ADVANCED NOTICE

Input for Changes to the SPDES General Permit for Stormwater Discharges from Construction Activity to Address Climate Change

Introduction

Through this Advanced Notice of Proposed Permit (ANPP), the New York State Department of Environmental Conservation ("the Department") **is soliciting stakeholder input regarding potential changes to the State Pollutant Discharge Elimination System General Permit for Stormwater Discharges from Construction Activity (CGP) that would address climate change impacts in New York State. Stakeholder input received may also be considered for future changes or updates to the New York State Stormwater Management Design Manual. The Department is specifically seeking input on the items listed under the "Instructions for Submitting Input" section of this ANPP. The Department is not seeking input on other potential changes to the CGP beyond those that would address climate change impacts in New York State.** Public input will help the Department determine appropriate next steps, with special consideration of climate impacts on the State's water resources and achievability by industry.

Climate Change Resiliency Planning

Climate change causes a range of impacts in New York State, including changes in temperature, precipitation, sea level rise, and frequency of extreme storms. The United Nations Intergovernmental Panel on Climate Change advises greenhouse gas emissions from human activities are responsible for accelerating global warming and climate change (Lee et al., 2023). Higher temperatures, more frequent precipitation and severe storms, faster rates of ocean warming, and sea level rise are some of the physical effects of climate change that are impacting communities and ecosystems. In New York State, these effects, such as increasing average temperatures and heavy rain events and heat waves, are occurring more frequently and for longer durations. These changes will continue and accelerate (NYSDEC 2021, NYSERDA 2023).

As a result of projected increases in precipitation due to climate change, it is anticipated there will be significant increases in stormwater runoff, potentially overwhelming the design capacity of municipal stormwater management systems, and increasing water pollution and localized flooding (USEPA 2023). Construction development is usually designed and engineered to last a very long time, in many cases between 50 and 100 years. As a result, designs need to account for the full range of potential flows that can be expected over the life of the development. In addition to understanding both annual

flows (e.g., spring high and summer low flows) and periodic flood events (e.g., 50-year, 100-year floods), design should also account for increasing frequency and higher volumes of extreme precipitation events and the likelihood of increased potential for flooding due to climate change. In New York State, precipitation is projected to increase over time due to climate change by as much as 20% but will likely vary by region (NYSERDA 2014)(Stevens & Lamie 2024). Average peak flood flows are expected to increase by 10 to 20% or more over the next 65 to 85 years, and these adjustments must be factored into the design and construction of new stormwater management and control structures. Adjusting for future conditions will help to ensure that siting and design sufficiently account for the effects of climate change and reduce future risk of flooding, while protecting water quality and preserving ecological processes (NYSDEC 2020).

Following the example of New York State Executive Order No. 22, to the extent practicable, construction activities should incorporate green infrastructure concepts to reduce overall stormwater runoff and improve water quality in new construction and redevelopment projects. Infrastructure should be designed and built to account for projected climate change impacts which may occur over their lifespans, which includes incorporating climate projections and adaptation strategies in upfront design and in expected operations and management. Preservation of open space and nature-based solutions should be considered among the strategies for reducing peak stormwater discharge and overall mitigation of climate risk.

To strengthen New York's resiliency to these risks, the Community Risk and Resiliency Act (CRRA) was adopted in 2014, requiring permit applicants to consider future physical risk due to climate change, including but not limited to sea-level rise, storm surge and flooding. In 2019, CRRA was amended by the Climate Leadership and Community Protection Act (Climate Act) to consider additional risks of climate change including precipitation, storm surges, and impacts on natural resources. To the extent feasible, programs must base program specific requirements and procedures on requirements or recommendations provided in Department-approved technical guidance documents.

At this time, the following guidance documents have been issued by the Department and can be found on the Department's website. They can be used as a reference for the design of climate change mitigation measures:

- Using Natural Measures to Reduce the Risk of Flooding and Erosion
- New York State Flood Risk Management Guidance for Implementation of the Community Risk and Resiliency Act
- New York State Flood Risk Management Guidance for Implementation of the Community Risk and Resiliency Act Estimating Guideline Elevations
- Tidal Wetlands Guidance: Living Shoreline Techniques in the Marine District of New York State

Instructions for Submitting Input

A. In responding to this solicitation for input, please provide ***specific*** suggestions (including suggested language) for the Department to consider for the statements below, and provide your reason for the support or objection, and any supporting data/research/examples if available. Information may be submitted anonymously.

B. Listed below are specific options the Department is considering and is requesting input on. Please provide suggestions that may be easily understandable and implementable and are fiscally responsible and affordable for inclusion in project designs. Individuals in the construction and related industries may have specific input that would be informative.

1. To account for the projected increase in precipitation in New York State from climate change the Department is considering changes to the New York State Stormwater Management Design Manual, which could include modifying the sizing criteria to reduce the post construction flow rate for the 10-year and 100-year events by as much as 20%, increasing the storage volume by up to 20%, or adding up to a 20% increase to precipitation values to match the existing condition.
    a. Please provide recommendations for changes to specific design requirements that may be critical to achieving this potential increase.
    b. Please provide information on the financial impact and estimated costs, that such modifications to the sizing criteria could have on project design.

2. The Department is considering increasing conveyance sizing requirements (e.g., use a larger design storm) along with additional channel protection measures in the CGP to provide additional capacity to accommodate the effects of climate change. Please provide any suggested changes, specific recommendations, and supporting information, including financial impact, related to conveyance sizing.

3. It has been suggested that severe flooding events typically occur when soils are close to saturation. Please provide suggestions on how to account for this in hydrologic modeling.

4. The Department is considering whether the effects of rain-on-snow events should be assessed during the design process. Please provide any suggested changes or specific recommendations the Department could consider to account for these additional runoff producing events.

5. The Department is considering expanding the role Green Infrastructure (GI) practices play to further address climate change.

a. Please provide specific recommendations for how GI practices could be **modified** to provide additional resiliency.
b. Please provide suggestions for how GI could be **further required** to provide additional resiliency.

6. The Department currently provides incentives (e.g. no runoff reduction volume required, less water quality volume required, and potential waiver(s) for quantity controls) to designers to encourage redevelopment of sites rather than new development. Please provide recommendations on how the Department could modify site redevelopment criteria in CGP requirements or design standards to improve resiliency to climate change.

7. Please provide any recommendations for future changes to the New York State Stormwater Management Design Manual to further address resilience, including the resilience/effective survival of existing and future storm water practices subject to extreme weather events.

8. Please provide other detailed suggestions, including support or references, for how the Department can account for future climate change in CGP requirements or design standards.

C. Information in response to this ANPP must be submitted to the Department by midnight on May 3, 2024. Submissions via email can be sent to: stormwater_info@dec.ny.gov.

Responses can also be sent to:

New York State Department of Environmental Conservation
625 Broadway, 4th Floor
Albany, NY 12233-3500
ATTN: Dawn Lussier

References

Lee, H., Calvin, K., Dasgupta, D., Krinner, G., Mukherji, A., Thorne, P., Trisos, C., Romero, J., Aldunce, P. and Ruane, A.C., 2023. CLIMATE CHANGE 2023 Synthesis Report Summary for Policymakers. *CLIMATE CHANGE 2023 Synthesis Report: Summary for Policymakers*.

NYSERDA. 2014. Climate Change in New York State: Updating the 2011 ClimAID Climate Risk Information. Supplement to NYSERDA Report 11-18. New York State Energy Research and Development Authority. Albany, New York. 24 pgs.

NYSERDA. 2023. New York State Energy Research and Development Authority. Climate Change, November 9, 2023. https://www.nyserda.ny.gov/All-Programs/Environmental-Research/Climate-Change-Research.

NYSDEC. 2020. New York State Flood Risk Management Guidance for Implementation of the Community Risk and Resiliency Act. New York State Department of Environmental Conservation. Albany, New York. 100 pgs.

NYSDEC. 2021. Observed and Projected Climate Change in New York State: An Overview. New York State Department of Environmental Conservation. Albany, New York. 38 pgs.

NYSDEC. 2020. SPDES General Permit for Stormwater Discharges from Construction Activity. GP-0-20-001. NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-20-001)

USEPA. 2023. United States Environmental Protection Agency. Climate Adaptation and Stormwater Runoff, November 9, 2023. https://www.epa.gov/arc-x/climate-adaptation-and-stormwater-runoff.

Stevens, A., & Lamie, C., Eds. 2024. New York State Climate Impacts Assessment: Understanding and Preparing for our Changing Climate. https://nysclimateimpacts.org