

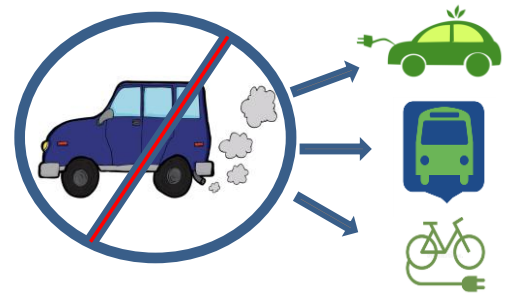
Vermont Replace Your Ride Program - Summary (02/2021)

Goal: to help low-income Vermonters switch to clean transportation options affordably, while also accelerating the reduction of greenhouse gas emissions from transportation in Vermont.

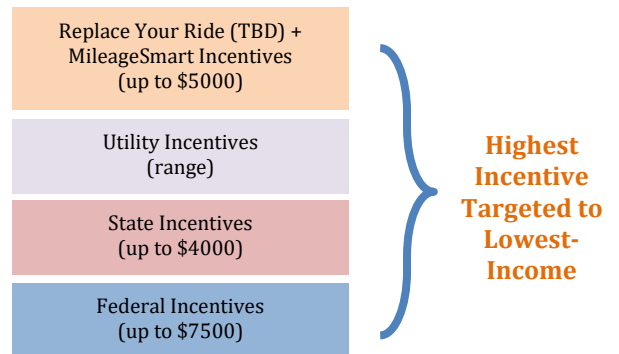
Beneficiaries: Vermonters with an Adjusted Gross Income (AGI) of \$50,000 or less, mirroring the targeting used by the existing State of Vermont plug-in electric vehicle (EV) Incentive program. Only one incentive per household. This could be adjusted after evaluation.

How: Offer cash (not tax) incentives to lower-income Vermonters to *scrap an older high-polluting vehicle* and switch to one of the following clean transportation options:

- ⇒ A new or used Electric Vehicle (or Plug-in Hybrid¹)
- ⇒ Electric Bicycles or Motorcycles
- ⇒ Vouchers for public transit, shared-mobility options, or private ride hailing (Options could include **public transit passes**, membership in **CarShare VT** or bike-share programs, vouchers for **ride hailing** options like Lyft/Uber **and Capstone’s new mobility rides**)



Incentive Amount: Proposed up to \$3,000 towards one or more of the above eligible clean-transportation options. If used for purchase or lease of an efficient vehicle, incentives could be **stacked** on top of existing EV and EV Charger incentives. Based on current incentives, this could bring the price of a new EV down to as low as \$8,000. If applied to used EVs, the price could be considerably lower.



Eligible Vehicles: those currently registered with DMV sticker, Model Year 2010 or older (representing approximately 179,000 of the 594,000 vehicles on Vermont roads)².

Performance Indicators:

- \$ funding spent per GHG saved
- # low income households served by income and town
- # Vehicles Scrapped by year and MPG
- # of vehicles purchased or leased (new and used)
- # of non-vehicle options selected

¹ Note: If participating in Capstone Mileage Smart program, can be used as a stacked incentive on top of the 25% towards purchase of a used high-efficiency or electric car (including gas-powered vehicles over 40 mpg)

² From Table 3-4 of the 2019 [VT Transportation Energy Profile](#).

- Mobility metric (survey asking beneficiaries if program assisted in increasing mobility)
- Change in VMT (survey or other research evaluation)
- ease of administration (share of total budget)

Potential Funding:

- 2021 - New state funding to pilot the program (\$1,000,000 - Tbill)
- 2021 - Federal stimulus/infrastructure funds
- 2022 (?) Transportation Climate Initiative

Partners:

Steering Committee:

Clean Cities Coalition (Peggy O’Neill-Vivanco)
 Drive Electric Vermont (Dave Roberts)
 Energy Action Network (Linda McGinnis, Jared Duval,
 Cara Robecheck, Mei Butler)
 UVM Transportation Research Center (Dana
 Rowangould)
 Regulatory Assistance Project (Nancy Seidman)
 Vermont Auto Dealers Association (Marilyn Miller)

Advisory Team

Capstone Community Development (Sue Minter,
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 Vermont Energy Investment Corporation/Efficiency
 Vermont (Jennifer Wallace-Brodeur, Carol
 Weston, Kelly Lucci, Hillary Andrews)
 Vermont Natural Resources Council (Johanna Miller,
 Kate McCarthy)
 Transportation 4 Vermont (Kate McCarthy)
 The Nature Conservancy (Lauren Oates)
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 VT Public Transit Association (Elaine Haytko)
 Chittenden Area Transportation Management
 Association (Sandy Theibault)
 Vermont Businesses for Social Responsibility (Jordan
 Giaconia)
 Localmotion, (Sandy Bender, Karen Yacos)
 Sierra Club (Robb Kidd)
 Middlebury College, (Grace Maley)
 CarShare VT,
 Dartmouth College, (Jennah Slayton)
 Bill Calfee, Independent
 Utilities (GMP, BED, WEC, VEC, VPPSA, Stowe)
 Community Action Agencies
 Cody Chevrolet

VT Administration

Heidi Hales, VT Agency of Natural Resources
 Dan Dutcher, Agency of Transportation
 Michele Boomhower, Agency of Transportation,
 Peter Walke, Agency of Natural Resources
 Collin Smythe, Vermont Agency of Natural Resources

Federal Delegation

Katie Thomas, Bernie Sanders’ Office
 Tom Berry, Patrick Leahy’s office
 Haley Pero, Bernie Sanders’ office

VT Legislature

Andy Perchlik, Senator
 Curt McCormack, Senator
 Molly Burke, Representative
 Becca White, Representative
 Mike McCarthy, Representative (whip)

Others Needed:

- DMV
- Used Car Dealers
- Scrap Yards
- Vehicle Inspection Groups
- Department of Housing/Human Services
- Financing
- Private ride-sharing

Background Information/FAQ

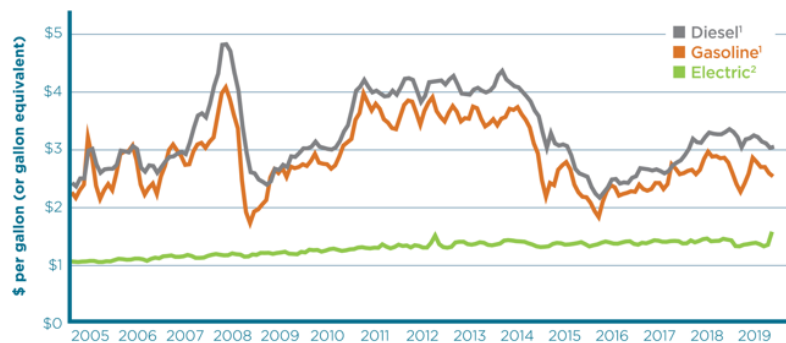
1. What are anticipated benefits and costs of this proposal for Vermont and Vermonters?

Many Vermonters are confronted with high-cost and unreliable transportation to get to their jobs, schools and critical services. In the wake of COVID-19, transportation will play a critical role in getting people back to school, services and work. We have an opportunity to build a more affordable and cleaner transportation sector for the long term. But without direct assistance, disadvantaged Vermonters risk being left behind from the start.

Benefits:

- **Access:** Replace Your Ride will expand access to affordable and clean transportation options to those who stand to benefit the most: *Lower income and rural Vermonters.*
- **Affordability:** Driving an old, low MPG vehicle is costly. Vermonters spend around half of their energy dollars on gas/diesel to get to school, work and critical services. By contrast, the cost of “filling the tank” of an EV ranges from 60 cents to \$1.50 cents per gallon, depending on the utility and mode/time of charging. Moreover, lower income people in rural counties spend over a third of their income on transportation and average 43% more vehicle miles traveled than residents in urban counties³. By transitioning to cleaner options, they will reduce those costs substantially, enabling them to invest in other household priorities. It is noteworthy that CarShare VT and AAA both have statistics on the substantial household savings that can be achieved by getting rid of a vehicle and replacing it with other options. AAA estimates that the average cost of new vehicle ownership has climbed to \$9,292 in 2020 (fuel costs, maintenance/tire, insurance, licensing, registration and taxes).⁴
- **Predictability:** Gas prices are among the most volatile of fuel prices, meaning that disadvantaged Vermonters are especially vulnerable to wide price swings in transportation costs. Cleaner electric options are ALL more stable.

Gas and diesel vehicles are more expensive to drive than EVs



1. Fuel prices (gasoline and diesel) from the Vermont Agency of Transportation (VTrans) and Drive Electric Vermont. 2. Electric charging costs (gallon equivalent) calculated by Drive Electric VT, based on EIA data on average Vermont residential electric rates and the average efficiency of light-duty electric and gasoline vehicles.

³ The Nature Conservancy – Supporting Rural Communities through Transportation Investments. Aug 2020.

⁴ AAA estimates of car ownership - <https://www.aaa.com/autorepair/articles/average-annual-cost-of-new-vehicle-ownership>; CarShare VT Calculator <http://www.carconscious.org/>;

- **Helping the State/Regional Economy:** While about 80% of dollars spent on fossil fuels leave the state, over 60% of dollars spent on electricity stay and recirculate in the local economy, helping support jobs for Vermonters.
- **Health:** the American Lung Association estimates that Vermont could save \$313 million in total health and climate costs by transitioning to a majority of electric transportation options by 2050.
- **Greenhouse Gas Emissions:** Transportation represents the largest single source of emissions in Vermont, and *is growing*. Because Vermont is such a rural state, on average, our vehicle miles traveled are far greater than in more densely populated states. By helping low income and rural Vermonters retire their old vehicles and transition to cleaner options, we accelerate our progress toward meeting our climate goals.

Costs

- **Incentives:** The image includes the projected number of net electric vehicles adoption needed to reach the VT Comprehensive Energy Plan goals (based on the Path to Paris model developed by EAN). This, however, does not include the additional GHG reduction coming from scrapped vehicles. As a starting point, if 3000 cars are scrapped the first year with an incentive of \$3,000 on average, that would equate to a \$9,000,000/year investment. The number of vehicles could increase each year until overall GHG goals are met, combined with other policies and incentives. If, however, the cash incentive was used for other alternatives (used vehicles, transit passes, shared mobility memberships, electric motorcycles, etc.), this total might be less. Possible sources of future funding for a pilot and/or implementation could be: revenues from the Transportation Climate Initiative, State EV Incentives, VLITE, possible federal funding sources, and/or potential feebate revenues.

Year	# of additional electric vehicles /year
2019	1,812
2020	2,989
2021	4,932
2022	8,138
2023	13,427
2024	22,153
2025	36,550

- **Program Management:** in the successful CA Replace Your Ride model, the Air Quality Management Districts manage these programs with small overheads. One downside of this model is that different AQMDs have different eligibility requirements. In Vermont, having a statewide program that is supported by local community-based organizations might be a better approach. For this, possible options include: i) Utilities (as in the current state incentive program); ii) contractors like the Center for Sustainable Energy, (currently implementing this in CA, and preparing for implementation in other states); iii) Efficiency Vermont under its new expanded all-fuels mandate; iv) local Community Action Agencies (who provide direct services to the most vulnerable Vermonters, and have already piloted the MileageSmart program); v) VTRANS and the vehicle inspection centers for identifying older vehicles; vi) the VW Settlement team in the Agency For Natural Resources (with experience in measuring GHG reductions of various investments;

2. What is the potential scale of impact on Vermont’s Energy and Emissions Goals:

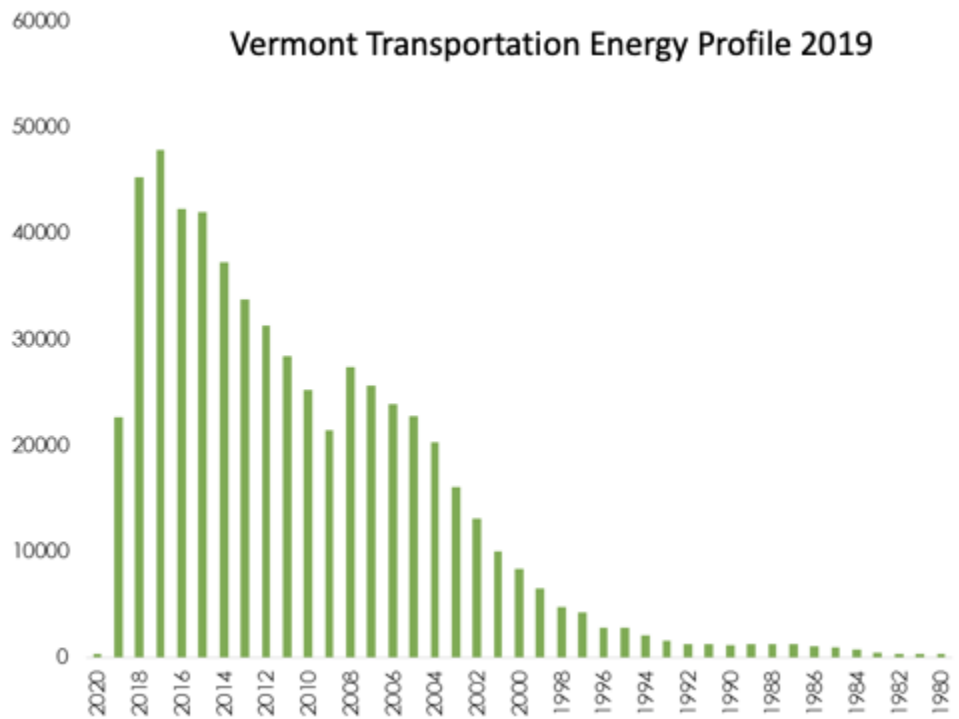
Passenger Vehicles are Key: 45% of Vermont’s GHG emissions are attributable to transportation, and of the total number of vehicles on Vermont’s roads, 94% are passenger vehicles, with automobiles accounting for 71% and trucks for 23%. Of total emissions, the use of on-road gasoline, primarily for passenger vehicles, accounts for 75% of total transportation emissions⁵.

Vermont’s mostly rural settlement pattern and our heavy reliance on fossil-fueled vehicles are key contributors to this. Replace Your Ride would focus on **accelerating emissions reductions by focusing on getting the highest-polluting and lowest-mileage vehicles off the road**, while providing the financial support to help low-income Vermonters choose from a range of clean transportation replacements. Reducing our energy use and emissions in transportation isn’t just a question of driving more efficient fossil-fueled vehicles or switching to electric or other low emissions vehicles. Biking, taking a bus or shared mobility like CarShare Vermont, and other ride hailing services are important options.

Age of Vermont Light Duty Fleet: The highest-polluting vehicles are generally the oldest.

According to the VT Transportation Energy Profile, Vermont has a total of 593,705 registered vehicles (2019), of which approximately 54% are model year 2012 or older⁶. According to recent DMV estimates, approximately 60% of on-road vehicles are model year 2012 or older.

The difference in emissions between older and newer average light duty gasoline and diesel vehicles is indicated in the table below. For each older gas-powered light



⁵ Vermont Agency of Natural Resources. 2019 GHG Emissions Inventory Brief (1990-2016)

https://dec.vermont.gov/sites/dec/files/aqc/climate-change/documents/Vermont_Greenhouse_Gas_Emissions_Inventory_and_Forecast_1990-2016.pdf

⁶ https://vtrans.vermont.gov/sites/aot/files/planning/documents/planning/The%20Vermont%20Transportation%20Energy%20Profile_2019_Final.pdf

duty vehicle taken off the road, the resultant GHG emissions reduction are up to **three times** that of a newer equivalent vehicle replacement. For each older diesel light duty vehicle replaced by a newer equivalent, the GHG reduction is up to **10 times**. If these vehicles were replaced by either electric or non-vehicle alternatives, the resultant GHG reduction would be substantially greater.

Estimated U.S. Average Vehicle Emissions Rates per Vehicle by Vehicle Type using Gasoline and Diesel (Grams per mile)				
	2005	2010	2015	2018
Gasoline - Light duty				
Total HC	1.020	0.786	0.499	0.350
Exhaust CO	9.759	7.121	4.898	3.941
Exhaust NOx	1.079	0.901	0.518	0.289
Exhaust PM2.5	0.023	0.017	0.011	0.008
Brakewear PM2.5	0.003	0.003	0.003	0.003
Tirewear PM 2.5	0.001	0.001	0.001	0.001
Diesel - Light duty				
Total HC	1.915	0.939	0.232	0.183
Exhaust CO	28.016	13.604	3.205	2.663
Exhaust NOx	1.691	1.008	0.248	0.153
Exhaust PM2.5	0.052	0.023	0.005	0.004
Brakewear PM2.5	0.003	0.003	0.003	0.003
Tirewear PM 2.5	0.001	0.001	0.001	0.001

Key: CO = Carbon Monoxide; HC = Hydrocarbons; NOx = Nitrogen oxides; PM 2.5 – particulate matter with diameter <= 2.5 micrometers

SOURCE: US EPA 2018 <https://www.bts.gov/content/estimated-national-average-vehicle-emissions-rates-vehicle-type-using-gasoline-and>

According to the EPA, the average new passenger vehicle emits about 404 grams of CO₂ per mile, or around 4.6 metric tons per year (assuming an average of 11,500 miles per year.⁷). Between 2004 and 2018, CO₂ emissions have decreased 23%, or 108g/mile, and fuel economy has increased 30%, or 5.8mpg. The trends in CO₂ emissions and fuel economy since 1975 are shown in the graphs. By removing older vehicles and replacing them with zero or lowest-emissions alternatives, Vermont can accelerate its progress towards its GHG goals.

The Vermont Comprehensive Energy Plan estimates that Vermont would need around 45,000 plug-in electric vehicles (EVs) on the road by 2025 in order to reach its first GHG milestone. If Vermont is to reach its GHG emissions targets as stated under the Paris Agreement, however, EAN estimates it will need to double that to approximately 90,000 EVs, representing 19% of the light duty vehicle vehicles registered in Vermont. This may be a very difficult number to achieve

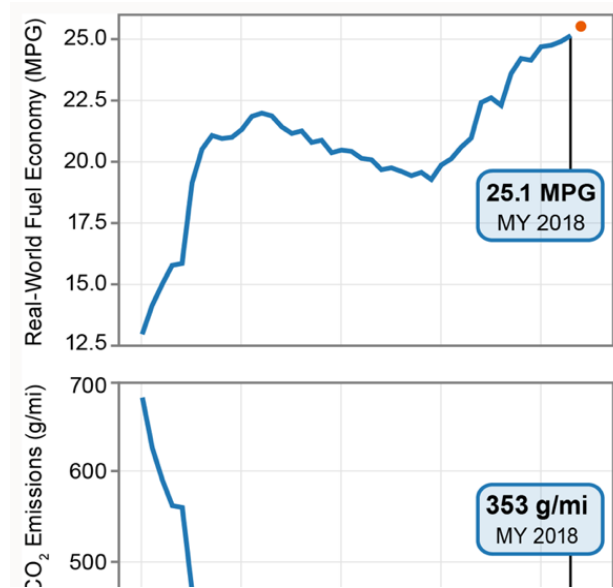
⁷ Federal Highway Administration Statistics 2016. <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100U8YT.pdf>

in just four years. However, if combined with a scrapping program that simultaneously removes high polluting vehicles permanently from our roads, we may be able to reach the GHG goals. Furthermore, if a portion of these drivers could be incentivized to move permanently to car-share or public transit, the goals would be met even more quickly.

3. What share of current state incentives goes to low-income Vermonters?

Vermont’s current state EV incentive program is eligible only for new vehicles. It ranges between \$1,500 and \$4,000, depending on income eligibility and type of vehicle (see table). The vehicle purchase base price must be under \$40,000.

This incentive can be combined with other federal, utility and state incentives, bringing down the price of a new EV to as low as \$11,000.



Incentive Amounts

Tax Filing Status	Adjusted Gross Income (AGI) Limits	Vermont State Incentive Amount	
		Plug-in Hybrid Electric Vehicle	All-Electric Vehicle
Individual filing as single or head of household	\$50,000 or less	\$3,000	\$4,000
	Over \$50,000 up to \$100,000	\$1,500	\$2,500
Individual filing as qualifying widower	\$50,000 or less	\$3,000	\$4,000
	Over \$50,000 up to \$125,000	\$1,500	\$2,500
Married filing jointly	\$50,000 or less	\$3,000	\$4,000
	Over \$50,000 up to \$125,000	\$1,500	\$2,500
Married filing separately	\$50,000 or less	\$3,000	\$4,000
	Over \$50,000 up to \$100,000	\$1,500	\$2,500

According to Drive Electric Vermont, as of December 2020, over 400 EVs had been purchased using the incentive, nearly half of which were by low-income Vermonters (\$50,000 AGI or lower). The incentive is eligible for over 24 different plug-in models, with the two most popular models being the Chevrolet Bolt and the Nissan Leaf under the incentive program.

	Nissan LEAF 150 Mile Range		Nissan Sentra
	Standard Incentive	< \$50k Income Incentive	
Starting Price	\$31,600	\$31,600	\$19,310
Federal Tax Credit	-\$7,500	-\$7,500	--
State Incentive	-\$2,500	-\$4,000	--
OEM Discount	-\$6,000	-\$6,000	--
Utility Incentive	-\$1,500	-\$2,500	--
Price after Incentives	\$14,100	\$11,600	\$19,310

Model	Low Income		Moderate		TOTAL	
	Count	Funds	Count	Funds	Count	Funds
Chevrolet Bolt	25	\$ 109,000	49	\$ 122,500	74	\$ 231,500
Nissan LEAF	27	\$ 126,000	25	\$ 62,500	52	\$ 188,500
Volkswagen e-Golf	24	\$ 118,000	2	\$ 5,000	26	\$ 123,000
Toyota Prius Prime	23	\$ 82,000	26	\$ 39,000	49	\$ 121,000
Nissan LEAF Plus	16	\$ 75,000	16	\$ 40,000	32	\$ 115,000
Tesla Model 3	15	\$ 69,000	6	\$ 15,000	21	\$ 84,000
Hyundai Kona EV	5	\$ 24,000	14	\$ 35,000	19	\$ 59,000
Hyundai Ioniq PHEV	13	\$ 49,000	6	\$ 9,000	19	\$ 58,000
Ford Fusion Energi	8	\$ 30,000	8	\$ 12,000	16	\$ 42,000
Subaru Crosstrek Hybrid	7	\$ 26,000	5	\$ 7,500	12	\$ 33,500
Toyota RAV4 Prime	2	\$ 6,000	11	\$ 16,500	13	\$ 22,500
Hyundai Ioniq EV	4	\$ 16,000	1	\$ 2,500	5	\$ 18,500
Kia Niro Electric	2	\$ 8,000	4	\$ 10,000	6	\$ 18,000
Mitsubishi Outlander PHEV	3	\$ 9,000	4	\$ 6,000	7	\$ 15,000
Kia Niro PHEV	1	\$ 3,000	2	\$ 3,000	3	\$ 6,000
Hyundai Sonata PHEV	1	\$ 4,000	1	\$ 1,500	2	\$ 5,500
Chevrolet Volt	1	\$ 4,000	0	\$ -	1	\$ 4,000
Chrysler Pacifica Hybrid	0	\$ -	1	\$ 1,500	1	\$ 1,500
<i>Pending Preapprovals</i>	11	\$ 38,000	25	\$ 54,500	36	\$ 92,500
Grand Total	188	\$ 796,000	206	\$ 443,000	394	\$1,239,000

4. How will Replace Your Ride affect low income Vermonters?

Driving an older low-MPG vehicle is costly. Low-income and rural Vermonters have the highest energy burden (share of household income spent on energy) of all Vermonters, and transportation takes the biggest toll on these households.

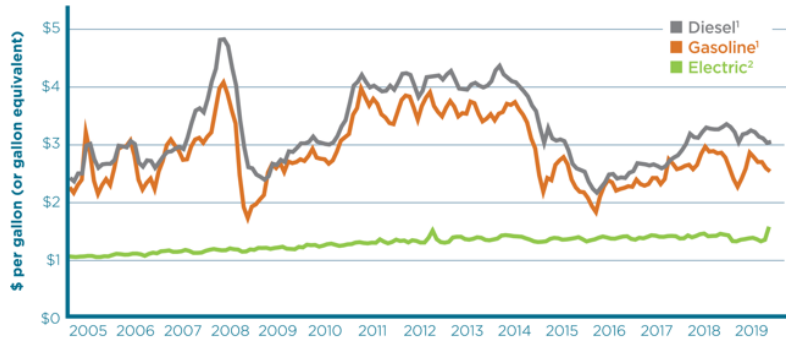
To put transportation costs in context, consider that low-income Vermonters spend a much higher **share** of their household income on transportation than higher income households (up to 30% on fuel alone!).

If we look at household spending on energy (electricity, heat, transportation), on average, Vermonters spend around half of their energy dollars on transportation - gas/diesel to get to school, work and critical services.

By contrast, the cost of “filling the tank” of an EV ranges from 60 cents to \$1.50 cents per gallon, depending on the utility and mode/time of charging. A recent survey carried out by The Nature Conservancy indicates that lower-income people in rural counties spend around a third of their income on transportation and average 43% more vehicle miles traveled than residents in urban counties ⁸.

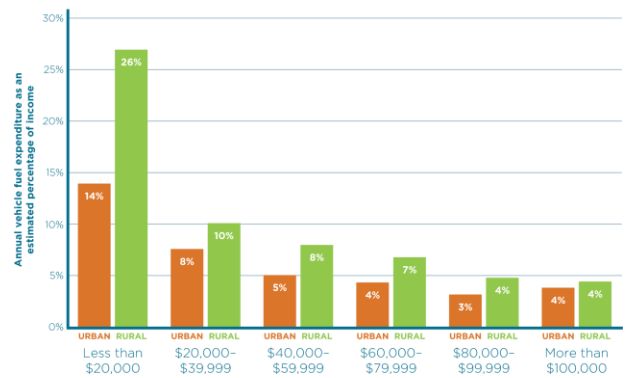
By transitioning to cleaner options, **Replace Your Ride** would allow lower-income Vermonters to reduce those monthly transportation costs substantially, enabling them to invest in other household priorities. It is noteworthy that CarShare VT and AAA both have statistics on the substantial household savings that can be achieved by getting rid of a vehicle and replacing it with other options. AAA estimates that the average cost of new gas-powered vehicle ownership has climbed to

Gas and diesel vehicles are more expensive to drive than EVs

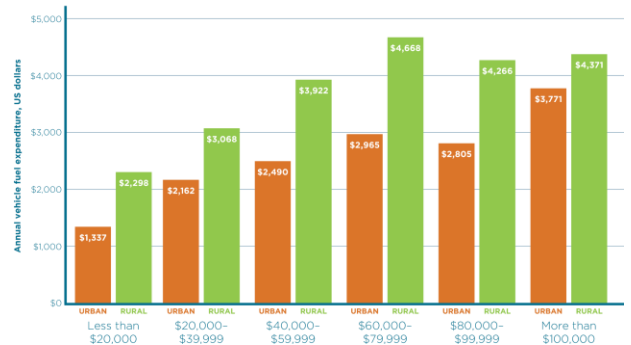


1. Fuel prices (gasoline and diesel) from the Vermont Agency of Transportation (VTrans) and Drive Electric Vermont. 2. Electric charging costs (gallon equivalent) calculated by Drive Electric VT, based on EIA data on average Vermont residential electric rates and the average efficiency of light-duty electric and gasoline vehicles.

Vermont 2009 annual vehicle fuel expenditure burden by income and location-type



Vermont 2009 annual vehicle fuel expenditure by income and location-type



⁸ The Nature Conservancy – Supporting Rural Communities through Transportation Investments. Aug 2020.

\$9,292 in 2020 (fuel costs, maintenance/tire, insurance, licensing, registration and taxes).⁹ By shifting to an electric vehicle or a vehicle-free alternative, these costs are reduced significantly.

These graphs illustrate the transportation energy burden by income level in Vermont. While higher-income Vermonters spend more in absolute terms on transportation, lower-income households spend a much higher *share* of their incomes on transportation, scarce dollars that could much better be spent on higher priority items like housing, health and education.

Finally, it's important to underscore that the current state incentives are tax based, so that an individual must have high enough tax payments to benefit. The Replace Your Ride incentive would be cash-based, so that it could reach a broader range of low-income Vermonters.

5. How will vehicle eligibility be administered?

This proposal would build on the existing state EV incentive program to minimize the administrative complexity. It would also complement the pilot Mileage Smart program run by Capstone Community Action to ensure local oversight of beneficiaries¹⁰. Finally, it proposes to enhance outreach through all community action agencies and vehicle inspection stations that can help identify those vehicles which fall into the vehicle eligibility criteria listed below.

6. How would beneficiary and vehicle eligibility be determined?

Proposed Beneficiary Eligibility (based on Vt State EV incentives targeting): \$50,000 Adjusted Gross Income, determined by the existing state incentive program guidelines

Proposed Vehicle Eligibility (modeled after CA program): To be eligible for the Replace Your Ride Program, the beneficiary must:

- Have a vehicle Model Year 2012 or older AND have a lower MPG rating than the current VT average (23 MPG)
- Have a vehicle title issued in your name for at least 12 months prior to the date of application submittal
- Be roadworthy and current on inspection to avoid free riders (emissions data will need to be provided – different options are available)
- Be powered by gasoline or diesel
- Have a Gross Vehicle Weight Rating (GVWR) of 10,000 pounds or less

In addition, the vehicle must also meet the following requirements:

⁹ AAA estimates of car ownership - <https://www.aaa.com/autorepair/articles/average-annual-cost-of-new-vehicle-ownership>; CarShare VT Calculator <http://www.carconscious.org/>;

¹⁰ <https://capstonevt.org/transportation/mileagesmart>

- Currently registered with DMV in Vermont as an operational vehicle with a valid and unexpired registration sticker and have all fees paid to DMV, with no lapse in registration for more than 120 days for two consecutive years prior to the current registration expiration date, OR
- Unregistered or currently registered vehicles where the vehicle owner can demonstrate two years of vehicle operation in Vermont using:
 - Vehicle insurance company-issued documentation, OR
 - Automotive Repair Dealer-issued invoice documentation (Automotive Repair Dealer must be registered with the Bureau of Automotive Repair)
- Registration showing PNO will not be accepted as proof of operation
- For vehicles that hold a salvage title, the vehicle MUST be registered with the DMV as operable at the time of application.
- The vehicle does NOT need to pass or fail a smog test to be eligible for the program.

7. Where else has a similar program been implemented?

- **Clean Cars 4 All (California):** helps get lower-income consumers into cleaner technology vehicles by retiring their older, higher polluting vehicle and upgrading to a cleaner vehicle. Participants also have the option to replace their older vehicle for alternative mobility options such as public transit passes. The program is limited to vehicle owners residing in participating air districts, and those who meet income and vehicle requirements. <https://ww3.arb.ca.gov/msprog/lct/vehiclescrap.htm>
 - **Replace Your Ride:** Los Angeles/South Coast Area
 - **Drive Clean in the San Joaquin**
 - **Clean Cars for All** (Bay Area)
 - **Clean Cars 4 All** (Sacramento)
- **SCRAP-IT (British Columbia):** Provides low carbon transportation solutions for BC residents through incentives to scrap high-polluting vehicles for new and used EVs and other low-carbon forms of transportation <https://scrapit.ca/>. Managed by a non-profit with private funding, grants and contributions from a variety of sources. Between 1996 and 2016, they scrapped 40,000 vehicles, resulting in over 1 million tons of CO2 reductions.

8. What legislation in other states can Vermont use as reference?

- a. In CA, Clean Cars 4 All (CC4A) expands upon a prior program, the Enhanced Fleet Modernization Program (EFMP). EFMP includes CC4A as the scrap and replace option as well as a separate program for just scrapping an old car, the [Consumer Assistance Program \(CAP\)](#). [AB 630 \(Cooper, 2017\)](#) codified Clean Cars 4 All and reflects the most current legislation on the program.

- b. The current CA [EFMP regulations](#) adopted by the California Air Resources Board lay out the program rules and requirements for both CAP and CC4A programs. CC4A is funded through the state agency, CARB, but ultimately administered by regional air districts with populations greater than 1 million people and only a few eligible air districts have elected to CA offer a RYR program to their constituents.

9. What was the earlier federal Cash For Clunkers program?

- a. The [Cash for Clunkers program that was introduced in 2008](#) was a government program that gave owners of vehicles that were up to 25 years old, had a fuel efficiency rating of less than 18 mpg, and were in drivable condition, a financial incentive to trade their old vehicle in for a new higher efficiency one. For consumers that traded in their old car for a new one, they had to purchase a vehicle with an EPA-rated fuel economy rating of 22 mpg. It ran in 2008 and 2009 with a \$3 billion package that helped bring roughly \$14 billion in new-car sales.
- b. For light- and standard-duty vehicles (including trucks, SUVs, and vans), new models had to have a fuel economy rating of at least 18 mpg. Consumers that traded in a clunker for a new vehicle under this classification that got at least 2 mpg better qualified for a \$3,500 coupon. A new vehicle that got at least 5 mpg higher than the old vehicle being traded in were eligible for a \$4,500 credit.
- c. Heavy-duty trucks were also a part of the program. New trucks under this category were required to have a fuel economy rating of at least 15 mpg. Compared to the vehicle that was being turned in, a heavy-duty truck with 1 mpg better would net a \$3,500 coupon, while one with at least 2 mpg higher would be eligible for a \$4,500 coupon.
- d. The overall goal of the program was to draw consumers into dealerships to purchase new vehicles. By offering a relatively large amount of money for vehicles that dealers would normally never even consider as trade-ins, the program increased interest in new and used vehicles. Because of the fuel economy requirements, the program also resulted in more efficient vehicles on the road.
- e. Lessons learned from this program, and incorporated into Replace Your Ride were: i) the need to target the program to those who need it most (low income); ii) the need to ensure that vehicles are permanently scrapped; and iii) the need to have current registration for the vehicles.

10. References:

MileageSmart (Capstone Community Action) [MileageSmart](#)

Moving California <https://ww3.arb.ca.gov/msprog/lct/vehiclescrap.htm>
[Clean Vehicle Rebate Project \(CVRP\)](#)

[Drive Clean In the San Joaquin](#) - San Joaquin Valley

[Replace Your Ride](#) - South Coast/L.A. Area

[Clean Cars For All - Bay Area](#)

[Clean Cars 4 All - Sacramento Area](#)

[Clean Vehicle Assistance Program](#)

[Driving Clean Assistance Program - Bay Area](#)

CARB's [DriveClean](#) for additional incentives

CARB's [Low Carbon Transportation Investments & Air Quality Improvement Program \(AQIP\)](#)

[Consumer Assistance Program](#) (Statewide vehicle repair and retirement assistance)

[Federal Tax Credit](#)

[DMV Clean Air Carpool Sticker](#)

Connecticut

- [CHEAPR Program](#) (Connecticut Hydrogen and Electric Automobile Purchase Rebate)

The Nature Conservancy

“Supporting Rural Communities with Clean Transportation Investments” Prepared by EBP for The Nature Conservancy, August 2020.

AAA estimates of car ownership costs- <https://www.aaa.com/autorepair/articles/average-annual-cost-of-new-vehicle-ownership>;

CarShare VT Calculator <http://www.carconscious.org/>

https://vtrans.vermont.gov/sites/aot/files/planning/documents/planning/The%20Vermont%20Transportation%20Energy%20Profile_2019_Final.pdf

Cash for Clunkers Evaluation - Brookings Institute

https://www.brookings.edu/wp-content/uploads/2016/06/cash_for_clunkers_evaluation_paper_gayer.pdf

California Replace Your Ride

Goal: Replace your older, high-polluting vehicle with a newer vehicle, upgrade to a hybrid or electric vehicle, or get vouchers for rideshares or public transit passes.

Eligibility Requirements:

1. **Location**
2. **Household Income:** at or below 400% of Federal Poverty Level (see below). Incentives differ based on replacement options
3. **Requirement for Vehicle to be Retired:** Prior to 2012, emissions test report, registered with DMV as operable with valid sticker, etc.
4. **No previous participation in Program**

Replacement Options:

1. **Advanced Technology Options:** Replacing high polluting vehicle with a hybrid, battery electric or fuel cell vehicle is a great way to get lower emissions while saving money on fuel. Basic eligibility depends on income level and type of replacement vehicle you choose.

Standard Incentives

If you reside within SCAQMD's jurisdiction, you can replace your current vehicle with a hybrid, plug-in hybrid, battery electric, or fuel cell vehicle.

Income Level	Maximum Funds for New or Used Vehicle
Low ($\leq 225\%$ FPL) ?	\$4,500
Moderate ($\leq 300\%$ FPL) ?	\$3,500
Above moderate ($\leq 400\%$ FPL) ?	\$2,500

Standard Vehicle Options

All-Electric Vehicles (Model Years 2013-2020)
 Fuel Cell Vehicles (Model Years 2015 – 2020)
 Plug-In Hybrids (Model Years 2013-2020)
 Hybrids (Model Years 2013-2020)

Plus-Up Incentives

If you live in a qualifying area, you may be eligible for a higher incentive if you choose to trade in your vehicle for a hybrid, plug-in hybrid, or electric vehicle.

Income Eligibility	Maximum Funds New or Used Eligible Vehicles			
	Battery-Electric or Fuel Cell Vehicle	Hybrid-Electric Vehicle 20+ MPG*	Hybrid-Electric Vehicle 35+ MPG	Plug-In Hybrid Vehicle
Low ($\leq 225\%$ FPL) ?	\$5,000	Not Available	\$2,500	\$5,000
Moderate ($\leq 300\%$ FPL) ?	\$4,000	Not Available	\$1,500	\$4,000
Above moderate ($\leq 400\%$ FPL) ?	\$3,000	Not Available	Not Available	\$3,000

*Battery-Electric Vehicle may be eligible for an additional incentive up to \$2,000 for the installation of electric vehicle charging equipment

2. **Rideshare/Transit Alternatives:** Qualifying participants can trade in a vehicle for a discounted mass transit pass or access ride sharing options.

Ridesharing :




If you qualify for this program, you can earn “Commuterbucks” that can be used for ridesharing options like Zipcar and vRide.

- Zipcar, the world's largest car-sharing and car club service, offers a viable alternative to traditional rental and car ownership with monthly memberships starting at \$6.00 per month.
- vRide is the nation's largest provider of vanpools.

Public Transit :

- Los Angeles County Metro, Riverside Transit, and San Bernardino Omnitrans agencies are offering discounted transit passes to qualifying program participants.

Incentive Amounts

	Maximum Funds New or Used Eligible Vehicles
Income Eligibility	Public Transit and/or Rideshare
Low ($\leq 225\%$ FPL) 	\$4,500
Moderate ($\leq 300\%$ FPL) 	\$3,500
Above moderate ($\leq 400\%$ FPL) 	\$2,500

3. **Newer Vehicles:** Replace high-polluting older vehicle (prior to 2012) with any vehicle that is 8 model years old or newer and meets the following MPG requirements.

Model Year	Minimum US EPA Combined Fuel Economy Rating	Minivans Minimum US EPA Combined Fuel Economy Rating
2011	25	21
2012	28	21
2013	29	21
2014	30	21
2015	31	21
2016	32	23
2017	37	23
2018	38	TBD
2019	40	TBD

Incentive Amounts

The amount you are eligible for depends on your income level and the type of vehicle you are purchasing. See the below chart for general guidelines. For an exact eligibility amount, please [proceed to the application](#).

Income Eligibility	Maximum Funds New or Used Eligible Vehicles	
	Conventional Fuel-Efficient Vehicle (35+ MPG)	Newer Vehicle*
Low ($\leq 225\%$ FPL) ?	\$4,000	\$4,000
Moderate ($\leq 300\%$ FPL) ?	Not Available	Not Available
Above moderate ($\leq 400\%$ FPL) ?	Not Available	Not Available

FPL – Federal Poverty Levels used to calculate eligibility

Income Levels

Persons in household	Income level		
	Low ($\leq 225\%$ FPL)	Moderate ($\leq 300\%$ FPL)	Above moderate ($\leq 400\%$ FPL)
1	\$28,103	\$37,470	\$49,960
2	\$38,048	\$50,730	\$67,640
3	\$47,993	\$63,990	\$85,320
4	\$57,938	\$77,250	\$103,000
5	\$67,883	\$90,510	\$120,680
6	\$77,828	\$103,770	\$138,360
7	\$87,773	\$117,030	\$156,040
8	\$97,718	\$130,290	\$173,720