Testimony of the Conservation Law Foundation
Before the Commonwealth of Massachusetts
Automated Vehicles Working Group

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Good afternoon, my name is Rafael Mares. I am a vice president at the Conservation Law Foundation (CLF). I would like to thank Secretary Pollack and the members of the Working Group for the opportunity to offer this testimony.

CLF is a nonprofit, member-supported, regional environmental organization working to conserve natural resources, protect public health, and promote thriving communities for all in the New England region. CLF has a long history of advocating for a better transportation system. Ensuring that our transportation system captures the best possibilities of technological advances—and avoids the worst consequences—is of great concern to the organization and its membership.

Autonomous vehicles have the potential to bring about a dramatic increase in vehicle miles traveled (VMT). Researchers generally agree that without any adjustments, autonomous vehicles will increase VMT significantly. A 2015 study from researchers at the University of Texas at Austin estimates that “system-wide VMT could experience 37% growth.” A 2016 collaboration between researchers at the University of Leeds in the U.K., the University of Washington, and the Oak Ridge National Laboratory suggests a 60% increase is possible. Another 2015 study, this one from the International Transport Forum, finds that if shared self-driving cars were to replace buses, overall miles traveled could increase by 90%. An increase anywhere within that range of 37-90% will likely mean increased congestion, more road wear, a spike in energy use, and a concomitant rise in greenhouse gas emissions (whether from vehicle tailpipes or from the electric sector as it meets vehicle demand for energy).

There are many reasons for this predicted increase in vehicle miles traveled. A study published just last month in the journal *Transportation* included a literature review discussing these factors in broad terms:

- Cheaper travel and parking could lead to more long-distance trips;
- Autonomous vehicles are likely to be more accessible than traditional vehicles to young people, older people, and people with disabilities;
- Greater accessibility will likely cause more autonomous-vehicle rides to divert people from high-density public transit options;
- People might use autonomous vehicles to access public transit routes, replacing foot and bicycle traffic with vehicle trips;
- And, most importantly, autonomous vehicles are likely to engage in “empty vehicle travel,” raising overall miles traveled with these “zombie” car trips.

Autonomous vehicles present the opportunity to mitigate some, but not all, of the effects of an increase in vehicle miles traveled. The 2016 paper mentioned above, titled “Help or hindrance? The travel, energy and carbon impacts of highly automated vehicles,” assesses several of these mitigating opportunities but ultimately finds that “at a high level of automation,” there is “a possibility of substantial increases in travel activities and energy consumption.” These mitigating opportunities – congestion mitigation through vehicle-to-vehicle communication and controlled traffic flow, automated “eco-driving” designed to limit energy consumption, so-called “platooning” where vehicles work together to reduce wind drag and improve efficiency, and dramatic changes in vehicle design – simply won’t be enough on their own to overcome the potential detriments of increased VMT from autonomous vehicles.

Based on these conclusions the researchers recommend that: “Policymakers should be considering early actions to mitigate possible negative outcomes from vehicle automation, while encouraging the realization of its potential energy benefits.” Autonomous vehicles do present a unique opportunity for us to rethink our transportation system and build a newer, better, and more efficient one. That newer, better, and more efficient transportation system will not, however, create itself. We must create incentives for socially beneficial behavior – ride-sharing, vehicle electrification, and linking autonomous vehicle rides to transit – while creating disincentives for socially negative behavior – zombie vehicle trips, inefficient vehicles, and unnecessary miles that will increase wear on our highways while potentially avoiding the traditional funding mechanism of the gas tax. Only by proactively addressing these important policy considerations can we maximize the benefits of autonomous vehicles and avoid their harms.

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5 Wadud, *supra* n.2, at 12.