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TESTIMONY OF ENE IN SUPPORT OF LD 1333: AN ACT TO ESTABLISH CLIMATE AND ENERGY PLANNING IN MAINE

PRESENTED BEFORE THE NATURAL RESOURCES COMMITTEE
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Senator Goodall, Representative Duchesne, Honorable Members of the Committee:

Environment Northeast (ENE) offers this testimony in favor of LD 1333, An Act to Establish Climate and Energy Planning in Maine. ENE is a nonprofit, nonpartisan organization incorporated in Maine with offices in Rockport and Portland that provides research, analysis and advocacy on environmental policies in the northeast United States and Eastern Canada. ENE is a long-time advocate of climate change policy in Maine.

LD 1333 is an essential next step for Maine to take if it wants to be able to plan for change in a cost-effective manner. The bill asks state agencies to address two questions in their long-term planning, project and licensing decisions. First, it directs them to consider the likely energy use and emissions associated with a project and how they can be feasibly reduced. Second, it directs them to consider how new infrastructure will be impacted by expected changes in the climate.

Other testimony presented before you today will illustrate the economic benefits of reducing emissions and energy use associated with development. This testimony will focus on the benefits of considering the effects of a changing climate on new infrastructure. It will also address the importance of reducing emissions from forest loss and sprawl in Maine.

Plan Today, Avoid Costs Tomorrow

Researchers from the University of Maine presented to a report on climate change in the state to Governor Baldacci in February (*Maine's Climate Future: An Initial Assessment*). Their evaluation showed that the rate of warming in Maine has been increasing over the last century, and that all three of Maine's climate divisions are warmer and wetter than they were 30 years ago. Sea level rise and changes in the timing and amount of precipitation would impact many planning decisions, from reservoir capacity to the size of bridges and culverts. While many agencies are beginning to consider long-term climate change in their planning, this needs to be done consistently and systematically, as infrastructure that is built today may last 50 years or more.

A recent study published by the National Research Council, *Informing Decisions in a Changing Climate: Panel on Strategies and Methods for Climate-Related Decision Support*; found that climate change poses challenges for the many decision makers in our country: "The end of climate stationarity requires that organization and individuals alter their standard practices and decision routines to

account for climate change" [Emphasis added]. However, while planning for climate change may marginally increase upfront costs, proactive planning by the state is often less costly in the long run than retrofitting, relocating or repairing infrastructure.

Attached to this testimony is a chapter of the Stern Review on the Economics of Climate Change, a comprehensive analysis of the economics of climate mitigation and adaptation. One of its primary recommendations is to use land-use planning and performance standards to encourage private and public investment in buildings, long-lived capital and infrastructure that take climate change into account. The report highlights several examples of how climate planning and standards can save government and private citizens money when they are implemented, and the costs that happen when they are not. For instance:

1. Property-owners in the US Gulf States who implemented all the recommended hurricane protection methods suffered only one-eighth of the damages from Hurricane Katrina than those that did not implement such methods. The result was that investment by property-owners of $2.5 million avoided damages of over $500 million.
2. The province of Manitoba in Canada uses winter roads constructed from snow and ice to transport essential goods to remote northern communities. The extent of this network is equivalent to building a 2,000 km road every winter. After an extremely warm winter in 1997-98 when the roads could not be opened, 1 million kg of food had to be airlifted to communities at a cost of $50 million (Canadian). Retroactively, Manitoba began the process of moving 600 km of roads from ice-based routes to land and installed permanent bridges over critical river crossings.

While performance standards are effective in many cases, the report notes that "policies will be more efficient if they encourage private individuals and firms to take explicit account of the economic costs of climate change in their decision-making, rather than simply imposing prescriptive design standards." For this reason, ENE favors the climate planning approach in LD 1333. The bill requires individual projects to undergo an assessment of emissions and climate change effects, allowing them to identify alternatives to reduce and mitigate impacts up front. However, it also allows agencies the alternative of developing waivers to streamline the process for projects adhering to certain performance standards. This waiver process should reduce time and costs for agency staff and developers in instances where the project clearly adheres to best practices.

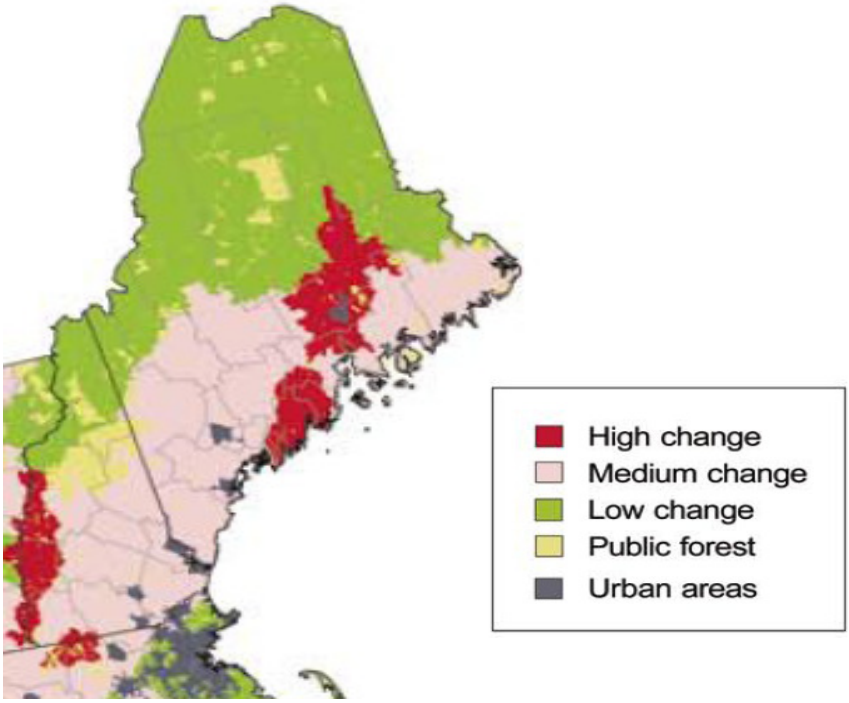
Land Use Emissions and Maine's Forests

Clearing forests for residential and commercial development can emit anywhere from 100-200 tons CO_2 per acre. When forests are converted, carbon loss occurs through several mechanisms. Soil carbon is depleted and released to the atmosphere when topsoil is scraped away to level the construction site or to prepare a driveway or road, foundations are dug, and soil is disturbed while clearing vegetation (*e.g.*, by skidders). Aboveground carbon is emitted when trees and stumps are cut down. If the wood is chipped and combusted or left to decay on site it will emit carbon to the atmosphere fairly quickly. If it is converted into durable wood products or ends up in a landfill, the carbon may take several decades before being emitted to the atmosphere. In paved and landscaped areas, which can make up the majority of smaller lots, these trees will never grow back. By comparison, forested areas will continually remove carbon from the atmosphere and store it in growing biomass.

Just as importantly, the associated development has cascading effects on other sectors. Increased land conversion leads to increased emissions in other sectors through energy inputs in

residential and industrial systems, construction of sprawling infrastructure and increased vehicle miles traveled (VMT). For example, the Maine State Planning Office estimated in its 1997 report that from 1987 to 1994, municipalities in the state built more than 100 miles of road per year (*The Cost of Sprawl*). This sort of sprawl locks the state into a future of high transportation emissions and further erosion of our forest land base. Not only that, it leads to higher maintenance costs for the local government, from lengthening of service routes for police, fire, emergency, road maintenance, and plowing. For these and other reasons local governments in Maine spent $800 million more in 1990-91 than they did in 1980-81 (in equalized dollars), an increase of about 60%, or $1,700 per household.

Figure 1. Increases in Housing Density in Maine Watersheds



Source: Forests on the Edge

On its own, land use change is not a leading contributor to overall GHG emissions in the United States. However, Maine is the most heavily forested state in the nation, and the question of emissions from forest loss is an important one for us to address. While reforestation and regrowth of stands in the state has meant that Maine forests have not been a large *net* emitter of carbon, *gross* emissions of carbon are significant and could begin to outweigh sequestration over the next few decades. The Maine Climate Action Plan notes:

> [T]he total volume of carbon lost from forestland conversion to non-forest uses in Maine from 1990-2000 was 18.53 MMTC compared to growth in emissions from all sectors of about 22 MMTC during the same period. In other words, the carbon emitted from forestland conversion was almost as large as that of all other sectors combined. Fortunately, some of this was mitigated through afforestation and stand recovery, but the flow of carbon from forestland conversion appears to be significant." (p. 53-54).

According to a 2005 report by the USDA (*Forests on the Edge*), three of Maine's watersheds will experience the greatest increases in housing density in the country in the foreseeable future (Figure 1). The biggest change among the 1,026 watersheds nationwide that were analyzed is expected in the Lower Penobscot watershed. By 2030, housing density is expected to increase on 310,200 forested acres. Also making the Top 15 list for rapid growth were the Lower Androscoggin, where residential development will occur on 213,800 acres, and the Lower Kennebec, on 210,000 acres.

This trend will exacerbate the forest loss that has already occurred over the last two decades. *Maine's Climate Future* notes that "[b]etween 1980 and 2000, development altered over 850,000 acres of Maine forest—an area the size of Rhode Island. This loss was the result of just 65,000 new residential dwellings, *making Maine's conversion rate of 10 acres per new housing unit the third highest behind Vermont and West Virginia*." [Emphasis in original].

Clearly, there are opportunities to increase development in Maine in a way that will have less of an impact on state and local government budgets and reduce the erosion of our working forest land base. On large new developments, reducing the footprint of new housing units and preserving open space can significantly reduce both emissions and costs. In fact, a study by the NOAA Coastal Service Center in Georgia found that clustered housing could reduce carbon emissions and clearing costs by about 41%, with only a 2% reduction in the number of housing units.

While other states in the region (Massachusetts and New York) have begun to incorporate climate assessments in their environmental review process, they have not sought to address emissions from land use change. Excluding consideration of forest conversion is a major deficiency in their regulations. On the other hand, LD 1333 proposes including site disturbance and changes in land use in its definition of embodied greenhouse gas emissions. This is an important step and should be applauded. Maine's Climate Action Plan was the first in the United States to fully consider the forest carbon cycle, and Maine should continue to take the lead in valuing the contribution its forests make.

In conclusion, new development and state infrastructure should be designed with an eye to the future. Considering energy use, emissions and climate impacts in state decision-making makes sense for state and local budgets. By fully considering the impacts of forest loss, we can help meet our climate goals while maintaining the vitality of our working land base. For all the reasons offered above, we urge the Committee to support LD 1333.