

Comments by Appalachian Mountain Club on the Draft Memorandum of Understanding and Model results of the Transportation and Climate Initiative (TCI)

The Appalachian Mountain Club (AMC) is the nation's oldest outdoor recreation and conservation organization with more than 100,000 members, supporters, and advocates from Maine to Washington, DC. We are dedicated to promoting the protection, enjoyment, and understanding of the outdoors. Our region's current transportation infrastructure and dependence on fossil fuels results in significant air pollution and greenhouse gas emissions that impact the enjoyment and safety of outdoor recreationists and the vitality of the natural and recreational resources AMC works to protect. As in past and joint comments AMC strongly supports the general approach laid out in the Transportation and Climate Initiative (TCI) draft MOU. We believe a well-planned TCI program can achieve the important goal of reducing carbon emissions from the mobile source sector while ensuring equitable and accessible transportation across our region. AMC joined the *Draft TCI MOU and Cap-and-Invest Modeling Results* comments submitted by Our Transportation Future and others, and we offer these additional comments emphasizing the benefits of investments in bike and pedestrian pathways, and the need to consider the specific challenges of rural communities whose life-blood is increasingly the outdoor recreation economy.

First, we respond to a specific question posed in the invitation for public input: *What factors should TCI jurisdictions consider when setting the starting level and the trajectory for a regional cap on carbon dioxide emissions from transportation fuels?*



AMC urges TCI to start the regional cap on carbon dioxide emissions from transportation fuels at a level that provides at least a 25% reduction from estimated 2022 emissions. Based on the threat and urgency of climate change and the specific climate impacts already happening in our region, TCI should start at least 25% and evaluate even more stringent starting cap scenarios. The International Panel on Climate Change (IPCC) report issued in October 2018 makes very clear that limiting global warming to 1.5 degrees Celsius is crucial if we are to avert climate disaster. The report finds that limiting global warming to 1.5°C would require “rapid and far-reaching” transitions in land, energy, industry, buildings, transport, and cities. Global net human-caused emissions of carbon dioxide (CO₂) would need to fall by about 45 percent from 2010 levels by 2030, reaching ‘net zero’ around 2050. The urgency could not be clearer, and the need for a strong and robust approach to reducing carbon emissions from the transportation sector has never been more timely or important.

Many states are working to grow their recreational opportunities, with Offices of Recreation in NH, ME, and VA and state task forces in VT and MD. The recent establishment of these offices recognizes the many benefits of outdoor recreation, including the more than 1.3 million jobs provided and \$166 billion in consumer spending it brings across the TCI region¹. Yet the ongoing cumulative impacts of climate change are working against these efforts and threaten existing and growing recreational infrastructure and businesses.

Our region is warming faster and experiencing more extreme events – heavy precipitation and intense storms – than the rest of the nation. The average annual temperature has warmed 2

¹ Numbers reflect tally of TCI states from OIA Outdoor Recreation Economy Report 2017.
<https://outdoorindustry.org/resource/2017-outdoor-recreation-economy-report/>



degrees F over the last century in the Northeast², resulting in warmer and longer summers, which increases the number and geographic range of human disease-carrying insects and ticks³. Longer autumns favor winter ticks as they seek hosts, contributing to moose calf die-off that has been particularly severe in recent years⁴. Nuisance plants and organisms such as poison ivy, water borne pathogens, and blue-green algae in lakes and ponds, are expected to increase due to warmer weather and increased run-off during storms. Disruptive and disease-causing land and aquatic organisms are not only a problem for hikers, campers, and swimmers, but monitoring and preventing their spread is another resource management concern and cost.

Maximum daily rainfall in the Northeast has increased 27% from 1901 to 2016⁵. Tropical Storm Irene has cost more than \$10 million in repairs to trails and other infrastructure in the White Mountain National Forest⁶. Trail networks in the Northeast are heavily used because of their proximity to major urban areas. In a warmer climate, with longer summer and shoulder seasons, trail use will expand even more, requiring more human resources and services. Added to this are the more frequent extreme storms and floods that can destroy trails, bridges, access roads, and other recreational infrastructure. Access to backcountry recreation areas and lodges can be compromised or lost, and recreationists and ecosystems can be put at risk from extreme weather.

Weather events once considered to happen every ten- or one hundred-years are occurring with greater frequency. Recent examples include the Halloween Storm of 2017,

² NOAA https://www.ncdc.noaa.gov/cag/regional/time-series/101/tavg/12/12/1895-2019?trend=true&trend_base=100&firsttrendyear=1895&lasttrendyear=2018&filter=true&filterType=binomial

³ https://www.cdc.gov/climateandhealth/pubs/VECTOR-BORNE-DISEASE-Final_508.pdf

⁴ <https://tspace.library.utoronto.ca/bitstream/1807/93137/1/cjz-2018-0140.pdf>

⁵ <https://science2017.globalchange.gov/chapter/7/>

⁶ <https://www.bostonglobe.com/metro/2016/09/16/years-white-mountains-feeling-effects-storm-irene/U1rQq1vPYdlpsu6WBsAzKJ/story.html>



Superstorm Sandy in 2012, and Hurricane Irene in 2011. The results are more downed trees and washed-out trails and bridges that put untold stress on trails in the Northeast—and, by proxy, the land managers and trail crews who maintain them to restore them for public use. AMC's trails department reports having to increase the amount of time spent clearing trails from wind storms and repairing the erosion caused by the heavy rains. More frequent and more extreme storms are making it harder to keep up with trail maintenance, and are driving a shift in strategy toward building and rerouting trails capable of withstanding intense wind and rain events, an effort that itself takes significant resources.

In particular, our winters are changing dramatically. We studied 100 years of weather data across the region, and the results are clear: We are losing the cold, with 18 fewer freezing nights⁷. We are losing the snow, with 21 fewer days of snow cover. At Hubbard Brook Experimental Forest in New Hampshire, colleagues have also measured a decline in snowpack; the average snow depth in the forest decreased by 12 inches—a foot less snow—since 1956. And in the Northeast, winters have become 3 weeks shorter over the past 100 years, which can have huge economic impacts. A 2018 report *The Economic Contributions of Winter Sports in a Changing Climate* found that low-snow seasons result in 5.5 million fewer visitors to ski towns than average, resulting in close to \$1 billion in reduced economic activity and 17,400 fewer jobs. In the Northeast, the continued warming is expected to further limit winter sports, and particularly those relying on natural snow, to regions furthest north. Shoulder seasons are also at risk with the important holiday season economic pulse becoming more uncertain, even with

⁷ Contosta et al. 2019. Northern forest winters have lost cold, snowy conditions that are important for ecosystems and human communities. *Ecological Applications* 29(7): <https://esajournals.onlinelibrary.wiley.com/doi/pdf/10.1002/eap.1974>



snowmaking, because of the increased likelihood of rain rather than snow. Winter fishing and other ice-dependent sports are also impacted by shorter and less reliable lake ice. Even within winter, we are seeing dramatic back-and-forth shifts in weather conditions, like the record-breaking warmup we saw this winter, followed by a return to more normal cold conditions. These “winter weather whiplash” events can set us up for major flooding, harm crops and vegetation, and cause problems for winter recreation⁸. With the shortening of the winter season, ski area demands on water for snowmaking also become compressed and magnified, impacting water resources.

AMC believes the cumulative impact from climate change on recreational resources and related business articulated above adds significant rationale to seek the deepest reductions possible with TCI and should be factors considered when setting the starting level and the trajectory for a regional cap on carbon dioxide emissions from transportation fuels.

We direct you to the *Draft TCI MOU and Cap-and-Invest Modeling Results* comments submitted by Our Transportation Future coalition, including AMC and others, for detailed feedback on the other specific topics requested in the MOU draft.

AMC supports the approach of each participating jurisdiction having an open and inclusive process around developing targeted investments and working collaboratively with their communities and other states to maximize program benefits to all. We applaud the prioritization to expand low-carbon and clean mobility options in urban, suburban, and rural communities, particularly for populations and communities that are disproportionately

⁸ Casson et al. 2019. Winter Weather Whiplash: Impacts of Meteorological Events Misaligned With Natural and Human Systems in Seasonally Snow-Covered Regions. *Earth's Future*. Vol 7, Issue 12.
<https://doi.org/10.1029/2019EF001224>



adversely affected by climate change and transportation pollution, and those that are currently underserved by the transportation system. We offer specific comments in consideration of investment strategies related to active transportation and rural areas reflecting our professional areas of expertise and distribution of our operations, employees, and membership.

Emphasizing Active Transportation

Investments in active transportation can not only reduce greenhouse gas emissions from vehicles but can result in the co-benefit of reducing ozone and fine particulates, creating healthier outdoor air. Further, well designed bike and pedestrian paths increase outdoor time, physical activity, and opportunities for more building community connections and cohesiveness. AMC strongly endorses the TCI jurisdiction's goals around equity, environmental justice, inclusion, and meaningful public participation, and the shared recognition of the historical inequities of accessibility, mobility, affordability, and public health risks that now also include a disproportionate vulnerability to our changing climate. We are attuned to the significant differences in the needs of urban, rural, and suburban communities, as we work in them all. We strongly support increased and well-connected systems of bike and pedestrian paths as a low-cost, low-carbon approach for mobility and to reduce the reliance on personal vehicles to reach work, services, and businesses, and as an essential feature of strong communities to connect with each other and the outdoors.



The health benefits of active transportation are well documented⁹ and TCI's own preliminary estimates of benefits from investing in active transportation (\$3-\$10 Billion by 2032 across the range of cap scenarios), under the example investment scenario B, demonstrate that the improvements in health and safety from such investments can far outweigh any cost to the TCI program. In particular, the majority of the monetized benefits in TCI estimates come from increased physical activity, which can have impacts well beyond this program. Therefore, as the TCI jurisdictions consider investment strategies, we urge them to emphasize active transportation as a key approach for reducing greenhouse gases, improving public health and safety, and expanding connections to surrounding communities. As with other investments under TCI it will be of utmost importance to incorporate equity and inclusion in active transportation projects. This would begin by evaluating regional and local underserved resident mobility, safety, and connectivity needs. This process should include community residents of all demographic backgrounds, incomes, and physical abilities early in the process. Information gathered from evaluations should then be used to develop solutions that can serve all residents and users and address any potential negative impacts from active transportation development such as housing affordability. With deliberate and inclusive community-based planning and responsiveness, projects can not only improve mobility but can also support local economic development, equity and inclusion, and realize physical health benefits across all community members.

⁹ Mueller et al. 2015, Health impact assessment of active transportation: A systematic review. Preventive Medicine Vol 76 Pages 103-114



Connectivity and Regional Efforts

As TCI jurisdictions evaluate active transportation improvements and new projects, we urge the consideration of connectivity and integration across the region. Connectivity between regional trail systems, local trails, sidewalk networks, and transit will be important to successful investments and integration into a broader recreational economy. A prime example of facilitating connectivity between destinations and transit hubs is the heavily used Minuteman Commuter Bikeway in Massachusetts. Traversing 10 miles through the towns of Bedford, Lexington, Arlington, and Cambridge, and connecting to the Alewife T Station in Cambridge, the bikeway provides an easy way for bicyclists and pedestrians to travel to and from subway and bus lines, reducing automobile traffic and associated emissions in the area. Expanding multi-use trail connections to existing core routes, especially in already overburdened communities, would enhance non-vehicular mobility to a wider range of destinations and services. Another example is the Bay Circuit Trail and Greenway, a 230+ mile trail and greenway that crosses 37 towns in greater Boston and overlays with public green spaces, community trails, bike paths, and commuter rail stations. The Pennsylvania Highland Trail Network, which connects existing and new recreational trails across a variety of landscapes in Southeastern Pennsylvania, is another example of trails providing community connectivity that enhances wellness, increases active mobility options, and expands recreational and economic opportunity.

Rural Areas and Connectivity

Many rural areas in the TCI region are experiencing a boom in their outdoor recreation economies, and some more remote recreation destinations are being used above their capacity



by outdoor enthusiasts (Franconia Notch in New Hampshire and Acadia National Park are but two examples) which can include overrun parking from too many vehicles. Expanding mass transit to some of these destinations, as well as looking at active transportation possibilities for recreation and connectivity, could reduce emissions and alleviate the overcrowding, spurring growth in local businesses and economies as well. The TCI jurisdictions should coordinate with established state Offices of Recreation in NH, ME, and VA and state task forces in VT and MD, to integrate planning for bike and pedestrian pathways and other active transportation infrastructure with regional and state-wide comprehensive recreation planning efforts, smart zoning, and other planning efforts to improve community resiliency, mobility, and safety.

A recent New Bridge Poll¹⁰ of 1,059 rural and small town voters in Northeastern and Mid-Atlantic states found that 75% were in favor of the creation of a state clean transportation fund similar to TCI. Access to improved shopping and work options from home with improved internet was the top supported investment option with 84% support. Improving internet access and speed is an important strategy to help rural residents improve their connectivity with the added benefits of reducing their need to drive. This could be especially helpful to low income residents and those with few mobility options. The survey also found that all investment options proposed were well supported by 70% or more of respondents, including expanding transit options and increasing EV infrastructure. Rural drivers tend to drive more miles overall with dispersed services and longer distances to places of work. Transitioning to electric vehicles could be more economically beneficial to these drivers, and transit to common destinations or services could aid in both mobility and emissions reductions. As AMC has presented previously

¹⁰ <https://www.nature.org/en-us/newsroom/transportation-climate-initiative-polling/>



there is a current lack of EV level 2 and DC Fast Charging stations in northern NH and Maine (US Dept. of Energy's Alternative Fueling Station Locator). Therefore, it will be important for TCI states to consider rural community needs and differences to successfully foster EV growth and target investments in infrastructure for EV charging that supports rural travel and commuting.

Thank you for the opportunity to comment on the Draft MOU. AMC appreciates the efforts undertaken to date by TCI jurisdictions and we look forward to continued participation in a constructive dialog to achieve the goals of a cleaner and equitable transportation future.

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