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## Brief Description of Proposed Priority Options Human Health, Safety, and Welfare Technical Working Group DRAFT

### HHSW-1. Health Impacts Assessments of the Climate Change Action Plan

#### Option Description

Options considered to respond to climate change will have considerable public health impacts. Because of this, a mechanism is required to assess the public health consequences of proposed mitigation and adaptation strategies prior to their adoption. Such a mechanism already exists; it is known as a Health Impact Assessment (HIA). The World Health Organization describes the value of an HIA in this way: “HIA provides decision makers with information about how any policy, program or project may affect the health of people. HIA seeks to influence decision makers to improve the proposal.”

#### Option Design

Health Impact Assessments would be required as a part of mitigation and adaptation strategy evaluation. The formal process of an HIA involves the following steps:

- 1. Screening:** This involves a rapid assessment of whether the policy would require a formal, detailed HIA or a relatively limited assessment. This would be performed by the Department of Health and Mental Hygiene on proposed policies, and the results reported as a recommendation for either a more formal HIA or a limited staff assessment.
  - 2. Scoping:** If a formal HIA is recommended, DHMH would work with other interested parties to define the participants in the HIA, what potential data needs might be, and what the objectives of the HIA would be.
  - 3. Appraisal:** This is the actual analysis. An example might be, for a given large policy option, an analysis of the affected population(s), distributional and equity considerations, health resource requirements, health infrastructure implications, etc. In addition, there is a presentation of potential alternatives to reduce or mitigate potential health consequences of the proposed policy.
  - 4. Monitoring and Evaluation:** This phase involves the monitoring and evaluation of the adopted policy’s implementation.
- **Targets and Timing:** This policy option (adoption of HIAs as a formal requirement for policy alternatives considered to mitigate or adapt to climate change) would be implemented immediately.
  - **Parties Involved:** The Department of Health and Mental Hygiene, together with the Maryland Department of Environment, Maryland Emergency Management Agency, and

local health agencies, would review proposed policy options according to the HIA framework. This would be coordinated through the Environmental Health Liaison Committee.

### Implementation Mechanisms

No statutory change is required to do this. It would require adoption of an executive policy that provides for conducting a Health Impact Assessment of proposed policies.

### Related Policies/Programs in Place

The development of Environmental Public Health Tracking, a project funded by the Centers for Disease Control and Prevention (CDC), would make environmental data and public health data from a number of surveillance programs available on the internet within a single browser. This program may be of benefit to the process of developing HIAs, as it would provide a ready source of historical data and GIS capability.

### Estimation of Adaptation Benefits and Costs

- **Capital intensity:** There is no capital required to adopt this policy.
- **Flexibility:** Health impact assessments actually increase the flexibility of proposed policy options, by requiring consideration of policy alternatives.
- **Adaptive capacity:** This proposal would increase the adaptive capacity of state institutions, by instituting public health considerations into the beginning of the policy process, rather than waiting for the adverse consequences to be recognized and mitigated at the end of the policy or implementation process.

### Documentation of Adaptation Benefits and Costs

- **Data Sources:** Information on HIAs is available online at <http://www.cdc.gov/healthyplaces/hia.htm>. Data for the HIAs within the State will be obtained from DHMH, MDE, DNR, MEMA, and a number of other agencies.
- **Quantification Methods:** HIAs would require some staff time and some data on environment and health, which should be available through environmental public health tracking and other sources.
- **Key Assumptions:** There is an assumption that HIAs would be mandatory for climate change policy evaluation, as well as (in the future) other major development policies.
- **Key Uncertainties:** There are no uncertainties in the analysis.

### Additional Benefits and Costs

None

### Feasibility Issues

The major feasibility issue has to do with sufficiency of data and involvement of interested parties. The major success historically for HIAs has been in communities with broad input into the process, as well as the development of a wide range of potential options from which to select.

**Status of Group Approval**

**Barriers to Consensus**

## HHSW-2. Coordination Across Agencies Responsible for Human Health and Safety

### Option Description

A gap analysis will be conducted to determine if there is adequate coordination of county and city level adaptation options to ensure consistency in response to health emergencies across county boundaries, including in response to large-scale floods and storms, and infectious disease outbreaks. Any recommendations resulting from the analysis will recognize and account for differences in response capacity between counties and recommend mitigation and augmentation options to minimize disruption in services due to lack of capacity. The analysis will determine if there is a geographical basis for differences.

### Option Design

**Targets:**

**Timing:**

**Parties Involved:**

**Other:**

### Implementation Mechanisms

### Related Policies/Programs in Place

### Estimation of Adaptation Benefits and Costs

**Capital intensity:**

**Flexibility:**

**Adaptive capacity:**

**Other:**

### Documentation of Adaptation Benefits and Costs

**Data Sources:**

**Quantification Methods:**

**Key Assumptions:**

**Key Uncertainties:**

**Additional Benefits and Costs**

**Feasibility Issues**

**Status of Group Approval**

**Barriers to Consensus**

## **HHSW-5. Public Health Response Plans for Large-Scale Floods, Storms, and Storm Surges**

### **Option Description**

The adverse health consequences of flooding, storms, and storm surges are complex and far-reaching, and include the physical health effects experienced during the event or clean-up process, or from effects brought about by damage to infrastructure, including population displacement. The physical effects largely manifest themselves within weeks or months following the event, and may be direct (such as injuries) and indirect (such as increased rates of vector-borne and other diseases). Extreme weather events are also associated with mental health effects, such as post-traumatic stress disorder, resulting from the experience of the event or from the recovery process. These psychological effects tend to be much longer lasting and may be worse than the direct physical effects.

To address these risks, in collaboration with appropriate public health agencies and stakeholders, effective approaches will be developed to communicate appropriate responses that protect human health during large-scale floods, storms, and storm surges. Of particular concern are communication systems and plans that address health issues associated with low-income and under-served populations and other vulnerable groups. Plans will be developed for moving critical acute and longer term care facilities if they will need to be closed because sea level rise, storm surges, or flooding will put them at risk. The plans will ensure that climate change concerns are integrated into activities of the Maryland Institute for Emergency Medical Services Systems and other organizations engaged in disaster response. Stakeholders will include managers of hospitals, public buildings, and infrastructure that provide emergency security, communications, and health services, to reduce the vulnerability of critical activities and equipment during an extreme event or other climate-related event.

### **Option Design**

**Targets:**

**Timing:**

**Parties Involved:**

**Other:**

### **Implementation Mechanisms**

### **Related Policies/Programs in Place**

**Estimation of Adaptation Benefits and Costs**

**Capital intensity:**

**Flexibility:**

**Adaptive capacity:**

**Other:**

**Documentation of Adaptation Benefits and Costs**

**Data Sources:**

**Quantification Methods:**

**Key Assumptions:**

**Key Uncertainties:**

**Additional Benefits and Costs**

**Feasibility Issues**

**Status of Group Approval**

**Barriers to Consensus**

## HHSW-9. Vector-borne Surveillance and Control Programs

### Option Description

One of the consequences of climate change that has received considerable attention is the likelihood of changes in patterns of vector-borne diseases. As the climate warms, the range of insect- and arthropod-borne diseases is likely to expand northward.

The Department of Health and Mental Hygiene, in close cooperation with the Maryland Department of Natural Resources and the Maryland Department of Agriculture, has responsibility for conducting vector-borne disease surveillance and control programs. One example is the West Nile Virus surveillance program, which tracks mosquitoes and human cases. This option would entail development of a coordinated plan to assure adequacy of the surveillance program given increased demand associated with climate change.

### Option Design

**Targets and Timing:** Significant increases may be required in personnel and resources if surveillance of vectors and cases is to be expanded. Vector surveillance requires collection of specimens, laboratory analysis, and GIS or other spatial analysis in order to follow the physical distribution of the vector. This requires specialists capable of specimen collection, laboratory resources, and data management capacity. While not immediately required, the long lead-time required to recruit and/or train the personnel necessary to fill these specialized positions necessitates advance planning and dedication of resources. Some positions may take more than a year to recruit.

**Parties Involved:** Maryland Department of Agriculture, Department of Natural Resources, and the Department of Health and Mental Hygiene would be involved in development of a coordinated plan to assure adequacy of the surveillance program.

### Implementation Mechanisms

The policy option involves a work group between the departments, which will prioritize and identify the resources required to meet the increased demand associated with climate change.

### Related Policies/Programs in Place

There are currently vector and disease surveillance programs within the state that could meet some (but not all) of the demands associated with increased vector-borne disease as a result of climate change.

### Estimation of Adaptation Benefits and Costs

**Capital intensity:** The capital requirements relate to funding for additional personnel required to meet the demands identified by the working group. There may be some additional capital requirements for specialized trapping equipment related to vector surveillance, as well as laboratory capacity.

**Flexibility:** This policy option allows significant flexibility, as it entails the option of using personnel involved in surveillance activities to perform multiple functions or to switch to different surveillance activities if the anticipated effects of climate change turn out to be not as predicted.

**Adaptive capacity:** This option provides the state with considerable capacity to adapt to changes as a result of climate change, however it manifests. Both the personnel and laboratory capacity anticipated can perform multiple functions, and will allow the state to shift resources in a relatively narrow window.

**Other:**

### **Documentation of Adaptation Benefits and Costs**

**Data Sources:**

**Quantification Methods:**

**Key Assumptions:**

**Key Uncertainties:**

### **Additional Benefits and Costs**

None

### **Feasibility Issues**

The primary feasibility issue relates to the state's ability to recruit and retain the personnel required to carry out these activities.

### **Status of Group Approval**

### **Barriers to Consensus**

## Hazard Preparedness and Emergency Planning

### Option Description

Current hazard preparedness and emergency planning efforts may need to be modified to effectively prepare for and respond to projected increases in the frequency and intensity of flooding, storms, and storm surges. The consequences of these events are complex and far-reaching, and include damage to infrastructure, disruption of normal activities, and human health impacts. Physical effects can be experienced during the event or clean-up process, or from effects brought about by damage to infrastructure, including population displacement. The physical health effects largely manifest themselves within weeks or months following the event, and may be direct (such as injuries) and indirect (such as increased rates of vectorborne and other diseases). Extreme weather events are also associated with mental health effects, such as post-traumatic stress disorder, resulting from the experience of the event or from the recovery process. Because these psychological effects tend to be much longer lasting and may be worse than the direct physical effects, hazard preparedness plans should detail how to identify and treat individuals experiencing mental health effects.

To address these risks, in collaboration with appropriate public health agencies and stakeholders, effective approaches will be developed to communicate appropriate responses that protect human health during large-scale floods, storms, and storm surges. Of particular concern are communication systems and plans that address health issues associated with low-income and under-served populations and other vulnerable groups. Plans will be developed for moving critical acute and longer term care facilities if they will need to be closed because sea level rise, storm surges, or flooding will put them at risk. The plans will ensure that climate change concerns are integrated into activities of the Maryland Institute for Emergency Medical Services Systems and other organizations engaged in disaster response. Stakeholders will include managers of hospitals, public buildings, and infrastructure that provide emergency security, communications, and health services, to reduce the vulnerability of critical activities and equipment during an extreme event or other climate-related event.

### Option Design

#### Targets:

- Conduct a gap analysis to determine whether current hazard preparedness and emergency plans are sufficient in the face of climate change projections.
- Track developments in forecasting extreme weather events to know when there is sufficient skill for development of early warning systems.
- In collaboration with appropriate stakeholders, identify effective approaches to communicate early warnings, particularly for low-income and other vulnerable group. Develop educational programs on appropriate behavior before, during, and following extreme events. Develop programs to inform care givers, pharmacists, churches, and other who work with vulnerable groups of the risks of and effective responses to an extreme

weather event. Provide appropriate training to emergency responders and other key personnel.

**Timing:**

**Parties Involved:**

**Other:**

### **Implementation Mechanisms**

### **Related Policies/Programs in Place**

### **Estimation of Adaptation Benefits and Costs**

**Capital intensity:**

**Flexibility:**

**Adaptive capacity:**

**Other:**

### **Documentation of Adaptation Benefits and Costs**

**Data Sources:**

**Quantification Methods:**

**Key Assumptions:**

**Key Uncertainties:**

### **Additional Benefits and Costs**

### **Feasibility Issues**

### **Status of Group Approval**

### **Barriers to Consensus**

## Public Awareness and Capacity Building

### Option Description

### Option Design

**Targets:**

**Timing:**

**Parties Involved:**

**Other:**

### Implementation Mechanisms

### Related Policies/Programs in Place

### Estimation of Adaptation Benefits and Costs

**Capital intensity:**

**Flexibility:**

**Adaptive capacity:**

**Other:**

### Documentation of Adaptation Benefits and Costs

**Data Sources:**

**Quantification Methods:**

**Key Assumptions:**

**Key Uncertainties:**

### Additional Benefits and Costs

### Feasibility Issues

**Status of Group Approval**

**Barriers to Consensus**