Climate Change & Greenhouse Gas Reduction Blog Series 2012

First published in *Conduit Street*, written by Les Knapp, Legal & Policy Counsel, Maryland Association of Counties

Part 1 – Overview of State Efforts

May 8, 2012

From time to time MACo will discuss particularly significant or complex policy issues that affect local governments through a series of blog articles. This post will be the first in a new series that will examine proposals being considered by Maryland to address climate change. This post will provide a basic overview of upcoming greenhouse gas reduction proposal and initiatives being considered by the State. Many of these proposals can have a significant effect on local land use.

The Greenhouse Gas Emissions Reduction Act of 2009

In 2009, the Maryland General Assembly passed the Greenhouse Gas Reduction Act (GGRA) [HB 315 / SB 278], which required the Maryland Department of the Environmental (MDE) to develop a plan that will reduce greenhouse gas (GHG) emissions in the State by 25% from their 2006 levels by 2020. The bill requires a study of the economic impact of GHG emission reductions on the manufacturing sector and MDE must consider the rural impact of any GHG emission reductions relating to transportation.

The State GGRA Plan

MDE has prepared its 2011 draft GGRA Plan and is now taking public comments. The biggest reductions under the Plan are expected to come from energy (49% of the total effort) and transportation (22% of the total effort).

From the GGRA Plan page on the MDE website:

The 2011 draft of the GGRA Plan fulfills the law's requirement for the Maryland Department of the Environment (MDE) to submit a draft of the GGRA Plan to the Governor and General Assembly in advance of the final Plan. The final GGRA Plan is due in December of 2012. During the interim period, MDE will solicit public comment on the Plan through a series of public workshops. MDE is encouraging public comment on the Plan as a whole, on the 65 control measures that comprise the Plan and on any new ideas that members of the general public may have.

The 2011 draft Plan puts the State on track to achieve the 25 percent GHG reduction required by the law while also creating jobs and improving Maryland's economy. The Plan also will help with other

environmental priorities, including restoration of the Chesapeake Bay, improving air quality and other critical energy and national security issues.

According to MDE, preliminary analyses show an annual economic and jobs benefits of about 34,000 jobs, $5.5 billion in economic output, and $2 billion in wages resulting from the Plan's proposed GHG emissions reduction strategies.

Transportation and Land Use Strategies Group

As previously reported on *Conduit Street*, there is also a Transportation and Land Use (TLU) Strategies Group that is focusing on GHG emission reductions through transportation and land use changes. From the Group's website:

The Maryland Department of the Environment (MDE) is leading this stakeholder process to develop and analyze additional policy recommendations for the transportation and land use (TLU) sector. This process will enhance existing policies to achieve long-term reductions in greenhouse gas (GHG) emissions and emissions that impact the Chesapeake Bay, while also providing positive economic, job creation and health benefits for the State. For this particular effort, the TLU Strategies Group will include both private sector and public sector participants. MDE is working with the Center for Climate Strategies (CCS) to conduct the stakeholder process and assist the TLU Strategies Group in identifying practical, effective strategies that will meet these goals.

This work will build on the policies developed by the State under the Greenhouse Gas Emissions Reduction Act of 2009 (GGRA), and will include consideration of California's Senate Bill (SB) 375 and the Carbon Neutral Corridor effort led by the Maryland Department of Transportation (MDOT). The process will begin where the State is now and is *not* intended to replace the TLU strategies currently in the State's GGRA Plan. Its focus will be on strategies that have the potential to achieve longer-term (post-2020) climate and Bay benefits. The TLU Strategies Group includes stakeholders representing the business, local government, transportation, housing and environmental communities, as well as several State agencies.

SB 375 essentially requires the development of regional GHG emission reduction targets for passenger vehicles and each region must demonstrate how the region will meet its GHG reduction targets through integrated land use, housing, and transportation planning.

Potential County Impacts

There could be a significant impact on local land use planning as a result of the proposals in contained in the draft GGRA Plan and TLU Strategies Group. This could include vehicle miles traveled (VMT) reduction targets for local governments, the withholding of State funding for any transportation project

that will increase VMT, and limiting development projects that do not reduce or mitigate VMT and GHG emissions.

An April 4 Maryland Department of Planning presentation to the Baltimore Regional Transportation Board Interagency Consultation Group contained the following quote:

"The only method to ensure a reduction in overall transportation emissions over time is to sharply reduce the rate of growth in VMT, which will require a significant adjustment of land use patterns away from automobile-oriented development."

- Growing Cooler, 2007

Reducing GHG emissions is a complex undertaking and will require a coordinated effort by the State, local governments, private businesses, and citizens. However, it should not be realized through a "one-size-fits-all" approach or the loss of local land use autonomy. MACo will continue to report and be engaged in this issue over the interim. Future blog posts will provide more detail on the various components discussed above.

Part 2 – Greenhouse Gas Reduction Act Plan

June 8, 2012

From time to time MACo will discuss particularly significant or complex policy issues that affect local governments through a series of blog articles. This post is the second in a new series that will examine proposals being considered by Maryland to address climate change. This post will provide an overview of the State's draft Greenhouse Gas Emissions Reduction Act (GGRA) Plan, which lays out proposed strategies for handling climate change. The draft Plan is currently open to public comment. The final version of the Plan is being targeted for adoption in 2012.

Overview of the Plan

The Greenhouse Gas Emissions Reduction Act of 2009 (HB 315 / SB 278) requires the Maryland Department of the Environmental (MDE) to develop a plan that will reduce greenhouse gas (GHG) emissions in the State by 25% from their 2006 levels by 2020. The legislation also required that any GHG reduction proposals in the Plan have a net economic benefit for Maryland. The 362-page Plan is divided into 9 Chapters and offer 65 initial proposals for reducing GHG emissions. The majority of reductions will come from energy(49%), transportation (22%), and agriculture and forestry (12%). The Plan also has nearly 2,000 pages of supplemental material included in 7 appendices. MDE views the Plan as a "multi-pollutant" plan that will not just target air quality but also nutrient run-off into the Chesapeake Bay.

A preliminary economic analysis conducted by Towson University's Regional Economic Studies Institute (RESI) estimates that if all 65 of the Plan's proposals are implemented the result will be the creation of approximately 36,000 jobs, $6.1 billion in additional economic output, and $2.1 billion in additional wages. (These numbers do not include the estimated $3 billion required to implement the proposals.) RESI's full economic analysis can be found in Appendix E of the Plan.

Chapter 1 – Background

Chapter 1 of the Plan provides basic background on climate change, why the Plan is needed, Maryland's climate change efforts to date, and the GHG reduction efforts of other states. The Plan notes that Maryland, with the 4th longest coastline of any state and a large agricultural component to its economy, is ranked as the 3rd highest state most susceptible to climate change.

Chapter 2 – Update on Climate Change Science

Chapter 2 contains a brief review of the most recent findings of climate change science, including global air temperatures, sea ice thickness, ocean acidification, and severe weather events.

The good news is that we are improving our understanding of the phenomenon of climate change, its repercussions and its likely course. The bad news is that the substantial preponderance of the new science indicates that significant climate change is more certain, will occur sooner than previously thought, and will result in largely negative consequences for the wellbeing of humans and their planet's critical living systems.

Chapter 3 – Inventory and Forecast

Chapter 3 discusses how the GRRA Inventory and Forecast were computed. The inventory is the amount of GHG emissions generated in Maryland in 2006. The inventory found that the top three GHG generators in 2006 were electricity use (39%); onroad transportation (28%); and residential, commercial, and industrial fuel use (16%). The forecast projects GHG emission patterns through 2020 and includes a "business as usual" scenario if not additional GHG reduction strategies were implemented.

For additional information on quantifying GHG emissions in Maryland see Appendix B.

Chapter 4 – Climate Change and the Cost of Inaction In Maryland: A 2011 Review

This Chapter updates a prior report by the University of Maryland Center for Integrative Environmental Research (CIER) on the costs if the State failed to implement climate change and GHG reduction policies. The report was originally included as part of the 2008 Maryland Climate Action Plan, which was used to help set the goals and requirements of the 2009 Greenhouse Gas Reduction Act. The study methodology used by CIER can be found in Appendix F.

The Chapter highlights the impacts and costs of climate change to Maryland in five sectors: (1) coastal land and ecosystems; (2) tourism; (3) agriculture; (4) public health; and (5) energy.

CHAPTER 5 – A Multi-Pollutant Planning Approach

Chapter 5 discusses how the Plan is part of a larger "multi-pollutant" reduction strategy by MDE and is the first of three pollution reduction plans that MDE will be creating in the next few years.

The 2012 GGRA Plan will not only help reduce emissions of greenhouse gases (GHG), but also will help Maryland meet its mandates to: (1) further clean up the Chesapeake Bay; (2) meet new National Ambient Air Quality Standards for ground-level ozone, fine particles, sulfur dioxide, and nitrogen dioxide, and (3) meet federal and State requirements to further reduce regional haze as well as mercury and other air toxics.

MDE's development schedule for the three plans is as follows:

- Phase 1: Adopt final GGRA Plan – December 2012
- Phase 2: Adopt State Implementation Plan for new federal Clean Air Act ozone standard – 2013 or 2014
- Phase 3: Adopt State Implementation Plan for new federal Clean Air Act fine particle standard – 2013 or 2014

The Chapter also discusses Maryland's existing air quality programs, including: (1) the Maryland Healthy Air Act; (2) the Maryland Clean Cars Program; and (3) EmPOWER Maryland. Finally, the Chapter discusses several frameworks for implementing and analyzing a multi-pollutant policy. For more on multi-pollutant planning see Appendix G.

Chapter 6 – Summary of Reduction Strategies

Chapter 6 is the core section of the Plan and describes the 65 proposed GHG reduction programs and State agency responsible for each program. Some of the proposals that may have significant county government impacts include:

- Increasing recycling and source reduction standards – MDE
- The Transportation and Climate Initiative – MDE
- Evaluate the GHG emissions impacts from major new projects and plans – Maryland Department of Transportation (MDOT)
- Increasing urban trees to capture carbon – Department of Natural Resources (DNR)
- Building and trade codes in Maryland – Department of Housing and Human Development (DHCD)
- Reducing GHG emissions from the transportation sector through land use and location efficiency – Maryland Department of Planning (MDP)

- Transportation GHG targets for local governments and Metropolitan Planning Organizations – MDP
- Funding mechanisms for Smart Growth – MDP
- GHG Benefits from Priority Funding Areas and other growth boundaries – MDP

The Chapter provides a potential breakdown of the GHG reductions and job creation and economic benefits that could be achieved by program and by sector (Energy, Transportation, Agriculture and Forestry, Recycling, Multi-Sector, Buildings, Land Use, and Maryland's Innovative Initiatives). The Innovative Initiatives sector contains proposals that do not fit within any other particular sector and serves as a "catch-all" category. The land use sector GHG reductions assume that 75% of Maryland's new development between 2011 and 2020 will be compact development.

Further details on the 65 proposals can be found in Appendix C.

Chapter 7 – Maryland Jobs and the Economy

Chapter 7 discusses the job and economic growth impact of the 65 proposals and is primarily based on the 2011 RESI study (see Appendix E) and the 2011 updated cost of inaction analysis by CIER (see Chapter 4 and Appendix F). RESI's preliminary findings indicate that for every $1 million invested in the 65 proposals, 15 jobs will be created with an economic output of $1.8 million and $0.6 million in wages.

If all 65 proposals are implemented, "[t]he programs will support a total of 35,981 jobs, $6.1 billion in output, and $2.1 billion in wages annually once in operation." The employment, economic output, and wage impacts are broken down by sector (Energy, Transportation, etc.) and proposal. Indirect and induced impacts are also included by sector.

The RESI study also includes a literature review of other climate change economic impact studies in Maryland.

Chapter 8 – Adaptation

Chapter 8 discusses how Maryland must not only work to mitigate the effects of climate change, but also adapt to the current and future effects that climate change will cause to the state. Many of the discussed adaptation strategies have an implementation time that extends beyond 2020 and many are ongoing in nature. The Chapter discusses how climate change will affect a variety of policy areas and offers potential adaptation strategies to address these changes. In some cases the adaptation identifies the lead State agency, key partners (such as local governments), priority, timeframe, and potential implementation cost.

The policy areas include: sea level rise and coastal storms; human health; agriculture; forest and terrestrial ecosystems; the Bay and aquatic ecosystems; water resources; population growth and infrastructure; and tools, research, and education to inform sound decisions.

For example, under population growth and infrastructure, on of proposed adaptation strategies is to institutionalize consideration of climate change in government decisions. MDP is tasked with considering climate change issues in combination with ongoing growth and development planning efforts promoting the integration of climate change adaptation strategies into State and local policies and programs. Local governments and the Sustainable Growth Commission are listed as key partners. The implementation priority is listed as high, the timeframe is short-term, and the potential cost is low.

Chapter 9 – Legislative Priorities

Chapter 9 discusses three major legislative initiatives that are linked to the draft Plan. The three initiatives include: (1) the Maryland Offshore Wind Energy Act of 2012; (2) the need for increased transportation revenue (such as a gasoline tax increase); and (3) the Sustainable Growth and Agriculture Preservation Act of 2012 (septic system legislation). Of the three initiatives, only the septic system legislation passed during the 2012 Session and its potential GHG reduction benefits will need to be factored into the Plan.

The remainder of the Chapter summarizes other Maryland climate legislation that has been passed from 2006 to 2011.

Appendices

The draft Plan contains seven appendices (A-G).

Appendix A - Greenhouse Gas Emissions Reduction Act of 2009 [10 pages]

Appendix B - 2011 Final Report on Analysis of Greenhouse Gas Emissions Reductions by Science Application International Corporation (SAIC) [316 pages]

Appendix C - Maryland Climate Policies (detailed explanation of the Plan's 65 proposed climate change initiatives) [380 pages]

Appendix D - MDOT 2011 Draft Climate Implementation Plan [178 pages]

Appendix E - RESI 2011 Draft Economic Impact Analysis [972 pages]

Appendix F - CIER 2011 Review of Climate Change and the Cost of Inaction in Maryland [56 pages]

Appendix G - Northeast States for Coordinated Air Use Management (NESCAUM) Multi-Pollutant Planning Approach [69 pages]

Public Comment and Reactions to the Plan

The draft Plan is open for public comment through August 17. Please direct question or comments about the draft Plan to climate@mde.state.md.us.

A June 8 *Gazette.net* article provides some stakeholder reactions to the Plan.

Comments largely have been positive, said George "Tad" Aburn, air director for MDE. …

In general, only a narrow range of such programs are likely to be effective, said Thomas Firey, senior fellow with the conservative Maryland Public Policy Institute. Cap-and-trade programs are the most efficient way to reduce emissions, said Firey, adding that it was encouraging that the O'Malley administration was supporting one. Some of the individual initiatives, such as transportation projects, will require the participation of local jurisdictions, Aburn said.

The article notes that the Maryland Sierra Club was "pleased" with the draft Plan. Environment Maryland argued that that Governor Martin O'Malley's offshore wind proposal needs to pass the Maryland General Assembly "ASAP."

Other Useful Links

- MDE GGRA Plan page
- Transportation & Land Use Strategies Group Page (This workgroup is reviewing the Plan's proposals as well as considering additional strategies the State could undertake.)

Part 3 – Using California as a Model

October 15, 2012

This MACo post is the third in a series of blog articles that will examine proposals being considered by Maryland to address climate change. Several of the proposals involve adopting policies that have been implemented in California and this post will examine and describe the California policies.

The State's draft Greenhouse Gas Emissions Reduction Act (GGRA) Plan details proposed strategies for climate change. The draft plan, developed by the Maryland Department of the Environment (MDE) with input from various State agencies is designed to reduce greenhouse gas (GHG) emissions in the State by 25% of their 2006 levels by 2020. The State is also considering a longer-term reduction goal of 90% by 2050. MACo and many local jurisdictions have submitted comments on the Plan.

The Maryland Department of Planning (MDP) has proposed a series of land use GHG reduction strategies in the Plan, including: (1) reducing transportation emissions through Smart Growth and land use/location efficiency; (2) assigning vehicle miles traveled (VMT) targets to local governments and metropolitan planning organizations (MPOs); (3) providing funding mechanisms that focus on Smart Growth; and (4) realizing GHG reductions through the use of PlanMaryland and other growth policies. The Land Use-1 reduction strategy in the Plan includes the following language:

MDP and sister agencies will investigate the feasibility in Maryland of implementing California's Senate Bill 375 bill and will develop sustainability criteria (e.g., a decrease or no net increase in VMTs) that local transportation plans and projects must achieve in order to receive State transportation funds. MDP and sister agencies will investigate the feasibility of implementing Rule 9510 of the San Joaquin Valley Air Pollution Control District in Maryland and perform a VMT Fee Pilot Project Study in Maryland.

CALIFORNIA SB 375

SB 375 was adopted by California in 2008 and became effective at the beginning of 2009. The bill creates regional VMT reduction targets that are tied to transportation planning and land use. Local governments and MPOs must create a "sustainable communities strategy" that will meet the assigned VMT targets. The sustainable communities strategy must incorporate transportation, land use, and housing elements, with a focus on compact, mixed-use, and affordable communities. If California's Air Resources Board determines that the proposed strategy will not meet the VMT target, the affected local and regional agencies must also prepare an "alternative planning strategy" to show how the VMT targets through "alternative development patterns, infrastructure, or additional transportation measures or policies." [SB 375]

Transportation projects must meet be consistent with the sustainable communities strategy in order to qualify for state funding. Residential and mixed-use development projects that are consistent with the strategy are exempt from certain environmental review requirements.

SB 375 Fact Sheet (prepared by Southern California Association of Government)

SB 375 Summary (prepared by Housing California)

San Joaquin Valley Rule 9510

Rule 9510 was adopted by the San Joaquin Air Pollution Control District in 2005 and became effective in 2006. The Rule requires developers to offset indirect sources GHG, such as automobile pollution, produced by certain development and transportation projects. From the San Joaquin Air Pollution Control District Website:

> The purpose of the District's Indirect Source Review (ISR) Program is to reduce emissions of NOx and PM10 from new development projects. In general, new development contributes to the air-pollution problem in the Valley by increasing the number of vehicles and vehicle miles traveled. In 2005, on-road vehicles generated approximately 200 tons per day of NOx and direct PM10 pollution in the Valley. Although newer, cleaner technology is reducing the per-vehicle pollution, the emissions increase from new development putting more vehicles on Valley roads partially offsets the emission reductions gained from technology advances.

Generally, the Rule applies to development projects with 50 or more residential units or that contains more than a certain amount of commercial, industrial, medical office, educational, or government space. The Rule also prohibits projects from being broken into smaller contiguous or adjacent sections in order to avoid compliance with the Rule. Several types of projects are completely exempt from the Rule's requirements, including reconstruction projects that resulted from a disaster and road modifications that will not increase single occupancy vehicle capacity. Other types of projects are partially exempt from the Rule's requirements, including development projects that are below a certain mitigated baseline for NOx and PM10. Rule 9510 Covered & Exempt Projects