

Maryland Commission on Climate Change Scientific and Technical Working Group

Work Plan 2016

Action Goals. The Scientific and Technical Working Group (STWG) will address five goals pursuant to the responsibilities assigned under the Maryland Commission on Climate Change Act (MCCCA). Each addresses one of the priorities for working group actions, (1) through (14), that are specified § 2-1303 (D) of the Act.

- 1. Update Climate Impacts Report [Actions (6) and (8)].** Since the STWG's 2008 Climate Impacts report, scientific understanding of the pace, nature and consequences have advanced. In particular, the Fifth Assessment of the Intergovernmental Panel on Climate Change (IPCC) and the U.S. National Climate Assessment (NCA) were completed in 2014. In 2013 the STWG prepared an update of projections of sea level rise for Maryland. In addition, the neighboring state of Delaware prepared an excellent climate impacts report for that state. The STWG will produce an update or series of updates, as appropriate, of its 2008 Climate Impacts report based on the emerging science and these recent global, national and regional assessments. The STWG will increase the emphasis on economy, revenues, and investment decisions in these updates.
- 2. Provide scientific and technical support for adaptation strategies [Actions (9) and (10)].** Based on the aforementioned climate impacts updates the STWG will provide support for the Adaptation and Response Working Group (AWG) in producing community scale climate vulnerability assessments to inform adaptation strategies.
- 3. Contribute information and analysis in support of the Commission's Comprehensive Action Plan to achieve science-based reductions in Maryland's Greenhouse Gas Emissions [Action (12)].** The STWG contributed information and analysis that informed the Commission's 2015 recommendation for reducing Maryland's emissions by 40 percent by 2030, likely to be codified in the Maryland Greenhouse Gas Reductions Act of 2016. The STWG will in particular assist the Commission's Greenhouse Gas Mitigation Working Group (MWG) in development of plans to achieve the reductions based on 5-year benchmarks.
- 4. Improve technical effectiveness of inventory of GHG emission sources and sinks [Action (4)].** The STWG will provide technical advice to assist the MWG in improving the inventory of Maryland's emissions sources and sinks.
- 5. Ensure sound scientific basis for communication and education [Action (3)].** It is critical that the Commission's communication and education efforts are scientifically accurate and credible. The STWG will work with the new Education, Communication and Outreach (ECO) Working Group to ensure this.

2016 Tasks. Over 2016 the following tasks will be emphasized.

- 1) **Vetting team for communication and education (July).** Establish a small team willing and able to review materials for scientific and technical accuracy and credibility.
- 2) **Climate Impacts Report Update.**
 - a) Complete a general update of the 2008 report and determine which sectors require deeper analysis (July-November).
 - b) A more in-depth assessment of the impacts on agriculture in the state will be begun as this is specifically indicated in the MCCA. The scope and content of this assessment will be provided for inclusion in the MCCC annual report, with the assessment being completed in 2017 (July-November).
 - c) § 2-1306 of the MCCA mandates that the University of Maryland Center for Environmental Science establish science-based sea-level rise projections for Maryland's coastal areas and update them at least every 5 years. The last update was produced by the STWG on June 13, 2013; thus, new projections are not due until 2018. However, there has been a recent flood of new scientific publications on this important topic. The UMCES will prepare and interim update that will be reviewed by the STWG (July-September).
- 3) **Assess methane emissions and mitigation strategies (July-November).** In 2015 the MCCC identified the need to provide more focus on greenhouse gas emissions other than carbon dioxide. Some of these gases have much shorter residence times in the atmosphere, but produce a far greater radiative effect on a molecule-per-molecule basis than carbon dioxide. Reducing emissions of such gases could have a significant effect on global warming in the short-term, while global society works on eliminating its net carbon dioxide emissions in the long term. For that reason, these are referred to as "fast-acting" reductions. Of foremost concern is methane, for which emissions might actually be growing because of increased reliance on natural gas than on more carbon-intense fuels such as coal). Even small losses of methane to the atmosphere could more than undue the greenhouse gas warming benefits of using this less carbon-intense fuel. Neither assessing nor reducing methane emissions is a simple matter. The emissions may result during extraction out of the state, within complex distribution systems from pipelines to local utility providers, or from operation of appliances in homes and industries. The STWG will produce an assessment of the sources, amounts and control options for methane used or produced in Maryland based on the literature and existing databases (July to November).

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