasters
 - Agency/Agencies: Business, Consumer Services and Housing Agency – Department of Development
- **Success Metric:** Number of households and facilities supported that address needs resulting from most impacted and distressed areas.
 - Timeframe: Implemented following Presidentially Declared Disasters
 - Agency/Agencies: Business, Consumer Services and Housing Agency – Department of Housing and Community Development
- **Success Metric:** Number of households supported within impacted counties through projects implemented to address mitigation and resiliency improvements.
 - Timeframe: Implemented following Presidentially Declared Disasters
 - Agency/Agencies: Business, Consumer Services and Housing Agency – Department of Housing and Community Development
- **Success Metric:** Number of households and businesses supported through mitigation Planning and/or Public Services projects that directly benefit the most impacted and distressed communities/areas.
 - Timeframe: Implemented following Presidentially Declared Disasters
 - Agency/Agencies: Business, Consumer Services and Housing Agency – Department of Housing and Community Development

Action 6: Promote sustainable land use planning and transportation investments that support walkable and bikeable communities and infill development to build resilience of climate vulnerable communities.

- **Success Metric:** Technical assistance and other support to improve how developers, public agencies, and communities learn from each other and work together to address climate and housing goals.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency - Coastal Commission, Tahoe Conservancy | State Transportation Agency – Caltrans | Governor’s Office of Planning and Research – Strategic Growth Council

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Provide guidance and technical assistance on strategies that support infill development and active transportation for inclusion in local general plan updates and related implementation efforts.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy
- **Success Metric:** Support transformative and innovative planning and implementation projects that accelerate housing and sustainable transportation investments at the regional and local scale to reduce vehicle miles traveled and build resilience through the Regional Early Action Planning Grants Program.
 - Timeframe: 2021-2024
 - Agency/Agencies: Governor's Office of Planning and Research – Strategic Growth Council | Business, Consumer Services and Housing Agency –Department of Housing and Community Development | Environmental Protection Agency – Air Resources Board

Action 7: Increase access to locally and traditionally grown food and produce in low-income communities to build climate resilient food systems and increase agricultural economic sustainability.

- **UPDATED! Success Metric:** Increased participation in the Farm to School Program to provide CA-grown or produced foods for school meals and expand farm to school education. Facilitate relationships between jurisdictions, farms, school districts, and food banks to increase recovery of edible food and education on best practices around fresh food recovery and recycling organics.
 - Timeframe: Annual reporting
 - Agency/Agencies: Department of Food and Agriculture | Environmental Protection Agency – Department of Resources Recycling and Recovery
- **Success Metric:** Increased participation in the California Nutrition Incentive Program, Healthy Refrigeration Grant Program, Senior Farmers Market Nutrition Program, and Farm to Community Food Hubs Program.
 - Timeframe: Annual reporting
 - Agency/Agencies: Department of Food and Agriculture
- **Success Metric:** Increase local production of nutritious food in climate vulnerable communities through increased funding to and participation in the Urban Agriculture Grant Program.
 - Timeframe: 2024 and ongoing
 - Agency/Agencies: Department of Food and Agriculture
- **NEW! Success Metric:** Increase investment in community composting to provide support to an additional 500 community composting sites throughout California, including tribal lands.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency – Department of Resources Recycling and Recovery
 - For More Details: Under Review

Action 8: Consider and integrate environmental justice principles in permit decisions and planning documents that drive on California's climate adaptation priorities.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Develop guidance for staff and local governments to better address environmental justice and equity in sea-level rise planning, including robust community engagement to better understand needs.
 - Timeframe: Under Review
 - Agency/Agencies: Natural Resources Agency – Ocean Protection Council
- **Success Metric:** Provide guidance and technical assistance on increasing environmental justice and equity through climate adaptation planning, including guidance on meaningful community engagement, consistent with the Governor’s Office of Planning and Research General Plan Guidelines and the California Adaptation Planning Guide.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor’s Office of Planning and Research - Planning and Policy
- **Success Metric:** Conduct early and often meaningful government-to-government consultations with tribal nations and engage and collaborate with all stakeholders, including community members, visitors, business owners, and affordable housing developers and advocates, as well as underserved and other vulnerable communities who live, visit, and recreate along the coast to ensure equitable participation in adaptation planning processes, and equitable outcomes from decisions.
 - Timeframe: Ongoing
 - Agency/Agencies: All relevant agencies
- **NEW! Success Metric:** Prioritize environmental justice and other disadvantaged communities in California’s investments in orphaned well plug, abandonment, and remediation work, decreasing these communities’ pollution burden as heat increases, compounding pollutant loads.
 - Timeframe: 2024
 - Agency/Agencies: Natural Resources Agency - Department of Conservation
 - For More Details: [Idle Well Program](#)
- **NEW! Success Metric:** Prioritize environmental justice and other disadvantaged communities in California’s oil and gas inspections, immediately addressing onsite/fugitive emissions, decreasing these communities’ pollution burden as heat increases, compounding pollutant loads.
 - Timeframe: 2024
 - Agency/Agencies: Natural Resources Agency - Department of Conservation
 - For More Details: [Oil and Gas Permitting and Compliance](#)

Action 9: Promote equity, community engagement, and culturally competent emergency response program design.

- **UPDATED! Success Metric:** Create and sustainably fund an Office of Equity to evaluate gaps and support reach and services for diverse, marginalized and underserved populations when preparing for, responding to, and recovering from disasters.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor’s Office of Emergency Services
- **Success Metric:** Number of community engagements, program outreach efforts, and grants awarded to assist vulnerable populations.
 - Timeframe: Annually
 - Agency/Agencies: Governor’s Office of Emergency Services

Action 10: Prioritize climate resilience and health equity resources for people and places experiencing the most need and risks due to historical and continuing disinvestment and inequities.

- **Success Metric:** Number of state, regional, and local climate action plans, adaptation plans, general plans, and hazard mitigation plans in public databases that explicitly prioritize strategies to benefit health equity and address racial equity.
 - Timeframe: Annually
 - Agency/Agencies: Health and Human Services Agency – Department of Public Health

Action 11: Ensure the Affordable Housing and Sustainable Communities Program advances California’s climate resilience priorities.

- **Success Metric:** Quantify climate resilience components in awarded projects, as well as the number of climate resilience components realized through completed projects.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Planning and Research – Strategic Growth Council

Action 12: Ensure projects funded through the Transformative Climate Communities Program advance California’s climate resilience priorities.

- **Success Metric:** Consider and incorporate future climate projections in Transformative Climate Communities-funded projects and include climate adaptation strategies for each project type in evaluation, scoring, and execution process.
 - Timeframe: 2024-2025
 - Agency/Agencies: Governor's Office of Planning and Research – Strategic Growth Council | Natural Resources Agency - Department of Conservation

Action 13: Enact policies for California High-Speed Rail that establish sustainability, climate change adaptation, and social equity goals.

- **Success Metric:** Annual or periodic reporting related to High-Speed Rail Authority sustainability policies and progress, including: the annual Sustainability Report.
 - Timeframe: Annually
 - Agency/Agencies: State Transportation Agency – High-Speed Rail Authority
- **Success Metric:** Adoption and periodic update of Climate Adaptation Plan.
 - Timeframe: As needed
 - Agency/Agencies: State Transportation Agency – High-Speed Rail Authority
- **Success Metric:** Implementation of Environmental Justice Policy, Title VI Policy, and Limited English Proficiency Policy, measured by Annual Accomplishment Report.
 - Timeframe: Annually
 - Agency/Agencies: State Transportation Agency – High-Speed Rail Authority

Action 14: Enact policies in the California State Rail Plan that support climate change adaptation for rail infrastructure and support emergency maintenance and repairs.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Updated climate analysis and vulnerability assessments for the California Rail Network.
 - Timeframe: 2028 and then every four years
 - Agency/Agencies: State Transportation Agency - Caltrans
- **Success Metric:** Develop and implement a state operations and protection funding program for rail, which will establish an ongoing source of emergency repair and capitalized maintenance funding to improve the reliability and resiliency of the state rail network.
 - Timeframe: 2028
 - Agency/Agencies: State Transportation Agency - Caltrans
- **Success Metric:** Identify and support climate adaptation projects in the California State Rail Plan Capital Program.
 - Timeframe: 2028 and then every four years
 - Agency/Agencies: State Transportation Agency - Caltrans

Action 15: Increase awareness and understanding, and reduce climate impacts on children, and pregnant people, by providing public health expertise and collaborating with state, tribal and local agencies, community organizations and other entities taking actions to build climate resilience.

- **Success Metric:** Guidance on the climate change impacts and climate vulnerability of children in view of supporting adaptation and resilience; outreach materials on climate vulnerability of children for county health departments, health care providers, school authorities and the public. Track number of entities OEHHA has provided direct consultation. Periodic symposia/webinars for state scientists and the public.
 - Timeframe: Annual updates as needed; factsheets to be released in 2024.
 - Agency/Agencies: Environmental Protection Agency – Office of Environmental Health Hazard Assessment | Health and Human Services Agency – Department of Public Health

Action 16: Incorporate cultural heritage in California's climate adaptation actions.

- **Success Metric:** Create a California Cultural Resources Climate Change Plan that encompasses actions taken, identifies areas for greater collaboration, and provides guideposts for future efforts.
 - Timeframe: 2024 and every two years thereafter
 - Agency/Agencies: Natural Resources Agency – State Parks Office of Historic Preservation
- **Success Metric:** Increased understanding of the role Traditional Knowledges and cultural heritage can play in accelerating and scaling climate adaptation action.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – State Parks Office of Historic Preservation

NEW! Action 17: Develop a statewide extreme heat ranking system.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Recommendations on thresholds or triggers for public policies that reduce the risk of extreme heat impacts and prioritize reducing the impacts of extreme heat to human health.
 - Timeframe: 2025
 - Agency/Agencies: Environmental Protection Agency – Office of Environmental Health Hazard Assessment | Health and Human Services Agency – Department of Public Health | Governor's Office of Planning and Research - Planning and Policy
 - For More Details: [Assembly Bill 2238](#)
- **Success Metric:** Recommendations for metrics to measure the short-term and long-term impacts of extreme heat on human health.
 - Timeframe: 2025
 - Agency/Agencies: Environmental Protection Agency – Office of Environmental Health Hazard Assessment | Health and Human Services Agency – Department of Public Health | Governor's Office of Planning and Research - Planning and Policy
 - For More Details: [Assembly Bill 2238](#)
- **Success Metric:** Analysis of the uninsured and insured economic costs of past extreme heat events across the state.
 - Timeframe: 2024
 - Agency/Agencies: Department of Insurance
 - For more details: [Assembly Bill 2238](#)

NEW! Action 18: Develop policy recommendations for the maximum safe indoor temperature in residential buildings.

- **Success Metric:** Consistent with Assembly Bill 209 (2022 - Sec 31), establish a stakeholders workgroup and guide the development of policy recommendation(s) that are designed to ensure that residential dwelling units can maintain the recommended maximum safe indoor air temperature. The policy recommendation(s) shall take into account state climate goals, the extreme heat plan, regional temperature differences, and various methods for reducing indoor air temperatures.
 - Timeframe: 2025
 - Agency/Agencies: Business, Consumer Services and Housing Agency – Department of Housing and Community Development | California Environmental Protection Agency - California Air Resources Board | California Energy Commission - State Energy Resources Conservation and Development Commission | Governor's Office of Planning and Research | California Natural Resources Agency – Department of Forestry and Fire Protection | Department of General Services - California Building Standards Commission Health and Human Services Agency – Department of Public Health
 - For More Details: Under Review

NEW! Action 19: Reduce risk of heat-related illness among at-risk indoor and outdoor workers.

- **UPDATED! Success Metric:** Develop plain language, educational materials in a variety of formats and languages to increase knowledge of extreme heat risks, relevant regulations, and resources available to employers of workers and workers at risk of extreme heat exposure.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- Timeframe: 2024-2026
- Agency/Agencies: California Health and Human Services Agency - Department of Public Health
- For More Details: Under Review
- **UPDATED! Success Metric:** Conduct outreach, which could include trainings and dissemination of educational materials that will reach employers in diverse industries and organizations including small businesses with a focus on those disproportionately impacted.
 - Timeframe: 2025-2027
 - Agency/Agencies: California Health and Human Services Agency - Department of Public Health
 - For More Details: Under Review

NEW! Action 20: Increase understanding of the effects of extreme heat on worker health and safety.

- **Success Metric:** Compile data from multiple administrative sources on heat-related illness and other outcomes associated with extreme heat exposure.
 - Timeframe: Ongoing
 - Agency/Agencies: California Health and Human Services Agency - Department of Public Health
 - For More Details: Under Review
- **Success Metric:** Conduct research to identify risk factors and avenues for prevention of heat-related health outcomes among California workers.
 - Timeframe: Ongoing
 - Agency/Agencies: California Health and Human Services Agency - Department of Public Health
 - For More Details: Under Review

PRIORITY: Bolster Public Health and Safety to Protect Against Increasing Climate Risks

Climate change poses significant threats to public health and safety across California. These health and safety impacts are having serious effects on the lives of our state's residents, sometimes literally threatening lives.

Climate-driven events including droughts, floods, extreme heat, wildfires and sea-level rise pose a broad range of harms to health and safety. Climate-related damage to health can be immediate and acute, as well as sustained and long-term. Wildfires, for instance, can injure and kill people while creating toxic, hazardous smoke across the state that worsens respiratory and cardiovascular conditions. Wildfires also destroy homes and livelihoods, with cascading economic and mental health effects. Extreme heat, for example, can cause illnesses that require immediate hospitalization, as well as increase cumulative physiological stress on the human body, resulting in conditions such as kidney disease, adverse birth outcomes, or risk of suicide. As heat waves and droughts have intensified, their effect on several vector-borne, foodborne, waterborne, and soil-borne infectious diseases have already impacted Californians over the past decade and are expected to increase further resulting in many more illnesses and deaths. In addition to these physical health and safety impacts, medical professionals must also respond to climate anxiety and other mental health challenges caused or exacerbated by climate change.

These events also have impacts on food supply and security, water supply and sanitation, environmental hazards such as harmful algal blooms, and many others. Climate change is a threat multiplier, worsening existing health inequities. Even during natural life stages, like youth, old age, and pregnancy, climate impacts can uniquely stress the body with consequences for morbidity and mortality. Preventing and reducing acute and long-term health and safety impacts of climate-driven events requires a comprehensive, equity-focused approach across sectors and regions.

Note to Readers - Highlights and Trends from the 2021 to 2024 Update: Improved understanding of public health and safety risks underpins this update to the Strategy. A key step to improving state and local response to extreme heat events will be the deployment of a syndromic surveillance system to gather information on heat-related morbidity in near-real time. The state is also developing methods to collect and report data on harmful algal blooms and debris flow risk in landscapes impacted by wildfire.

The 2024 draft includes new or evolving frameworks for responding to the public health and safety consequences of climate change. Guidance and regulations on water use efficiency will provide a framework for water management in California that respects this critical resource, supporting the state's goal to [make water conservation a California way of life](#). Some of these actions include particular emphasis on supporting drought resilience planning for small water suppliers, tribal water systems, and domestic wells, which are particularly vulnerable and in need of support.

GOAL A: Reduce urgent public health and safety risks posed by climate change

Action 1: Reduce health impacts of wildfire smoke.

- **Success Metric:** Enhance prescribed fire reporting.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency – Air Resources Board
- **Success Metric:** Conduct research on the health impacts of wildfire smoke and mitigation strategies to protect vulnerable populations.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency – Office of Environmental Health Hazard Assessment | Health and Human Services Agency – Department of Public Health
- **Success Metric:** Update and release WILDFIRE SMOKE: Considerations for California's Public Health Officials, to help local public health officials prepare for smoke events, take measures to protect the public when smoke is present, and communicate with the public about wildfire smoke and health.
 - Timeframe: 2024
 - Agency/Agencies: Health and Human Services Agency – Department of Public Health

Action 2: Conserve water

- **Success Metric:** Increased technical assistance and training for improved tracking of water loss to reduce water loss across the state in the urban sector.
 - Timeframe: Ongoing (monthly)
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources
- **UPDATED! Success Metric:** Adoption of new water use efficiency standards for outdoor residential water use, outdoor commercial, industrial, and institutional (CII) water use on landscapes with dedicated irrigation meters, and CII performance measures.
 - Timeframe: State Water Board will consider adopting new efficiency standards and performance measures in 2024
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board | Natural Resources Agency – Department of Water Resources
- **Success Metric:** Implement urban water use efficiency standards for urban retail water suppliers.
 - Timeframe: Beginning January 1, 2024 and annually thereafter, calculation from each urban retail water supplier are to be submitted to the State along with documentation of the implementation of CII performance measures
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board | Natural Resources Agency – Department of Water Resources
- **Success Metric:** Support land use authorities to improve adoption and reporting of the Model Water Efficiency Landscape Ordinance by updating the regulation to allow for a streamlined implementation.
 - Timeframe: Finalize rulemaking in 2024
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources

- **NEW! Success Metric:** Reduce annual water demand in towns and cities by at least half a million acre-feet.
 - Timeframe: 2030
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board | Natural Resources Agency – Department of Water Resources

Action 3: Help regions improve preparation for drought.

- **Success Metric:** Support for urban water suppliers to develop urban water management plans in examining reliability under a five-consecutive-year drought and planning for a standard set of water shortage levels as part of its water shortage contingency plan.
 - Timeframe: 2026. Plans are due every five years.
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources
- **Success Metric:** Support for agricultural water suppliers in developing agricultural water management drought plans and examining drought resilience and response planning.
 - Timeframe: 2026, plans are due every five years
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources
- **Success Metric:** Maintain and update the Drought and Water Shortage Risk Explorer Tool and scoring indicators for small water systems and rural communities.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources
- **Success Metric:** Small suppliers serving 1,000 to 2,999 service connections develop and maintain a water shortage contingency plan that includes specified drought-planning elements and implement, subject to funding availability, specified drought resiliency measures, including having at least one backup source of water supply and metering each service connection.
 - Timeframe: 2027
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board | Natural Resources Agency – Department of Water Resources
- **Success Metric:** Small water suppliers, including water systems that serve schools, implement, subject to funding availability, specified drought resiliency measures, including having at least one backup source of water supply and metering each service connection.
 - Timeframe: 2027
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources | Environmental Protection Agency – State Water Resources Control Board
- **Success Metric:** Development of guidance and assistance for counties to establish a standing county drought and water shortage task force and contingency plan to facilitate drought and water shortage preparedness for state small water systems, tribal water systems, and domestic wells within the county's jurisdiction.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources
- **Success Metric:** Establish a standing interagency drought and water shortage task force to facilitate proactive state planning and coordination, both for pre-drought planning and drought emergency response, to enhance collaboration and consider all water user types.
 - Timeframe: Ongoing

- Agency/Agencies: Natural Resources Agency – Department of Water Resources | Environmental Protection Agency – State Water Resources Control Board

Action 4: Protect groundwater as an important water source for future generations.

- **Success Metric:** Ongoing progress toward sustainability, as defined in law, in covered groundwater basins.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board, Natural Resources Agency - Department of Water Resources
- **NEW! Success Metric:** Support repurposing agricultural lands to reduce reliance on groundwater or increase recharge of groundwater while minimizing impacts to communities and the environment.
 - Timeframe: 2028
 - Agency/Agencies: Natural Resources Agency – Department of Conservation
 - For More Details: [Multibenefit Land Repurposing Program](#)
- **NEW! Success Metric:** Where appropriate, encourage the integration of groundwater recharge basins and floodwater retention ponds into aggregate mine reclamation plans to meet community needs.
 - Timeframe: 2024
 - Agency/Agencies: Natural Resources Agency – Department of Conservation
 - For More Details: [Division of Mine Reclamation](#)
- **NEW! Success Metric:** Expand average annual groundwater recharge by at least 500,000 acre-feet.
 - Timeframe: under review
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board, Natural Resources Agency - Department of Water Resources
 - For More Details: [California's Water Supply Strategy](#)

Action 5: Reduce flood risk in California by helping regions prepare for new flood patterns.

- **Success Metric:** Reduced risks to Californians' lives and property, even in the face of more extreme precipitation events.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources, Central Valley Flood Protection Board, San Francisco Bay Conservation and Development Commission, Delta Stewardship Council
- **Success Metric:** Implementation of the Central Valley Flood Protection Plan.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources, Central Valley Flood Protection Board
- **Success Metric:** Achieve and maintain 200-year level of protection in Central Valley urban areas, including the resiliency requirements identified in the Urban Levee Design Criteria.
 - Timeframe: Ongoing, over 10-15 years
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources, Central Valley Flood Protection Board, Local Flood Control Agencies

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Implement system-wide flood risk reduction projects -- such as weirs and bypass expansions, improved reservoir outlets, increased surface storage, and forecast informed operations -- that modernize and expand system capacity and increase climate and ecosystem resiliency at a regional scale.
 - Timeframe: Ongoing, over 25-30 years
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources
- **Success Metric:** Identify and communicate weather patterns and coordinate emergency operations and resources at local, state, tribal, and federal levels.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources
- **UPDATED! Success Metric:** Support the availability of multiple tiers of flood insurance policies to expand flood insurance coverage for property owners and renters.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources | Department of Insurance
- **Success Metric:** Annual flood insurance premiums for property owners are lowered as state agencies document state-led flood risk reduction efforts as part of the Federal Emergency Management Agency's National Flood Insurance Program Community Rating System.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources
- **Success Metric:** Awareness of flood risk and evacuation routes is increased through deployment of new river and rain gauges in recently burned watersheds and creation of forecast-based early warning alert systems.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources

Action 6: Protect public health by increasing reliable access to safe, affordable drinking water and sanitation.

- **Success Metric:** Reduction in the number of drinking water systems on the “Human Right to Water” list over time. Specific metrics and tracking are in the yearly Fund Expenditure Plan approved by the Board.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board
- **Success Metric:** Reduced timelines for funding projects for water and wastewater systems most at risk to climate change and increase in total number of projects funded per year.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board

Action 7: Support local and regional agencies to recycle or reuse water.

- **Success Metric:** Increase recycled water use to at least 800,000 acre-feet per year.
 - Timeframe: December 1, 2030
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Reuse all dry weather discharge to enclosed bays, estuaries and coastal lagoons, and ocean waters.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board | Natural Resources Agency – Department of Water Resources
- **Success Metric:** Maximize reuse where groundwater supplies are in a state of overdraft.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board | Natural Resources Agency – Department of Water Resources
- **NEW! Success Metric:** Reuse at least 800,000 acre-feet of water per year by 2030 and 1.8 million acre-feet.
 - Timeframe: 2040
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board | Natural Resources Agency – Department of Water Resources
 - For More Details: [California's Water Supply Strategy](#)
- **NEW! Success Metric:** Increase annual supply capacity from stormwater capture by at least 250,000 acre-feet by 2030 and 500,000 acre-feet.
 - Timeframe: 2040
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board
 - For More Details: [California's Water Supply Strategy](#)

Action 8: Invest state bond funds in water storage that provides flood control, ecosystem, water quality, emergency response, and recreation benefits.

- **Success Metric:** State agency contracts deliver public benefits from new water storage projects in the Proposition 1 Water Storage Investment Program.
 - Timeframe: Before final award determination for Water Storage Investment Program projects; timeline varies for each project
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources, Department of Fish and Wildlife, Department of Parks and Recreation, Water Commission | Environmental Protection Agency – State Water Resources Control Board

Action 9: Support the public health sector's capacity to address the climate crisis and increase health equity.

- **Success Metric:** Number of local health departments and tribal health or environmental programs receiving technical assistance and staff resources to address climate change as a public health crisis.
 - Timeframe: Annually
 - Agency/Agencies: Health and Human Services Agency – Department of Public Health
- **NEW! Success Metric:** Implement Syndromic Surveillance (near real-time reporting of health conditions seen in an emergency department such as heat related illness or conditions related to wildfire smoke) for climate-related health conditions. Initiate accessing data from participating emergency departments in 2024.
 - Timeframe: 2024
 - Agency/Agencies: Health and Human Services Agency – Department of Public Health

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- For More Details: Under Review
- **Success Metric:** Models to project climate-related morbidity and mortality in California and tools to assess the health effects of climate-related policy changes.
 - Timeframe: Ongoing
 - Agency/Agencies: Health and Human Services Agency – Department of Public Health

Action 10: Integrate health equity data, tools, and metrics into state climate change-related plans, policies, and investments, to improve health equity outcomes.

- **Success Metric:** Number of state climate change-related plans, policies, and investments incorporating health equity-related data, tools, and metrics.
 - Timeframe: Annually
 - Agency/Agencies: Health and Human Services Agency – Department of Public Health

Action 11: Minimize toxic chemical exposures associated with climate-related events by providing toxicological expertise and consultation to support state and local decision-making and emergency response.

- **Success Metric:** Fact sheets on most common potential chemical exposures with different types of climate-related events; an online resource developed in collaboration with state/local emergency response partners; participation in emergency planning and response.
 - Timeframe: Ongoing, with annual updates of online resources for emergency planning and response
 - Agency/Agencies: Environmental Protection Agency - Office of Environmental Health Hazard Assessment

Action 12: Promote safer sustainable pest management.

- **Success Metric:** Support technical assistance and participation in programs that help develop alternatives and tools farmers need to transition to safer, integrated pest management options. These programs include the Research Grants, Alliance Grants, Biologically Integrated Farming Systems Program, Proactive Integrated Pest Management Solutions Program, and Interregional Research Program Number Four (IR-4), including advanced plant breeding.
 - Timeframe: Annual reporting
 - Agency/Agencies: Environmental Protection Agency – Department of Pesticide Regulation | Department of Food and Agriculture
- **Success Metric:** Outreach events and grant funding.
 - Timeframe: Five years
 - Agency/Agencies: Environmental Protection Agency – Department of Pesticide Regulation | Department of Food and Agriculture
- **Success Metric:** Number of pounds, acres treated with specified pesticides.
 - Timeframe: Five years
 - Agency/Agencies: Environmental Protection Agency – Department of Pesticide Regulation

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Update Best Management Practices for pest control via research and on-the ground testing.
 - Timeframe: Ongoing
 - Agency/Agencies: Department of Food and Agriculture
- **Success Metric:** Reduce need for pesticides to combat invasive species by increasing the technical capacity of border and county pest interception authorities.
 - Timeframe: Ongoing
 - Agency/Agencies: Department of Food and Agriculture

Action 13: Protect natural resources and agriculture from invasive species and pests whose impact changes spatially and temporally as a result of climate change.

- **Success Metric:** Map new and established pest distributions by increasing delimitation depth and breadth.
 - Timeframe: 2024
 - Agency/Agencies: Department of Food and Agriculture, CalEPA-Department of Pesticide Regulations
- **Success Metric:** Slow or stop spread of exemplar plant pests via well documented 'leading edge' pest management programs.
 - Timeframe: Ongoing
 - Agency/Agencies: Department of Food and Agriculture
- **Success Metric:** Number of potential or recognized invasive species subjected to risk assessment or modeling for establishment and/or spread in California; number of invasive species added to the regulated list of Restricted Live Animals (14 CCR sec. 671); number of invasive species with active monitoring, control, or eradication programs in California.
 - Timeframe: Annual reporting
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Department of Parks and Recreation's Division of Boating and Waterways, Invasive Species Council of California

Action 14: Improve water quality by reducing excess nutrients in groundwater.

- **UPDATED! Success Metric:** Number of Alternative Manure Management Program and Dairy Plus projects with relevant technologies.
 - Timeframe: Annual reporting
 - Agency/Agencies: Department of Food and Agriculture
- **Success Metric:** Increased capacity to produce transportable manure-based and organics-based (food waste/green waste) soil amendments including compost produced on-farm that stabilizes nitrogen and improves nutrient cycling.
 - Timeframe: Annually
 - Agency/Agencies: Department of Food and Agriculture | Environmental Protection Agency – Department of Resources Recycling and Recovery
- **Success Metric:** Technical assistance, training materials, and consultations provided to farmers through the Alternative Manure Management Program and Water Efficiency Technical Assistance grant programs.
 - Timeframe: Annually
 - Agency/Agencies: Department of Food and Agriculture

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Number and breadth of Fertilizer Research and Education Program research projects related to fertilizer management.
 - Timeframe: Annual reporting
 - Agency/Agencies: Department of Food and Agriculture

Action 15: Modernize the harmful algal bloom notification (HAB) network.

- **UPDATED! Success Metric:** Identify opportunities to leverage current and future monitoring efforts to provide near real-time public notifications for HABs in freshwater, estuarine, and marine waters for public safety. Participate in an interagency HAB-related Illness Workgroup to provide water quality information to support the Office of Environmental Health and Hazard Assessment, Department of Fish and Wildlife, and Department of Public Health in HAB-related illness determinations and coordinate with local jurisdictions for public health advisory postings at waterbodies.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board, Water Quality Monitoring Council, Office of Environmental Health Hazard Assessment | Natural Resources Agency – Ocean Protection Council, Fish and Wildlife | Health and Human Services Agency – Department of Public Health
 - **NEW!** For More Details: [Freshwater HAB Program](#), [Coastal HABs](#), [HAB Early Warning System](#)

Action 16: Integrate future climate risk into emergency preparedness and response.

- Success Metric: Number of pre-positioned resources intended to anticipate and mitigate catastrophic wildfires and other climate-driven disasters.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Emergency Services | Natural Resources Agency – Department of Water Resources

an indoor heat regulation for consideration by the Occupational Safety and Health Standards Board

- **Success Metric:** Adoption and implementation of the regulation by the Occupational Safety and Health Standards Board.
 - Timeframe: Under Review
 - Agency/Agencies: Labor and Workforce Development Agency – Department of Industrial Relations Division of Occupational Safety and Health
 - For More Details: [Cal/OSHA - Division of Occupational Safety and Health - Home Page](#)
- **Success Metric:** Reduction in heat-related incidents in indoor workplaces.
 - Timeframe: Under Review
 - Agency/Agencies: Labor and Workforce Development Agency – Department of Industrial Relations Division of Occupational Safety and Health
 - For More Details: [Cal/OSHA - Division of Occupational Safety and Health - Home Page](#)

NEW! Action 19: Address food system vulnerabilities to extreme heat

- **Success Metric:** Reduction in crop losses and food supply chain disruptions during extreme heat events.
 - Timeframe: Under Review
 - Agency/Agencies: Department of Food and Agriculture
 - For More Details: [California Department of Food and Agriculture](#)
- **Success Metric:** Improvement in food security for vulnerable populations.
 - Timeframe: Under Review
 - Agency/Agencies: Department of Food and Agriculture
 - For More Details: [California Department of Food and Agriculture](#)
- **Success Metric:** Increase in the adoption of heat-resistant agricultural practices.
 - Timeframe: Under Review
 - Agency/Agencies: Department of Food and Agriculture
 - For More Details: [California Department of Food and Agriculture](#)

NEW! Action 20: Review and improve access to and use of air conditioning and other indoor cooling strategies, including passive cooling techniques and other alternate methods that are energy efficient, low-cost, and do not rely on high global warming potential refrigerants. Address obstacles to the use of air conditioning and other cooling strategies for vulnerable populations.

- **Success Metric:** Increase in the number of vulnerable populations using cooling strategies.
 - Timeframe: Under Review
 - Agency/Agencies: Natural Resources Agency | Public Utilities Commission | Labor Workforce and Development Agency – Department of Industrial Relations Division of Occupational Health and Safety | Governor’s Office of Emergency Services | Environmental Protection Agency – California Air Resources Board
 - For More Details: [Extreme Heat Action Plan](#)
- **Success Metric:** Adoption of energy-efficient and low-cost cooling methods.
 - Timeframe: Under Review
 - Agency/Agencies: Natural Resources Agency | Public Utilities Commission | Labor Workforce and Development Agency – Department of Industrial Relations Division of Occupational Health and Safety | Governor’s Office of Emergency Services | Environmental Protection Agency – California Air Resources Board
 - For More Details: [Extreme Heat Action Plan](#)

GOAL B: Consider future climate impacts in governmental planning and investment decisions

Action 1: Provide specific and actionable guidance and technical assistance to local communities on sustainable, resilient, and equitable planning for land use and community development, transportation, and resource preservation that advances the State's climate goals.

- **Success Metric:** Technical assistance and guidance documents are grounded in user-defined needs.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- Timeframe: Ongoing
- Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy
- **Success Metric:** Number of updated general plan safety elements and/or other locally adopted plans, that address current climate adaptation and resilience requirements pursuant to SB 379 and SB 1035.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy
- **NEW! Success Metric:** Develop geoscience products (pre-fire hazard maps) and data to address potential post-fire debris flow and alluvial hazard risks.
 - Timeframe: 2025
 - Agency/Agencies: Natural Resources Agency – Department of Conservation
 - For More Details: [Burned Watershed Geohazards](#)
- **NEW! Success Metric:** Support local agencies in applying a holistic, longer-term lens to mine reclamation plan review, ensuring that the end use of the landscape is considered when making land reclamation and restoration investments.
 - Timeframe: 2024
 - Agency/Agencies: Natural Resources Agency – Department of Conservation
 - For More Details: [Division of Mine Reclamation](#)

Action 2: Incorporate climate considerations into state, tribal, and local emergency planning efforts.

- **Success Metric:** Create or request a Federal Emergency Management Agency certified training course on climate change for emergency management personnel and create criteria for tracking utilization and effectiveness of this training.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Emergency Services
- **Success Metric:** Update the State Hazard Mitigation Plan's (SHMP) every 5 years to meet the state's goal of risk reduction, continuing to build upon climate adaptation strategies and best practices in the SHMP 2023 update.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Emergency Services
- **Success Metric:** Require climate adaptation strategies to be integrated into mitigation actions in Local Hazard Mitigation Plans.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Emergency Services
- **Success Metric:** Number of Dam Emergency Action Plans submitted, reviewed, and approved.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Emergency Services
- **Success Metric:** Present and engage with the Governor's Office of Emergency Services Access and Functional Needs Stakeholder advisory committee on the Adaptation Planning Guide and its usability, accessibility, and functionality.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Emergency Services

Action 3: Strengthen alignment of coastal resilience planning activities.

- **Success Metric:** Work with federal, state, and local governments, and other partners, to align relevant planning documents (e.g., Local Coastal Programs, General Plans, Local Hazard Mitigation Plans) to minimize adaptation project implementation challenges and better capitalize on funding opportunities for hazard mitigation, preparation, and disaster response.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Coastal Commission, San Francisco Bay Conservation and Development Commission | Governor's Office of Planning and Research – Planning and Policy | Governor's Office of Emergency Services
- **Success Metric:** Convene and participate in discussions with federal, state, local, and tribal governments to identify opportunities to support statewide initiatives to improve coastal resilience planning efforts.
 - Timeframe: 2022-2025 and ongoing
 - Agency/Agencies: Natural Resources Agency – State Lands Commission

Action 4: Develop coastal adaptation (sea-level rise or shoreline adaptation) plans or incorporate coastal adaptation elements into planning documents for all coastal jurisdictions.

- **UPDATED! Success Metric:** Local governments develop a sea level rise plan as part of either a local coastal program, as defined, that is subject to approval by the California Coastal Commission, or a subregional San Francisco Bay shoreline resiliency plan that is subject to approval by the San Francisco Bay Conservation and Development Commission (per SB 272)
 - Timeframe: January 1, 2034
 - Agency/Agencies: Natural Resources Agency – Ocean Protection Council, Coastal Commission
 - For More Details: [SB 1 Grant Program](#), [Local Assistance Grant Program](#)

Action 5: Promote special considerations for critical infrastructure and facilities during planning processes to proactively ensure safety of coastal resources against coastal hazards, including sea-level rise.

- **Success Metric:** Under review
 - Timeframe: Under review
 - Agency/Agencies: Natural Resources Agency – Coastal Commission, State Lands Commission

Action 6: Prioritize investments that reduce climate risk to California's transportation system based on exposure and sensitivity analyses of climate change and natural disasters.

- **Success Metric:** Develop and maintain a transportation resilience improvement plan to identify and respond to future disruptions.
 - Timeframe: 2024
 - Agency/Agencies: State Transportation Agency – Caltrans

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Develop statewide repository of location-specific adaptive strategies that can be incorporated into infrastructure maintenance and rehabilitation projects.
 - Timeframe: 2024
 - Agency/Agencies: State Transportation Agency – Caltrans
- **Success Metric:** Promote the increased use of simulation systems and predictive technologies to understand how future disruptions may impact infrastructure and travel patterns.
 - Timeframe: 2025
 - Agency/Agencies: State Transportation Agency – Caltrans
- **Success Metric:** Update Caltrans District Vulnerability Assessments with latest science, including broadening to include natural hazards impacted by climate change (e.g., landslides) and to include the state's multimodal transportation system, and continue to integrate information into planning and project delivery processes.
 - Timeframe: 2025
 - Agency/Agencies: State Transportation Agency – Caltrans

Action 7: Integrate climate adaptation and resilience principles into the design, construction, and operation of the High-Speed Rail system.

- **Success Metric:** Number of climate hazard assessments conducted through the High-Speed Rail Safety and Security Management Plan, and number of mitigative actions taken that stem from those assessments.
 - Timeframe: 2024
 - Agency/Agencies: State Transportation Agency – High-Speed Rail Authority
- **Success Metric:** Number of Climate Adaptation Implementation Committee meetings held to review analysis results, consequences, adaptation decisions, etc.
 - Timeframe: Annual
 - Agency/Agencies: State Transportation Agency – High-Speed Rail Authority
- **Success Metric:** Number of mitigative actions taken that stem from climate hazard assessments conducted through the High-Speed Rail Safety and Security Management Plan.
 - Timeframe: Annual
 - Agency/Agencies: State Transportation Agency – High-Speed Rail Authority
- **Success Metric:** Revisions to the High-Speed Rail Safety and Security Management Plan to improve how climate hazards are evaluated.
 - Timeframe: Annual
 - Agency/Agencies: State Transportation Agency – High-Speed Rail Authority
- **Success Metric:** Success of adaptation through resilience and adaptation criteria added to the Design Criteria Manual and procurement documents.
 - Timeframe: 2024
 - Agency/Agencies: State Transportation Agency – High-Speed Rail Authority
- **Success Metric:** Implementation and success of site-specific adaptation strategies.
 - Timeframe: 2024
 - Agency/Agencies: State Transportation Agency – High-Speed Rail Authority

Action 8: Ensure proposed Clean and Drinking Water State Revolving Fund projects account for impacts related to climate change.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Number of Clean Water and Drinking Water State Revolving Fund-supported projects with mitigation and adaptation measures implemented as fully as practicable.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board

Action 9: Identify opportunities to implement climate smart land management on state lands that build climate resilience while also delivering other benefits, such as increasing carbon sinks, reducing overall greenhouse gas emissions, and enhancing biodiversity.

- **Success Metric:** Increase acreage of state lands utilizing relevant strategies called for in the Natural and Working Lands Climate Smart Strategy.
 - Timeframe: 2025
 - Agency/Agencies: Natural Resources Agency organizations that own and/or manage land | Environmental Protection Agency – Department of Resources Recycling and Recovery
- **Success Metric:** Increase acreage of state lands implementing appropriate healthy soil management practices that build climate resilience.
 - Timeframe: Ongoing
 - Agency/Agencies: Department of Food and Agriculture and partner agencies | Environmental Protection Agency – Department of Resources Recycling and Recovery
- **Success Metric:** Increase the development and implementation of co-management agreements with California Native American tribes on state lands that support climate resilience and implementation of tribal expertise and traditional knowledges.
 - Timeframe: Ongoing
 - Agency/Agencies: All relevant agencies

Action 10: Increase community-scale climate resiliency through innovative, research-supported emergency planning grants and projects– such as those that offer multiple co-benefits; are scalable at the regional level; and bring multiple funding sources or in-kind resources from private and public sector stakeholders.

- **Success Metric:** Number of grants and amount awarded for projects that further community resilience from climate impacts.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Emergency Services

Action 11: Ensure proposed Salton Sea Management Program projects account for climate change impacts.

- **Success Metric:** Number of Salton Sea Management Program funded projects with mitigation and adaptation measures implemented as fully as practicable.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency

UPDATED! Action 12: Implement a pilot program for community health promoters / promotores de salud in the San Joaquin Valley to refer farmworker families with climate-related health conditions to receive home weatherization and energy efficiency services that can improve housing and health.

- **UPDATED! Success Metric:** Pilot program reaches 20 households for enrollment into the weatherization program.
 - Timeframe: 2026
 - Agency/Agencies: Health and Human Services Agency – Department of Public Health

NEW! Action 13: Review and incorporate changes as appropriate to state and local regulations, industry practices for buildings, and land use and design elements to identify opportunities to accelerate the adoption of cooling strategies for both indoor and outdoor environments.

- **Success Metric:** Number of regulatory and industry changes implemented.
 - Timeframe: Under Review
 - Agency/Agencies: Department of Food and Agriculture | Environmental Protection Agency – Department of Resources Recycling and Recovery, California Air Resources Board, State Water Resources Control Board
 - For More Details: [Extreme Heat Action Plan](#)
- **Success Metric:** Adoption rate of cooling strategies in new buildings.
 - Timeframe: Under Review
 - Agency/Agencies: Department of Food and Agriculture | Environmental Protection Agency – Department of Resources Recycling and Recovery, California Air Resources Board, State Water Resources Control Board
 - For More Details: [Extreme Heat Action Plan](#)
- **Success Metric:** Increase in the use of cooling strategies in outdoor environments.
 - Timeframe: Under Review
 - Agency/Agencies: Department of Food and Agriculture | Environmental Protection Agency – Department of Resources Recycling and Recovery, California Air Resources Board, State Water Resources Control Board
 - For More Details: [Extreme Heat Action Plan](#)

GOAL C: Improve infrastructure’s climate resilience to protect public health and safety

Action 1: Reduce the risk of energy infrastructure-related ignitions that lead to catastrophic wildfire.

- **UPDATED! Success Metric:** Reduction in the risk of infrastructure-related wildfires and increase in wildfire risk mitigation capabilities of electrical corporations as indicated by decreases in utility wildfire ignitions and other wildfire safety related metrics including the number of approved utility wildfire mitigation plans.
 - Timeframe: 10 years starting in 2020
 - Agency/Agencies: Natural Resources Agency – Office of Energy Infrastructure and Safety | Public Utilities Commission

Action 2: Increase resilience of critical, climate vulnerable energy infrastructure.

- **Success Metric:** Results of Climate Vulnerability Assessments filed with the Public Utilities Commission by Investor-Owned Utilities.
 - Timeframe: 2025
 - Agency/Agencies: Public Utilities Commission
- **NEW! Success Metric:** Rehabilitate dams to regain storage capacity.
 - Timeframe: under review
 - Agency/Agencies: Natural Resources Agency - Department of Water Resources
 - For More Details: [California's Water Supply Strategy](#)

Action 3: Reduce vulnerability of water and wastewater infrastructure to climate-driven disasters, such as flooding, storm surge, sea-level rise, and landslides.

- **Success Metric:** Increase in the number of National Pollutant Discharge Elimination System permits and waste discharge requirements that include infrastructure climate resilience requirements.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency - State Water Resources Control Board, Regional Water Quality Control Boards

Action 4: Help tribal nations and communities diversify their water supply sources.

- **Success Metric:** Reduction in number of drinking water systems with only one well, or only one type of water source.
 - Timeframe: 2027
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board | Natural Resources Agency – Department of Water Resources
- **Success Metric:** Increased number of physical connections among local and regional water systems to improve access to multiple sources of water.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board | Natural Resources Agency – Department of Water Resources
- **Success Metric:** Support tribal drought relief programs.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources
Environmental Protection Agency – State Water Resources Control Board

Action 5: Evaluate and strengthen resilience of regulated water and wastewater facilities.

- **Success Metric:** Climate change vulnerability assessments regularly updated in Electronic Annual Report for drinking water) with assessment results made available via a publicly-accessible system.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board | Public Utilities Commission
- **Success Metric:** Support tribal water system improvements and maintenance.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- Timeframe: Ongoing
- **Agency/Agencies:** Natural Resources Agency – Department of Water Resources

NEW! Action 7: Examine and expand the use of cool, porous, or sustainable materials in pavement.

- **Success Metric:** Percentage increase in the use of cool, porous, or sustainable pavement materials.
 - Timeframe: Under Review
 - Agency/Agencies: State Transportation Agency – Caltrans | Governor's Office of Planning and Research – Planning and Policy | Government Operations Agency – Department of General Services, Building Standards Commission | Environmental Protection Agency
 - For More Details: Under Review
- **Success Metric:** Reduction in pavement-related urban heat island effects.
 - Timeframe: Under Review
 - Agency/Agencies: State Transportation Agency – Caltrans | Governor's Office of Planning and Research – Planning and Policy | Government Operations Agency – Department of General Services, Building Standards Commission | Environmental Protection Agency
 - For More Details: Under Review

PRIORITY: Build a Climate Resilient Economy

Our economy relies on safe and reliable infrastructure, a healthy workforce, stable supply chains, and dependable natural resources and healthy natural systems. Each of these elements of a sound economy are impacted by climate change and are specifically threatened by climate impacts that we are already experiencing in California. Drought, for example, can lead to unsustainable groundwater pumping that exacerbates land subsidence that damages transportation and water infrastructure, threatens economic sectors including agriculture and commercial fishing, and worsens rural unemployment.

Increasingly, we are improving our understanding of the economic impacts of climate change. For example, the cost of removing hazardous materials from properties in the town of Paradise after the Camp Fire in 2018, for example, cost the California State government over \$2 billion. Such costs demonstrate the need for up-front investment to reduce the long-term fiscal impacts of climate-driven disasters.

Well-established estimates used in the United States suggest that that on average every \$1 invested in proactive efforts to reduce climate risk avoids at least \$6 in in future costs to respond to such risks. For example, proactive investments that protect communities from wildfires not only protect California's residents but help reduce the long-term costs of wildfire recovery. Proactive adaptation and resilience measures are sound economic and fiscal investments.

Examples of proactive resilience measures include investments in public health systems and community resilience, supporting climate-smart businesses, protecting workers vulnerable to climate impacts, wetland restoration, forest management, and climate resilient infrastructure. These types of projects, coupled with the transition from fossil fuel extraction and refining to renewable energy projects and carbon sequestration, as well as clean technology innovation and deployment, also present new job and business opportunities. Importantly, these economic opportunities require diverse skillsets, engaging numerous sectors of California's economy in climate solutions. Preserving and creating jobs and business opportunities in a clean, resilient, and inclusive economy will bolster quality of life and support economic mobility for Californians. Through this Strategy, the State is committed to equity-centered actions that ensure that all Californians enjoy these benefits of a resilient economy. By pursuing equity in its economic resilience efforts, the State will affirm and maintain California's status as a place of opportunity and innovation.

Note to Readers - Highlights and Trends from the 2021 to 2024 Update: The growing clean energy economy and large-scale resilience projects present several opportunities for inclusive, high-road workforce development, generating multiple benefits. For example, this Strategy's new actions and metrics associated with planning for workforce development and industry growth in the forestry and woody biomass sectors will benefit California's economy and energy resilience while reducing wildfire risk. As articulated in this draft, the State has committed to leveraging contracts to support workforce transition, which is an example of forward-thinking, integrated planning that can benefit both the environment and the economy.

GOAL A: Expand economic opportunities for California by building climate resilience

Action 1: Support regions experiencing economic transitions resulting from climate impacts by incorporating high road economic principles, emphasizing high quality jobs, environmental sustainability, and broad access to opportunities for a diversity of businesses and workers.

- **UPDATED! Success Metric:** Include principles that create high quality jobs in individual program guidelines, so that all programs score and evaluate applications on a rubric that integrates job quality, climate resilience, equity, and inclusivity.
 - Timeframe: Immediate and ongoing
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy | Labor and Workforce Development Agency | Governor's Office of Business and Economic Development, in coordination with all relevant state agencies
- **UPDATED! Success Metric:** Build a clear set of related metrics for the California Jobs First Initiative, measuring both short-term and long-term outcomes.
 - Timeframe: 2026
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy | Labor and Workforce Development Agency | Governor's Office of Business and Economic Development, in coordination with all relevant state agencies
- **NEW! Success Metric:** Leverage state contracts to support jobs for workers transitioning out of oil and gas.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency - Department of Conservation
 - For More Details: Under Review
- **NEW! Success Metric:** Assess the suitability of underground storage reservoirs across the state for carbon storage potential: suitability location identification will encourage project development, directly supporting workforce transition from extraction-based to sequestration-based.
 - Timeframe: 2027
 - Agency/Agencies: Natural Resources Agency - Department of Conservation, State Lands Commission
 - For More Details: [Geologic Carbon Sequestration in California](#)

Action 2: Support California communities to attract businesses and economic opportunities resulting from adaptation actions that build resilience to economic assets and services.

- **Success Metric:** Number of communities who are including climate resilience as a location advantage to businesses.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Business and Economic Development
- **NEW! Success Metric:** Mineral Resource mapping to transition to a green economy: identify and map critical minerals in California that are used in electric vehicles and other transition technologies (lithium, nickel, cobalt).
 - Timeframe: 2026
 - Agency/Agencies: Natural Resources Agency - Department of Conservation, State Lands Commission
 - For More Details: [California's Minerals](#)

UPDATED! Action 3: Protect agricultural land from development and provide the technology, tools, and resources necessary to maintain the economic viability, resiliency, and biodiversity of California's agricultural lands.

- **UPDATED! Success Metric:** Number of plans to guide improvements in soil health and habitat created through Department of Conservation, Wildlife Conservation Board, and California Department of Food and Agriculture grant programs.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Conservation, Wildlife Conservation Board | Department of Food and Agriculture
- **UPDATED! Success Metric:** Number of state-funded local government plans to conserve agricultural lands from development and address economic viability funded by SALC and other Department of Conservation grant programs.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Conservation
- **Success Metric:** Number of Affordable Housing and Sustainable Communities grants and Sustainable Agricultural Lands Conservation grants in the same region that support a regional approach to affordable housing and land conservation.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Planning and Research – Strategic Growth Council

Action 4: Support and incentivize climate resilience in the agricultural sector.

- **Success Metric:** Stand up the Fresno-Merced Future of Food Innovation Corridor to support the Central Valley's investment in the labor forces and technology needed to scale up climate smart agricultural practices.
 - Timeframe: 2024
 - Agency/Agencies: Department of Food and Agriculture
- **Success Metric:** Number of Healthy Soils Program projects funded, acres of resilience-building and soil protecting measures from incentives, and outreach through demonstration projects as part of the Healthy Soils Program.
 - Timeframe: Annual reporting
 - Agency/Agencies: Department of Food and Agriculture
- **Success Metric:** Support participation in the State Water Efficiency and Enhancement Program that improves agricultural water use efficiency and/or diversify farm income.
 - Timeframe: Annual reporting
 - Agency/Agencies: Department of Food and Agriculture
- **Success Metric:** Ensure stability of critical pollinator populations by supporting pollination projects and technical assistance support.
 - Timeframe: Annual reporting
 - Agency/Agencies: Department of Food and Agriculture
- **Success Metric:** Increase early detection and rapid response ability to prevent or eradicate new or expanding pests.
 - Timeframe: Ongoing
 - Agency/Agencies: Department of Food and Agriculture

Action 5: Enhance and protect California's nature-based tourism economy through resilience investments.

- **Success Metric:** Complete an assessment of California's sustainable coastal tourism industry with recommendations on how to grow the industry consistent with marine conservation law and policy.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Ocean Protection Council, California Water Commission, Coastal Commission, State Lands Commission
- **UPDATED! Success Metric:** Coordinate shared management of California's inland recreation landscapes among federal, state, tribal and local land managers, communities, and members of the recreation economy.
 - Timeframe: Ongoing
 - Agency/Agencies: California Wildfire and Forest Resilience Task Force, CalRec Vision workgroup
- **Success Metric:** Ensure attractive recreation facilities are supported as economic drivers in gateway recreation communities, and that these facilities are protected and rebuilt during and after wildfire and other climate-driven disasters.
 - Timeframe: Ongoing
 - Agency/Agencies: California Wildfire and Fire Forest Resilience Task Force, CalRec Vision workgroup

Action 6: Ensure continued public access to California's coast in light of changing shoreline conditions and sea-level rise, prioritizing climate vulnerable communities.

- **Success Metric:** Identify locations where public access ways, the California Coastal Trail, or roadways that facilitate access to these areas may be limited or eliminated in the future due to sea-level rise and increased storm events. Begin planning for other options to maintain maximum public access such as through new vertical access ways, trail relocations, rerouting of transportation corridors, bluff top facility enhancements, or other alternatives that incorporate adaptation measures to ensure long-term continuance of public access.
 - Timeframe: 2026
 - Agency/Agencies: Natural Resources Agency – Department of Parks and Recreation, Coastal Commission, State Coastal Conservancy, San Francisco Bay Conservation and Development Commission, State Lands Commission, State Transportation Agency - Caltrans
- **UPDATED! Success Metric:** Develop a “Coastal Access for All” Plan that ensures equitable public access to and along the ocean, with measurable targets for beaches, physical trails and access points, education, tribal beneficial use, transportation, and recreational opportunities.
 - Timeframe: 2025
 - Agency/Agencies: Natural Resources Agency – Department of Parks and Recreation, Coastal Commission, State Coastal Conservancy, San Francisco Bay Conservation and Development Commission, State Lands Commission

Action 7: Develop adaptive management approaches to assess and effectively respond to climate-caused shifts in fisheries.

- **Success Metric:** Number of new Enhanced Status Reports and Fishery Management Plans for species identified through the prioritization and scaled management processes described in the 2018 Marine Life Management Act Master Plan.
 - Timeframe: Annually
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Ocean Protection Council
- **Success Metric:** Number of fisheries transitioned to electronic catch logbooks/monitoring, number of landings by port.
 - Timeframe: 2025
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Ocean Protection Council

Action 8: Bring to scale a thriving forest and wood products market in California that leverages public investments by energizing private capital for sustainable forest management, regional economic recovery, and climate resilience.

- **UPDATED! Success Metric:** Deploy \$17 million in federal funds under the Biomass Utilization Fund in Tuolumne County. Create over 30 jobs, with over half of job opportunities offered to low- and moderate-income individuals.
 - Timeframe: December 2024
 - Agency/Agencies: Natural Resources Agency – Sierra Nevada Conservancy
- **UPDATED! Success Metric:** Commit the Climate Catalyst Fund's Forest Biomass and Management program's available capital and track the number of executed loans from the Fund.
 - Timeframe: June 2024
 - Agency/Agencies: Governor's Office of Business and Economic Development - IBank
- **Success Metric:** Support pilot projects that sustainably use Sierra Nevada Forest management residues to create carbon-negative fuels.
 - Timeframe: 2024
 - Agency/Agencies: Natural Resources Agency – Department of Conservation | Environmental Protection Agency – Air Resources Board
- **Success Metric:** Deploy pilot projects to develop regional strategies to establish reliable access to woody feedstock through a variety of feedstock aggregation mechanisms and organizational innovations.
 - Timeframe: Under review
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy
- **NEW! Success Metric:** Maintain CAL FIRE's Business and Workforce Development Grant Program.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Forestry and Fire Protection
 - For More Details: [CAL FIRE Wood Products and Bioenergy](#)

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Reduction of agricultural burning in the San Joaquin Valley.
 - Timeframe: 2025
 - Agency/Agencies: Environmental Protection Agency – Air Resources Board
- **NEW! Success Metric:** Finalize and begin implementation of the State's Wood Utilization Strategy to build markets for forest waste utilization, resulting in increasing private investment in forest health efforts and other co-benefits meeting state objectives including climate action, rural economic development and habitat improvement and protection.
 - Timeframe: 2025
 - Agency/Agencies: California Natural Resources Agency - Department of Conservation, CAL FIRE, Energy Commission | Environmental Protection Agency – Air Resources Board | Housing and Community Development | Governor's Office of Planning and Research – Planning and Policy | California Public Utilities Commission | Governor's Office of Business and Economic Development – Ibank

NEW! Action 9: Promote climate smart agricultural practices that build resilience to extreme heat.

- **Success Metric:** Adoption of climate-smart practices by agricultural communities.
 - Timeframe: Under Review
 - Agency/Agencies: Department of Food and Agriculture
 - For More Details: [CDFA Office of Environmental Farming and Innovation](#)
- **Success Metric:** Increase in crop resilience to extreme heat.
 - Timeframe: Under Review
 - Agency/Agencies: Department of Food and Agriculture
 - For More Details: Under Review
- **Success Metric:** Reduction in agricultural losses due to heat-related stress.
 - Timeframe: Under Review
 - Agency/Agencies: Department of Food and Agriculture
 - For More Details: Under Review

GOAL B: Deepen understanding of climate change effects on California's economy

Action 1 Deepen understanding of climate change effects on California's economy.

- **Success Metric:** Number of industry outreach/communications materials developed and number of industry engagements to inform the business community about the issues associated with climate risk and resiliency.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Business and Economic Development

Action 2: Fund applied climate research through the California Climate Change Assessments to quantify economic impacts of climate change in various sectors, with a focus on economic loss and opportunity.

- **Success Metric:** Research results that lend quantifiable economic outcomes for future climate risks, including extreme heat, wildfire, sea-level rise and flooding, spread of invasive species, and extreme precipitation (including drought).

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- Timeframe: Rolling five-year cycle (2021-2026 for Fifth Assessment)
- Agency/Agencies: Governor's Office of Planning and Research – Strategic Growth Council | Department of Food and Agriculture

Action 3: Identify and assess sea-level rise impacts and associated financial costs to coastal lands.

- **Success Metric:** Develop economic valuation guidance for coastal communities to use in understanding risks and adaptation options.
 - **Timeframe** 2026
 - Agency/Agencies: Natural Resources Agency – State Lands Commission

PRIORITY: Accelerate Nature-Based Climate Solutions and Strengthen Climate Resilience of Natural Systems

Climate smart management of our natural and working lands – forests, farms, wetlands, coasts, deserts, community greenspaces, and more – is a key pillar of California's climate change agenda. Governor Newsom elevated the role of this sector in [Executive Order N-82-20](#), and called for accelerated use of nature-based solutions that deliver on our climate change goals and other critical priorities, such as improving public health and safety, securing our food and water supplies, and increasing equity.

Nature-based climate solutions are actions that work with and enhance nature to build climate resilience and/or contribute to carbon neutrality. For example, climate smart forest management – such as reintroducing prescribed fire onto landscapes – reduces the threat of catastrophic wildfire, supports long-term carbon storage, and builds resilience of our forests to future climate impacts. Similarly, coastal wetland restoration can reduce the risk of flooding, store carbon, and build community, economic, and ecological resilience along California's coasts.

This priority emphasizes our commitment to advancing multi-benefit, nature-based solutions that ensure California's communities and natural systems continue to thrive in the face of climate change. While we all pay a price when our lands are unhealthy – with our health, our economic prosperity, and our security – some of us are burdened more than others. As we accelerate nature-based climate solutions, a core goal for California is to do so in a manner that increases equity and environmental justice.

Note to Readers - Highlights and Trends from the 2021 to 2024 Update: Safeguarding the resilience of California's expansive and diverse natural systems requires scalable, cross-sector, and multi-benefit solutions. In this draft, the State includes new metrics focused on piloting interdisciplinary technical support teams to accelerate the review and approval of large-scale habitat projects. Also included are ongoing landscape scale and river restoration efforts to enhance the ability of California's lands and watersheds to support thriving wildlife and be resilient in dry and critically dry years. The State also anticipates restoring approximately 3,500 acres of wetlands in the Delta between 2025 and 2030, which will also benefit wildlife habitat and flood resilience. These new, updated, and ongoing efforts continue to elevate the importance of stewarding our natural environment to achieve California's climate and biodiversity goals.

GOAL A: Increase pace and scale of nature-based climate solutions

Action 1: Identify opportunities for co-management of lands and marine resources and invite and incorporate tribal expertise, Traditional Ecological Knowledges, and cultural practices in the tool set for understanding and responding to climate change.

- **Success Metric:** Number of partnerships or collaborations with tribes where specific tribal input, including opportunities, decisions, and actions that incorporate co-management,

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

tribal expertise, and Traditional Knowledge, is incorporated into the management of marine resources.

- Timeline: Ongoing
- Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, State Lands Commission, Ocean Protection Council
- **Success Metric:** Number of partnerships or collaborations with tribes where specific tribal input, including opportunities, decisions, and actions that incorporate co-management, tribal expertise, and Traditional Knowledge, is incorporated into the management of state-owned lands.
 - Timeline: Ongoing
 - Agency/Agencies: All applicable agencies

Action 2: Increase the pace and scale of wildfire resilience and forest health projects.

- **Success Metric:** Scale up wildfire and forest resilience treatments to 500,000 acres annually.
 - Timeframe: Complete by 2025
 - Agency/Agencies: California Wildfire and Forest Resilience Task Force | Natural Resources Agency – Department of Forestry and Fire Protection, Department of Parks and Recreation, Department of Fish and Wildlife, Department of Conservation
- **Success Metric:** Scale up state prescribed fire treatments up to 100,000 acres annually.
 - Timeframe: Complete by 2025
 - Agency/Agencies: Natural Resources Agency – Department of Forestry and Fire Protection, Department of Conservation
- **Success Metric:** Fund robust wildfire resilience programs across a variety of landowner types including small landowners, state landowners, tribes, and federal land managers.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency | State Transportation Agency – Caltrans
- **Success Metric:** Scale up professional staff within the Caltrans Division of Maintenance to support each Caltrans district (12) in preparing a District Vegetation Management Plan and geospatial tool in alignment with the Governor's Million Acre Strategy for wildfire resilience in California. Utilize four Regional Resource Profiles and Regional Toolkits created by the Wildfire and Forest Resilience Task Force for California to inform land management across jurisdictional boundaries.
 - Timeframe: Increase staff (2023 – 2024); publish District Vegetation Management Plans and geospatial tool by January 1, 2025 (plan duration 2025 – 2030)
 - Agency/Agencies: State Transportation Agency – Department of Transportation Caltrans

Action 3: Reduce risks of wildfire through increased use of fuel breaks and fuels reduction.

- **Success Metric:** Maintain a pipeline of roughly 500 projects in various stages of planning, implementation, and maintenance at any given time.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency - Department of Forestry and Fire Protection | State Transportation Agency – Department of Transportation Caltrans

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Execute Fuel Reduction Service Contracts (12) to reduce overly dense fuels on state highway corridors that are also identified as primary evacuation routes.
 - Timeframe: July 2023 – June 2025
 - Agency/Agencies: State Transportation Agency – Department of Transportation Caltrans
- **Success Metric:** Calculate and report creditable activities funded and completed by Caltrans' field maintenance crews, contractors, and others through Interagency Agreements to manage vegetation on the state highway right of way, with a target of 50,000 acres treated per calendar year.
 - Timeframe: July 2023 – June 2025; submit creditable activities to the Interagency Treatment Dashboard annually.
 - Agency/Agencies: State Transportation Agency – Department of Transportation Caltrans

Action 4: Protect, restore, and create coastal wetlands.

- **Success Metric:** Increase the acreage of coastal wetlands - 20% by 2030 and 50% by 2040.
 - Timeframe: 2030 and 2040
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Department of Parks and Recreation, Ocean Protection Council, State Coastal Conservancy, State Lands Commission
- **Success Metric:** Estimate total carbon sequestration associated with coastal wetlands creation and restoration.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Department of Parks and Recreation, Ocean Protection Council, State Coastal Conservancy

Action 5: Increase green space and infrastructure across California's communities and prioritize tribal nations and climate vulnerable communities.

- **Success Metric:** Identify opportunities through the current Natural and Working Lands Climate Smart Strategy
 - Timeframe: 2024
 - Agency/Agencies: Natural Resources Agency – multiple

Action 6: Support planning and building capacity to implement climate smart agricultural practices by helping growers seeking to develop Agriculture Conservation Plans.

- **Success Metric:** Number of conservation agriculture plans developed; Number of contacts (workshops and webinars) with Socially Disadvantaged Farmers and Ranchers to increase access to conservation planning process.
 - Timeframe: 2024
 - Agency/Agencies: Department of Food and Agriculture

Action 7: Test innovative, nature-based climate solutions.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Number of innovative, nature-based demonstration projects in State Parks, Wildlife Areas, and Ecological Reserves.
 - Timeframe: 2024
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Department of Parks and Recreation, Ocean Protection Council, Coastal Commission, State Coastal Conservancy, Delta Conservancy
- **Success Metric:** Number of nature-based climate adaptations that include monitoring as a project requirement.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Department of Parks and Recreation, Ocean Protection Council, Coastal Commission, State Coastal Conservancy, Delta Conservancy, Department of Water Resources
- **Success Metric:** Number of lease applications and projects that incorporate nature-based climate solutions.
 - Timeframe: 2025
 - Agency/Agencies: Natural Resources Agency - State Lands Commission
- **UPDATED! Success Metric:** Number of permits for Environmentally Sensitive Habitat Areas, wetlands, and marine resources mitigation strategies that deliver climate resilience benefits.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Coastal Commission

Action 8: Protect existing and create additional seagrass habitat.

- **Success Metric:** Work with partners to preserve the existing, known 15,000 acres of seagrass beds and create an additional 1,000 acres.
 - Timeframe: 2025
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Ocean Protection Council, State Coastal Conservancy, Coastal Commission

Action 9: Protect and restore kelp forest ecosystems.

- **Success Metric:** Development of a statewide kelp forest research and restoration plan, which shall include potential restoration and management approaches and research and monitoring recommendations.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Ocean Protection Council, Coastal Commission

Action 10: Assist the federal government in scaling up forest treatments by supporting collaborative forest management and encouraging landscape level planning.

- **Success Metric:** Double current forest treatment levels to 500,000 acres per year.
 - Timeframe: 2025
 - Agency/Agencies: California Wildfire and Forest Resilience Task Force | Natural Resources Agency – Sierra Nevada Conservancy, Tahoe Conservancy

Action 11: Utilize existing market mechanisms and tools to accelerate nature-based climate solutions.

- **Success Metric:** Incentivize the application of certified compost and other commercial organic amendments, whole orchard recycling, and the construction of facilities that allow the production of marketable compost and manure compost.
 - Timeframe: Ongoing
 - Agency/Agencies: Department of Food and Agriculture | Environmental Protection Agency – Department of Resources Recycling and Recovery

Action 12: In the Sacramento-San Joaquin Delta watershed, build climate resilience through restoration.

- **Success Metric:** 60,000 to 80,000 acres of restored natural ecosystems.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources, Department of Fish and Wildlife, Delta Stewardship Council, Delta Conservancy
- **Success Metric:** Additional acres of projects that reverse subsidence and sequester carbon.
 - Timeframe: Ongoing, with a goal of restoring 30,000 acres by 2030
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources, Department of Fish and Wildlife, Delta Conservancy, Delta Stewardship Council

NEW! Action 13: Improve groundwater conditions to support and expand groundwater dependent ecosystems associated with discharges to streams, springs, and wetlands.

- **Success Metric:** Complete or permit restoration projects on 5,000 acres of Groundwater Dependent Ecosystems.
 - Timeframe: Under Review
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife
 - For More Details: Under Review

NEW! Action 14: Partner with California Native American tribes to implement tribal expertise and Traditional Ecological Knowledge to accelerate tribal nature-based climate solutions that address extreme heat.

- **Success Metric:** Number of tribal climate solutions implemented.
 - Timeframe: Under Review
 - Agency/Agencies: Natural Resources Agency and all relevant Departments, Conservancies, Commissions, and Boards
 - For More Details: Under Review
- **Success Metric:** Enhancement of tribal resilience to extreme heat.
 - Timeframe: Under Review
 - Agency/Agencies: Natural Resources Agency and all relevant Departments, Conservancies, Commissions, and Boards
 - For More Details: Under Review
- **Success Metric:** Preservation of Traditional Ecological Knowledge.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- Timeframe: Under Review
- Agency/Agencies: Natural Resources Agency and all relevant Departments, Conservancies, Commissions, and Boards
- For More Details: Under Review

NEW! Action 15: Streamline and consolidate permit process for small and medium size organics recycling and composting facilities through pre-application coordination, programmatic approvals, consistent monitoring standards, statutory or regulatory reform, best available science, and agency leadership.

- **Success Metric:** Increase number of small and medium size organics recycling and composting facilities and provide planning and permit guidance.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency – Department of Resources Recycling and Recovery, California Air Resources Board, State Water Resources Control Board, and Regional Water and Air Agencies
 - For More Details: Under Review

NEW! Action 16: Increase investment in community composting to provide support to an additional 500 community composting sites throughout California, including tribal lands.

- **Success Metric:** Increase number of community composting sites.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency – Department of Resources Recycling and Recovery
 - For More Details: Under Review

GOAL B: Increase landscape connectivity and establish climate refugia

Action 1: Maintain and increase areas of high resilience to climate change.

- **Success Metric:** Per the Executive Order N-82-20, conserve 30 percent of the state's land and coastal waters.
 - Timeframe: 2030
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife
- **Success Metric:** Newly developed Land Management Plans include strategies for maintaining or increasing habitat identified as highly resilient to climate change.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife

Action 2: Utilize California's Marine Protected Areas to build climate resilience.

- **Success Metric:** Support research to better understand the mechanisms and role that Marine Protected Areas can play in building climate resilience.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Ocean Protection Council

- **Success Metric:** Develop and implement the MPA Statewide Leadership Team Work Plan
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Ocean Protection Council

UPDATED! Action 3: Conserve agricultural lands at risk of development to reduce the rate of conversion and retain habitats and connectivity.

- **Success Metric:** Increase in agricultural acres permanently protected through state programs.
 - Timeframe: Ongoing
 - Agency/Agencies: Governor's Office of Planning and Research – Strategic Growth Council | Natural Resources Agency – Department of Conservation, Coastal Commission | Department of Food and Agriculture

Action 4: Enhance and maintain state wildlife areas and ecological reserves as well as increase pace and scale of habitat restoration and adaptive management on state lands, including through the Cutting the Green Tape initiative.

- **Success Metric:** Number of acres improved or restored in highly climate-vulnerable areas on state wildlife areas, ecological reserves, and other state lands.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency - all | Department of Food and Agriculture | Environmental Protection Agency – State Water Resources Control Board

Action 5: Reconnect aquatic and terrestrial habitats to help fish and wildlife endure drought and adapt to climate change.

- **Success Metric:** Number of fish passage barriers, as identified in the fish passage assessment database, that are removed.
 - Timeframe: Ongoing, reported annually
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Department of Water Resources, Wildlife Conservation Board
- **Success Metric:** Adequate flow in California's waterways during normal and drought years to maintain native fisheries in good condition.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources, Department of Fish and Wildlife, Wildlife Conservation Board | Environmental Protection Agency – State Water Resources Control Board
- **UPDATED! Success Metric:** Number of wildlife barriers, as identified in the wildlife barriers report, that are removed or addressed through terrestrial over/under passes built or retrofitted.
 - Timeframe: Report progress with next Adaptation Strategy update
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board | Natural Resources Agency – Department of Fish and Wildlife, Wildlife Conservation Board

Action 6: Restore and expand rivers, mountain meadows, and deltaic wetlands to improve water quality and storage, enhance wildlife habitat and biodiversity, sequester carbon, and buffer floods.

- **Success Metric:** Expansion of wetland and floodplain acreage statewide.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Department of Water Resources, Wildlife Conservation Board, Sierra Nevada Conservancy, Tahoe Conservancy

Action 7: Minimize causes and impacts of ocean acidification and hypoxia.

- **UPDATED! Success Metric:** Based on the latest scientific research, advance adoption of regulations, as needed and depending on available funding, establishing water quality objectives or other regulatory action and program of implementation for ocean acidification and hypoxia that include, but are not limited to, publicly owned treatment works, stormwater, and non-point source pollution, by 2027, with scientific analysis of the relationship between nutrient inputs and acidification hot spots completed by 2024.
 - Timeframe: 2028
 - Agency/Agencies: Natural Resources Agency – Ocean Protection Council | Environmental Protection Agency – State Water Resources Control Board
- **Success Metric:** With the water recycling industry, and state and federal government, increase support for water reuse projects coastwide.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Ocean Protection Council | Environmental Protection Agency – State Water Resources Control Board
- **Success Metric:** Based on the latest scientific results, establish interim goals as needed for significantly reducing nutrient loading and/or phasing out coastal wastewater discharge into the ocean; work with partners to achieve a goal of 80-90% coastal wastewater recycling that can be put to beneficial use.
 - Timeframe: 2040
 - Agency/Agencies: State Lands Commission
- **UPDATED! Success Metric:** Implementation of California's Ocean Acidification Action Plan goals.
 - Timeframe: 2024
 - Agency/Agencies: Natural Resources Agency – Ocean Protection Council | Environmental Protection Agency – State Water Resources Control Board
- **UPDATED! Success Metric:** Initiate development of water quality objectives, or some other appropriate regulatory action, and a program of implementation once sufficient scientific information is available.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Ocean Protection Council | Environmental Protection Agency – State Water Resources Control Board

GOAL C: Integrate nature-based climate solutions into relevant infrastructure and investments

Action 1: Integrate natural land, resource, ecosystem, and public health protection strategies into transportation resiliency planning.

- **Success Metric:** Ensure integration of climate change, natural resources, equity, and environmental considerations into all planning guidance and products, including transportation corridor plan guidance and project planning documents.
 - Timeframe: Ongoing
 - Agency/Agencies: State Transportation Agency – Caltrans
- **Success Metric:** Support habitat connectivity and restoration in project planning.
 - Timeframe: Ongoing
 - Agency/Agencies: State Transportation Agency – Caltrans
- **Success Metric:** Prioritize natural solutions in project delivery and environmental mitigation using climate smart land strategies.
 - Timeframe: Ongoing
 - Agency/Agencies: State Transportation Agency – Caltrans

Action 2: Minimize adverse environmental impacts of the transportation system through enhancing California's natural resources and environmental health.

- **Success Metric:** Increase usage of natural infrastructure solutions such as bioswales, rainwater storage systems, and permeable pavements to enhance infrastructure resiliency.
 - Timeframe: Ongoing
 - Agency/Agencies: State Transportation Agency – Caltrans
- **Success Metric:** Increase implementation of management practices that minimize soil loss and improve the water holding capacity of soil along roadways, such as compost or mulch application and live planting.
 - Timeframe: Ongoing
 - Agency/Agencies: State Transportation Agency – Caltrans | Environmental Protection Agency – Department of Resources Recycling and Recovery
- **Success Metric:** Support a comprehensive culvert and fish passage improvement program along transportation corridors.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Wildlife Conservation Board

Action 3: Prioritize the use of natural infrastructure in efforts to protect and restore coastal watersheds, coasts, marine waters, and coastal ecosystems.

- **Success Metric:** Develop guidance for Coastal Commission staff and project applicants on evaluating shoreline management adaptation options in light of sea-level rise in support of nature-based adaptation strategies and phased adaptation approaches.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Coastal Commission, State Lands Commission

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Develop and implement strategies to protect the state's biodiversity, working and natural lands in the coastal zone, and coastal waters and build climate resilience and economic sustainability.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Coastal Commission, Ocean Protection Council, State Lands Commission

Action 4: Encourage investment in upper watersheds to protect water quality and supply.

- **Success Metric:** Sustainable forest health conditions that protect water quality and aquatic habitat, and reduce fire risk.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board | Natural Resources Agency – Department of Forestry and Fire Protection, Department of Conservation, Department of Water Resources, Sierra Nevada Conservancy
- **Success Metric:** Robust reforestation program to quickly recover critical watersheds after high severity fire.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency - Department of Forestry and Fire Protection, Sierra Nevada Conservancy

Action 5: Integrate nature-based solutions in the development of California's High-Speed Rail system.

- **Success Metric:** Use of drought-tolerant, native, and/or fire-resistant landscaping and compost application.
 - Timeframe: Annual
 - Agency/Agencies: State Transportation Agency - High-Speed Rail Authority | Environmental Protection Agency – Department of Resources Recycling and Recovery
- **Success Metric:** Number of grants funded and trees planted through Urban Forestry Program
 - Timeframe: Annual
 - Agency/Agencies: State Transportation Agency - High-Speed Rail Authority

NEW! Action 6: Utilize nature-based solutions as part of cooling strategies in public and private spaces, including through planting trees, expanding greenspace, restoring urban streams, and increasing public awareness of best practices to green urban residential areas.

- **Success Metric:** Development and implementation of outreach, education, financial assistance, studies, and technical assistance programs to support local agencies and the public in increasing in water-efficient greenspace, compost utilization, and climate-appropriate urban tree planting.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Forestry and Fire Protection, Department of Water Resources, Department of Conservation, Wildlife

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

Conservation Board, Santa Monica Mountains Conservancy, San Gabriel and Lower Los Angeles Rivers Conservancy | Environmental Protection Agency – State Water Resources Control Board, Department of Resources Recycling and Recovery | State Transportation Agency – Caltrans, High-Speed Rail Authority

- For More Details: [Model Water Efficient Landscape Ordinance](#); [Save Our Water](#)
- **Success Metric:** Development and implementation of outreach, education, financial assistance, studies, and technical assistance programs to support local agencies and the public in reducing urban temperatures through nature-based solutions.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Forestry and Fire Protection, Department of Water Resources, Department of Conservation, Wildlife Conservation Board, Santa Monica Mountains Conservancy, San Gabriel and Lower Los Angeles Rivers Conservancy | Environmental Protection Agency – State Water Resources Control Board, Department of Resources Recycling and Recovery | State Transportation Agency – Caltrans, High-Speed Rail Authority
 - For More Details: [Extreme Heat Action Plan](#)
- **Success Metric:** Public awareness and participation in green urban practices.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Forestry and Fire Protection, Department of Water Resources, Department of Conservation, Wildlife Conservation Board, Santa Monica Mountains Conservancy, San Gabriel and Lower Los Angeles Rivers Conservancy | Environmental Protection Agency – State Water Resources Control Board, Department of Resources Recycling and Recovery | State Transportation Agency – Caltrans, High-Speed Rail Authority
 - For More Details: [Save Our Water](#)

GOAL D: Accelerate state processes to support implementation of nature-based climate solutions

Action 1: Coordinate and guide prescribed fire and cultural fire activities and address the key barriers to widespread use in California.

- **Success Metric:** Conduct research, develop guidance and template permit language, deploy a system to streamline and clarify the regulatory processes, and fund cultural fire on and off tribally owned lands with the goal of cutting the green tape for cultural fire.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Forestry and Fire Protection, in partnership with U.S. Forest Service and other federal, state, local and tribal governments | Environmental Protection Agency – Air Resources Board
- **Success Metric:** Develop and deploy cultural fire and burn boss trainings with tribal nations, state, and federal agencies.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Forestry and Fire Protection, in partnership with U.S. Forest Service and other federal, state, local and tribal governments | Environmental Protection Agency – Air Resources Board

Action 2: Expedite permitting processes for wildfire resilience projects using exemptions or the California Vegetation Treatment program.

- **Success Metric:** Wildfire resilience projects not stalled in environmental review: streamlined and consolidated environmental permitting for wildfire projects.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Board of Forestry

Action 3: Accelerate permitting for groundwater recharge projects to capture peak flows for groundwater recharge.

- **Success Metric:** Increase in new groundwater recharge projects implemented on natural and working lands.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board | Natural Resources Agency – Department of Water Resources, Delta Stewardship Council, San Francisco Bay Conservation and Development Commission | Department of Food and Agriculture

Action 4: Align and improve permitting to help launch and incentivize more multi-benefit, multi-partner restoration projects that build water resilience.

- **Success Metric:** Accelerate pace and scale of multi-benefit, multi-partner restoration and water projects.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Department of Water Resources, Delta Stewardship Council | Department of Food and Agriculture | Environmental Protection Agency – State Water Resources Control Board
- **Success Metric:** Identify opportunities and a strategy for implementing regulatory alignment measures that reduce the administrative burden of regulatory compliance for agricultural producers and incentivize the use of climate smart agriculture practices.
 - Timeframe: 2024
 - Agency/Agencies: Department of Food and Agriculture | Environmental Protection Agency

Action 5: Streamline coastal permitting processes for restoration/nature-based solutions through pre-application coordination, programmatic approvals, consistent monitoring standards, regulatory reform, best available science, and agency leadership.

- **Success Metric:** Provide planning, permitting, and leasing guidance encouraging the use of nature-based solutions.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Coastal Commission, State Lands Commission, Ocean Protection Council
- **Success Metric:** Number of coastal restoration projects implemented through streamlined permitting options.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- Timeframe: 2025
- Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife

Action 6: Expedite the regulatory approval process for appropriate large habitat restoration projects.

- **UPDATED! Success Metric:** Implement the 2022 General Order adopted for Clean Water Act Section 401 Water Quality Certification and waste discharge requirements for restoration projects statewide.
 - Timeframe: 2025
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board
- **Success Metric:** Development of streamlined incidental take authorization (California Endangered Species Act) for large restoration projects (Restoration Management Permit) and consistency determination process for programmatic federal biological opinions.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife
- **NEW! Success Metric:** Establish multi-disciplinary technical support for expediting approvals and implementation of large habitat restoration projects.
 - Timeframe: 2025
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife
 - For More Details: Under Review

PRIORITY: Make Decisions Based on the Best Available Climate Science

California's investment in actionable scientific research is a cornerstone of its leadership on climate change. Each year, scientific understanding of climate change and its impacts improves. In California, world-class scientific researchers are currently deepening our understanding of how climate change impacts our state and what we can do about it. This evolving scientific understanding must underpin all our efforts to strengthen climate resilience.

A science-to-action approach that advances partnership-based research allows us to better understand the location, timing, and extent of climate impacts and will support investments and policies that reduce future climate risk. For example, the Fourth Climate Change Assessment was designed to be actionable by state and local stakeholders and supports adaptation practice across the state. Many local counties and government agencies continue to use the Fourth Assessment projections to plan for sea-level rise, extreme heat, and other climate impacts. Now underway, the Fifth Climate Change Assessment is already expanding and building on the advancements made during the Fourth Assessment.

The partnership-based research models California is adopting will improve our understanding of and response to climate impacts by diversifying the perspectives and contributions to this work. For example, western science has overlooked the generations of knowledge held by indigenous communities, who have stewarded the land since time immemorial. Seeking and elevating Traditional Ecological Knowledge can augment conventional research methods to better understand how California's climate and environment have changed over time. Additionally, establishing partnerships at the outset of research processes to understand communities' needs will direct more actionable research and outcomes. As a State, we commit to continued support for new and innovative climate research, and application of findings for the purpose of adaptation.

Note to Readers - Highlights and Trends from the 2021 to 2024 Update: New additions to this Priority from CAL FIRE demonstrate the State's commitment to applying research and monitoring to inform adaptive management of the California's forests. Information generated through these efforts will improve our understanding of the outcomes of forest resilience practices, monitor forest health as the climate changes, and prioritize resilience projects.

Over the 2024 – 2027 implementation period of this Strategy, California's Fifth Climate Change Assessment will release technical, synthesis, and regional reports based on the downscaled climate projections generated in 2024. The Fifth Assessment will significantly advance our understanding of climate impacts in California and decision support tools, including the updated Cal-Adapt Enterprise and the updated Planning and Investing for a Resilient California Guidebook which will support the integration of data into decision-making.

Goal A: Support actionable climate science

Action 1: Increase the state's ability to anticipate and plan for climate impacts through implementation of the California Climate Change Assessments, which fund applied science,

traditional knowledge, and tools that provide actionable insight into the impacts a changing climate has on California's economy, ecosystems, and communities.

- **Success Metric:** Release of updated science, in the form of scientific reports and regional syntheses, that can be used in guidance for planning and decision-making.
 - Timeframe: Five-year cycle for each Assessment
 - Agency/Agencies: Governor's Office of Planning and Research – Strategic Growth Council | Natural Resources Agency – Energy Commission

Action 2: Invest in science-based forest management.

- **Success Metric:** Creation of tools for spatial data, ground data, state demonstration, forest health project planning, and vegetation change tracking.
 - Timeframe: 2024-2025
 - Agency/Agencies: Natural Resources Agency
- **NEW! Success Metric:** Implementation and monitoring long term forest-climate experiments on State Forests and other lands.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency - Department of Forestry and Fire Protection
- **NEW! Success Metric:** Implement pre and post prescribed fire monitoring across a broad range of vegetation types.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency - Department of Forestry and Fire Protection
- **NEW! Success Metric:** Implementation of Forest Inventory and Analysis (FIA) intensification to provide comprehensive monitoring of forest health from FIA plot data.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency - Department of Forestry and Fire Protection
- **NEW! Success Metric:** Continue investment in Forest Health Research grants to better understand the effectiveness of forest health implementation projects.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency - Department of Forestry and Fire Protection

Action 3: Support utilization of emerging technologies and partnerships to improve forecasts of precipitation, seasonal snowpack, and runoff at all time scales.

- **Success Metric:** Experimental seasonal precipitation (including snowpack) forecasts are produced in partnership with the research community in each November for the coming wet season.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources
- **Success Metric:** Snowpack runoff forecasts are made with modern physically-based watershed models that can accommodate climate change impacts.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- Timeframe: Sacramento Valley forecasts in 2023, San Joaquin Valley forecasts in 2024, full implementation by 2030
- Agency/Agencies: Natural Resources Agency – Department of Water Resources
- **Success Metric:** Transition of successful atmospheric river forecasting tools and products from university partners to Department of Water Resources operations.
 - Timeframe: Ongoing starting in 2021
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources
- **Success Metric:** Number of research-grade weather stations installed on state lands that contribute to the state's climate modelling efforts.
 - Timeframe: 2024
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife
- **NEW! Success Metric:** Advance a multi-agency effort to install 430 new stream gages and upgrade or reactivate 200 more across the state.
 - Timeframe: under review
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources
 - For More Details: [California's Water Supply Strategy](#)

UPDATED! Action 4: Coordinate actionable research that informs climate resilient decarbonization.

- **UPDATED! Success Metric:** Deliver updated climate projections and launch a data platform and analytics engine to make climate projections available to users.
 - Timeframe: 2024
 - Agency/Agencies: Natural Resources Agency – Energy Commission
- **Success Metric:** Deliver research to understand and enhance climate resilience in California's clean energy transition.
 - Timeframe: 2026
 - Agency/Agencies: Natural Resources Agency – Energy Commission
- **Success Metric:** Use of valuation frameworks developed through ratepayer-funded research by state and local agencies to incorporate societal benefits into electricity sector adaptation planning.
 - Timeframe: 2025-2026
 - Agency/Agencies: Natural Resources Agency – Energy Commission
- **Success Metric:** Use of ratepayer-funded research results from the Energy Commission by utilities and other infrastructure providers to support vulnerability assessments as well as customer and grid-resilience investments and to inform their obligations to prioritize disadvantaged vulnerable communities in the context of climate change.
 - Timeframe: 2025-2026
 - Agency/Agencies: Natural Resources Agency – Energy Commission | Public Utilities Commission

Action 5: Work closely with federal agencies, tribal nations, businesses, and universities to better manage and protect California resources utilizing the latest available airborne and spaceborne climate monitoring data and data products, including low-cost sensors, hand-held devices, mobile survey vehicles, and sophisticated sensors set up on communication towers, drones, aircraft, and satellites.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Use aircraft and satellite-based snowpack observations to support the Department of Water Resources' transition to physically based watershed models for estimating snowmelt runoff.
 - Timeframe: Ongoing; a pilot effort for the Feather River Basin is beginning in Water Year 2022 to support the preliminary Sacramento Valley model-based forecasts to be made in Water Year 2023
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources
- **Success Metric:** Department of Water Resources staff are trained to process Interferometric Synthetic Aperture Radar data from the pending National Aeronautics and Space Administration NISAR mission (launch expected in 2023) and perform subsidence monitoring to support Sustainable Groundwater Management Act implementation.
 - Timeframe: After 2023
 - Agency/Agencies: Natural Resources Agency - Department of Water Resources

Action 6: Coordinate across state agencies to advocate for federal support for climate adaptation science in California.

- **Success Metric:** U.S. Department of Agriculture and Federal Emergency Management Agency assistance obtained for climate-linked agricultural research.
 - Timeframe: Ongoing
 - Agency/Agencies: Department of Food and Agriculture
- **Success Metric:** The State Water Resources Control Board Executive Director shall engage in dialogue with the United States Environmental Protection Agency (U.S. EPA), external experts, and interested stakeholders on how best to address meeting water quality standards given climate change impacts that contribute to or exacerbate degradation of water quality.
 - Timeframe: Ongoing
 - Agency/Agencies: Environmental Protection Agency – State Water Resources Control Board

Action 7: Invest in research, long-term monitoring/adaptive monitoring, and other efforts to improve nature-based climate solution decision-making.

- **Success Metric:** Number of funded projects that support restoration design, pre- and long-term post-restoration monitoring, and real-time decision making.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Department of Water Resources, Delta Stewardship Council | Department of Food and Agriculture | Environmental Protection Agency – State Water Resources Control Board
- **Success Metric:** Support research on climate indicators for California via the Indicators of Climate Change Reports and the Department of Water Resources California Hydroclimate Report.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Department of Water Resources, Delta Stewardship Council | Department of Food

and Agriculture | Environmental Protection Agency – State Water Resources Control Board

- **Success Metric:** Number of Healthy Soils Demonstration Projects funded to test effects of nature-based climate solutions on agricultural lands.
 - Timeframe: Annual
 - Agency/Agencies: Department of Food and Agriculture
- **Success Metric:** In the Tahoe Basin, increased research to improve future projects and programs, such as future hydrology projections and greenhouse gas sequestration in meadows and forests.
 - Timeframe: Ongoing (future hydrology projection complete in 2023; GHG sequestration in meadows complete in 2025)
 - Agency/Agencies: Natural Resources Agency – Tahoe Conservancy

UPDATED! Action 8: Develop and utilize a rapid assessment climate vulnerability assessment tool that is inclusive of tribal nations' priorities and cultural resources.

- **Success Metric:** Engage tribal nations, along with stakeholders, to gain a more holistic understanding of the multiple values a site may possess.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – State Parks Office of Historic Preservation
- **UPDATED! Success Metric:** Create a values definition that is inclusive of tribal nations' priorities and those of adjacent communities, to be used in a rapid assessment climate vulnerability assessment tool.
 - Timeframe: March 2025, Ongoing
 - Agency/Agencies: Natural Resources Agency – State Parks Office of Historic Preservation
- **Success Metric:** Conduct the rapid assessment considering the climate threats to the values a site possesses, modulate those threats for social and other factors, and conduct the rapid assessment.
 - Timeframe: March 2025, Ongoing
 - Agency/Agencies: Natural Resources Agency – State Parks Office of Historic Preservation
- **Success Metric:** Create a toolkit so that others can utilize the tool- thereby increasing climate ambition by making the toolkit accessible on a global scale.
 - Timeframe: March 2025, Ongoing
 - Agency/Agencies: Natural Resources Agency – State Parks Office of Historic Preservation
- **Success Metric:** Provide education, training, and technical assistance to potential users, in conjunction with partners working on similar frameworks.
 - Timeframe: March 2025, Ongoing
 - Agency/Agencies: Natural Resources Agency – State Parks Office of Historic Preservation

Action 9: Develop and update a suite of indicators that document the drivers and observed impacts of a changing climate across California over time.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Release of Indicators of Climate Change in California reports and related online resources, such as plain-language summaries and videos featuring Tribal perspectives on impacts.
 - Timeframe: 2026 and every four years thereafter; plain-language summaries released in 2023, with yearly updates, as appropriate; Tribal videos to be released in 2024
 - Agency/Agencies: Environmental Protection Agency - Office of Environmental Health Hazard Assessment
- **Success Metric:** New biodiversity-related indicators identified through successful implementation of the climate-biodiversity monitoring network on state lands.
 - Timeframe: Identify any new metrics by the 2026 update of the Indicators Report
 - Agency/Agencies: Natural Resources Agency - Department of Fish and Wildlife
- **Success Metric:** Publicly accessible compilation of documented human health impacts of climate change on Californians.
 - Timeframe: 2026
 - Agency/Agencies: Health and Human Services Agency – Department of Public Health

Action 10: Develop state-of-the-science models to map wildfire fuels and carbon stocks and simulate the future of California's natural and working lands.

- **Success Metric:** Launch model.
 - Timeframe: Align with 2022 Climate Change Scoping Plan
 - Agency/Agencies: Environmental Protection Agency – Air Resources Board | Natural Resources Agency – Department of Forestry and Fire Protection

Action 11: Understand climate vulnerabilities of wildlife areas, ecological reserves, and state-owned park units and marine protected areas along California's coast and ocean.

- **Success Metric:** Percentage of state-owned park units with completed vulnerability assessments.
 - Timeframe: 2026
 - Agency/Agencies: Natural Resources Agency – Department of Parks and Recreation, Coastal Commission
- **Success Metric:** Percentage of wildlife areas and ecological reserves with completed vulnerability assessments.
 - Timeframe: 2026
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Coastal Commission
- **Success Metric:** Development of plan and methodology for conducting vulnerability assessments for marine protected areas.
 - Timeframe: 2024
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Ocean Protection Council
- **NEW! Success Metric:** Explore the role of California's Marine Protected Areas and Marine Protected Area Network in imparting climate resilience and fund gaps.
 - Timeframe: 2024

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Ocean Protection Council
- For More Detail: [Climate Resilience and California's Marine Protected Area Network Report](#)

Action 12: Support accessible and actionable science to address the effect of climate change on species, habitats, and ecosystems.

- **Success Metric:** Support climate-related research on the impacts of climate change to sensitive species and at-risk ecosystems.
 - Timeframe: 2024
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife
- **Success Metric:** Develop a multi-year Science Action Strategy that identifies clear scientific research, monitoring, and priorities, including those specific to climate change.
 - Timeframe: Under review
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife
- **Success Metric:** Wildfire resilience planning tool developed which integrates spatial data.
 - Timeframe: Under review
 - Agency/Agencies: Natural Resources Agency

NEW! Action 13: Quantify the impact of increased temperatures on electric grid operation.

- **Success Metric:** Increase in the understanding of temperature impacts on grid operation.
 - Timeframe: Under Review
 - Agency/Agencies: Public Utilities Commission
 - For More Details: Under Review
- **Success Metric:** Implementation of grid resilience measures.
 - Timeframe: Under Review
 - Agency/Agencies: Public Utilities Commission
 - For More Details: Under Review
- **Success Metric:** Reduction in distribution level and system level power disruptions due to extreme heat events.
 - Timeframe: Under Review
 - Agency/Agencies: Public Utilities Commission
 - For More Details: Under Review

Goal B: Operationalize climate science into decision making

Action 1: Support consistent integration of climate risk into state agency decision making through regularly updated guidance.

- **Success Metric:** Update the Planning and Investing for a Resilient California Guidebook (implementing EO B-30-15 and EO N-19-19) and hold training workshops with agencies who operate, maintain, and invest in state infrastructure.
 - Timeframe: Update by mid-2024
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **UPDATED! Success Metric:** Update state guidance using best available science for sea-level rise adaptation, impacts, and hazards.
 - Timeframe: 2023 and every five years thereafter
 - Agency/Agencies: Natural Resources Agency – Ocean Protection Council
- **NEW! Success Metric:** Utilize and adopt updated state sea-level rise guidance for state agency staff and local governments to plan for sea-level rise adaptation, impacts, and hazards in a way that is responsive and flexible, and based on best available science and unique local community contexts.
 - Timeframe: 2024 and every five years thereafter
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources, Ocean Protection Council, Coastal Commission, San Francisco Bay Conservation and Development Commission, State Lands Commission | Governor's Office of Planning and Research – Planning and Policy
 - For More Details: Under Review
- **Success Metric:** Provide scientific guidance to agencies to understand potential impacts of sea-level rise to contaminated sites.
 - Timeframe: 2025
 - Agency/Agencies: Natural Resources Agency – Ocean Protection Council, Coastal Commission, San Francisco Bay Conservation and Development Commission, State Lands Commission | Environmental Protection Agency – Department of Toxic Substances Control | Governor's Office of Planning and Research – Planning and Policy
- **Success Metric:** Issue guidance on the consistent use of sea-level rise data in cleanup decisions in 2022 and train staff on the use of this guidance.
 - Timeframe: Under review
 - Agency/Agencies: Environmental Protection Agency – Department of Toxic Substances Control
- **Success Metric:** Develop a GIS tool to present sea-level rise data and the sites that the Department of Toxic Substances Control works on.
 - Timeframe: Under review
 - Agency/Agencies: Environmental Protection Agency – Department of Toxic Substances Control
- **Success Metric:** Issue guidance on the use of pathways of adaptation and resiliency measures.
 - Timeframe: Under review
 - Agency/Agencies: Environmental Protection Agency – Department of Toxic Substances Control
- **Success Metric:** Provide policy guidance and other forms of technical assistance to Coastal Commission staff, tribal and local governments, and other state agencies in support of updating Local Coastal Programs to address climate impacts, such as on addressing environmental justice and equity in sea-level rise planning, increased risk of wildfire and post-fire land management, droughts, seawater intrusion and ocean acidification.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Coastal Commission

Action 2: Improve wildfire smoke guidance for schools, children, and other vulnerable populations (including low-income populations, communities of color, and tribal communities). Develop outreach materials for health care providers and the public on wildfire smoke health effects and ways to decrease exposure.

- **Success Metric:** Guidance on the health effects of wildfire smoke for vulnerable populations including children; fact sheets and other outreach materials on wildfire smoke risks and adaptation measures for use by county health departments, health care providers, and school authorities; consultations with the Environmental Protection Agency and other state agencies on wildfire smoke risks and adaptation measures.
 - Timeframe: FY 2022-2023; additions and updates annually as appropriate
 - Agency/Agencies: Environmental Protection Agency - Office of Environmental Health Hazard Assessment | Health and Human Services Agency - Department of Public Health | Department of Education

Action 3: Understand climate impacts on agricultural land viability and use that information to inform conservation decisions and strategies.

- **Success Metric:** Coordinate information sharing with the University of California Agriculture and Natural Resources' agriculture adaptation research team.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Conservation | Department of Food and Agriculture

Action 4: Improve the ability of regions to anticipate water-related weather and climate changes.

- **Success Metric:** Support increased understanding and tribal and regional decision making related to water with watershed-scale climate vulnerability and adaptation assessments.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Department of Water Resources, Delta Stewardship Council, San Francisco Bay Conservation and Development Commission | Department of Food and Agriculture | Environmental Protection Agency – State Water Resources Control Board | Governor's Office of Planning and Research – Planning and Policy
- **Success Metric:** Improve spatial coverage of climate change studies. Ensure all hydrologic regions have comprehensive climate change analyses.
 - Timeframe: 2028
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources
- **Success Metric:** Improve forecasting of vulnerable areas to water supply shortages by identifying and refining lists of vulnerable regions.
 - Timeframe: Under review
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources
- **Success Metric:** Increase the number of flood control facilities that utilize Forecast-Informed Reservoir Operations.
 - Timeframe: Under review
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Complete watershed scale climate vulnerability and adaptation studies for the San Joaquin River watershed and its tributaries.
 - Timeframe: 2025
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources
- **Success Metric:** Develop planning guidance and toolkits for assessing climate change vulnerability and adaptation at the watershed scale.
 - Timeframe: 2025
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources
- **UPDATED! Success Metric:** Number of sub-watershed scale high resolution models developed and available to assess and forecast climate water deficit and inform state land managers of drought risk.
 - Timeframe: 2025
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Department of Water Resources

UPDATED! Action 5: Integrate consideration of California's most recent downscaled climate change projections into state conservation decisions.

- **Success Metric:** Strengthen climate adaptation components of conservation planning efforts.
 - Timeframe: Ongoing, beginning 2022
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Wildlife Conservation Board
- **Success Metric:** Incorporate climate change projections when assessing the ecological conditions of conservation targets.
 - Timeframe: Ongoing, beginning 2022
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Wildlife Conservation Board

Action 6: Incorporate the best available science, including the use of adaptation pathways, on sea-level rise into policies, plans, and permits and have explicit processes for updating these with new information.

- **Success Metric:** Number of state-wide policies, plans, permits, or documents completed to reduce future damage from coastal hazards, address sea-level rise, and mitigate climate change.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Coastal Commission, San Francisco Bay Conservation and Development Commission, Ocean Protection Council | Governor's Office of Planning and Research – Planning and Policy | State Lands Commission
- **Success Metric:** Number of Local Coastal Programs or other plans completed to reduce future damage from coastal hazards, address sea-level rise, and mitigate climate change.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Coastal Commission, San Francisco Bay Conservation and Development Commission, Ocean Protection Council | Governor's Office of Planning and Research – Planning and Policy

- **Success Metric:** Number of Local Coastal Program Grants and funding amount.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – Coastal Commission, San Francisco Bay Conservation and Development Commission, Ocean Protection Council

Action 7: Incorporate new practices into the climate smart agricultural incentive program benefit calculators, as science supports.

- **Success Metric:** Changes made to climate smart agricultural incentive program benefit calculators and number of new practices incorporated as science supports.
 - Timeframe: Continuous
 - Agency/Agencies: Department of Food and Agriculture

Action 8: Support knowledge exchange and outreach to develop a deeper understanding of climate change impacts on crops and livestock, climate change projections, and decision support tools for farmers and ranchers, disseminating up-to-date climate science and climate smart agricultural practices.

- **Success Metric:** Number of new online adaptation tools supported by the Department of Food and Agriculture.
 - Timeframe: 2024
 - Agency/Agencies: Department of Food and Agriculture
- **Success Metric:** Number of videos and educational material regarding Climate Smart Agriculture on the Department of Food and Agriculture website, as well as the level of distribution of these materials in areas of agricultural adaptation.
 - Timeframe: 2024 and annually thereafter
 - Agency/Agencies: Department of Food and Agriculture
- **Success Metric:** Number and geographical distribution of field days supported by the Healthy Soils Program, and number of technologies discussed at field days.
 - Timeframe: 2024 and annually thereafter
 - Agency/Agencies: Department of Food and Agriculture
- **Success Metric:** Farmer engagement with Community Education Specialists from University of California Cooperative Extension services to expand awareness of climate smart agricultural practices; measuring numbers of workshops and attendees.
 - Timeframe: 2024 and annually thereafter
 - Agency/Agencies: Department of Food and Agriculture

Action 9: Increase land and aquatic monitoring efforts to better understand and enable the early detection of climate impacts on biodiversity.

- **Success Metric:** Number of state-owned lands and marine protected areas with sustainable long-term monitoring frameworks implemented.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency - Department of Fish and Wildlife
- **Success Metric:** Improved detection and delimitation of pests and invasive species as an indicator of changing climate pressures.
 - Timeframe: Annual reporting

- Agency/Agencies: Department of Food and Agriculture

NEW! Action 10: Provide science-based guidance on cool and sustainable pavements.

- **Success Metric:** Develop the Sustainable Pavement Ideas Repository to provide a science-based sustainable pavement guidance.
 - Timeframe: 2024
 - Agency/Agencies: State Transportation Agency – Caltrans
 - For More Details: [Caltrans Pavement Program](#)
- **Success Metric:** Improvement in pavement durability and longevity.
 - Timeframe: Under Review
 - Agency/Agencies: State Transportation Agency – Caltrans
 - For More Details: [Caltrans Pavement Program](#)

NEW! Action 11: Develop an urban heat island effect index, including a definition consistent with the legislative intent in AB 296 (2012), and assess the extent and severity of the urban heat island effect for California cities to inform quantifiable reduction goals.

- **Success Metric:** Establishment of a baseline urban heat island index for California cities.
 - Timeframe: Under Review
 - Agency/Agencies: Environmental Protection Agency – California Air Resources Board | Governor's Office of Planning and Research – Planning and Policy | Government Operations Agency – Department of General Services, Building Standards Commission | Natural Resources Agency – Energy Commission, Department of Forestry and Fire Protection | State Transportation Agency – Caltrans
 - For More Details: [Urban Heat Island Index for California | CalEPA](#)
- **Success Metric:** Percentage reduction in the severity of urban heat island effect in targeted cities.
 - Timeframe: Under Review
 - Agency/Agencies: Environmental Protection Agency – Office of Environmental Health Hazard Assessment, California Air Resources Board | Governor's Office of Planning and Research – Planning and Policy | Government Operations Agency – Department of General Services, Building Standards Commission | Natural Resources Agency – Energy Commission, Department of Forestry and Fire Protection | State Transportation Agency – Caltrans
 - For More Details: Under Review
- **Success Metric:** Integration of the index into local climate action plans.
 - Timeframe: Under Review
 - Agency/Agencies: Environmental Protection Agency – Office of Environmental Health Hazard Assessment, California Air Resources Board | Governor's Office of Planning and Research – Planning and Policy | Government Operations Agency – Department of General Services, Building Standards Commission | Natural Resources Agency – Energy Commission, Department of Forestry and Fire Protection | State Transportation Agency – Caltrans
 - For More Details: Under Review

PRIORITY: Partner and Collaborate to Leverage Resources

The impacts of climate change in California are wide ranging and experienced in myriad ways across the state. Climate impacts affect large cities and small towns, our natural places and our built environment, a wide array of sectors, and the full diversity of California's 40 million residents.

Governments and public agencies at all levels are impacted by climate change and have some responsibility to help California adapt. No one single government or entity is fully "in charge" of building climate resilience and can lead this effort alone. In the case of climate driven catastrophic wildfires, for example, multiple governments play important roles: federal agencies like the U.S. Forest Service; state agencies like CAL FIRE and state conservancies; and local county and city governments. Additionally, non-governmental entities including Fire Safe Councils, Resource Conservation Districts, timber companies, neighborhood councils, and other groups contribute to local and regional fire resilience.

Partnerships, coordination, and collaboration in our efforts to build climate resilience are essential given the diversity of threats California faces and the vast array of entities that are focused on building our resilience to these threats. All entities – from individuals, to tribal, local, regional and state governments, to community-based organizations and the private sector – hold a piece of the puzzle and must work together to leverage each other's strengths and actions in response to the climate crisis.

Collaborative approaches to resilience can anchor equity in California's climate efforts by welcoming the perspective of vulnerable communities to shape planning, projects, and investments. Building partnerships with diverse entities can also support capacity-building by creating networks for information-sharing and other support. Deepening relationships with vulnerable communities will advance equity outcomes in resilience efforts and have broader equity benefits by earning the trust and respect of the communities we serve.

Working together allows us to go further, faster. This priority serves to encourage collaboration and demonstrate the State's commitment to achieve equitable climate adaptation action through partnerships.

Note to Readers - Highlights and Trends from the 2021 to 2024 Update: This draft includes two new Success Metrics for new collaborative initiatives to support public health and land conservation. The California Department of Public Health's Climate Change and Health Equity Section is establishing a Local Health Department Climate and Health Community of Practice to build a network of public health departments to share resources, strategies, best practices, opportunities, and support to address the health equity impacts of climate change. Additionally, the Natural Resources Agency and several of its departments will establish workgroups to develop a conservation strategy framework for river corridors and identify pilot projects. These new partnerships and networks will build on the success of existing and ongoing efforts from the 2021 Strategy, and together, these initiatives will expand capacity to prepare for and respond to climate change in California.

GOAL A: Collaborate to build climate resilience across sectors and region

Action 1: Accelerate state, tribal, and local adaptation efforts through sharing of best practices, facilitating collaborative partnerships, and direct investments through the Integrated Climate Adaptation and Resiliency Program.

- **Success Metric:** Number of engaged and sustained users of the State's Adaptation Clearinghouse.
 - Timeframe: Annual
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy
- **Success Metric:** Number of grants and amount of funding awarded to support collaborative partnerships on adaptation planning and implementation.
 - Timeframe: Annual
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy
- **UPDATED! Success Metric: Develop annual impact report documenting the milestones, lessons learned, collaborations and partnerships, and emerging best practices identified through the Integrated Climate Adaptation and Resiliency Program.**
 - Timeframe: Annual
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy

Action 2: Improve coordination and alignment on climate adaptation and resilience in the water sector through partnerships.

- **UPDATED! Success Metric:** Establish regular dialogue with federal, tribal, local, and regional water stakeholders.
 - Timeframe: Ongoing
 - Agency/Agencies: CA Natural Resources Agency - Department of Fish and Wildlife, Department of Water Resources, Delta Stewardship Council | CA Department of Food and Agriculture | CA Environmental Protection Agency - State Water Resources Control Board
- **Success Metric:** Engage California Native American tribes to drive climate resilience.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency - Department of Fish and Wildlife, Department of Water Resources, Delta Stewardship Council | Department of Food and Agriculture | Environmental Protection Agency - State Water Resources Control Board
- **Success Metric:** Work with partners on bi-national, cross-border opportunities to improve water resilience.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency - Department of Fish and Wildlife, Department of Water Resources, Delta Stewardship Council, State Lands Commission | Department of Food and Agriculture | Environmental Protection Agency - State Water Resources Control Board
- **Success Metric:** Partner with Water Districts to improve forest health of natural watersheds.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- Timeframe: Ongoing
- Agency/Agencies: Natural Resources Agency – Department of Conservation, Department of Forestry and Fire Protection
- **NEW! Success Metric:** Develop data and analytical tools for implementing the water right priority system for an estimated 10 to 15 watersheds.
 - Timeframe: under review
 - Agency/Agencies: Environmental Protection Agency - State Water Resources Control Board
 - For More Details: Under Review

Action 3: Explore community and tribal stewardship and co-management agreements and policies to meaningfully engage the public in the management of public lands and resources and provide additional oversight and protections for State Lands Commission and Department of Fish and Wildlife lands.

- **Success Metric:** Number of established and/or updated community steward and partnership agreements with collaborators on State Lands Commission and Department of Fish and Wildlife lands, lease requirements, or polices.
 - Timeframe: 2021-2025
 - Agency/Agencies: Natural Resources Agency - State Lands Commission, Department of Fish and Wildlife

Action 4: Work with tribal and local governments to establish a shared vision for climate change and sea-level rise adaptation planning updates to Local Coastal Programs.

- **Success Metric:** Coastal Commission and local governments agree to co-develop guidance on an improved Local Coastal Program update process that supports more frequent and incremental or 'phased' updates to Local Coastal Programs, including identifying appropriate time horizons for policy application, baseline policies for a first-round update, and future update requirements.
 - Timeframe: Ongoing; additional guidance and recommended actions anticipated in 2024
 - Agency/Agencies: Natural Resources Agency – Coastal Commission

Action 5: Coordinate with U.S. Department of Agriculture's Natural Resource Conservation Service on funding opportunities and the Climate Hub activities supporting adaptation tools and resources.

- **Success Metric:** Under review
 - Timeframe: Under review
 - Agency/Agencies: Department of Food and Agriculture

Action 6: Coordinate with the U.S. Forest Service to improve forest health and wildfire resilience.

- **Success Metric:** Federal funding matching California's investment in Forest Health and Fire Resilience.

- Timeframe: Ongoing
- Agency/Agencies: Natural Resources Agency

Action 7: Provide technical assistance to farmers implementing climate smart agricultural practices through collaboration with U.S. Department of Agriculture, University of California Cooperative Extension, and non-governmental organizations.

- **Success Metric:** Number of technical assistance agreements with University of California Cooperative Extension, California State University, and non-governmental organizations.
 - Timeframe: Annually
 - Agency/Agencies: Department of Food and Agriculture

Action 8: Collaborate with state, regional, and local agencies to build a resilient High-Speed Rail system of the future, and partner with communities to meet local needs through station area planning.

- **Success Metric:** Number of stakeholder and community engagement meetings and surveys through Authority community liaisons.
 - Timeframe: Meetings are held regularly on a monthly or every other month basis
 - Agency/Agencies: State Transportation Agency – High-Speed Rail Authority
- **Success Metric:** Identification of disadvantaged or underserved community needs and goals for station areas and High-Speed Rail.
 - Timeframe: Meetings are held regularly on a monthly or every other month basis
 - Agency/Agencies: State Transportation Agency – High-Speed Rail Authority
- **Success Metric:** Completion of successful early site activation that meets needs of community.
 - Timeframe: Site activation phased in before station use across the state
 - Agency/Agencies: State Transportation Agency – High-Speed Rail Authority
- **Success Metric:** Number of meetings held with peers including regional partners and state agencies.
 - Timeframe: Annual
 - Agency/Agencies: State Transportation Agency – High-Speed Rail Authority
- **Success Metric:** Agreements made related to data or information sharing.
 - Timeframe: Annual
 - Agency/Agencies: State Transportation Agency - High-Speed Rail Authority

Action 9: Collaborate with federal, state, tribal, and private partners to increase pace and scale of forest restoration and maximize the climate resilience benefits of forest treatments.

- **Success Metric:** Identification of engagement opportunities for partners and stakeholders on the full spectrum of priorities to increase pace and scale and reach resilience.
 - Timeframe: 2034 (New website released in 2023)
 - Agency/Agencies: Natural Resources Agency - Tahoe Conservancy, Sierra Nevada Conservancy
- **UPDATED! Success Metric:** Progress in achieving the goals and strategies of the Tahoe Central-Sierra Initiative 10-year regional plan.
 - Timeframe: 2034

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- Agency/Agencies: Natural Resources Agency - Tahoe Conservancy, Sierra Nevada Conservancy
- **Success Metric:** Number of collaborative projects with the U.S. Forest Service focused on forest pest management, terrestrial weed control, and state and private forestry weed control.
 - Timeframe: Annual
 - Agency/Agencies: Department of Food and Agriculture

UPDATED! Action 10: Leverage federal support such as the historic Infrastructure Investments and Jobs Act (IIJA) and the Inflation Reduction Act (IRA) that amplifies state programs to deliver on California's climate resilience agenda and priorities.

- **Success metric:** Secure federal funding to support energy resilience.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency – California Energy Commission

Action 11: Leverage federal funding to support fire-hardening roads and communities.

- **Success metric:** Number of 20-foot wide roads and number of dense communities with fire hydrants.
 - Timeframe: Ongoing
 - **Agency/Agencies:** Natural Resources Agency – Board of Forestry

Action 12: Number of private sector companies offering funding for healthy soil management practices or integrating soil health into their supply chain.

- **Success metric:** Number of private sector companies offering funding for healthy soil management practices or integrating soil health into their supply chain.
 - Timeframe: 2024
 - Agency/Agencies: Department of Food and Agriculture | Natural Resources Agency

Action 13: Support tribal nations, communities, groups, and leaders in each of the state's regions to develop and execute integrated water resilience strategies.

- **Success metric:** Increase in active, watershed-scale, multi-sector coordination partnerships and networks that contribute to water resilience by identifying climate vulnerabilities, conducting risk assessments, and identifying robust adaptation strategies.
 - Timeframe: 2025
 - Agency/Agencies: Natural Resources Agency – Department of Water Resources, Department of Conservation

Action 14: Collaborate with local health departments and communities facing climate and health inequities to develop a shared vision and action plan for protecting health equity and well-being in a changing climate.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **UPDATED! Success metric:** Records of engagement of health departments and communities, establishment of a Local Health Department Climate and Health Community of Practice, and written vision and action plan.
 - Timeframe: 2023-2024 and ongoing
 - Agency/Agencies: Health and Human Services Agency – Department of Public Health

NEW! Action 15: Explore, setup, and/or leverage existing cooperative agreements among state agencies and departments for developing working lands conservation strategies that aid in establishing river corridor conservation zones and providing benefits to native species.

- **Success metric:** Interagency and interdepartmental policy and technical workgroups establish an initial conservation strategy framework and identify 10 pilot projects representative of state regional diversity.
 - Timeframe: 2026
 - Agency/Agencies: Natural Resources Agency – Department of Fish and Wildlife, Department of Conservation, Department of Water Resources, Department of Forestry and Fire Protection, Central Valley Flood Protection Board, Delta Conservancy, San Joaquin River Conservancy, Sierra Nevada Conservancy, State Coastal Conservancy, Santa Monica Mountains Conservancy, Coachella Valley Mountains Conservancy | Department of Food and Agriculture | Environmental Protection Agency – State Water Resources Control Board
 - For More Details: Under Review

NEW! Action 16: Launch an Extreme Heat and Community Resilience Program to coordinate state efforts and support local and regional adaptation efforts.

- **Success Metric:** Number of state and local adaptation efforts supported.
 - Timeframe: Under Review
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy, in partnership with relevant agencies
 - For More Details: [Extreme Heat and Community Resilience Program - Office of Planning and Research \(ca.gov\)](#)
- **Success Metric:** Number of community resilience projects initiated.
 - Timeframe: Under Review
 - Agency/Agencies: Governor's Office of Planning and Research – Planning and Policy, in partnership with relevant agencies
 - For More Details: [Extreme Heat and Community Program Round 1 Guidelines FY 2023-2024 \(ca.gov\)](#)

GOAL B: Increase awareness of climate adaptation and resilience issues

Action 1: Facilitate collaboration on adapting to climate change amongst grant applicants, grantees, and sub-grantees through convenings, trainings, and peer-to-peer learning in the agricultural sector.

DRAFT 2024 CA CLIMATE ADAPTATION STRATEGY

- **Success Metric:** Number of convenings, trainings, and peer-to-peer learning events held per year, as well as videos produced and visited using farmers' voices, and extension publications focused on farmer case studies.
 - Timeframe: Ongoing
 - Agency/Agencies: Department of Food and Agriculture
- **Success Metric:** Use of peer-to-peer learning, farmers' voices, and grower organizations to promote conservation agriculture practices.
 - Timeframe: Ongoing
 - Agency/Agencies: Department of Food and Agriculture
- **Success Metric:** Use of peer-to-peer learning, farmers' voices, and grower organizations to disseminate drought updates and drought management approaches.
 - Timeframe: Ongoing
 - Agency/Agencies: Department of Food and Agriculture

Action 2: Coordinate with Universities to share climate adaptation and resilience research and training opportunities.

- **Success Metric:** Number of opportunities for training publicized.
 - Timeframe: 2024 and annually thereafter
 - Agency/Agencies: Department of Food and Agriculture

Action 3: Working with partners, maintain and build up Climate Smart Agriculture outreach videos on the Department of Food and Agriculture website.

- **Success Metric:** Use of videos to demonstrate a wide variety of adaptation approaches, increasing adoption and visibility.
 - Timeframe: 2024 and annually thereafter
 - Agency/Agencies: Department of Food and Agriculture

Action 4: Increase meaningful government-to-government consultations with tribal nations, public awareness of, and encourage participation in, planning to address climate change in coastal communities and statewide.

- **Success Metric:** Tell local and regional stories about people and places adapting to climate change.
 - Timeframe: Ongoing
 - Agency/Agencies: Natural Resources Agency - San Francisco Bay Conservation and Development Commission

Action 5: Empower Californians to take meaningful climate action through increased service and volunteerism opportunities.

- **UPDATED! Success Metric:** Number of people educated, number of service members and volunteers engaged, number and type of individual actions reported.
 - Timeframe: Ongoing (Program timeline/tracking in sync with Fellow cohorts serving September-August each year)
 - Agency/Agencies: California Volunteers

Action 6: Increase protection of heritage and cultural resources from climate impacts through science-based, tribal expertise, and Traditional Ecological Knowledge solutions, in partnership with California Native American tribes, adjacent communities, and the cultural and arts sector.

- **UPDATED! Success Metric:** Conduct assessments of climate impacts to cultural heritage, sourced from the Cultural Resources Climate Change Task Force, partnerships, and community engaged efforts. Complete assessment of climate impacts on cultural heritage based on emerging understanding being discussed through the Cultural Resources Climate Change Task Force.
 - Timeframe: 2024, Ongoing
 - Agency/Agencies: Natural Resources Agency – State Parks Office of Historic Preservation

Planned Landing Page Updates

Landing Page: Regions

[Note to Readers – This section is under review and development as Fifth Assessment products become available in 2024.]

Landing Page: Tribes

[Note to Readers – This section is under review. We welcome suggestions for how to be the most valuable for the 2024-2027 timeframe.]

Landing Page: A Timeline of California’s Climate Adaptation Policy

[Note to Readers – We will add further adaptation policy advancements from recent years (2021 – 2024) to this timeline: <https://climateresilience.ca.gov/overview/timeline.html>. When the final Strategy is released and the website is updated, the timeline information will be reflected as visual/graphic.]