

DRAFT

Transportation Strategies

June 10, 2022

Goals and Approaches

1. Create diverse transportation choices that meet personal needs and benefit the state's economy
2. Programs, policies and any regulatory reforms are designed to achieve cost-effective GHG reductions AND have positive equity outcomes.
3. Design programs, policies, approaches to prioritize benefits to as well as mitigate cost and potential impacts to the most vulnerable, marginalized, low income Vermonters
4. The benefits of various strategies are *quantified* (emissions reductions/economic costs and benefits) to the extent possible (using EAN and other data and analyses) and add up to achieving the state's emissions reductions in line with statutory requirements
5. Business as usual "BAU" has costs to Vermonters, and the state. Recognizing, quantifying and prioritizing strategies to change this starts with prioritizing options that have economic benefits such as job creation /reduced cost of living/keeping dollars in state.
6. Strive to include all stakeholders in program design and deployment including the principles and broad parameters of the Dec. 2021 plan.
7. Support and partner with the existing network of transportation providers
8. Focus on fuels and technologies that are widely available now - while maintaining flexibility to allow for new technologies as they develop. Electrification and high-efficiency vehicles are near term priorities.
9. Prioritize ease of implementation and build on successful existing programs
10. Incentivize behaviors that help achieve emissions targets and disincentivize behaviors that don't
11. Recognize that transportation is a federal, multi-state regional, state and local partnership. Align federal, state and community implementation. VT stays in close coordination with the federal government re. policies and funding.
12. Actively work with other states and the federal government on US and multi-state programs and policies (CA standards, Cafe, TCI, NESCAUM etc) to help achieve VT's emissions reductions. Maintain commitment to the multi-state ZEV program.
13. State government takes on a leadership role at the highest levels and agency actions are coordinated through well-supported inter-agency mechanisms.
14. Harness and maximize federal funding and programs (Such as COVID relief, American Rescue Plan Act and future infrastructure programs) — and the private sector -- to

achieve success.

15. Continue working towards meeting the state's long term emissions goals by supporting:

- Research and deployment of new and emerging advanced technologies and fuels
- Smart growth/land use approaches and investments that foster compact community development (wastewater, sewer, bike/ped and other infrastructure investments etc) and reduce vehicle miles traveled (VMT) through the increases in TDM, transit and rail programs and rail and bike/ped infrastructure.

Pathway: Transportation Electrification

Measures/Methods:

1. EV Light Duty:

Measures: EAN/VPIRG/VEIC: #Light, Heavy Duty and Other EVs registered/purchased (for E-bikes) in VT; #of public charging stations; #of employee charging stations (?)

2025 Goal/Metric: TBD

2050 Goal/Metric: TBD

Importance: High - technology readily available, costs coming down, known replacement of fossil fuel (assuming decreasing VMT of fossil fuel vehicles). Public intervention decreases over time once vehicles become main stream

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GHG Reductions: See EAN Report

Guiding Principles Met: TBD

Equity Considerations: Contingent on strategy design - see barriers below. Costs to address equity may not be as cost effective in reducing emissions. Complexity of purchases must be addressed.

Non-GHG Benefits/Impacts: Health benefits (reduced pollutants affecting human health), household savings - EVs are cheaper to operate including reduced fuel costs, and fuel dollars are kept in state. There will be term effects on the gas tax and a need for alternative forms of transportation revenue sources.

Barriers/Ease of Implementation: Pathway depends on vehicles being available and for sale in VT at an affordable cost. Also public confidence in the technology, availability and costs of models desired for rural living - 4WD, trucks and range; and public charging availability and costs; multi-family dwellers and renters access to charging at home, and dealer knowledge and support.

Carbon reductions if known: TBD

Strategies:

1. EV Light Duty Purchase Incentives - non-commercial (rebate at point of sale, tax income and/or sales tax rebate, attractive financing programs)

Evaluate success of existing programs, determine enhancements and changes necessary to meet emissions goals and address equity considerations such as income sensitivity, time of rebate, etc. Start now, expand as needed and ramp down as purchase or registration numbers are achieved including equity considerations.

Costs and Public vs Private Investment: Evaluate existing program costs and determine investment necessary to achieve registration goals for 2025/2050. Consider federal, industry, utility, financing and others incentive programs.

Entities Responsible to Implement: Consider existing programs (State agencies/VEIC/Dealers/Utilities) and add to as required by the programs such as credit unions and commercial lenders

Key Stakeholders: All vehicle purchasers

2. EV Light Duty Purchase Incentives - Commercial and Government Fleets

Evaluate the number of public and private light duty fleet vehicles, their emissions contributions and the types of incentives needed - rebate, tax incentives, group purchasing. Potential for "lead by example" programs and benefits.

Costs and Public vs Private Investment: Evaluate existing program costs and determine investment necessary to achieve registration goals for 2025/2050.

Entities Responsible to Implement: Consider existing programs (State agencies/VEIC/Dealers/Utilities) and add to as required by the programs such as credit unions and commercial lenders

Key Stakeholders: Fleet operators, municipal officials

3. Multi-state ZEV and other Program

4. Join California and other states and prohibit fossil fuel new vehicle sales after 2030

5. EVCE Funding Programs - Public Charging

6. EVCE Funding/Incentive Programs - Employee Charging

7. EVCE Funding Programs - Private Residential - Single Family

8. EVCE Funding/Incentive Programs - Multi Family and Residential Rental Properties

9. Building Codes supporting EVCE

10. EVCE Interoperability - (are there programs/policies VT can undertake alone to address this)

11. Outreach and education programs and partnerships to help move the market - VEIC/Drive Electric VT and other programs

2. EV Heavy Duty Trucks and Busses:

Measure: # HD EVs registered in VT

2025 Goal/Metric: TBD

2050 Goal/Metric: TBD

Importance: Medium - challenge - lack of technology availability, low vehicle turnover rate and costs

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GHG Reductions: See EAN Report

Guiding Principles Met: TBD

Costs and Public vs Private Investment:

Entities Responsible to Implement:

Key Stakeholders:

Equity Considerations: Contingent on strategy design

Non-GHG Benefits/Impacts: Health benefits (reduced pollutants affecting human health), business savings - EVs are cheaper to operate including reduced fuel costs, fuel dollars are kept in state.

Barriers/ease of Implementation: Contingent on vehicles available and for sale in VT. Affects small contractors, construction companies and small truck and other fleets without capital and other economic impacts, public confidence in the technology, lack of availability and costs, dealer knowledge and support.

Carbon reductions if known: TBD

Strategies:

1. Purchase Incentives
2. R&D Programs
3. Multi-state ZEV Program

3. EV Other (Motorcycles, Motor Scooters, ATVs, Snow Machines and Electric Bikes)

Measure: #Registrations or purchases (for E-bikes) in VT

2025 Goal/Metric: TBD

2050 Goal/Metric: TBD

Importance: Medium - High - technology readily available, costs coming down, known replacement of fossil fuel (assuming decreasing VMT)

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GHG Reductions: Need analyses of emissions contributions of current fleet of vehicles, technology costs and availability

Guiding Principles Met:

Costs and Public vs Private Investment: Public dollars, foundations, revenue neutral feebate program applied to vehicle sales tax,

Entities Responsible to Implement:

Key Stakeholders: Capstone and other agencies, Good News Garage

Equity Considerations: Some programs aimed at low income households and small businesses

Non-GHG Benefits/Impacts: Health benefits (reduced pollutants affecting human health and benefits of exercise for E-bikes), household savings in fuel, reduces traffic congestion

Barriers/ease of Implementation: Winter weather, travel distances and scattered land use pattern, lack of safe roads for cycling

Carbon reductions if known: TBD

Strategies:

1. Purchase Incentives (Utilities?)
2. Increase bike/ped safety improvements (VTrans)
3. Public education and outreach (LocalMotion)

Pathway: Transportation - Efficiency: Technology (light and heavy duty)

Measures/Methods:

Measures: Current average MPG of the state fleet - 22.7mpg, fossil fuel sales #

2025 Goal/Metric: More rapid fleet turnover to increase overall fleet efficiency. Increase the average MPG for all registered vehicles to XX from 22.7. Reduce fossil fuel sales by XX.

2050 Goal/Metric: Increase the average MPG for all registered vehicles to XX for all registered vehicles

Importance: High - Improved MPG technology readily available, costs coming down, federal CAFE improving. Important step for the used car and truck market where EVs are not readily available.

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GHG Reductions: ?

Guiding Principles Met:

Costs and Public vs Private Investment:

Entities Responsible to Implement:

Key Stakeholders:

Equity Considerations: Contingent on strategy design - important for low income people who may be currently restricted from getting an EV due to cost or lack of access to EVCE.

Non-GHG Benefits/Impacts: Household savings on fuel.

Barriers/ease of Implementation: Higher MPG SUVs and truck (AWD) maybe needed in rural places and for businesses and trades people. Availability driven by federal policies (CAFE), car dealer actions and purchase decisions

Carbon reductions if known:

Strategies:

1. Feebate Program
2. Replace Your Ride
3. Mileage Smart
4. Fleet Programs

Pathway: Transportation - Low Carbon: Non-electric Fuels (light and heavy duty) - bio-diesel, ethanol, etc

Measures/Methods:

Measures: #gals sold

2025 Goal/Metric:

2050 Goal/Metric:

Importance: Low - Medium ? Sustainably produced biodiesel has promise in the future especially for on farm use. Ethanol is being sold today. CNG for mid duty trucks? Hydrogen technology remains in RD and is not readily available.

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GHG Reductions: ?

Guiding Principles Met:

Costs and Public vs Private Investment:

Entities Responsible to Implement:

Key Stakeholders:

Equity Considerations:

Non-GHG Benefits/Impacts:

Barriers/ease of Implementation: Ethanol policy is set beyond the state's border. Calculate upstream GHG? Costs, R&D necessary to implement

Carbon reductions if known:

Strategies:

Pathway: Transportation - Reduce SOV trips (VMT) and increase availability and use of other modes (Transit, Inter-city Bus, Rail, TDM -ride share, vanpool, etc., Walking and Biking)

Measures: VMT, fossil fuel sales, ridership data, ACS data

2025 Goal/Metric: VMT reduced by X%, ridership increased by X%, walking and biking increased by X%

2050 Goal/Metric: VMT reduced by X% ridership increased by X%, walking and biking increased by X%

Importance: Medium now - High in the long run

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GHG Reductions: ?

Guiding Principles Met:

Costs and Public vs Private Investment:

Entities Responsible to Implement:

Key Stakeholders:

Equity Considerations: Provides transportation alternatives for those that can't afford a car or can't drive due to age or disability - assuming the service is safe, affordable and in the right locations and at a useful frequency (for transit).

Barriers/ease of Implementation: Programs have multiple benefits including health, quality of life and more. It's a long term strategy to provide real and lasting change to transportation and our acute dependency we now have on single occupancy vehicles.

Carbon reductions if known:

Strategies:

- Increase state and flex federal funding to the extent possible for transit, inter-city bus, rail, and TDM - ride share, vanpool programs.
- Increase funding and work to obtain federal and other funding for rail, intermodal and other infrastructure.
- Bike ped

Pathway - Land Use: The state grows in a sustainable way - adhering to it's long held land use goals of concentrated mixed use development - dense, multi-use villages, towns and cities - surrounded by rural countryside, thus discouraging car dependent land use patterns. This land use approach is the foundation for achieving many of the goals described above. It will also protect and lead to the conservation of farm, forest and open lands and thus the environmental services they provide.

Measures: TBD

2025 Goal/Metric:

2050 Goal/Metric:

Importance: High

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GHG Reductions: ?

Guiding Principles Met:

Costs and Public vs Private Investment:

Entities Responsible to Implement:

Key Stakeholders: State ACCD, regional and local planners, municipal officials, developers

Equity Considerations: Contingent on strategy design -Safe, clean and affordable housing in downtown and village areas with close proximity to jobs, schools, health care will be a result. Still doesn't address the rural poor.

Barriers/ease of Implementation: This is a long term and *necessary* slog over decades given the state's relatively slow rate of growth. Lack of infrastructure (waste water, bike/ped facilities, EVCE, etc) as well as volunteer and municipal professional capacities are ongoing challenges.

Carbon reductions if known:

Strategies:

- Fund critical infrastructure, including water and wastewater to urban/village centers in order to facilitate density necessary for reducing VMT. Increase current programs and use ARPA, Jobs Plan and other one time moneys.
- Target funding for bike/ped facilities to providing access to and within downtown and village areas
- See the state's land use and smart growth goals, priorities and strategies such as downtown programs and other ACCD planning and funding opportunities

Pathway: Necessary Enabling, Cross Cutting Policies and Strategies

Measures/Methods:

Importance - High

- Sustainable Funding - Use one time dollars and seek/secure sustainable funding sources such as a regional cap and invest program (TCI)
- Government - Climate Cabinet, Environmental Justice/Equity Board, and participation in multi-state programs - NESCAUM, CA emissions/ZEV programs, TCI and more
- Education
- Navigator services to support Vermonters in easily identifying and accessing programs, incentives etc
- Other

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