

EAN 2020 Pitch Submission Form (DRAFT 08-29-20)

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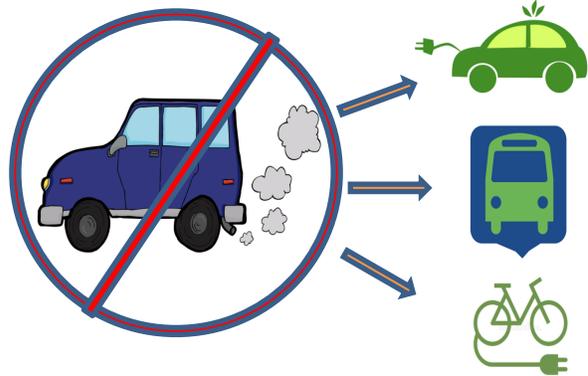
4. Pitch Title: (one line): **Vermont Replace Your Ride Program**

5. Pitch Summary: (one paragraph)

Replace Your Ride would help lower-income and rural Vermonters trade in their older, high-polluting vehicles for a range of clean transportation and shared-mobility options. 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. **Replace Your Ride** would allocate the highest incentive amount to participants with the lowest income, living in a disadvantaged community (e.g., highly inaccessible to public transit), and choosing the cleanest vehicle technology. Incentives would be *stacked* on top of other EV and EV Charger incentives, and include incentives to:

Retire an older vehicle in order to:

- **Switch to a new or used Plug-In Hybrid or All Electric Vehicle** (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)
- To go **car free** by getting vouchers for public transit, shared-mobility options, and private ride hailing
- Options include local and regional **public transit passes**, membership in **CarShare VT** or bike-share programs, vouchers for **ride hailing** options like Lyft and Uber and **Capstone's new mobility rides**
- **electric motorcycles or bikes.**



6. How would you describe the status of this pitch:

- ✓ **Level one: Initial idea that needs to be refined and developed with the expertise of relevant partners before work can move forward**

Level two: Project in the planning phase – ready to create an action plan, draft a grant proposal, complete necessary research, etc.

Level three: Ready to begin implementing in collaboration with partners

7. What Energy Sector(s) Does this Pitch Apply to? (Check all that apply):

- ✓ **Energy Efficiency**
Electricity
- ✓ **Transportation**
Thermal Heating and/or Cooling
None

8. Which Criteria Category(ies) Does It Address? (Check all that apply):

- ✓ **Promoting energy equity**
- ✓ **Significant reductions in fossil fuel use and GHG pollution from energy**
- ✓ **A stronger and more just Vermont economy**
- ✓ **Clean energy jobs**
Energy security and resilience
Sustainable energy landscape
Committed leadership from multiple network members

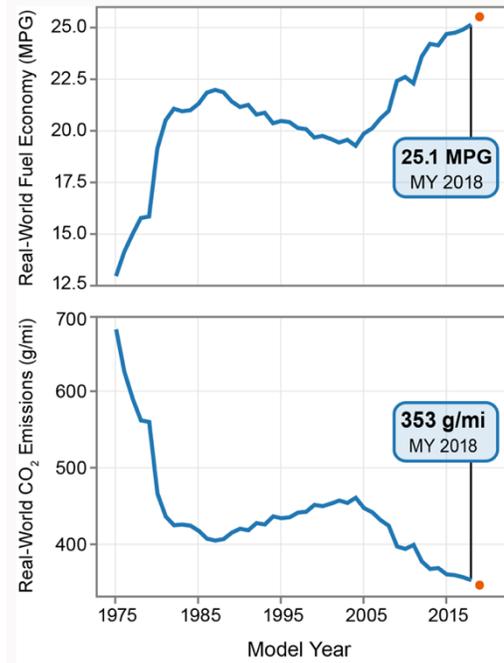
9. Which Leverage Areas Would It Attempt to Shift? (Check all that apply):

- ✓ **Policy & Regulatory Reform**
- ✓ **Public Engagement**
 - Workforce Development/Workforce Transition
 - Technology Innovation
 - Capital Mobilization

10. Scale of Impact on Vermont’s Energy and Emissions Goals: If this proposal came to fruition, how would it help meet Vermont’s energy and emissions goals by 2025 and/or 2050? Please outline assumptions and, if available, provide calculations-- especially for emissions reduction estimates.

45% of Vermont’s GHG emissions are attributable to transportation, and the use of on-road gasoline, primarily for passenger vehicles, accounts for 75% of total transportation emissions¹. Vermont’s mostly rural settlement pattern and our heavy reliance on fossil-fueled vehicles are key contributors to this. The highest polluting vehicles are generally the oldest and are generally those owned by Vermonters who can least afford a new vehicle. 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. ***This proposal aims to accelerate the emissions reductions by focusing on the highest polluting and lowest mileage vehicles first, while providing a range of transportation options from which to select.***

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.²). 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

¹ 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](https://dec.vermont.gov/sites/dec/files/aqc/climate-change/documents/Vermont%20Greenhouse%20Gas%20Emissions%20Inventory%20and%20Forecast%201990-2016.pdf)

² Federal Highway Administration Statistics 2016. <https://nepis.epa.gov/Exec/QueryPDF.cgi?Dockey=P100U8YT.pdf>

Vermont is to reach its GHG emissions targets as stated under the Paris Agreement, EAN estimates it will need double that, or 90,000 EVs, representing 19% of the light duty vehicle vehicles registered in Vermont. 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.

According to the VT Transportation Energy Profile, Vermont has a total of 593,705 registered vehicles (2019), of which approximately 40% are model year 2010 or older³. 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 vehicle taken off the road, the resultant GHG emissions reduction are up to **three times** that of replacing a newer vehicle:

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>

11. Benefits and costs of this proposal for Vermont and Vermonters: Including, where possible, economic (local economic development and jobs), financial (consumer savings), social, public health, and environmental. Who will be better off? Who will *not* be able to benefit?

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 older 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

³[https://vtrans.vermont.gov/sites/aot/files/planning/documents/planning/The%20Vermont%20Transportation%20Energy%20Profile 2019 Final.pdf](https://vtrans.vermont.gov/sites/aot/files/planning/documents/planning/The%20Vermont%20Transportation%20Energy%20Profile%202019%20Final.pdf)

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, people in rural counties spend over a third of their income on transportation and average 43% more vehicle miles traveled than residents in urban counties ⁴. 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).⁵

Electric vehicles are less expensive to drive than gas vehicles

- **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.
- **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). We can make assumptions from here. As a starting point, if 3000 cars are scrapped the first year with an incentive of \$4,000 on average, that would equate to a \$12,000,000/year investment. That could increase each year until our overall 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

⁴ The Nature Conservancy – Supporting Rural Communities through Transportation Investments. Aug 2020.

⁵ 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/>;

- **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) local Community Action Agencies (who provide direct services to the most vulnerable Vermonters, and have already piloted the MileageSmart program); ii) VTRANS and the vehicle inspection centers for identifying older vehicles; iii) the VW Settlement team in the Agency For Natural Resources (with experience in measuring GHG reductions of various investments; iv) Efficiency Vermont, if it receives approval for an expanded all-fuels mandate⁶, iv); contractors like the Center for Sustainable Energy, etc.

12. Collaboration and Commitment: What partners/organizations are already working together and/or committed to work together on this issue?

Primary Partners: VEIC, Capstone, RAP, VNRC, VT Clean Cities Coalition/UVM Transportation Center, EAN Sr Fellow

Additional Support from: TNC, Transportation 4 Vermont, Federal Delegation (initial expressed interest)

13. Key stakeholders and decision-makers: Who else needs to be involved to move this proposal forward? (e.g., Legislature, Governor, a regulatory agency, a business, organization, media outlet, or financing institution, people with lived experience, etc.)

Representatives of affected communities, Federal Delegation, Legislature, Governor, VTRANS, ANR (TCI and Air Quality staff), Public Service Department, Efficiency Vermont, VT Public Transit Association, Car Share VT, Community Action Agencies, DMV/Vehicle Inspection Centers, VSECU, Utilities (?)

14. If selected, EAN staff will support you in pulling together and facilitating a dedicated Action Team to work on this pitch over the next year, and possibly beyond. Describe what success would look like for this idea a year from now.

Success would be having a strategy in place to seek the necessary legislation, suggestions and reactions to potential funding stream(s) and implementation capacity in place to initiate a Replace Your Ride incentive program that builds on the Mileage Smart program initiated by Capstone Community Action in 2019 and funded by the legislature.

15. Is there anything else you would like us to know about this pitch?

⁶ The current pending legislation that would allow for this (S337) would be a 3-year pilot capped at \$2m/year, covering both transportation and thermal efficiency activities. Managing this program would likely require additional legislation/funding to support the level of investment contemplated for this program

✓ This pitch proposes to build on the pilot Mileage Smart program run by Capstone Community Action to ensure local oversight of beneficiaries⁷. It also proposes to enhance outreach through vehicle inspection stations that can help identify those vehicles which fall into the vehicle eligibility criteria listed below.

✓ **Proposed Vehicle Eligibility:** To be eligible for the Replace Your Ride Program, your vehicle must:

- Have a vehicle title issued in your name for at least 12 months prior to the date of application submittal
- Be road worthy 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, your vehicle must also meet the following requirements:

- 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.
- A current OBD2 (On-Board Diagnostics) test

✓ **Precedents**

- **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)

⁷ <https://capstonevt.org/transportation/mileagesmart>

- **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.

✓ **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](#)

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

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/>

https://vtrans.vermont.gov/sites/aot/files/planning/documents/planning/The%20Vermont%20Transportation%20Energy%20Profile_2019_Final.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 (≤225% FPL) ?	\$4,500
Moderate (≤300% FPL) ?	\$3,500
Above moderate (≤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](#).

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