EPA's Climate Adaptation Plan 2022 Progress Report

Agency: U.S. Environmental Protection Agency

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SECTION 1: UPDATES ON PRIORITY ACTIONS

1. Priority Action Progress Summary

Action	Current Status	Estimated Date of Completion	Brief Description of Progress
Priority Action 1: Integrate climate adaptation into EPA's programs, policies, rulemaking processes, and enforcement activities.	In progress	5/2014 – 9/2026 (ongoing process with multiple target completion dates)	Building on ongoing work since 2014, EPA is continuing to train managers and staff on the importance of climate adaptation to EPA's mission (*e.g.,* requiring "Introductory Climate Adaptation Training" for all new employees) and developing new training modules (*e.g.,* for integrating climate adaptation into rulemaking processes). The Agency is also enhancing existing decision support tools (*e.g.,* EJSCREEN) used by EPA staff and external partners so they can account for risks posed by climate change and modernizing financial assistance programs to encourage and support climate-resilient investments, particularly under the Bipartisan Infrastructure Law (BIL). In addition to EPA's Agency-wide Plan and priority actions, all National Programs and Regional Offices have developed draft Implementation Plans containing specific actions to integrate climate change into their programs, policies, rulemakings, and enforcement activities consistent with their respective authorities.
Priority Action 2: Consult and partner with states, tribes, territories, local governments, environmental justice organizations, community groups, businesses, and other federal agencies to strengthen adaptive capacity and increase the resilience of the nation, with a particular focus on advancing environmental justice.	In progress	9/2008 – 9/2026 (ongoing process with multiple target completion dates)	Building on ongoing work since 2008, EPA is strengthening the adaptive capacity of its partners through four primary mechanisms: (1) training to increase awareness of the ways climate change may affect their ability to implement effective environmental and public health programs (*e.g.,* "Climate Change Adaptation Introductory Training for Local Governments"), (2) tools, data, and informational resources (*e.g.,* through EPA's Climate Change Adaptation Resources Center ([ARC-X]), (3) technical and planning assistance (*e.g.,* through EPA's Office of Community Revitalization), and (4) supporting climate-resilient investments in communities across the country (*e.g.,* through the Tribal General Assistance Program [GAP]).

Priority Action 3: Implement measures to protect the Agency's workforce, facilities, critical infrastructure, supply chains, and procurement processes from the risks posed by climate change.	In progress	5/2014 – 9/2026 (ongoing process with multiple target completion dates)	Building on ongoing work since 2014, EPA's Office of Mission Support (OMS) has identified priority actions to ensure the safe and continued operation of the Agency's facilities, contracts, grants, workforce, and operations, including critical supply chains. OMS is in the process of conducting new climate assessments for all 20 EPA-owned facilities to prioritize projects that protect against climate change. OMS is also incorporating climate risk data in acquisitions planning, mission-critical contracts, and a new Supply Chain Management Program.
Priority Action 4: Measure and evaluate performance.	In progress	10/2021 – 9/2026 (ongoing process with multiple target completion dates)	EPA released its *FY 2022 – 2026 Strategic Plan*, with long and short-term performance measures, to track and evaluate the effectiveness of all actions to address climate change through the Agency's programs, policies, rulemakings, operations, and enforcement and compliance activities. In addition to incorporating climate change into its Agency-wide planning and budget processes, EPA's National Programs and Regional Offices are currently working to measure and report on their progress implementing priority actions in their individual Climate Adaptation Implementation Plans.
Priority Action 5: Identify and address climate adaptation science needs.	In progress	8/2022 – 8/2026 (ongoing process with multiple target completion dates)	EPA's Office of Research and Development (ORD) is coordinating with the National Programs and Regional Offices to identify priority climate research needs for the entire Agency. ORD is prioritizing research that best supports EPA's programs and its external partners in planning for, designing, and performing climate adaptation activities based on sound science.

2. Priority Action Progress Examples

Regarding Priority Action 1: All EPA National Program and Regional Offices are developing Climate Adaptation Implementation Plans (to be finalized by August 1, 2022) that contain program-specific or region-specific goals, commitments, measures, and implementation strategies for integrating climate adaptation throughout regular operations. The draft Implementation Plans contain office-specific vulnerability assessments, priority actions, and training opportunities that will advance EPA's Agency-wide climate adaptation goals and policies. The Implementation Plans will help ensure that climate adaptation remains a high priority within each Office.

Regarding Priority Action 2: EPA is integrating climate adaptation into its financial and technical assistance programs to encourage climate-smart investments across recipient states, territories, tribes, local governments, and others. EPA's Office of Water (OW) is highlighting climate tools and informational resources as it establishes an unprecedented technical assistance program to support underserved communities in applying for more than $43 billion in State Revolving Funds through BIL, while existing programs like Creating Resilient Water Utilities (CRWU) will expand the number of utilities to which they provide technical assistance and training to address climate risks. The Cross-EPA Work Group on Climate

Adaptation, with representatives from all National Programs and Regional Offices, is leading an effort to modernize the Agency's financial assistance programs to encourage climate-resilient investments across the nation. The Group is developing an approach that all EPA Offices can use to help integrate climate change into their financial and technical assistance agreements (*e.g.*, grants, loans, contracts, cooperative agreements, other key mechanisms), where appropriate, to better catalyze local climate-resilient actions.

Regarding Priority Action 3: OMS is the office within EPA responsible for facilities, transportation, security, health and safety, human resources, grants, and procurement. OMS has begun to update the list of climate vulnerabilities previously identified for EPA's facilities and operations (*e.g.,* structural, mechanical, water/energy availability, workforce, cybersecurity) in its 2014 Climate Adaptation Implementation Plan by conducting onsite evaluations with facility and lab managers. The results of these surveys will be used to identify adjustments facility managers might easily implement to become more climate resilient. OMS is using analytical tools to create new "hazard maps" of EPA locations by assigning climate risk factors by region/climate zone. These actions are being taken in conjunction with several planned initiatives to revisit and conduct additional climate resiliency assessments for EPA's facilities and operations, which are described in more detail below. The planned work builds upon progress already made. For example, EPA installed a 1.5-Megawatt solar field at its Edison, New Jersey, facility in 2018/2019. The solar field supplies over half of the site's overall power needs and allows continued operation during local power outages. EPA also relocated all the utilities at the Agency's Gulf Breeze Laboratory from vulnerable above-ground locations to underground concrete conduits to protect them from hurricane storm surges.

EPA is using American Rescue Plan funds to provide technical assistance to develop neighborhood cleaner air and cooling centers in public schools. The Agency also launched a "Cool Communities Challenge," which is a national competition to identify innovative and effective communication strategies that inform people of the risks of extreme heat and offer ways to keep safe during the hottest days.

Regarding Priority Action 4: EPA has established measures, metrics, and targets to monitor and evaluate the Agency's progress in implementing climate adaptation actions across all Offices. Assessment of the Agency's progress with meeting these targets will inform EPA's approach to integrate climate adaptation into its tools, activities, program management, and policy approaches. In addition to the long-term and interim measures outlined in EPA's Climate Adaptation Action Plan, EPA has established Long-Term Performance Goals for climate adaptation in the Agency's *FY 2022-2026 Strategic Plan*, as well as Annual Performance Goals in the FY 2023 Congressional Justification. Internal measures have additionally been developed by each National Program and Regional Office to track the execution of their Implementation Plans. These internal measures will be included in all final Implementation Plans and reported on a quarterly basis in a new database established for this purpose.

Regarding Priority Action 5: As the lead of this Priority Action, ORD held its first cross-Agency climate research workshop in October 2021 to gather information on EPA's climate-related research needs. Additional input was provided through listening sessions with state and local agencies and, separately, with tribes to hear their perspectives on science needs related to climate change and related equity concerns. Through these workshops, listening sessions, and the Office-specific Implementation Plans, over 240 adaptation science needs of importance to multiple EPA Offices, states, localities, and tribes have been identified. This information is being used in the design of ORD's FY 2023-2026 Strategic Research Action Plans (StRAPs) which will deliver research results that meet near-term and long-term science needs of the Agency and support the emerging needs of tribal, state, and community partners. ORD will continue to engage the National Programs and Regional Offices (as well as states, tribes, and communities) in identifying

priority research gaps and will conduct research that supports the integration of climate adaptation into EPA's activities.

SECTION 2: UPDATES ON OTHER INITIAL PLAN TOPICS

1. Climate-Risk Reduction

Climate resiliency has been an integral component of EPA's site planning and facility support for more than a decade. Since 2014, EPA has used a consistent method to identify vulnerabilities and assess operating risk to facilities and infrastructure from climate-related hazards. As a result of this approach, while prioritizing new projects for construction and/or renovation, EPA has taken steps to protect its most vulnerable facilities based on anticipated climate change risks and impacts in their respective locations. The biggest barrier EPA has encountered to reducing these risks continues to be significant budget constraints.

OMS has already identified more than 14 large and 120 small projects to enhance EPA facility resilience, support resilient power and water supply, and ensure continuity of operations in the event of severe weather events. EPA will give priority to its facilities located in vulnerable, underserved communities when addressing the impacts of climate change.

OMS has developed a Supply Chain Risk Management Plan that addresses climate change-related vulnerabilities in EPA's supply chain. OMS has also performed a high-level assessment of potential types of contract work that may be at risk from or unable to be performed during climate change-related events (*e.g.,* contracts that ensure adequate site coverage for Superfund remediation and emergency response). OMS will continue to coordinate with ORD to identify research equipment and lab facilities that are vulnerable to the impacts of climate change, specific threats to each facility, and potential measures to protect these assets. ORD will consult with the Regions to ensure impacts from climate change are identified and protective measures are implemented for the Regional Lab Network. Potentially vulnerable systems include a range of ORD assets, including research field equipment, study sites, and research vessels. Progress has already been made. For example, EPA relocated the computer center at the Narragansett Laboratory in Rhode Island from a flood-prone exterior location to a flood-resistant and hardened room in the interior, providing 24/7 ability for site IT operations. The project also relocated all site IT infrastructure, switches, servers, etc. to the new location to provide storm protection.

EPA is also reducing the Agency's climate-related financial risks by ensuring that investments it makes through various mechanisms result in outcomes that are resilient to the impacts of climate change, and that financial resources aren't wasted. It is integrating climate adaptation criteria into financial assistance agreements to promote climate-informed investments made with federal dollars (*e.g.,* grants, cooperative agreements, loans, technical assistance, contracts, and awards where the project's desired outcomes are sensitive to climate change). EPA's Office of Policy (OP) is working with the Office of Grants and Debarment and other National Program and Regional Offices to develop language and evaluation criteria to include in all financial assistance agreements where appropriate.

2. Climate Vulnerability Assessments

EPA completed an Agency-wide climate vulnerability assessment as part of its 2021 Climate Adaptation Action Plan, which will be supplemented by the National Program and Regional Office vulnerability assessments (specific to their programs and regions of the country) as part of the forthcoming Implementation Plans. EPA's plan describes the high-level vulnerabilities of its mission, facilities, and operations to climate change by major program area: air quality, water quality, contaminated sites, chemical

safety and pollution prevention, and EPA's facilities and operations. Vulnerabilities concerning limitations in the adaptive capacity and resilience of our partners, the disproportionate impacts climate change has on certain communities, and the costs associated with implementing adaptation efforts remain pertinent to all program areas. To date, the National Program and Regional Office vulnerability assessments informed the selection of their priority actions, research needs, and employee training opportunities. These assessments cover risks to EPA programs posed by the impacts of climate change; communities and individuals that are particularly vulnerable to these impacts; and actions already being taken to address the risks, remaining vulnerabilities, and known barriers to further activities.

3. Climate Literacy

EPA's training, education, and outreach programs focused on climate adaptation are continuously evolving. EPA is currently updating existing climate adaptation training modules for its staff and external partners. These trainings will have two primary goals: (1) To increase awareness about the importance of climate adaptation and encourage all EPA staff and partners to consider the changing climate in the normal course of business and (2) To introduce staff and partners to specific methods and tools for integrating climate adaptation into programmatic decision-making. As an example, EPA is currently developing guidance documents and training specifically for rule writers to understand the implications of climate change impacts and incorporate these considerations into EPA's rulemaking processes. EPA's Climate Change Adaptation Resource Center (ARC-X) is a portal through which external partners can access the training modules and other educational materials. Over 40,000 users from across all 50 states access resources through the ARC-X system every year.

Each National Program and Regional Office will also be developing educational opportunities (including trainings) for their employees to continuously learn about climate change and its implications for the long-term effectiveness of their programs. Under Priority Action One, EPA will also develop decision-support tools and provide technical assistance to help staff integrate climate change into core programs and identify adaptation strategies that yield multiple co-benefits. Looking forward, the Agency will establish standard operating procedures across the National Programs and Regional Offices to incorporate climate adaptation more consistently into EPA's programs, policies, rulemaking processes, and enforcement activities. EPA has established several cross-office workgroups to foster a culture of knowledge, expertise, and practice for climate adaptation, including the Cross EPA Work Group on Climate Change Adaptation and distinct National Program and Regional Office Climate Change Workgroups.

Several of EPA's Offices and programs have successfully incorporated the effects of climate change into their regular operations, e.g., EPA's Superfund Program offers training and technical support for remedial project managers on conducting site-level risk assessments that include information on the potential effects of climate change (evaluated by the Government Accountability Office in 2019). OW's CRWU Initiative provides direct technical assistance to help water utilities assess, plan for, and identify actions to address system risks and vulnerabilities, so they can achieve multiple statutory requirements while building climate resilience. The Office of Air and Radiation (OAR) is expanding their technical assistance and training on adaptation strategies to address air quality conditions and extreme weather events. For example, EPA's "Smoke-Ready Toolbox for Wildfires" contains resources that public health officials and others can use to educate people about the risks of smoke exposure and actions they can take to reduce their health risks *before* a wildfire.

4. Tribal Engagement

EPA is committed to meeting the Agency's obligations to tribal nations. In keeping with the Federal Trust Responsibility, EPA will consider tribal concerns and interests whenever EPA's actions and/or decisions may

affect Indian country. EPA is engaging in timely consultation and coordination on a government-to-government basis to implement the Agency's Plan and help tribes address their climate adaptation concerns, as well as working with indigenous peoples, and other stakeholders in Indian country. In September 2021, EPA joined 16 other federal agencies in signing an MOU that committed those parties to identifying and protecting tribal treaty rights early in the decision-making and regulatory processes. Accordingly, EPA will consider and protect treaty and reserved rights through strengthened consultation, additional staff training, and annual reporting requirements for all climate adaptation plans to ensure EPA meets its legal and statutory obligations and other mission priorities. Each National Program and Regional Office will address treaty and reserved rights while developing their Implementation Plans, including priority actions to combat the climate crisis in Indian country. EPA will also continue to support tribes as they implement their own environmental programs that advance climate adaptation, equity, and climate justice.

EPA will develop climate science and decision-support tools that are useful to tribes and indigenous peoples. Honoring tribal and indigenous partners through our joint work requires EPA to incorporate knowledge acquired by these partners through their direct contact with the environment. This knowledge helps EPA understand how Indian country and tribal ways of life may be impacted by climate change and informs our broader understanding of ecological systems. EPA recognizes that Indigenous Traditional Ecological Knowledge (ITEK) – an expression of key information that links historical, cultural, and local ecological conditions – may help tribes and indigenous peoples choose how they adapt to climate change. Consistent with the OSTP and CEQ's forthcoming memorandum on ITEK and Federal Decision Making, EPA will work with tribes and indigenous peoples to support the application of ITEK in future program operations, technical assistance, and decision support tools. For example, ORD's Implementation Plan explicitly recognizes ITEK as an important component of its research area, "Empowering Communities and Individuals to Improve Public and Ecosystem Health." The National Program and Regional Office Implementation Plans will leverage existing EPA partnerships with tribes, indigenous peoples, and their networks to identify the most effective applications for ITEK.

5. Environmental Justice

EPA is actively working to increase the number of climate adaptation and community resilience-building planning and implementation efforts in overburdened, underserved communities in which EPA contributes resources and technical assistance. Through its Priority Actions, EPA will prioritize the most vulnerable people and communities with the goal of attaining a more equitable, just, and resilient future for communities. EPA's Environmental Justice (EJ) office is currently working with EPA's National Programs and Regional Offices to strengthen their EJ initiatives, including community engagement efforts; identifying, assessing, and considering community issues in EPA's decision-making processes; developing guidance on incorporating EJ into regulatory programs; and conducting robust EJ analyses using equity and justice screening tools such as EJSCREEN. EPA is committed to developing decision-support tools that improve the quality and efficacy of decisions sensitive to climate change and related EJ considerations. Tools such as EJSCREEN, ARC-X, and How's My Waterway will enable staff and external partners to integrate adaptation and climate justice considerations into their work.

Through development of the Implementation Plans, EPA's National Programs and Regional Offices have identified activities to further incorporate EJ, equity, and climate justice into their grant and loan programs, technical assistance programs, rulemakings, and engagement or educational opportunities. Multiple EPA Offices have identified opportunities and taken action to provide technical assistance, funding, and on-the-ground support for underserved, disadvantaged utilities and communities through the BIL. As another example, the Office of Land and Emergency Management (OLEM) is expanding brownfields and toxic site

assessments with newly identified climate vulnerabilities while focusing on EJ communities located near contaminated areas.

6. Partnerships

EPA is establishing and expanding partnerships with other federal agencies and international organizations (*e.g.,* the United Nations Global Adaptation Network and the EPIC Network) on climate change challenges that cut across agency jurisdictions to improve the efficiency and effectiveness of the combined federal effort. EPA is strengthening coordination with our federal partners on permitting under NEPA, the development of climate science and data to support decision-making through the U.S. Global Change Research Program (USGCRP), and other key areas related to energy efficiency, climate-smart agriculture, and the conservation of natural resources. EPA is actively engaged in several Interagency Work Groups (IWGs), including, for example, the CEQ Federal Climate Action Plan (F-CAP) Network, the Extreme Heat Work Group co-chaired by EPA, the Coastal Resilience Work Group, and the Inter-Agency International Working Group on the President's Emergency Plan for Adaptation and Resilience (PREPARE). EPA is also engaged with other Interagency coordinating bodies, such as the Green Infrastructure Federal Collaborative, Interagency Committee on Advance Meteorological Services, the Climate-Smart Infrastructure Working Group, and the National Silver Jackets Team. EPA's longstanding partnership and Memorandum of Agreement with FEMA provide coordinated support to external partners for planning, designing, and implementing adaptation projects through coordinated technical assistance and funding. These interagency collaborations offer valuable opportunities to combine efforts across the federal family, and engage with, educate, and support external partners in a holistic manner. EPA is involved in regular engagements with the scientific community and interagency efforts, such as the National Academies (NAS) which offer opportunities to meet EPA's adaptation science needs. EPA staff are actively participating in and contributing as authors to the development and review of the 5th U.S. National Climate Assessment (NCA5) and assessments of the Intergovernmental Panel on Climate Change (IPCC), among other interagency and international climate science activities.

EPA is reaching out to external partners to strengthen adaptive capacities and increase the resilience of the nation, with a particular focus on advancing EJ. OP has already engaged the Local Government Advisory Committee and the National Environmental Justice Advisory Council in discussions about EPA's climate adaptation activities, including a Tribal Consultation on June 1, 2022, and a state and local engagement session on June 9, 2022, to receive feedback on the draft Implementation Plans. Invitees to the engagement session included Environmental Council of the States, the National Governors Association, National Association of Counties, United States Conference of Mayors, National League of Cities, International City/County Management Association, National Association of State Departments of Agriculture, and African American Mayors Association. Over the next year, EPA's National Programs and Regional Offices will continue to engage and partner with stakeholders to calibrate, strengthen, and implement their Plans.

SECTION 3: NEW TOPICS FROM E.O. 14057

1. Policy Review

In October 2011, EPA issued guidance for incorporating climate adaptation criteria into all *competitive* grant solicitations. After reviewing the effectiveness of this guidance, the Agency recently identified the need to update it to integrate consideration of climate adaptation in *all* financial assistance agreements. New guidance is currently under development. EPA will continue to evaluate the effectiveness of this guidance using the measures and metrics established in the Agency's FY *2022 – 2026 Strategic Plan*.

2. Climate Scenario Analysis

All of EPA's National Program Offices are already incorporating climate projections, data, and information into programmatic decision-making. Under EPA Priority Action Five, ORD is leading the identification and development of the latest data, models, and tools necessary to help the Offices further utilize climate projections in their regular operations. This information is critical to ensure that all National Programs and Regional Offices are equipped with the latest science and decision support tools to inform their climate adaptation activities. The National Programs and Regional Offices have provided ORD with a list of priority research needs as a core component of the Implementation Plans, which will be finalized by August 1, 2022. ORD is working within EPA and the broader scientific community to produce and deliver necessary climate-related research, including decision frameworks to consider short and long-term climate projections in future planning and policy implementation. For example, to implement the Federal Flood Risk Management Standard (FFRMS), the Agency is exploring approaches to apply climate projections into project planning, design, and siting decisions under the "Climate Informed Science Approach" outlined by EO 13690.

EPA and its partners have an extensive amount of climate data and information required by specific end users through tools such as the Climate Resilience Toolkit. Additional progress can be made in partnership with the USGCRP to develop and provide the appropriate data in an accessible format that meets local decision-making needs. As part of EPA Priority Action Five, EPA has identified several key climate research needs and data gaps, including:

- The need for expanded climate model data for use in evaluating future impacts to related to water quality/quantity, land use, ecology, and fate and transport between environmental media.
- The need to incorporate social and behavioral aspects of climate change, which may result in changed risk calculations and approaches, particularly related to developing equitable responses. EPA's external partners also identified needs related to social sciences, including the evaluation of social and economic disruption related to climate impacts.
- Climate and resilience research related to extreme weather events, waste management, and water quality and availability.
- Development of location-specific data and information, and increased availability, accessibility, and usability of research data (*e.g.,* visual presentation of information using maps and screening tools).
- Information that qualitatively and quantitatively captures the co-benefits of adaptation and mitigation, nature-based solutions, and community capacity building.

To ensure that the outcomes of investments made with BIL funds are resilient to the impacts of climate change, OW is including projected climate impacts when considering its financial and technical assistance programs. OLEM is using projected climate conditions to update fact sheets that help its programs identify the types of hazardous or toxic sites most vulnerable to climate change impacts. EPA's Offices have also developed several decision support tools commonly used by the Agency's programs and partners. Examples include EJSCREEN, the Climate Resilience Evaluation and Awareness Tool, and the National Stormwater Calculator's Climate Assessment Tool.