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CUMULATIVE RISK Summary of Legislative Components

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on behalf of Community Action to Promote Healthy Environments

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Introduction

Community Action to Promote Healthy Environments (CAPHE) is a community based participatory research partnership that includes representatives from community based organizations, environmental advocacy groups, government entities and academic researchers (see acknowledgements). CAPHE has worked together to develop a scientifically based and community informed [Public Health Action Plan](#), and is currently working to implement components of that plan, to reduce air pollution and its adverse health effects in Detroit, Michigan. Recommendations include making greater use of Health Impact Assessments to inform environmental decision making, with a particular focus on communities currently experiencing heightened/cumulative risk due to multiple environmental exposures and population characteristics that may increase risk (e.g., young age, low wealth, older housing stock). The report below summarizes key dimensions of state level legislation and policies that use cumulative risk frameworks to inform action toward environmental justice and to reduce health inequities associated with disparate exposure to air pollutants.

Background

Environmental justice communities have long argued that environmental risk assessments that focus on single pollutants and permitting processes that focus on single emissions or sources fail to consider the joint or cumulative impacts of multiple exposures within a given community (Chavis, 1987). Substantial evidence has demonstrated the compounding of exposures (e.g., emissions of multiple chemicals, emissions from multiple sources) within geographically defined communities, and the inequitable distribution of pollution sources within communities of color and low income communities (see, for

example, Mohai, Pellow, Roberts, 2009). Geographically defined communities with older housing stock, high proportions of young or elder residents, residents with respiratory or cardiovascular conditions, and areas with child serving organizations, hospitals or other health care facilities, elder care facilities, and other institutions in which there are likely to be concentrations of populations particularly susceptible to adverse health effects of environmental exposures are also of concern. The recognition that emissions, exposures and population vulnerabilities often converge within geographically defined areas has led to the development of indicators that capture cumulative or combined risks associated with the clustering of these characteristics (Morello Frosch et al 2011; U.S. Environmental Protection Agency, 2019). Furthermore, increasingly, states are developing policies and procedures that use cumulative risk indices or other metrics to identify communities experiencing disproportionate risk, and to take action to reduce inequitable exposures and their adverse health impacts. Our objective in this report is to summarize key aspects of such state level efforts, and to establish recommendations to inform action.

Methods

We identified legislation in place at the state level, and legislation proposed between 2018-2021 but not yet passed in Michigan. While our focus is primarily at the state level, we also included the national Environmental Justice Mapping and Data Collection Act introduced in 2021 given its relevance for statewide action on this issue. An initial spreadsheet was developed to extract key aspects of each bill for comparison. Following review by the CAPHE Working Group engaged with this process (Detroit Hispanic Development Corporation, Detroiters Working for Environmental Justice, Southwest Detroit Community Benefits Coalition, Southwest Detroit Environmental Vision, UM SPH) the categories for information extraction were refined and expanded. The final table includes the following information: name of bill; sponsor(s); year introduced/passed; brief summary of legislation; funding/resources for implementation; level of legislation (state, federal); accountability/oversight; definition of population; community engagement implementation; definition of cumulative risk/cumulative impact; and specific mentions or definitions of environmental justice. Based on review of the set of components included in existing legislation, the CAPHE Working Group drafted a set of preliminary recommendations. These were reviewed and refined by the full CAPHE Steering Committee (see acknowledgements), and are presented below.

Results

Results from the above processes are presented in [Table 1: Cumulative Risk State Legislation](#)

Following review and discussion of key data from existing legislation, the CAPHE Cumulative Risk Working Group identified the following key components for consideration in Michigan, specifically to address environmental inequities/injustices. Recommendations are summarized briefly below.

Key Components

- 1. Use a comprehensive cumulative risk index (CRI) to identify communities with high cumulative risk.** There are multiple examples of cumulative risk indices which make use of readily available administrative data to identify communities experiencing excess environmental exposures linked to adverse health outcomes, in conjunction with population characteristics - including low wealth, high concentrations of young or elder populations - that enhance their vulnerability or susceptibility to adverse health outcomes of those exposures. Some of these have already been applied in Michigan contexts to identify communities encountering excess environmental risk, demonstrating their applicability (see Grier, Mayor, Zeuner 2019; Schulz et al 2016 for examples). There are some variations across indices: Indicators to be used in a statewide CRI should be determined through substantive, meaningful dialogue and shared decision making with members of communities currently experiencing high levels of exposure and population vulnerabilities.
- 2. Mandate that the data included in the cumulative risk database be updated frequently, as data is available.** To assure that data is updated to reflect temporal changes (e.g., short term changes in air pollutants due to changes in local emissions), include language in the legislation that requires regular, frequent (e.g. annual) updates to the data included in the database. This language can recognize that some data may be available in an updated form annually, while other data obtained from administrative sources may be updated less frequently (e.g., every 2-3 years): Administrative data should be updated as soon as it is made publicly available.
- 3. Define mechanisms for community input to refine/update metrics included in the database for identifying communities with high cumulative risk.** To assure that locally relevant metrics of risk are incorporated into the CRI, define a mechanism for regular review and opportunities for representatives from communities who experience excess environmental exposures or harms to submit proposals/requests for refining and updating metrics incorporated in the database and the CRI. Where locally relevant, these may be incorporated into local/regionally defined CRIs: Where more broadly applicable, they may be incorporated into statewide CRIs.
- 4. Assure bi-directionality in determining EJ designated communities, for example, facilitating incorporation of local air monitoring data brought by community members.** In order to assure that

locally identified and collected environmental or community data relevant to cumulative risk are integrated into the database, create a defined mechanism for community members to submit community science (e.g. data from local air quality monitors) into the database.

5. Use the statewide cumulative risk index (CRI) (see #1 above) to identify communities that experience high cumulative risk, e.g., those in the top quintile (top 20%). The CRI should be used to identify communities statewide that experience high CRIs, for example those in the top 20% of joint social, economic and physical environmental risks. Communities that are designated as EJ/high CRI communities should be designated for special protections (see 7.1 and 7.5) and resources (see 7.2-7.4, and 7.6) to reduce emissions, exposures and adverse health impacts.

6. Create and publish in a readily accessible location(s) maps showing EJ communities on a regular basis, no less frequently than every two years. Maps showing the distribution of cumulative risk at a fine spatial scale (e.g. census block group) should be produced using the CRI no less frequently than every two years, and made publicly available at readily accessible locations (e.g., EGLE websites, environmental justice advocacy organization websites). These maps should be explicitly linked to resources made available to communities designated as EJ/high CRI communities in order to facilitate their ability to identify and access policy, legislative and financial resources (described in 7 below) available to reduce emissions, exposures and adverse health impacts for community residents.

7. Use the following mechanisms to reduce emissions or other releases, exposures and adverse health impacts in communities designated as high risk using the cumulative risk index (e.g. top 20%):

7.1. Require health impact assessments (HIAs) to be conducted for new permits or permits requesting substantial modifications to emissions in communities designated as "high" [e.g., top 20%], with recommendations to reduce adverse health impacts, prior to making a decision on permit requests. Mechanisms for paying for the HIA should be included in the legislation and assure the independence of the HIA from, for example, influence by the entity requesting the permit. The HIA must include recommendations for reducing emissions, exposures and/or adverse health impacts. The permitting entity may require that the permit be adapted in keeping with the HIA recommendations. The permitting entity may deny the request for permit based on findings from the HIA.

7.2. Create an Air Quality Enforcement Fund (AQEF) to support funds to communities designated as high on the CRI (e.g., top 20%) for use by those communities to reduce emissions, exposures and mitigate adverse health impacts. Assure that funds are administered by a

community-based and community-led entity with capacity for community engagement, fiscal responsibility, accountability to the community, and capacity to identify and engage appropriate technical assistance to support effective use of funds to protect community health (See Table 1 for examples). Funds should be administered in a manner that assures local control and accountability to the community in decision making. Funds from permit applications, fines for violations and SEPS could be used to assure funding for the AQEM.

7.3. *The AQEF should provide resources to support technical assistance for communities to gather better quality data, support community engagement, and use data to inform decisions about strategies for reducing emissions, exposures and mitigate adverse health impacts of pollutants.*

7.4. *Assure mechanisms and funding to support community engagement and influence in decisions about the use of funds that are directed to communities designated as high on the CRI.*

7.5. *Increase enforcement of permit violations and use them to support reductions in emissions exposures and adverse health impacts in communities with high CRIs: Funds from fines should be placed in a designated fund (e.g., AQEM) for this purpose; Funds should be protected from being redirected to other purposes.*

7.6. *Prioritize areas with high CRIs for State funding (e.g. Clean Diesel Grant program, Fuel Transformation Program, etc).*

7.7. *Develop clear mechanisms for accountability to EJ communities, including bi-directional communication about the process and timeline, including the timeline for, for example, designation as an EJ community, and access to protections and resources described above.*

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