

Vermont Transportation Carbon Reduction Strategy

PUBLIC MEETINGS

AUGUST 2, 2023

Agenda



Introductions



Project Overview



Gap Analysis



Strategy Summary



Next Steps



Discussion

Project Team



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Community Engagement



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Project Objectives

Support Vermont's requirements for GHG emissions reduction

- Reduce emissions 40% below 1990 levels by 2030
- Reduce emissions 80% below 1990 levels by 2050
- Transportation sector contributes to 40% of reduction

Support U.S. DOT requirements for each State to develop a Carbon Reduction Strategy

- Describe how new Carbon Reduction Program funding will be used

U.S. DOT Carbon Reduction Program

Infrastructure Investment and Jobs Act (IIJA)

\$32 million

\$6.3 million annually over 5 years

- Public Transit
- Transportation Alternatives
- Congestion Mitigation
- Efficient Street and Traffic Lighting
- Travel Demand Management Strategies
- Deployment of Alternative Fuel Vehicles and related Infrastructure
- Carbon Reduction Strategy

Strategy Steps

Phase 1

Estimate GHG emissions and reductions associated with VTrans' Capital Program

- Baseline projection
- Construction & maintenance
- Transportation system user emissions

Phase 2

Develop Carbon Reduction Strategy

- Stakeholder and public engagement
- Gap analysis
- Strategy and scenario development and evaluation
- Carbon Reduction Strategy

Committees

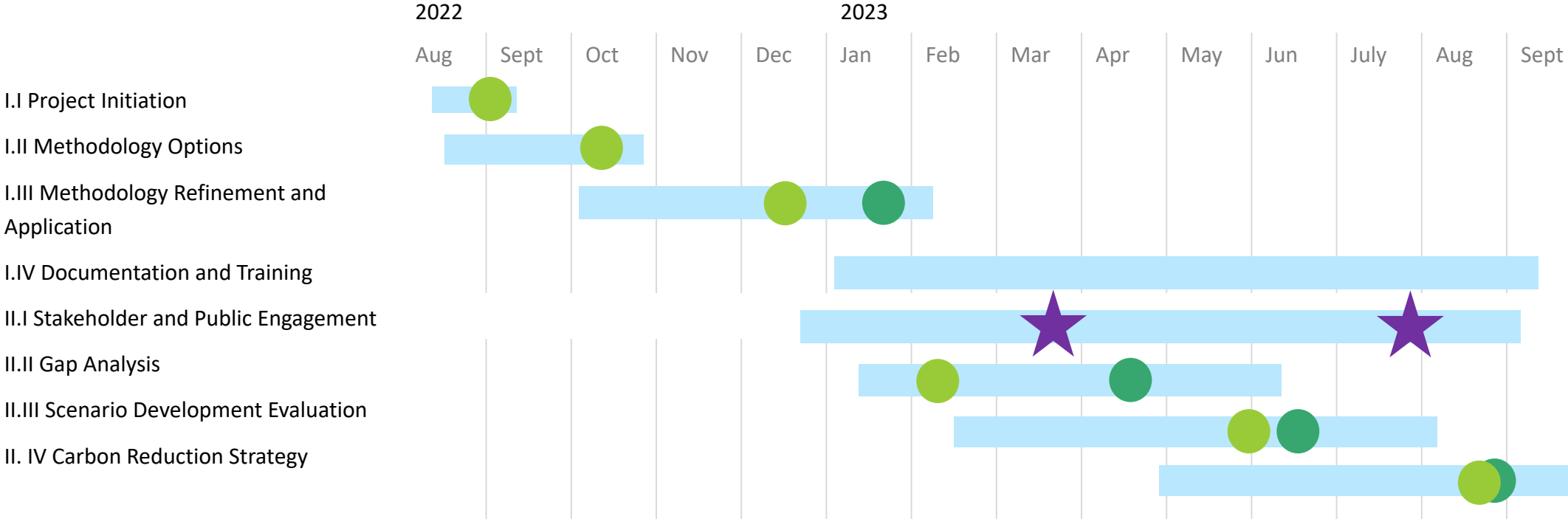
Technical Committee

Agency of Transportation
Agency of Natural Resources
Chittenden County Regional Planning Commission
University of Vermont
Vermont Climate Council
Environmental Action Network


Advisory Committee

Agency of Transportation
Agency of Natural Resources
Agency of Commerce and Community Dev.
Department of Health
Department of Environmental Conservation
Chittenden County RPC
Mount Ascutney Regional Commission
VT Public Transit Association
VT Natural Resources Council
Federal Highway Administration

Project Timeline



 Technical Committee

 Advisory Committee

 Focus Groups, Public Meeting

Public Engagement

- Two sets of virtual public meetings
- Two rounds of focus groups
 - Community-based organizations, including equity/environmental justice groups
 - Business community
 - Transportation and freight industry
 - Environmental groups
 - Regional planning and public transportation
 - Elected officials
- Online survey (Closing August 4th)

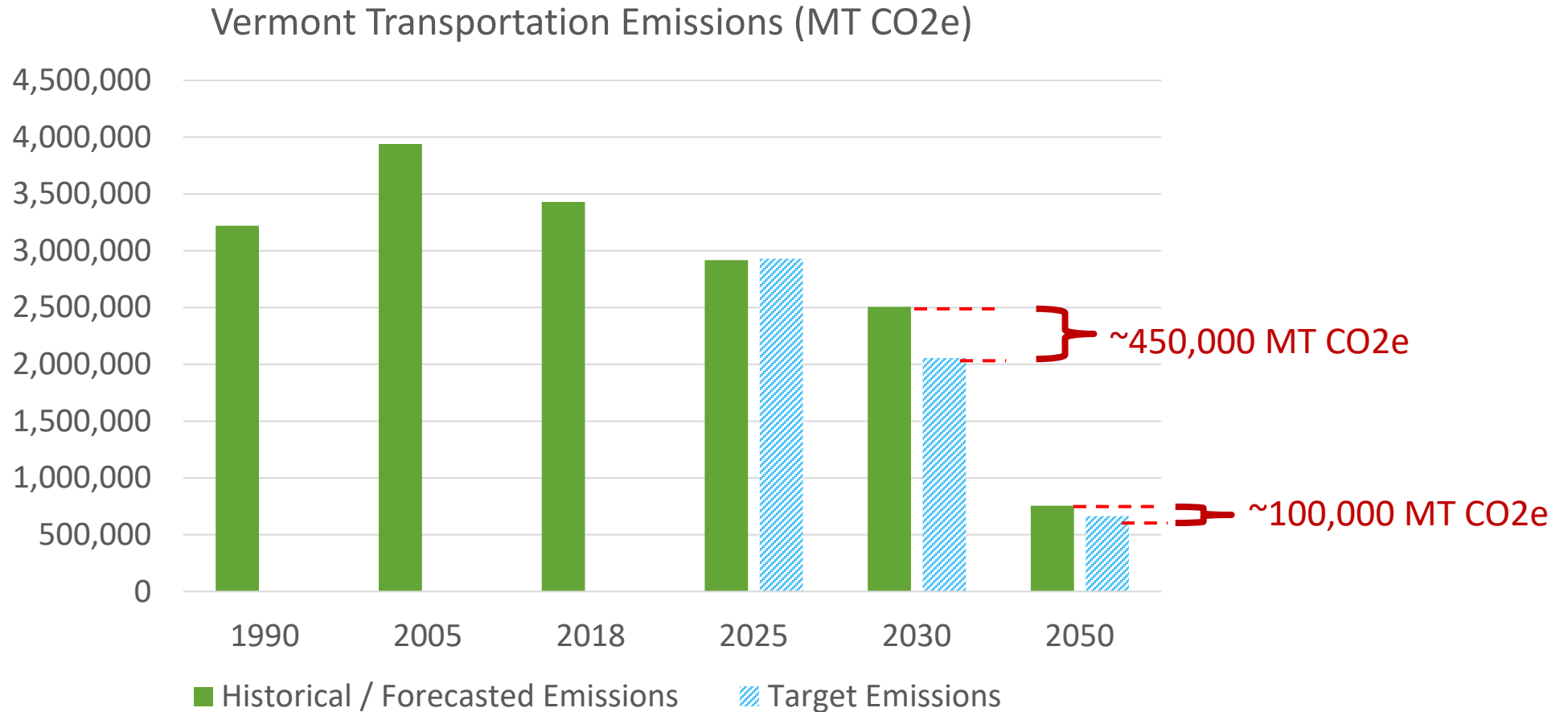


Gap Analysis

Transportation GHG Emissions Baseline Forecast

- Coordinated with Agency of Natural Resources & Climate Action Plan and sourced Vehicle Miles Traveled Data from the LEAP Model
- Under the Baseline, assumed adoption of:
 - Advanced Clean Cars II
 - Advanced Clean Trucks

Gap Analysis



What We Heard

Phase 1 Outreach

Bike, Pedestrian, & Transit Strategies



Land Use & Tele-Travel Strategies



Clean Car/Truck Incentives and Requirements



Carbon Management Strategies



Traffic and Roadway Strategies



What We Heard

- High support for mode shift strategies, especially village center traffic calming, pedestrian improvements, and expansion of transit throughout the state
- High support for land use strategies because of their compounding effect on mode shift and co-benefits
- Fast charging infrastructure is needed to support electric vehicle legislation requirements
- Favor incentives versus regulations
- Favor regional approach to policy-making



Strategy Summary

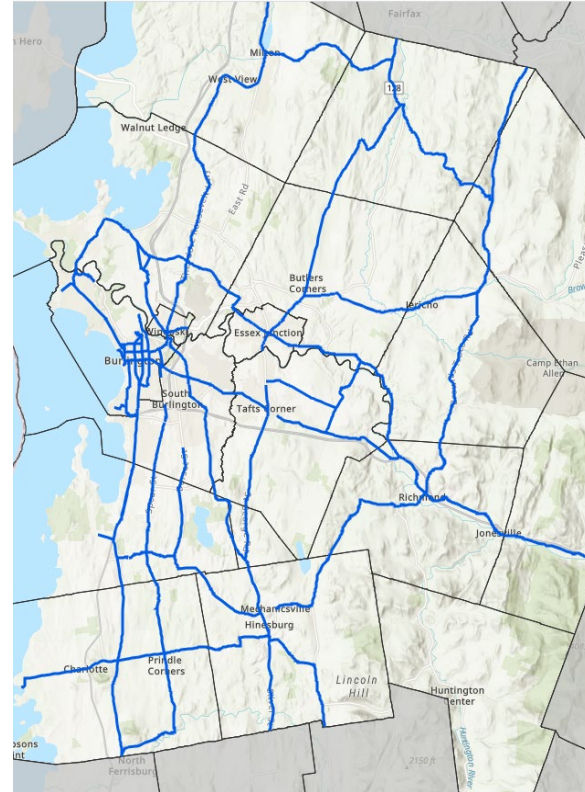
Considerations

- Strategies are modeled at a *planning-level* of analysis (as opposed to *detailed project-level*)
 - Effectiveness of strategies, as well as other impacts such as equity implications, will be affected by program design, implementation, and other local contextual factors
- Greenhouse gas impact estimates help provide “order-of-magnitude” range, but subject to various uncertainties
- Will provide opportunity for questions after all strategies are presented

Bicycle and Pedestrian Network



- Buildout of proposed Bicycle Facilities from Chittenden County Active Transportation Plan – roughly ***doubles*** the amount of bicycle infrastructure in the county + additional bicycle facility buildout statewide
- 150 directional miles of new bicycle lanes and shared use paths *and*
- 150 directional miles of widened shoulders to facilitate bicycle travel in rural areas
- Increased sidewalk coverage across the state
- Half of buildout completed by 2030



Transit: Service Expansion



- **Green Mountain Transit Bus Service:**
Increase from 20 to 15-minute frequencies (30% VRM increase)
- **Rural Fixed-Route Bus Service:**
expansion to include weekend service (34% VRM increase)
- Goal to implement additional service before 2030



Micromobility



- State subsidies for e-bike purchase
- Over \$1 million annual fund dedicated to incentivize e-bike adoption
- Program would subsidize 50% of the purchase price of a standard e-bike, and could cover up to 1,500 bikes per year



Micromobility refers to the emerging group of small, low-speed vehicles such as e-bikes and e-scooters which offer transportation alternatives in various settings

Land Use



- Concentrate future population growth in lower VMT-per capita regions
- Modeled effects of turnover of existing housing stock (~4% each decade or ~1,300 housing units per year), where newer housing exhibits lower VMT (through density and/or mixed-use policy)



Broadband Expansion



- **Completion of the VT Rural Broadband Expansion by 2030**
- The delivery of fast and reliable internet to rural areas may help expand telework feasibility for select professions, as well as teletravel for non-work purposes (school, health, etc.)



Travel Demand Management



- Expand funding for Vermont's travel demand management program "GO! Vermont" which helps facilitate travel in non-SOV (single occupancy vehicle) modes



Transit: Vehicle Electrification



- Electrification of all registered transit agencies in the state of Vermont – reaching **100 percent electrification by 2050**



Results Check-In

- Emissions reductions associated with investment and incentive strategies close ***less than 5%*** of the gap by 2030

Strategy	CO2 Emission (2030 metric tons)	Percent of Gap Closed (2030)
TDM	90	0.0%
Bicycle and Pedestrian Network	260	0.1%
Transit: Service Expansion	670	0.1%
Micromobility	1,600	0.4%
Transit: Vehicle Electrification	3,900	0.9%
Telework	6,100	1.3%
Land Use	6,500	1.4%
Total	19,100	4.2%
2030 Gap	450,000	

Additional Standards and Policies

- Modeled investments and incentives are insufficient to close the gap in emissions between project emissions and Vermont transportation emissions target
- Look to other standards and policies to work towards meeting state climate requirements
 - Advanced Clean Fleets rule
 - Feebates
 - Clean Transportation Standard
 - Regional cap-and-invest program

Advanced Clean Fleets



- Medium and heavy-duty zero-emissions fleet regulation which accelerates the adoption of zero-emission trucks
- Includes updates to Advanced Clean Trucks to deliver even more EV Trucks to consumers



Feebates



- Incentive policy that encourages the adoption of more fuel-efficient vehicles
- Vehicles with lower fuel efficiency receive a **surcharge**
- Vehicles with higher fuel efficiency receive a **rebate**
- Policy can be designed to be revenue neutral



Results Check-In

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Telework	6,100	1.3%
Land Use	6,500	1.4%
Feebates	19,800	4.4%
Advanced Clean Fleets	34,600	7.7%
Total	73,400	16.3%
2030 Gap	450,000	

Clean Transportation Standard



- Market-based policy that is designed to decrease the carbon intensity (CI) of transportation fuels
- Considers CI from a lifecycle perspective
- Active programs in CA, OR, WA, BC
 - Reduce CI 20% by 2030 - 2034



Cap-and-Invest



- Cap-and-invest program would aim to establish an emissions “cap” – the state would raise revenue from the auction of emissions “allowances” and reinvest revenue towards carbon reduction strategies
 - Active programs in CA, WA, Quebec
 - Program undergoing adoption in NY
- Key questions and considerations:
 - Transportation-sector only or economy-wide?
 - Partner with neighboring states to create a regional program?
 - Design program in way that mitigates burdens to disadvantaged populations

Co-benefit cost-effectiveness

Strategy	Air Quality	Mobility	Health
TDM	++	+++	++
Bicycle and Pedestrian Network	++	+++	+++
Transit: Service Expansion		+++	+
Micromobility	++	+++	++
Transit: Vehicle Electrification	+++		++
Telework	+++		
Land Use	++		+++
Advanced Clean Fleets	+++		++
Feebates			
Clean Transportation Standard	+++		
Cap-and-Invest	+++	+++	+++

Draft

Recommendations

Strategy Recommendations

(1)

- Expand **transportation capital program investment and services** as described in the draft analysis, as feasible consistent with available funding
 - **Bicycle and pedestrian** facility expansion & improvements statewide
 - **Transit** service expansion (frequency, hours, coverage)
 - **E-bike** subsidies
 - Expanded funding for **GO! Vermont**
 - **Transit vehicle electrification**

Strategy Recommendations

(2)

- Expand programs and incentives to encourage **compact land use and teletravel**
 - **Downtown and Village Center** tax credits & sales tax reallocations
 - Smart Growth **zoning incentives** and technical support
 - Completion of the **VT Rural Broadband** Expansion by 2030

Strategy Recommendations

(3)

- Support maximum conversion of Vermont's vehicle fleet to **zero-emission vehicles**
 - a. Build out **public charging infrastructure** network to serve entire state, in a timeframe to support anticipated EV market penetration
 - b. Leverage existing federal and state funding and new funding to provide **incentives** for electric cars and trucks and private charging infrastructure

Strategy Recommendations

(4)

- Undertake a process with public and stakeholder involvement to **further evaluate the feasibility to develop and implement additional programs** that could further close the remaining gap between projected and required emissions levels while also potentially providing a funding source for additional investments as described in other strategies and ensuring equitable outcomes that benefit all Vermonters
 - **Advanced Clean Fleets** regulation to further accelerate zero-emission trucks
 - Vehicle **feebate** program to encourage purchase of more fuel-efficient and zero-emission vehicles
 - **Clean Transportation Standard** for fuels
 - **Cap-and-invest program** – a multi-sector program linked or coordinated with other state programs

Implementation Responsibilities

	Agency of Transportation	Other State Agencies	Legislature & Governor	Municipalities & RPCs
Transportation investments & services	✓			
Land use & teletravel		✓	✓	✓
Zero-emission vehicles	✓	✓	✓	✓
Additional programs		✓	✓	



Let's hear from you!





Question and Answer



Thank You!



ONLINE SURVEY - LIVE UNTIL AUGUST 4

<https://vtrans.vermont.gov/form/carbon-reduction-strategy>

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