FLOW
FOR LOVE OF WATER

Ensuring the Waters of the Great Lakes Basin Are
Healthy, Public, and Protected for All

VIA EMAIL TO: EGLE-ClimateSolutions@Michigan.gov

March 12, 2022

Director Liesl Clark
Department of Environment, Great Lakes, and Energy
Constitution Hall
525 West Allegan
P.O. Box 30473
Lansing, MI 48909

Re: FLOW Comments on Draft MI Healthy Climate Plan

Dear Director Clark:

Thank you for the opportunity to comment on the Draft MI Healthy Climate Plan ("Draft Plan") dated Jan. 14, 2022.

For Love of Water ("FLOW") very much appreciates the commitment by Governor Whitmer, yourself, and the Michigan Department of Environment, Great Lakes, and Energy ("EGLE") to reduce Michigan's greenhouse gas emissions ("GHG") consistent with U.S. Climate Alliance objectives. Because FLOW's mission is to ensure that the waters of the Great Lakes Basin are healthy, public, and protected for all, we have primarily reviewed the Draft Plan through that lens. We recognize that the climate crisis is a water crisis. Fundamentally, we believe EGLE could dramatically increase public support for, and ownership in, Michigan's decarbonization efforts by making water-related climate issues a more prominent focus of the Draft Plan.

While FLOW understands that EGLE's primary task under Executive Directive 2020-10 is to develop a plan to achieve carbon neutrality, the department's charge is far broader than that. Paragraph 3 of the directive expressly states that EGLE's implementation obligation includes "monitoring and evaluating programs and activities that support statewide climate mitigation and adaptation practices." In order to inform these monitoring and evaluation requirements, the Draft Plan should include a more robust description of baseline environmental conditions; existing climate impacts, including impacts on surface and groundwater resources, the amount of precipitation, and frequency and intensity of storms; unavoidable, future climate impacts; avoidable, future climate impacts; and specific climate resiliency measures.

This information also will provide much-needed context for decarbonization. People are reluctant to change their ways without a good reason, so it is critical to fully explain why it is

important for each of us to support the transition to carbon neutrality and what benefits individual and collective support and active participation will have. If the distinction between avoidable and unavoidable impacts is not clearly defined, the public may lose faith as decarbonization proceeds and certain impacts continue to occur. Knowledge is power, and threats to water strike a deep chord in Michiganders.

Because climate change and the water cycle are inextricably linked, water is a tangible way to speak to the impacts of invisible greenhouse gasses. Carbon becomes visceral when attached to flooding, the siphoning of Great Lakes water to desiccating states, or an influx of climate refugees. Making water a more central part of the Draft Plan is accordingly imperative.

FLOW offers the following recommendations to strengthen the Draft Plan:

1. **Describe the numerous, adverse impacts already occurring in the Great Lakes as a result of rising regional temperatures.** These harmful impacts are documented in detail by the National Climate Assessment, the studies undertaken by the National Oceanic and Atmospheric Administration ("NOAA"), universities, and Midwest research centers. Among the most well-documented are:

    - **Increasing severity and frequency of storm events** are causing more combined sewer overflows ("CSOs"); mobilizing debris, oils, salt, and contaminants; exacerbating erosion and soil loss; and washing land-applied fertilizers and manure into rivers and streams. Flooding of waste lagoons and runoff from animal wastes applied to land at concentrated animal feeding operations ("CAFOs") load nitrates and phosphorus into tributary rivers, streams, and agricultural drains, impairing water quality, intensifying harmful algae blooms, and harming public health.[1]
    - **Increasing variability in lake levels** harms coastal properties; high water levels result in shoreline and bluff erosion, submerged beachfront and recreational areas, and impaired coastal biomes when shorelines are hardened. During periods of low lake levels, navigation channels and harbors require dredging, which impairs water quality and commerce.[2]
    - **Rising lake temperatures and loss of winter ice cover** increase lake stratification and reduce seasonal lake water "mixing" that serves to resupply oxygen and nutrients to lake ecosystems. Warmer lake water temperatures impact lake ecosystems in a variety of ways, including the distribution of fish populations, by advantaging warm water species over cold water species,

[1] Fourth National Climate Assessment, Impacts, Risks, and Adaptation in the United States, Volume II, Chapter 21, Midwest, 2018 pp 873- 890 https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf
[2] EPA, Climate Change Indicators: Great Lakes Water Levels and Temperatures https://www.epa.gov/climate-indicators/great-lakes

changing aquatic plants and benthic communities, and accelerating eutrophication.[3]

- **Highlight the water equity issues resulting from existing climate impacts.** Identifying differential impacts is essential to prioritizing the adaptation strategies discussed below.

2. **Identify and implement adaptive measures to avoid or reduce future climate impacts.** Michigan's globally unique freshwater system will continue to be stressed and impacted by climate change, yet the environmental, economic, and social value of our water resources that define our region will likely significantly *increase* as water scarcity refocuses global attention on our region's water wealth. The Great Lakes region is being recognized for the comparative climate resiliency that our freshwater resources provide. Anticipating and preparing for likely future climate impacts through adoption of protective water management practices is Michigan's best long-term environmental and economic strategy. There are many specific adaptive measures that should be integrated into the Draft Plan to improve water quality and protect freshwater resources, such as:

   - **Encourage Green Infrastructure** – Storm events yielding more precipitation in shorter time frames will require improved management of stormwater. Climate disruption will negatively impact structural support for roads and bridges, while increased heating will reduce the life of pavement, stress expansion joints, and accelerate erosion. Proven measures to manage stormwater that will reduce climate-related impacts are readily available.[4] Green infrastructure provides highly effective, nature-based solutions that can manage stormwater runoff while saving communities operational and maintenance costs. Examples of green infrastructure include permeable pavement, bioswales and bioretention ponds, street trees, rain gardens, green roofs, and rain barrel systems. Green infrastructure can remove pollutants by directing and filtering water into the local, ground-based reservoirs, while also reducing flooding by mitigating stormwater flows rather than funneling stormwater across impervious surfaces. These solutions, when properly implemented, can be simple and cost-effective ways of reducing the burden on traditional stormwater infrastructure, promoting economic revitalization, and prioritizing public health. They also can increase property values by creating new aesthetic amenities for communities by enhancing public green space and parks, decreasing vacant and abandoned property, and increasing climate resilience.[5]

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[3] Fourth National Climate Assessment, Impacts, Risks, and Adaptation in the United States, Volume II, Chapter 21, Midwest, 2018 pp 894-896 https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf

[4] Midwest Economic Policy Institute, Climate Change and Its Impact on Infrastructure Systems in the Midwest, October 2017. https://midwestepi.files.wordpress.com/2017/10/mepi-infrastructure-and-climate-change-final.pdf

[5] N. Strouse, et al, Climate Risks and Opportunities in the Great Lakes Region, 2021 https://cdn.ymaws.com/www.chicagowilderness.org/resource/resmgr/publications/climaterisksgljan2021.pdf

- **Improve Land Management Practices** – Limiting excess nutrient loadings from CAFOs, particularly phosphorus, delivered to the Great Lakes via nonpoint sources and runoff from agricultural fields will reduce harmful algal blooms. Though Michigan has significantly reduced phosphorus loads from municipal wastewater treatment systems, Michigan is unlikely to meet targeted goals due to the failure to successfully reduce nonpoint source phosphorus loadings from agricultural lands. Adoption of total maximum daily loads ("TMDLs") of nutrients in vulnerable watersheds like Lake Erie is necessary to restore and protect water quality. Agricultural practices limiting soil erosion through the use of riparian filter strips, cover crops, grassed waterways, contour farming, and improved water management systems need to become the norm.[6]
- **Enhance Coastal Resilience** – The Draft Plan must provide more focus on the land-water interface and the need for improved coastal land use planning to foster healthy coastal zone and watershed ecosystems and reduce fragmentation of coastal habitats. Our regulatory system needs to recognize and protect the rich biological attributes and functions of shorelines and restore the ecological benefits that have been lost. Artificial hardening of lake shorelines must be minimized, while planning and zoning efforts must take into account dynamic lake level fluctuations by protecting wetlands, establishing and enforcing development setback requirements, and creating new conservational upland buffer areas.
- **Increase Funding for Nonpoint Source Water Management** – EGLE's nonpoint source programmatic vision is to "protect high quality waters from NPS [nonpoint source] threats and restore waters impaired by NPS pollution or causes," yet only 0.67% of Clean Water State Revolving Fund monies are allocated to addressing nonpoint source water management. With the unprecedented federal appropriations currently earmarked for improving water quality, the potential availability of new state appropriations, and use of Clean Water Act section 319 grant funding, Michigan has a unique opportunity to establish a comprehensive program to increase Michigan's focus on nature-based solutions that improve climate resiliency. Michigan agencies should work to strengthen their relationships with local units of government, planning officials, universities, nonprofit organizations, and the business community to develop state-of-the-art, climate-resiliency programs and strategies.

  In developing these and other strategies, it is critical that EGLE prioritize environmental justice and the protection of tribal treaty rights. EGLE should focus on achieving climate change adaptation and resilience in Michigan by 2050. The International Joint

[6] K. Fussell, et al, Summary of Findings and Strategies to Move Toward a 40% Phosphorus Reduction, September 2017 https://melinda-cms-files.s3.amazonaws.com/application/pdf/bf11f8ea-f781-4a84-a1bc-a2110951ba8a.pdf?response-content-disposition=inline%3B%20filename%3D%22EXT-1545_Summary-Findings-Strategies-To-Move-Toward-A-40-Phosphorus.pdf%22&AWSAccessKeyId=AKIAITRSJ4WSD4PFN74Q&Expires=1646701200&Signature=%2F3cByT3axFsA1uwCLDt%2BJet9%2BT0%3D

Commission's Triennial Assessment of Progress on Great Lakes Water Quality Report ("TAP")[7] provides an excellent template for the elements, scoping, shared vision, coordinated and collaborative action, integrated water management, best management practices, and modeling capabilities necessary for success.

3. **Provide more detailed strategies for building and improving multidisciplinary and collaborative partnerships.** It is critical that the Draft Plan outlines steps to strengthen coordination among local, state, tribal, and federal agencies; marshal the expertise of local governments that are leaders in climate resilience; draw from the traditional ecological and other knowledge of Indian tribes through improved tribal consultation and meaningful tribal participation in the plan's implementation; and incorporate the tools and climate adaptation strategies already developed by universities and research centers.

   The Great Lakes Climate Adaptation Network, for instance, forges partnerships with other organizations that are working on Great Lakes climate challenges and promotes connections among cities, counties, nonprofits, foundations, and universities. The state should adopt, communicate, and amplify the successful strategies that leading communities are already implementing and promote the toolkits and technical assistance available from the U.S. Environmental Protection Agency, NOAA, and other organizations focused on climate resilience.

4. **Recommend amendments to state regulations to require the disclosure of a cumulative carbon emissions profile in permit applications for major development projects such as Enbridge's proposed tunnel.** This information will facilitate review under the Michigan Environmental Protection Act ("MEPA") and help prevent the issuance of permits for projects that will interfere with the attainment of the State's climate goals long into the future.

5. **Establish a shared lexicon and understanding of climate definitions.** Readers need a shared understanding and definition on the terms mitigation, adaptation, and resilience (for example consider the Great Lakes Commission's 2020 definition).[8]

FLOW appreciates that these suggestions entail a significant amount of work, but this work is necessary to make the Draft MI Healthy Climate Plan the transformative document it must be to make Michigan a global leader in the fight against climate change.

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[7] 2020 Second Triennial Assessment of Progress Report on Great Lakes Water Quality, https://www.ijc.org/en/2020-TAP-Report

[8] The Great Lakes Commission Standing Committee developed a common definition for resilience for the Great Lakes basin in November 2020: "A resilient Great Lakes basin is one in which communities, infrastructure, ecosystems, and the economy can withstand, adapt to, and recover from climate-related stressors and changing conditions to ensure equitable and inclusive social, economic, and environmental well-being across the basin."

Sincerely,

Liz Kirkwood
Executive Director

cc:

Kara Cook, Senior Advisor on Energy and Environment, Executive Office of Governor Whitmer
Dan Eichinger, DNR Director