

CURBING VEHICLE POLLUTION

Lena Lewis // The Nature Conservancy | Trip Pollard // Southern Environmental Law Center
Bill Penniman, Sierra Club, Virginia Chapter

INTRODUCTION

Air pollution from transportation threatens our health and our climate. Transportation is the largest source of Virginia's greenhouse gas emissions, emitting 45% of our carbon dioxide pollution¹. Our vehicles also emit other pollutants that harm nearly every organ in our bodies and that represent particular dangers to children and elderly adults living near heavily trafficked roads. Fortunately, there are many opportunities to lower emissions from transportation while also strengthening our communities and improving public health. Virginia needs innovation and bold leadership to address these problems.

BACKGROUND

While Virginia has focused on cutting carbon dioxide from our power sector, we have done little to address transportation emissions. The internal combustion engine has tied vehicles to gasoline and diesel fuels since the beginning of the 20th century. The typical passenger car emits about 28 pounds of carbon dioxide per day, and three fourths of Virginian commuters drive to work alone². Virginia needs a multi-prong program to reduce solo driving and fast-track adoption of zero-emission vehicles, including buses.

Solutions that lower total vehicle miles driven provide many benefits, of which lower greenhouse gas emissions is just one. Advancing smarter growth, enhancing intercity passenger rail, and improving public transit are just some of the strategies that can reduce driving while decreasing carbon and other air pollution.

In addition to reducing our dependency on cars, we must lower carbon pollution from vehicles. Virginia can and should increase fuel efficiency standards above the minimum federal levels for new vehicles, particularly if the federal administration proceeds with weakening fuel efficiency standards. Virginia can join 13 other states in implementing the Advanced Clean Car Program, which has stronger standards for criteria pollutants and greenhouse gases than proposed new federal standards. Virginia can also adopt the Zero Emissions Vehicle (ZEV) component of the Advanced Clean Cars Program, which requires manufacturers to sell an increasing number of electric and hybrid electric cars in participating states.

Electric vehicles (EVs) have the potential to dramatically lower carbon and other emissions from the transportation sector. In most parts of Virginia, carbon pollution from generating electricity used by EVs is equivalent to carbon from vehicles getting at least 50 miles per gallon (The typical passenger car gets 22 mpg.³). As the electricity sector shifts to using more lower-carbon and zero-carbon energy sources, the carbon emissions attributable to EVs will continue to decrease as well.

Because EVs have no tailpipe exhaust, they improve local air quality. Solutions that lower carbon pollution from cars will also lower asthma, heart attacks, strokes, early deaths, harm to pregnant mothers and babies, and other harms exacerbated by particulate matter and ground-level ozone.

TODAY IN VIRGINIA, THE COST OF CHARGING AN EV IS LESS THAN HALF THE COST OF AN EQUIVALENT AMOUNT OF GASOLINE, AND ANNUAL MAINTENANCE IS MUCH LOWER, TOO. YET UP-FRONT COSTS AND SCARCITY OF CHARGING STATIONS IMPEDE LARGE-SCALE ADOPTION.

Policies supporting our transition to electric vehicles are essential. Today in Virginia, the cost of charging an EV is less than half the cost of an equivalent amount of gasoline, and annual maintenance is much lower, too⁴. Yet up-front costs and scarcity of charging stations impede large-scale adoption. In 2018, Virginia initiated a program to install a network of public charging stations that would put 95% of Virginians within 30 miles of a DC fast charger, but more is needed. Virginia should implement incentives for more public chargers and building code requirements to install chargers or at least 240 volt outlets in garages and parking areas for single and multifamily dwellings. Given public health and climate benefits, policymakers should also consider tax or other financial incentives to encourage EV purchases.

As a participant in the Transportation Climate Initiative (TCI), Virginia is currently working with other states to design and fund policies to reduce greenhouse gas emissions from transportation. By adopting the policies that come out of the TCI process, Virginia

would increase low-carbon transportation options. In addition, Virginia should support electrifying municipal and state fleets, including buses. Substituting electricity for diesel in school and public buses will cut pollution affecting children and people living in urban and other high-traffic areas.

As electric vehicles become more common in Virginia, they will change the demands placed on the electric grid. Thoughtful planning that includes diverse stakeholders can ensure that EVs enhance grid reliability and keep electricity costs low. Electricity rates can be structured to encourage EV charging during

times of low electricity demand, avoiding the need for new power plants. EV batteries also have the potential to put electricity back on the grid during peak demand periods, improving system reliability at lower costs.

CONCLUSION

Transportation is Virginia's largest source of carbon dioxide pollution and a key source of other harmful pollutants. We can no longer ignore these impacts. Virginia needs to accelerate the transition to cleaner transportation by adopting policies and making investments to provide more alternatives to driving and to promote electric vehicles.

POLICY RECOMMENDATIONS

Expand alternatives to driving (see

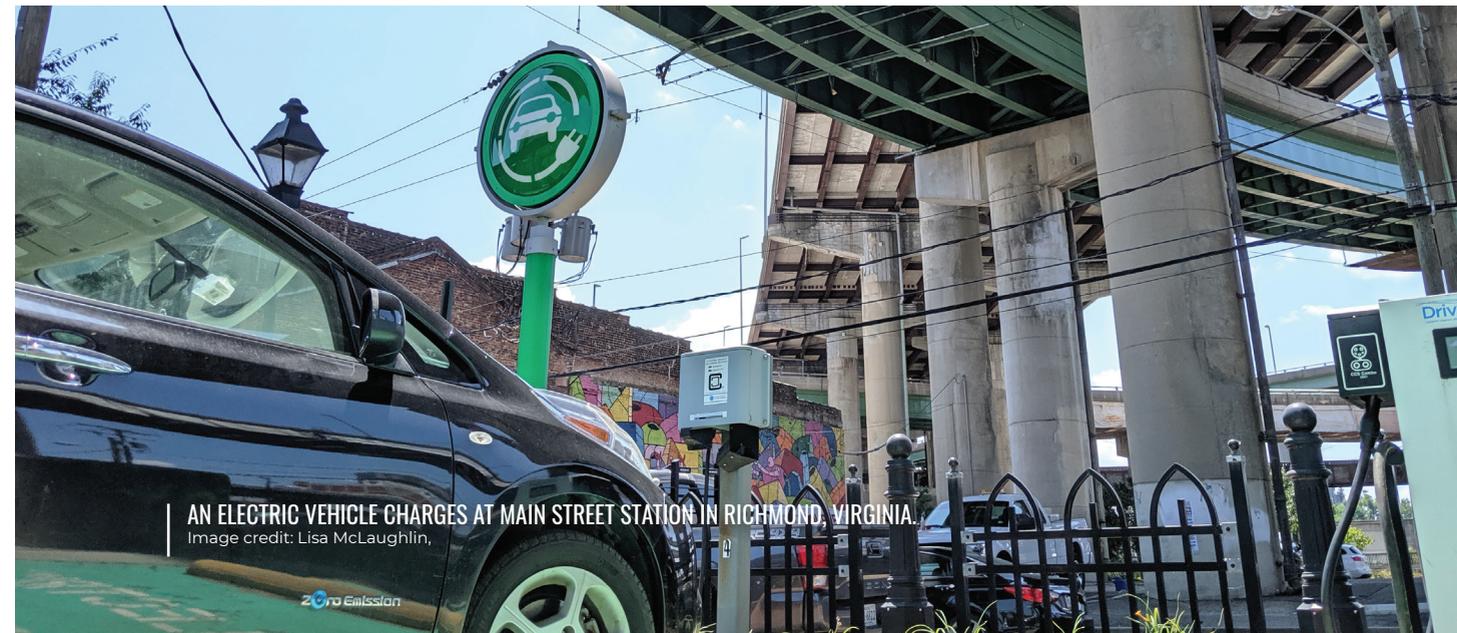
Transforming Transportation, p. 32 and *Funding Transit for a Competitive, Sustainable Future*, p. 34)

Accelerate the transition to EVs:

- Implement Advanced Clean Car standards for new vehicles as 13 other states have done, and join states adopting the Zero Emissions Vehicle (ZEV) Program which would require manufacturers to sell an increasing number of electric and hybrid electric cars;
- Participate fully in the Transportation and Climate Initiative to explore regional programs to reduce GHG emissions;
- Adopt tax or other financial incentives to

encourage EV purchases;

- Fund and provide incentives for public chargers;
- Adopt building code provisions requiring that level 2 chargers (or better) be installed in multifamily dwellings, and requiring that new houses with garages or driveways have outlets needed to charge EVs;
- Develop rate schedules that encourage EV charging in off-peak periods; and,
- Adopt requirements for electrifying state vehicle fleets and provide incentives for localities and regional transit agencies to purchase electric vehicles, including buses.



AN ELECTRIC VEHICLE CHARGES AT MAIN STREET STATION IN RICHMOND, VIRGINIA.

Image credit: Lisa McLaughlin,

Zero Emission