

A RESOLUTION directing staff to develop a Climate Resilience Plan that includes elements related to planning, consultation, outreach, education, and rulemaking concerning climate change.

WHEREAS, the Third National Climate Assessment¹ summarized climate change impacts on the water cycle as follows:

Water cycles constantly from the atmosphere to the land and the oceans (through precipitation and runoff) and back to the atmosphere (through evaporation and the release of water from plant leaves), setting the stage for all life to exist. The water cycle is dynamic and naturally variable, and societies and ecosystems are accustomed to functioning within this variability. However, climate change is altering the water cycle in multiple ways over different time scales and geographic areas, presenting unfamiliar risks and opportunities.²

WHEREAS, the Fourth National Climate Assessment³ cautioned:

Changes in the frequency and intensity of climate extremes relative to the 20th century and deteriorating water infrastructure are contributing to declining community and ecosystem resilience. Climate change is a major driver of changes in the frequency, duration, and geographic distribution of severe storms, floods, and droughts.⁴

WHEREAS, the Fifth National Climate Assessment⁵ reinforced that:

¹ The Third National Climate Assessment was a three-year analytical effort by a team of over 300 experts, overseen by a broadly constituted Federal Advisory Committee of 60 members. The group's 2014 report was subjected to extensive review by the public and by scientific experts in and out of government, including a special panel of the National Research Council of the National Academy of Sciences. See the full report at: <https://nca2014.globalchange.gov/report/sectors/water>.

² Melillo, Jerry M., Terese (T.C.) Richmond, and Gary W. Yohe, Eds., 2014: Climate Change Impacts in the United States: The Third National Climate Assessment. U.S. Global Change Research Program, 841 pp. doi:10.7930/J0Z31WJ2. Page 71.

³ The Fourth National Climate Assessment was thoroughly reviewed by external experts and the general public, as well as by the federal government. An expert external peer review of the entire report was performed by an *ad hoc* committee of the National Academies of Sciences, Engineering, and Medicine. <https://nca2018.globalchange.gov/chapter/front-matter-about/>.

⁴ AghaKouchak, Amir, *et al.*, He, Minxue, Ed., 2018: Fourth National Climate Assessment Chapter 3: Water, available at: <https://nca2018.globalchange.gov/chapter/3/> (internal citations omitted).

⁵ The Fifth National Climate Assessment analyzes the impacts of climate and global change in the United States. The development of the Fifth National Climate Assessment was overseen by a Federal Steering Committee

Climate change will continue to cause profound changes in the water cycle, increasing the risk of flooding, drought, and degraded water supplies for both people and ecosystems. These impacts will disproportionately impact frontline communities.⁶

WHEREAS, the Intergovernmental Panel on Climate Change noted:

Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred. Human-caused climate change is already affecting many weather and climate extremes in every region across the globe. This has led to widespread adverse impacts and related losses and damages to nature and people (high confidence). Vulnerable communities who have historically contributed the least to current climate change are disproportionately affected (high confidence).⁷

WHEREAS, in its *2019 State of the Basin Report* the Commission recognized potentially significant impacts and threats to the Basin's water resources posed by climate change; and

WHEREAS, the Governors of the four Basin states—Delaware, New Jersey, New York and Pennsylvania—are all members of the United States Climate Alliance,⁸ a bipartisan coalition of Governors focused on smart, coordinated state action that can ensure the United States continues to contribute to the global effort to address climate change; and

WHEREAS, Governors of all four of the Basin states have issued executive orders directing that studies be conducted, and in certain instances, that rulemaking be initiated, to help mitigate the impacts of climate change on their states' natural resources, environment, and economies;⁹ and

appointed by the Subcommittee on Global Change Research and comprising representatives from U.S. Global Change Research Program agencies. The full report is available at: <https://nca2023.globalchange.gov/>.

⁶ Payton, E.A., *et al.*, Crimmins, A.R., *et al.*, Eds., 2023: Ch. 4. Water: *Fifth National Climate Assessment*, available at: <https://nca2023.globalchange.gov/chapter/4/>.

⁷ IPCC, 2023: Summary for Policymakers. In: *Climate Change 2023: Synthesis Report*. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001 at 5 (references omitted).

⁸ U.S. Climate Alliance, *Members* web page, <https://usclimatealliance.org/members/>.

⁹ See, e.g., Del. Exec. Order No. 41 (Sept. 12, 2013), https://archivesfiles.delaware.gov/Executive-Orders/Markell/Markell_EO41.pdf; N.J. Exec. Order No. 89 (Oct. 29, 2019), <https://www.state.nj.us/infobank/eo/056murphy/pdf/EO-89.pdf>; E.O. 22 of Sept. 20, 2022; N.Y. Exec. Order No. 22 (Sept. 20, 2022), https://www.governor.ny.gov/sites/default/files/2022-09/EO_22.pdf; and Pa. Exec. Order No. 2019-07 as Amended (June 22, 2020), <https://www.oa.pa.gov/Policies/eo/Documents/2019-07.pdf>.

WHEREAS, each of the four basin states has adopted a Climate Resilience Plan¹⁰ that considers observed and anticipated climate-related water resource impacts within the state. These plans also include mitigation measures related to energy, transportation and other sectors that contribute significant green house gas emissions. The DRBC's activities will focus on water resources matters within the authority and jurisdiction of the Commission. These do not include setting or implementing broad GHG reduction goals across sectors .

WHEREAS, Presidential Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad*, announced the policies, among others, of (a) making climate considerations an essential element of foreign policy and national security, and (b) implementing a coordinated, government-wide approach to meeting climate-related challenges;¹¹ and

WHEREAS, Presidential Executive Order 14096, *Revitalizing Our Nation's Commitment to Environmental Justice for All*, launched a whole-of-government approach to environmental justice and equity, including in response to climate change and its effects;¹² and

WHEREAS, evaluations and studies conducted by, among others, the Commission,¹³ United States Army Corps of Engineers,¹⁴ and United States Geological Survey¹⁵ have shown the enhanced threats to water supplies, water infrastructure, water quality, and the health of aquatic ecosystems due to potential changes in the seasonality and volume of streamflows, which cause

¹⁰ Del. Dep't of Nat. Res. & Env'tl. Control, *Delaware's Climate Action Plan* (Nov. 2021), available at: <https://documents.dnrec.delaware.gov/energy/Documents/Climate/Plan/Delaware-Climate-Action-Plan-2021.pdf>; N.J. Dep't of Env'tl. Prot., *Strategic Climate Action Plan (Draft)* (Sept. 2023), available at: <https://dep.nj.gov/wp-content/uploads/strategic-climate-action-plan/strategic-climate-action-plan-draft.pdf>; N.Y. Climate Action Council, *Scoping Plan Full Report* (Dec. 2022), available at: <https://climate.ny.gov/resources/scoping-plan/>; Pa. Dep't of Env'tl. Prot., *Pennsylvania Climate Action Plan* (Sept. 2021), available at: <https://greenport.pa.gov/elibrary//GetDocument?docId=3925177&DocName=2021%20PENNSYLVANIA%20CLIMATE%20ACTION%20PLAN.PDF%20%20%3cspan%20style%3D%22color:green%3b%22%3e%3c/span%3e%20%3cspan%20style%3D%22color:blue%3b%22%3e%28NEW%29%3c/span%3e%209/21/2023>.

¹¹ Exec. Order No. 14008, 86 Fed. Reg. 7619 (Feb. 1, 2021), <https://www.federalregister.gov/documents/2021/02/01/2021-02177/tackling-the-climate-crisis-at-home-and-abroad>.

¹² Exec. Order No. 14096, 88 Fed. Reg. 25251 (Apr. 21, 2023), <https://www.federalregister.gov/documents/2023/04/26/2023-08955/revitalizing-our-nations-commitment-to-environmental-justice-for-all>.

¹³ Shallcross, Amy. (2017). Analyzing Climate Change Impacts to Water Resources in the Delaware River Basin - Big Picture Risks. https://www.nj.gov/drbc/library/documents/Shallcross_climate-change-wrm_WRADRBnov2018.pdf.

¹⁴ Johnson, Billy H., (2010). Report prepared for: U.S. Army Engineer District, Philadelphia: Application of The Delaware Bay and River 3d Hydrodynamic Model to Assess the Impact of Sea Level Rise on Salinity. Available from U.S. Army Engineer District, Philadelphia or Delaware River Basin Commission.

¹⁵ Williamson, T.N., Lant, J.G., Claggett, P.R., Nystrom, E.A., Milly, P.C.D., Nelson, H.L., Hoffman, S.A., Colarullo, S.J., and Fischer, J.M., 2015, Summary of hydrologic modeling for the Delaware River Basin using the Water Availability Tool for Environmental Resources (WATER): U.S. Geological Survey Scientific Investigations Report 2015–5143, 68 p., <http://dx.doi.org/10.3133/sir20155143>.

more frequent and severe floods and droughts; changes in the location of the salt front due to sea level rise; and insufficient storage to manage salinity in the Delaware River Estuary; and

WHEREAS, the Commission is committed to the principles of diversity, equity, inclusion, and justice and recognizes that certain overburdened and under-represented communities, including those with a high percentage of minority and low-income populations, may be disproportionately affected by the impacts of climate change on water quantity and quality; and

WHEREAS, the Commission employs the best available science to promote sustainable water resource management within the Basin, increase water conservation and efficiency, and enhance the resilience of aquatic ecosystems and water infrastructure to the impacts of flood and drought events; and

WHEREAS, in December 2019, the Commission formed the Advisory Committee on Climate Change (“ACCC”) to provide the Commission and the Basin community with vital expertise, information, and advice in the face of changing hydrologic conditions and sea level rise resulting from climate change, and the ACCC has reviewed this Resolution (including the attachments described below) and has recommended its adoption; and

WHEREAS, the Commission is charged with developing and adopting, and with periodically reviewing and revising, a Comprehensive Plan for the optimum planning, development, conservation, utilization, management and control of the water resources of the Basin to meet present and future needs; and the Delaware River Basin Compact (the “Compact”) provides the Commission with a range of tools for developing and implementing its Comprehensive Plan, including powers to conduct and sponsor research; to plan, design and construct projects, activities and services; to establish rules; and to review projects sponsored by other entities that may have a substantial effect on the Basin’s water resources to ensure such undertakings do not substantially impair or conflict with the Comprehensive Plan; now therefore,

BE IT RESOLVED by the Delaware River Basin Commission:

1. Finding. Climate change has caused and will continue to produce impacts on the water cycle, including on water availability; water quality; the management and uses of Basin water for economic, recreational, ecosystem sustainability, and other purposes; and the functionality and resilience of water infrastructure and other vital projects and activities within the Delaware River Basin.
2. Directive.
 - a. Water Resources Program: Each year, the Commission’s Water Resources Program shall include a section or sections dedicated to climate change, associated impacts on the water resources of the Basin, and any proposed additions or revisions to work

plans and rules to address climate change resilience, adaptation, or mitigation within the scope of the Commission’s authority to manage the Basin’s water resources.

- b. Climate Resilience Plan: The Executive Director is hereby authorized and directed to develop a plan of prioritized DRBC actions for evaluating the impacts of climate change on water resources of the Basin and formulating management approaches, including recommended policies and rules, for improving resilience and adaptation to a changing climate. In consultation with the Commissioners, advisory committees and other stakeholders, the Commission staff are directed to identify and recommend activities and actions within the authority, jurisdiction, and expertise of the Commission, which may include, but are not necessarily limited to, the following:
- i. Flow and Drought Management: Evaluate and propose responses to seasonal and long-term hydrologic changes affecting rainfall-runoff, groundwater recharge, reservoir inflows, snowpack, sea levels, changes in salinity, and freshwater storage and flow management needs.
 - ii. Flood Loss: Evaluate the impacts of climate change on the frequency and extent of main stem and tidal flooding. Review and propose updates to DRBC’s *Flood Plain Regulations*.
 - iii. Water Quality: Evaluate water quality trends for interstate waters and determine whether amendments to the Commission’s *Water Quality Regulations* (including Article 3 of the *Water Code*, “Water Quality Standards,” and Article 4, “Application of Standards”) are advisable as a result of the impacts of climate change on the designated uses of these waters.
 - iv. Water Use and Water Efficiency: Re-evaluate water use (withdrawal) and consumptive use projections based upon climate trends. Evaluate and consider additional water efficiency needs, standards, and impacts related to climate change.
 - v. Water Equity and Environmental Justice: Identify and propose actions consistent with the Commission’s Policy on Diversity, Equity, Inclusion, Justice and Belonging; design and implement measures that will enhance the resilience of overburdened and under- represented communities; and integrate measures to promote equity and environmental justice into the activities and actions recommended in the Climate Resilience Plan.
 - vi. Regulations: Consider new or revised regulations under the Compact to address significant climate-related risks and vulnerabilities .

- c. Metrics: Identify available metrics or develop new ones to measure the impacts of climate change on the Basin's water resources and the performance of resilience and adaptation measures.
- d. Advisory Committee on Climate Change: Consult the ACCC on the Water Resources Program and the above Climate Resilience Plan.
- e. Action by Other Entities: It is recognized that the scope of impacts of climate change on the water cycle and the water resources of the Basin warrant activity and action by entities in addition to or other than the Commission. After consultation with the ACCC, staff may identify potential activities and actions more appropriately undertaken by other entities.
- f. Outreach and Education: The Commission shall continue to provide the Basin community with science-based information and data about the relationship of climate change to the water cycle and water resources of the Basin and the measures that the Commission, other government entities, and the Basin community may take to mitigate or adapt to climate change impacts.
- g. Funding Priorities: The Commission recognizes that funding resources are limited and that available resources have not always been commensurate with the importance of developing and implementing a basin-scale action plan to support water management in the face of climate change. The Commission is committed to supporting staff in securing supplemental resources, including through grants and collaboration with other Basin organizations, to advance and accelerate the development and implementation of a Climate Resilience Plan for the Basin.

BY THE COMMISSION

Adopted: