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As a senior Conservation Biology major at Middlebury College, this semester I am taking a class that focuses on transportation in Vermont. Over my time in college, I have learned from an array of courses the dangers that vehicle pollution poses on human and non-human ecosystems. Fortunately for Vermonters, we have some of the best air quality in the country, with the American Lung Association ranking Burlington as one of the cleanest cities for year-round particle pollution.

Yet, we've all had a moment rolling down the window of a car, walking down the street in town, or just sitting peacefully outside, when we get a big mouthful of vehicle exhaust and think to ourselves, *Ooh, that might not have been great for my lungs*. And although we don't always have these upsetting realizations each time a car goes by, every day we are exposed to some level of unavoidable air pollution. Tailpipe emissions, from passenger cars to 18-wheelers, send a variety of pollutants into the air that we all breath - nitrogen oxide, carbon monoxide, and particulate matter, to name a few.

Study after study shows that air pollution caused by motor vehicle exhaust has been directly linked to a variety of human health issues, including asthma, bronchitis, stunted lung development, and in more serious cases, premature death. Furthermore, this increased risk of health issues drags with it an increased medical bill for millions of Americans. With transportation responsible for emitting about 40% of Vermont's GHGs and, as a result, impacting human health, it's about time that the industry takes a look at what it is costing all of us, and takes action to change that for everyone.

In short, the Transportation and Climate Initiative (TCI) seems to be proposing two things, both of which could improve our air quality, and thus our health. The first is to decrease motor vehicle emissions, and the second is to change behavior and incentivizing a move toward low-carbon / electric vehicles. In the Draft Memorandum of Understanding (MOU), the TCI recognizes that "accelerating the transition to cleaner, more efficient transportation sector will improve public health... for all communities." (p.3). This last piece is a necessary component of the TCI - that the "public" whose health will be improved is not solely the young, healthy, middle and upper class, but it is the low-income, disadvantaged, and disproportionately afflicted citizens as well.

Therefore, it is important to address where the TCI has room to improve. The Draft MOU resolves that Signatory Jurisdictions will be enabled to, "strategically invest in programs to help their residents transition to affordable, low-carbon transportation options that provide substantial public health benefits, reduce congestion, and increase economic and job opportunities." The pursuit of a cap-and-invest program, rather than a cap-and-trade program, is promising (despite the quite blurry lines on buying offsets). However, the section that speaks to these investments, Appendix 3A, is upsettingly unclear. Wording such as, "invest the proceeds from the auction of allowances as determined appropriate by each Participating Jurisdiction to achieve TCI Program goals" and "to achieve CO₂ emission reductions and other related TCI Program goals" (Appendix 3A), does not provide citizens much insight into what these investments might be. Citizens should be able to understand the investment process, as we are the ones electing the legislature that will then decide how the revenue from allowances will be invested.

In order to have a more robust TCI, it is necessary for the document to outline what investment options look like. As the TCI is pushing a movement towards electric vehicles, it must be responsible for

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supporting this movement. Therefore, investments should be made in infrastructure that provides charging stations to make the use of EVs feasible for Vermonters. Another solution is for the TCI jurisdiction to provide subsidies on electric vehicles in order to help and incentivize all citizens, particularly lower-income and disadvantaged community members, to transition to cleaner transportation alternatives.

The current TCI, however vague, does recognize the impact that it could have on improving public health of all Vermonters, yet it has much room to grow in defining a solution to get to that endpoint. What is important is that the TCI has the potential to be a step in the right direction towards stronger human and environmental health, as a future electric transportation sector would eliminate the tailpipe and GHG emissions that negatively impact our communities and the non-human entities that inhabit our ecosystems.

Sources:

Draft Memorandum of Understanding of the Transportation and Climate Initiative. (2019).

Brugge D, Durant JL, Rioux C. Near-highway pollutants in motor vehicle exhaust: a review of epidemiologic evidence of cardiac and pulmonary health risks. *Environ Health* 2007; 6: 23.

Gauderman WJ, Vora H, McConnell R, Berhane K, Gilliland F, Thomas D, Lurmann F, Avol E, Kunzli N, Jerrett M, Peters J. Effect of exposure to traffic on lung development from 10 to 18 years of age: a cohort study. *Lancet* 2007; 369: 571-577.

Meo, S. A., et al. Effect of motor vehicle pollution on lung function, fractional exhaled nitric oxide and cognitive function among school adolescents. *European review for medical and pharmacological sciences* 2019; 23: 8678-8686.

<https://www.ucsusa.org/resources/vehicles-air-pollution-human-health>