JOHNS HOPKINS BLOOMBERG SCHOOL of PUBLIC HEALTH | Risk Sciences and Public Policy Institute

Testimony Supporting HB1484
House Environment and Transportation Committee
March 11, 2025

Position: SUPPORT

Dear Chair Korman and Members of the Committee,

As a resident of Maryland and expert in cumulative risk assessment and community environmental health, I am writing to express my strong support of HB1484, the CHERISH Our Communities Act.

I am Dr. Mary Fox, Associate Practice Professor in the Departments of Health Policy and Management and Environmental Health and Engineering in the Johns Hopkins Bloomberg School of Public Health. I am a risk assessor with doctoral training in toxicology, epidemiology and environmental health policy. I am faculty of the Johns Hopkins Risk Sciences and Public Policy Institute (Risk Institute) where I teach human health risk assessment including chemical mixture and cumulative risk assessment methods. I have worked in the field of cumulative risk assessment for 25 years developing and applying these methods to understand community health impacts in places where hazardous waste disposal and industrial activity expose people to toxic chemicals through air, food, water and soil.[1-3]

I provide the testimony below on behalf of myself and the undersigned colleagues of the Risk Institute. For 28 years, the Risk Institute has worked to apply human health risk assessment methods to develop policies that reduce the health impacts of chemical exposures. Our research and practice in the fields of exposure science, chemical risk assessment, risk policy and management have supported scientific assessments and policy making on a wide variety of environment and health issues. Through this work we have developed expertise in health risks of arsenic and other metals that leach from coal combustion waste (fly ash) disposal, use of antibiotics, biosolids and pesticides in food production, tobacco regulation, urban agriculture, and exposures to air toxics including benzene and other organic solvents.[4-6]

Main points covered: 1) why policy action to reduce cumulative exposure is needed; 2) the health impacts and risks that result from cumulative exposures; and 3) the readily available methods we have to prepare Existing Burden Reports.

- **An everyday reality: Cumulative exposures and impacts**

Most people do not realize that everyday activities, e.g., getting to work, the food we eat and products we use, expose us to complex mixtures of environmental chemicals and other non-

chemical stressors (e.g., low income, nutritional status, psychosocial stress). We can do some things on our own to reduce these exposures but broader action and policy changes are also needed to protect public health. Each person's ability to respond to these stressors depends on their own health status and their ability to access other resources such as health care within their community. For example, good nutrition reduces the amount of lead (Pb) people absorb from environmental sources.[7] From the Maryland EJ Screening tool we know that people in many Maryland communities are faced with more than their fair share of chemical stressors as well as challenging health disparities, social and economic circumstances.[8] The CHERISH Act's requirement for an Existing Burden Report provides decision makers with a more complete understanding of this critical context so risk management decisions can be made that protect health in all communities.

- **Examples of cumulative risk and impact**

Research at the individual, community and state levels finds chemical mixtures and combined exposures of chemical and non-chemical stressors to be associated with outcomes such as mortality, increased cancer risk and child neurodevelopment. In my early research, I developed a method to pair a cumulative risk assessment with community health finding that exposures to large mixtures of toxic air pollutants (>100 chemicals) were associated with increased mortality at the neighborhood level in Philadelphia.[1] In Maryland, research showed that cancer risks estimated from exposures to mixtures of air toxics were higher in communities of color and low socio-economic position.[9] Our work finds that people are unique and may have different responses to certain exposures depending on health status or wealth measured as socio-economic status. For example, an analysis of data from the National Health and Nutrition Examination Survey found that women of reproductive age who had prior Hepatitis B infection were more likely to have higher levels of mercury in their blood, which would put their infants at greater risk of developmental delays.[10] Other research found that people with different socio-economic status had differing amounts of IQ loss due to lead (Pb) exposure from air, with those of lower socio-economic status having greater IQ loss.[11] Studies of air and other pollutant exposures in combination with race, ethnicity or stress show increased risks of adverse birth and neurodevelopmental outcomes.[12, 13]

- **Employ readily available methods for Existing Burden Reports**

Creating an Existing Burden Report can draw upon a strong foundation of well-recognized methods in a community-engaged approach. Methods such as health impact assessment and chemical mixtures risk assessment can provide the necessary context on health, social factors and the chemical exposures affecting community residents. The US EPA has applied health impact assessment to promote "sustainable and healthy communities."[14] The Maryland Department of Health offers a Health Impact Assessment Toolkit including the ability to "... map Maryland health, environmental, and social economic data at the county, ZIP code, and census tract level."[15] Data on environmental exposures can be evaluated with mixtures and cumulative risk assessment methods that have been available for many years.[16, 17] These same cumulative risk assessment methods are being used as part of New Jersey's Environmental Justice Law implementation.[18] Leveraging these approaches to incorporate

consideration of cumulative harms in environmental permitting decisions would be an important step forward for public health to reduce cumulative exposures and prevent harm in Maryland's communities.

- **We support HB1484 to ensure that permit decisions are made with a full understanding of the health impacts on affected communities.**
- **We look forward to working with community members and state and local decision makers to develop and implement practical cumulative risk and impact assessment approaches for Maryland.**

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