



For a thriving New England

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By Electronic Mail

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Commission on the Future of Transportation in the Commonwealth
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114

Subject: Conservation Law Foundation Recommendations

Dear Chair Kadish, Vice Chair McAnneny, and Commissioners:

Conservation Law Foundation (CLF) is a non-profit, member-supported organization dedicated to conserving natural resources, protecting public health, and promoting thriving communities for all in New England. CLF has a long history of working on behalf of its members to create a more affordable, accessible, sustainable, and equitable transportation system that reduces greenhouse gas emissions.

CLF applauds Governor Baker for establishing the Commission on the Future of Transportation in the Commonwealth to explore the impact of anticipated changes in technology, climate, and land use and to develop recommendations to create a better transportation network for Massachusetts. We thank you, the members of the Commission, for your important work in pursuit of these goals.

CLF endorsed and supports the joint comment letter to the Commission submitted by Acadia Center and Transportation for Massachusetts (Sept. 4, 2018) (T4MA Letter), which lays out some key principles for our shared vision of a clean, modern, and equitable transportation system in the Commonwealth. In this submittal, we offer additional, specific steps to translate those principles into enforceable benchmarks for meaningful progress toward an innovative transportation system that leads the region and the Nation in reducing emissions while increasing mobility, opportunity, and affordability for families and businesses in Massachusetts and throughout New England. These benchmarks and concomitant policies must recognize the close linkages between and among transportation, housing availability and stability, climate risk, and alarming disparities in health and income.

The transportation sector is witnessing disruptions now, such as the rapid growth of Transportation Network Companies (TNCs), and broad transformations are anticipated as we look to 2040, including the rapid introduction of autonomous vehicles. Given these changes, the Commonwealth must establish the path now to ensure that our

transportation system is clean, equitable, and a fundamental strength of the regional economy.

To this end, we respectfully urge the Commission to consider the following proposals.

1. Establish regulatory milestones for reducing greenhouse gas emissions from the transportation sector using the Commonwealth's Global Warming Solutions Act (GWSA).

Transportation is now the largest source of greenhouse gas emissions in Massachusetts and in the region.¹ Moreover, as the state's own analysis is beginning to indicate, without significant new interventions, transportation emissions alone will by 2050 exceed economy-wide limits for allowable emissions in the state.

While CLF supports the Transportation and Climate Initiative (TCI) dialogue on regional market measures to reduce greenhouse gas (GHG) emissions from the transportation sector, that dialogue has been ongoing for nearly a decade and has yet to produce a specific or broadly-supported market design or set of proposed policies. One headwind to TCI's success is that the design of market measures to reduce GHG emissions must be informed by clear direction as to the scope, scale, pace, and localized impact of required reductions. No such parameters have been established for TCI. A second headwind has been the implicit assumption that a cap-and-invest program creating incentives for zero-emission vehicles (ZEV) deployment will have impact commensurate with the challenge. But such impact is not something we can or should simply presume: California has the most robust incentives for ZEV purchase in the country, yet ZEV penetration there is still less than 5 percent and automobile charging infrastructure is not keeping up with even that too-slow growth. The economic impacts of such a market measure is a third major consideration with questions remaining about who assumes the cost burden of a market measure and whether revenues would be deployed to benefit those communities most burdened by climate change and transportation insecurity.

The best tool for addressing transportation emissions in the Commonwealth that will ensure we achieve required emissions reductions while enabling regional and other market structures is the Global Warming Solutions Act (GWSA), G. L. c. 21N, § 3 (d). The Act provides clear direction – and a mandate – as to the scope, scale, and pace of

¹ See Cambridge Systematics, *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions*, Urban Land Institute (2009) available at <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/MovingCoolerExecSummaryULL.pdf>; see also Ewing, Reid, Keith Bartholomew, Steve Winkelman, Jerry Walters, & Don Chen., *Growing Cooler: The Evidence on Urban Development and Climate Change 2*, Urban Land Institute (2007) available at <https://www.smartgrowthamerica.org/app/legacy/documents/growingcoolerCH1.pdf>.

GHG reductions required economy-wide while also providing the regulatory authority necessary to address those emissions.²

Based on the state's current emissions profile and available emissions reduction modeling, we are confident that without specific measures to cap emissions in the transportation sector, the Secretary and the Department of Environmental Protection will not have the tools in place to comply with their GWSA emissions reduction mandates for 2030 and beyond. In starting to formulate sector-wide emissions reduction measures, the Commonwealth and its agencies should pay special attention to commercial, industrial, and TNC fleets. Early adoption of such mandates would allow Massachusetts to provide needed leadership to TCI and would give affected sectors ample time to integrate ZEV adoption into their planning and investment cycles.

CLF is particularly concerned about the potential for TNCs and autonomous vehicles to frustrate the GWSA's enforceable emissions caps. CLF's recent analysis of the economic and fiscal impacts of autonomous vehicles on the Commonwealth and its cities and towns shows that vehicle miles will rise drastically: With a vehicle fleet that is made up of just 20 percent self-driving vehicles, our analysis anticipates an increase of almost 6 billion miles traveled annually in Massachusetts.³ At full deployment of self-driving cars, this could increase to 35 billion additional miles annually. To achieve the purported benefits of this new technology, the Commonwealth must implement policies that ensure autonomous vehicles are zero emission vehicles, maximize use of autonomous vehicles for ride sharing, and incentivize ride-sharing zero emission vehicles to create affordable mobility options that connect more people to public transit and increase transportation equity.⁴

These factors prove that to successfully transition to a lower-carbon transportation sector, we need clear, enforceable benchmarks and milestones as an essential prerequisite to complementary market measures that may be developed through TCI or otherwise.

² The Supreme Judicial Court has ruled that the GWSA places no restriction on the categories of emissions sources that DEP may regulate, *New England Power Generators Ass'n. v. DEP*, No. SJC-12477, slip op. at 15 (Sept. 4, 2018), and that DEP has a perpetual mandate to make certain annual emissions decline to ensure that both interim and 2050 Statewide emissions limits will be met, *id.* at 23-25.

³ R. Mares, C. Stix, and S. Dewey, *How Autonomous Vehicles Will Drive Our Budgets: An Analysis of the Economic and Fiscal Impacts of Self-Driving Cars on the Commonwealth of Massachusetts* (June 2018) available at https://www.clf.org/wp-content/uploads/2018/06/CLF_AV_Report.pdf.

⁴ See, e.g., R. Hahn and R. Metcalfe, *The Ridesharing Revolution: Economic Survey and Synthesis. More Equal by Design: Economic Design Responses to Inequality* (Brookings 2017) available at <https://www.brookings.edu/wp-content/uploads/2017/01/ridesharing-oup-1117-v6-brookings1.pdf>; K. DeGood and A. Schwartz, *Can New Transportation Technology Improve Equity and Access to Opportunity?* (Center for American Progress 2016) available at <https://www.scribd.com/document/309877442/Can-New-Transportation-Technology-Improve-Equity-and-Access-to-Opportunity>.

Accordingly, CLF proposes that the GWSA rules that DEP is required to promulgate in 2021 include, at a minimum, the following:

- a. Rules to require that passenger vehicles in all commercial, industrial, governmental, taxi, rental, car-share, and TNC fleets be ZEV-only by 2030 and achieve 50 percent ZEV composition by 2025.
- b. Rules to require that all other vehicles and equipment in commercial, industrial, or governmental fleets be ZEV-only on the same schedule, but with tailored exceptions for those vehicles and equipment types for which ZEV alternatives have not yet become commercially available.
- c. Rules to prohibit the marketing, sale, use, or registration of non-ZEV autonomous vehicles.
- d. Rules to limit the use of autonomous vehicles to taxi, TNCs, or ride-sharing platforms for an initial period of five years.
- e. Rules to require that all commercial, public transit, and school buses be ZEVs by 2025.
- f. Rules to prohibit the use of non-electric passenger locomotives in intrastate service after 2025.
- g. Rules to establish a market-oriented, low-carbon fuel standard modeled on that of the California Air Resources Board (CARB).

These proposals are based on CLF's successful emissions reductions agreement with the Port Authority of Massachusetts (Massport). This agreement achieves significant emissions reductions through long-term mandates that take into account the demands of passenger convenience, operational feasibility, the commercial availability of equipment, and the capital investment cycles and revenue constraints of both the Authority and the airlines and other businesses that must conform their practices to the requirements of the agreement. These proposals also consider decarbonization models nationally and internationally, from CARB's low-carbon fuels standard to Shenzhen, China's rapid electrification of its entire fleet of more than 16000 buses, a system that dwarfs the fleet of the Massachusetts Bay Transportation Authority (MBTA).

2. Comprehensively reform the Commonwealth's model for funding transportation infrastructure.

The mandates of the GWSA and the existential threat of climate change require progressive and dramatic reduction in the use of fossil fuels. These long-term shifts are fundamentally in conflict with the Commonwealth's funding model for transportation infrastructure, which relies primarily on revenue from taxes on those same fossil fuels. Increases in gasoline taxes (or the addition of an upstream fuels tax as contemplated by TCI) may ameliorate the conflict and reduce revenue losses in the short term, but in

the longer term these approaches will leave transportation infrastructure severely and chronically underfunded as fossil fuel use declines with broad and ultimately universal deployment of more fuel-efficient and ZEV vehicles.

Unless the Commonwealth confronts this conflict directly, its policies can only manage, not reverse, the progressive degradation of transportation infrastructure of every sort. In consequence, motorists and transit users will face reduced levels of service; families and businesses will face increasing economic losses from time lost in traffic and delays; the companies and the labor force that maintain and improve our transportation infrastructure will be idled; and the region's competitiveness in attracting new investment and growth will quickly wane. These burdens inevitably will be greatest in low-income and minority communities and among the labor force already hard-hit by underinvestment in transit and transportation infrastructure.

CLF proposes the following elements as the building blocks for a more sustainable and equitable transportation finance system.

- a. Maintenance and increase in gasoline and other fossil fuels taxes, notwithstanding the limitations discussed above, to discourage use both before and after stable long-term sources are phased in.
- b. Establishment of infrastructure user fees based on vehicle miles traveled (VMT) and time of use rather than fuel consumption, using innovative technology (transponders and apps) to expand such fees and tolling beyond the current universe of tolled roads.
- c. Authorization of regional ballot initiatives to adopt regional transit fees.
- d. Broader authorization and use of tax-increment financing where development projects add burdens to existing road or transit infrastructure or benefit from road or transit improvements.

3. Recognize and commit to the multiple, large-scale capital projects needed for the MBTA to keep pace with growth in the Boston Metro region and avert complete gridlock on major roadways like the Mass Pike.

Governor Baker, Secretary Pollack, and the members of the Fiscal Management Control Board (FMCB) deserve credit for significant progress in reforming and improving the management and performance of the MBTA. Yet the MBTA needs to cement the FMCB's progress to date, reduce the burden of twice-monthly oversight meetings, and begin to address those areas of underperformance that have not yet been addressed by the FMCB. There is urgent need for multiple system investments, long overdue, that are essential if the Commonwealth is to sustain growth and mitigate congestion in the Boston Metropolitan area while expanding access and opportunity in Gateway Cities and beyond.

This is optimal moment to implement a bold, long-term vision. That vision should include the following.

- a. Immediate reforms to strengthen the MBTA's capacity to do major procurements on an efficient timeline with increased vendor accountability.
- b. Commitment to finance and construct regional rail improvements by 2025 that include systemwide electrification, raised platforms, frequent service, and other improvements encompassed in the Transit Matters proposal "Regional Rail for Metropolitan Boston" (Winter 2018).
- c. Commitment to finance and construct by 2025 the North-South rail connection.
- d. Commitment to finance and construct by 2025 the proposed West Station, and ancillary improvements to address connectivity to Commonwealth Avenue and Kendall.
- e. Investment into the Fairmount Commuter Rail Branch to provide a level of service comparable to a Rapid Transit line, increasing service frequency, providing dedicated train sets, synchronizing connecting bus service, and ensuring fares levied are at subway rates.
- f. Fulfillment of the state's outstanding contractual obligation to connect the MBTA's Red and Blue lines by construction of a transit tunnel between Bowdoin (Blue) and Charles/MGH (Red), rather than the draft Focus 40 proposal for a pedestrian connection between Downtown Crossing (Red) and State Street (Blue) stations.
- g. Timely and on-budget completion of the Green Line Extension to Route 16/Mystic Valley Parkway.

4. Establish and implement an agenda to address social and environmental justice in transportation policy.

Low-income and minority communities suffer disproportionately from the failures of the regional transportation system. Low-income workers and minority communities are subject to greater risk of asthma and other health impacts of the soot and smog generated by traffic congestion. In the Boston region, the difference in life expectancy between affluent and poor communities can exceed 30 years. Low-income and minority communities are more likely to experience poor levels of transit and road service; higher rates of trip cancelation and construction delays; and are more vulnerable to displacement when mobility is improved by road or transit investments.

In addition to addressing these conditions, a forward-looking policy must consider the many linkages among transit, employment, and housing. Lower-income households are largely and increasingly priced out of the Boston housing market, where the job market is most robust; public transit to Gateway Cities where housing is cheaper is

often slow and unreliable; and transportation improvements to increase mobility in more affordable areas typically bring with them rising property values and housing costs, with consequent displacement, gentrification, and loss of affordable and workforce housing units. The Metropolitan Area Planning Council has predicted, for example, that the Green Line Corridor and the Green Line extension, which CLF has strongly supported, will crowd out affordable units as rents increase and rental units are converted to condominiums.⁵ Despite the urgency of this issue, housing stabilization is “uncharted territory for most transportation advocates and planners.”⁶ CARB-funded research has associated transit access with exclusion of low-income households and increased evictions.⁷ Massachusetts must join California in leading the nation to develop new strategies to promote sustainable development, protect housing affordability, and incentivize development of housing that is not simply transit adjacent but aimed at the people who use transit.

CLF’s proposals for addressing these issues are as follows.

- a. Transportation improvement projects must be coupled with measures and funding to stabilize and increase affordable and workforce housing where the improvement is likely to induce greater housing demand. These incentives could include allowing developers of transit-oriented development greater density than currently allowed while promoting creation of affordable units at scale and directing resources toward preservation of permanently affordable units.
- b. Market measures to address GHG emissions from transportation must avoid or fully mitigate adverse impacts on low-income and minority communities.
- c. Communities with the greatest exposure to criteria pollutants related to transportation should receive priority in the planning and sequencing of investments in electrification of rail and bus transit as well as in the creation of rapid-bus transit lanes.
- d. Major transportation systems, with the MBTA in the lead, should conduct an equity analysis of its operating and capital budgets in an open and public process to understand the distributional and potentially disparate impact of resource allocation decisions.
- e. As funding for mass transit is stabilized, fare mitigation for those living at or

⁵ MAPC, *The Dimensions of Displacement: Baseline Data for Managing Neighborhood Change in Somerville’s Green Line Corridor* (2014) available at http://www.mapc.org/wp-content/uploads/2017/11/Housing20Workshop202_11_14.pdf.

⁶ J. Aloisi and J. Johnson, *The Transportation Equity Conundrum: Improving Mobility Without Displacement* (2018) available at <https://meetingoftheminds.org/the-transportation-equity-conundrum-improving-mobility-withoutdisplacement-27887>.

⁷ University of California at Berkeley (Chapple et al.) and University of California at Los Angeles (Loukaita Sideris et al.), *Developing a New Methodology for Analyzing Potential Displacement* (2017) available at http://www.urbandisplacement.org/sites/default/files/images/arb_tod_report_13-310.pdf.

below the poverty line should be incorporated into the MBTA's revenue model.

5. Require comprehensive planning for – and direct resources toward – a climate-ready transportation system.

Throughout the Northeast corridor, the vulnerability of public transportation infrastructure to climate-related impacts is real and ongoing, from the flooding of the Aquarium and Beachmont MBTA stations to road closures on Seaport Blvd. in Boston and other coastal areas. Ongoing strategic planning processes within the Commonwealth must include the development of comprehensive climate-readiness and vulnerability analyses of the transportation system, at state, regional, and local levels. State agencies and local municipalities must understand and prepare for climate risks such as more intense precipitation, sea level rise, more frequent storm events, and increased heat. The development and implementation of adaptation strategies must include a focus on the Commonwealth's most vulnerable communities, including environmental justice populations, as well as other vulnerable communities⁸ who lack transportation access and/or face enhanced health and safety risks from climate-related events.

The following are the critical steps.

- a. Transportation agencies must be required to conduct vulnerability assessments of their critical infrastructure through an open process in which the underlying data and assumptions are publicly available. MassDOT has led by example here, with MBTA as a notable laggard.
- b. Vulnerability assessments must result in specific action plans reflected in operational and capital budgets.
- c. Transportation projects – both new starts and expansion/modification of existing assets – must be designed and constructed to be resilient to, or to readily recover from, climate conditions and weather events that are reasonably predicted for the economic life of the project.

6. Eliminate inconvenience to motorists by moving from manual to virtual motor vehicle safety and emissions inspections, reallocating both revenue and staffing to other priorities.

As the Commonwealth's motor vehicle fleet has become dominated by newer and more fuel-efficient vehicles and second-generation on-board diagnostic (OBD-II) has been

⁸ People with disabilities, people experiencing homelessness or housing insecurity, youth, seniors, and rural populations also experience both disproportionate climate risks and transportation insecurity.

adopted, the emissions-reduction benefits of manual motor vehicle emissions inspections have waned and the capacity to adopt virtual inspections through the combination of OBD-II and innovative reporting software has increased. A small OBD-II transponder linked to an app would allow emissions monitoring and certification of compliance, relieving both the motorist and state agencies of significant burden. CLF has investigated the feasibility of this approach and has confidence that a virtual system could be designed both to protect privacy and to compel timely repair or maintenance indicated by OBD-II. While both statutory and regulatory changes, including a possible amendment to the State Implementation Plan (SIP) under the Federal Clean Air Act, may be necessary to shift to a virtual emissions inspection and maintenance (I&M) system, Massachusetts would likely have the support of a coalition of states willing to liberate motorists from the manual inspection mandate.

Motorists could be relieved of safety inspections, too, without harm to the public or impact to insurance rates. New Jersey eliminated safety inspections in 2010, without any significant increase in the frequency or intensity of accidents due to car failure.⁹

A virtual I&M program will allow the Commonwealth to reallocate the substantial resources – both revenue and staff – to other transportation and emissions-reductions priorities. Public and regulator acceptance of such a transition will likely depend on those resources being devoted to accelerating the statewide transition to ZEVs.

Accordingly, CLF proposes the following.

- a. MassDOT and DEP should initiate a public process to transition to a virtual I&M program.
- b. MassDOT and DEP should confer with other interested states, private inspection facility representatives, automobile manufacturers, and EPA on the design of such a program.
- c. MassDOT should issue a request for expressions of interest from vendors with products and applications that would enable the transition to a virtual I&M system.

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⁹ Hoagland & Wooley, *It's no Accident: Evaluating the Effectiveness of Vehicle Safety Inspections*, 36 Contemporary Econ. Policy 4, pp. 607-628, (Oct. 2018).

CLF is grateful for the Commission's consideration of our views and looks forward to playing a supportive and constructive role in achieving the Commission's vision.

Respectfully submitted;

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