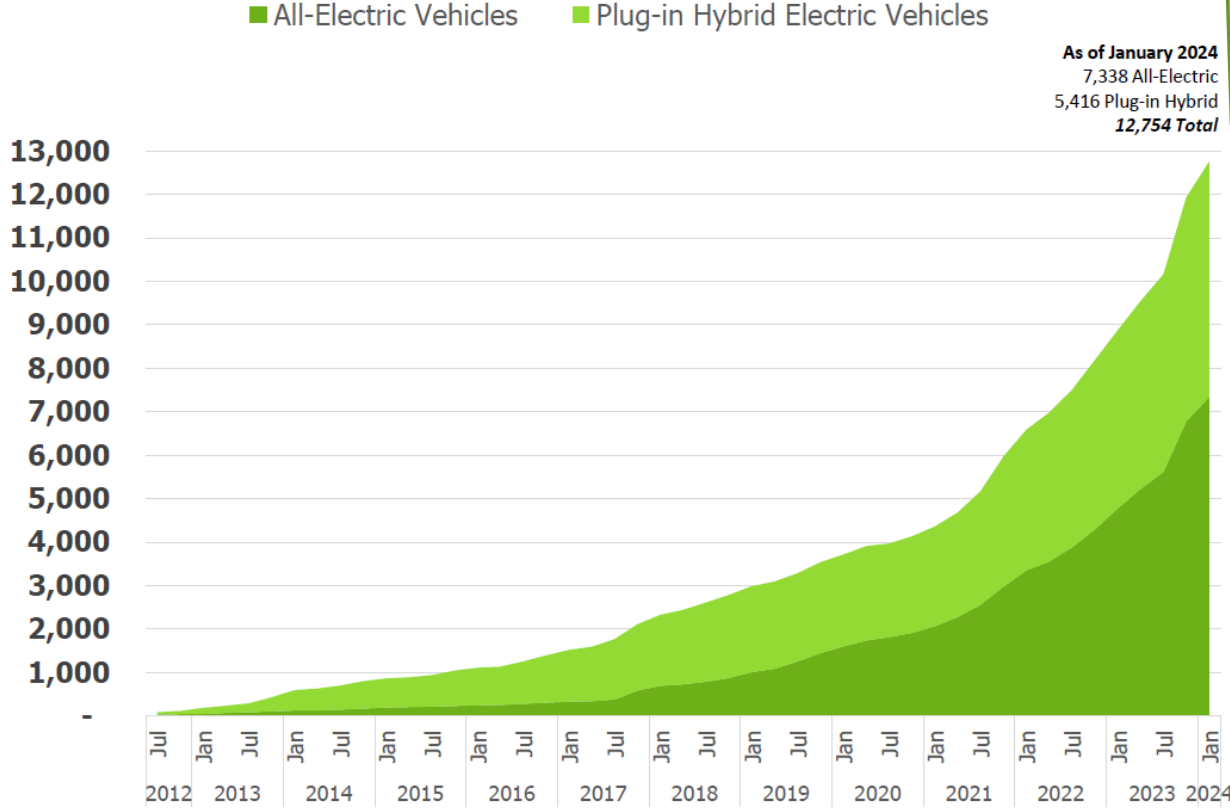

Road Usage Charges for Electric Vehicles

SENATE TRANSPORTATION COMMITTEE, FEBRUARY 14, 2023

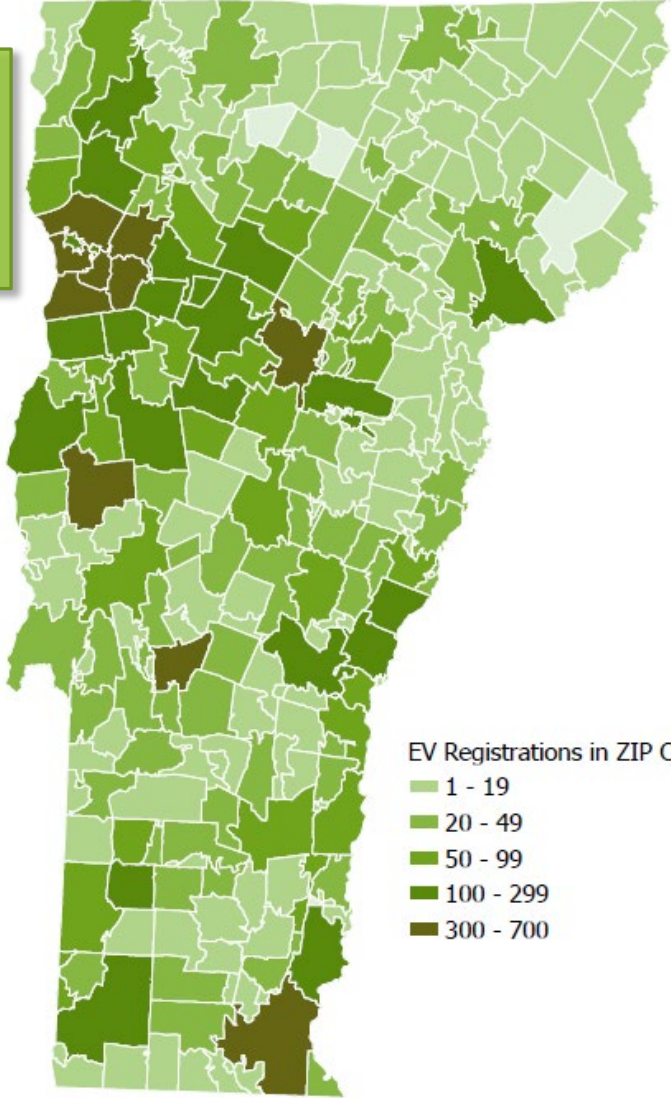
PATRICK Ó. MURPHY, SUSTAINABILITY + INNOVATIONS PROJECT MANAGER, AOT

EV Adoption in Vermont

Vermont Electric Vehicle Registrations

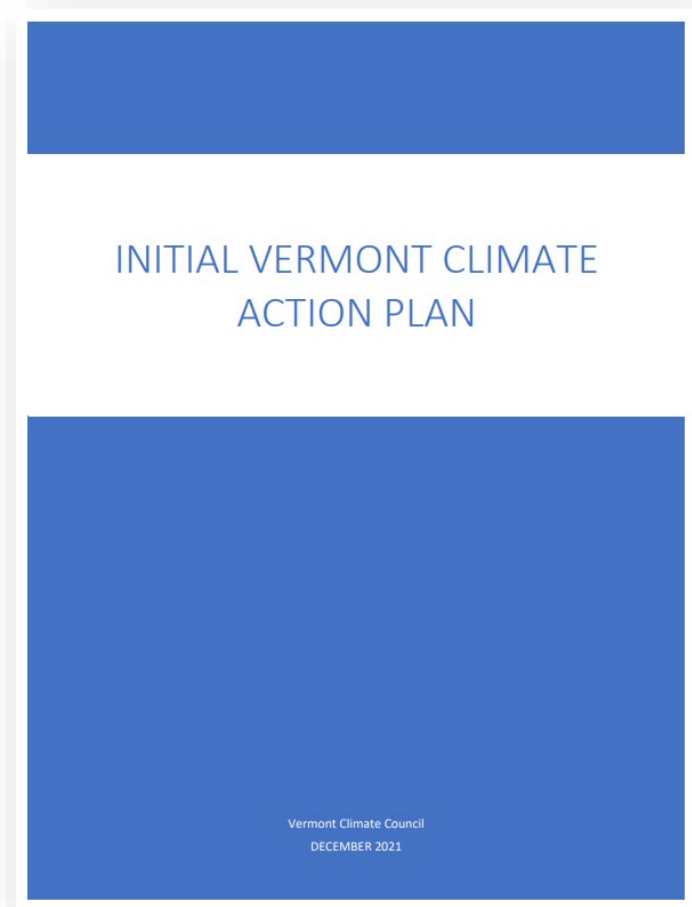
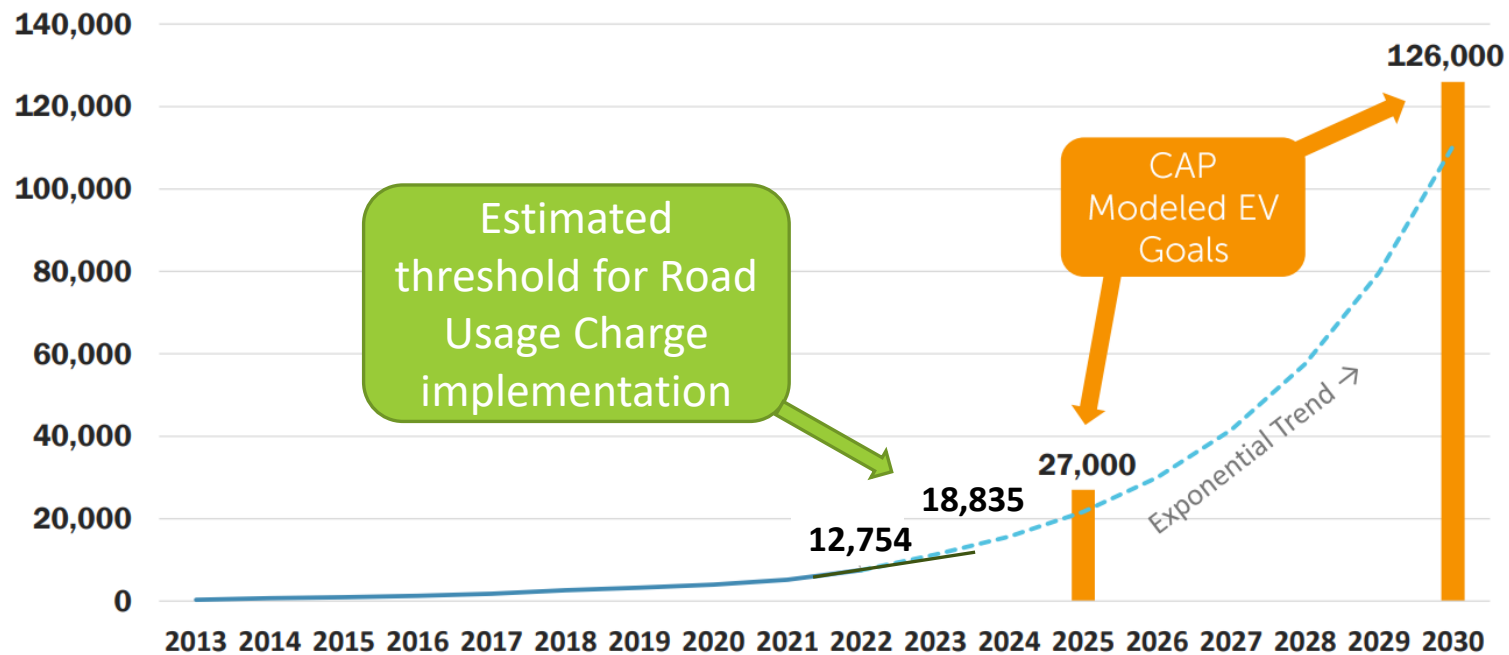


12,754 ZEVs:
 5,416 PHEVs
 7,338 AEVs



EV Adoption in Vermont

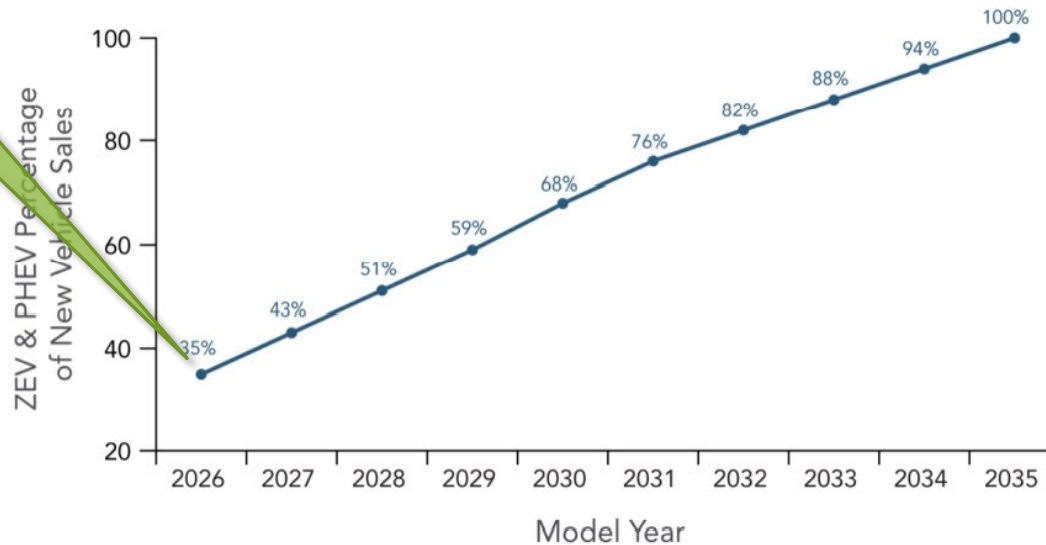
How many vehicles does Vermont need to electrify?



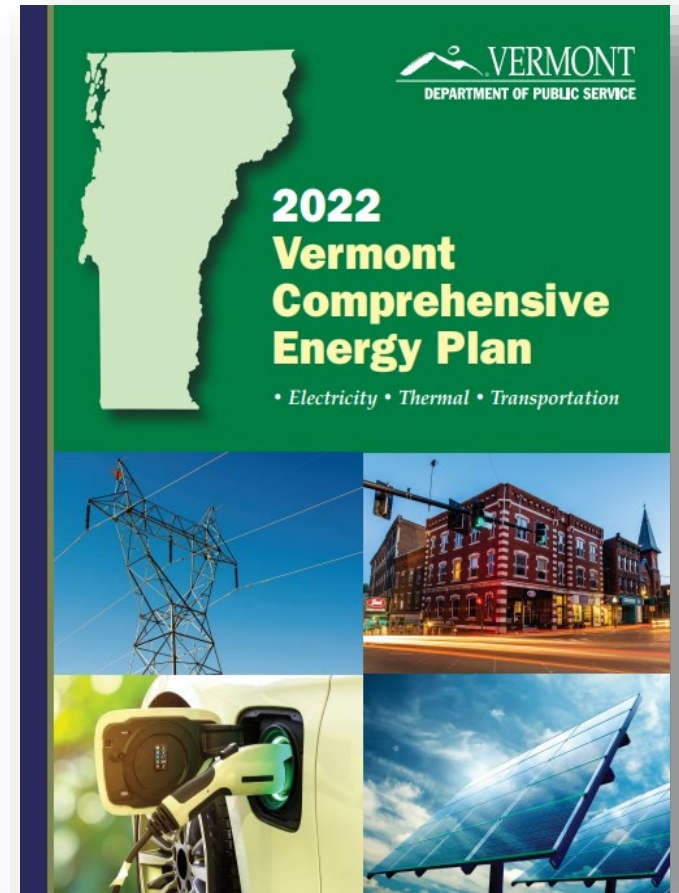
EV Adoption in Vermont

Vermont's Low and Zero Vehicle Regulation

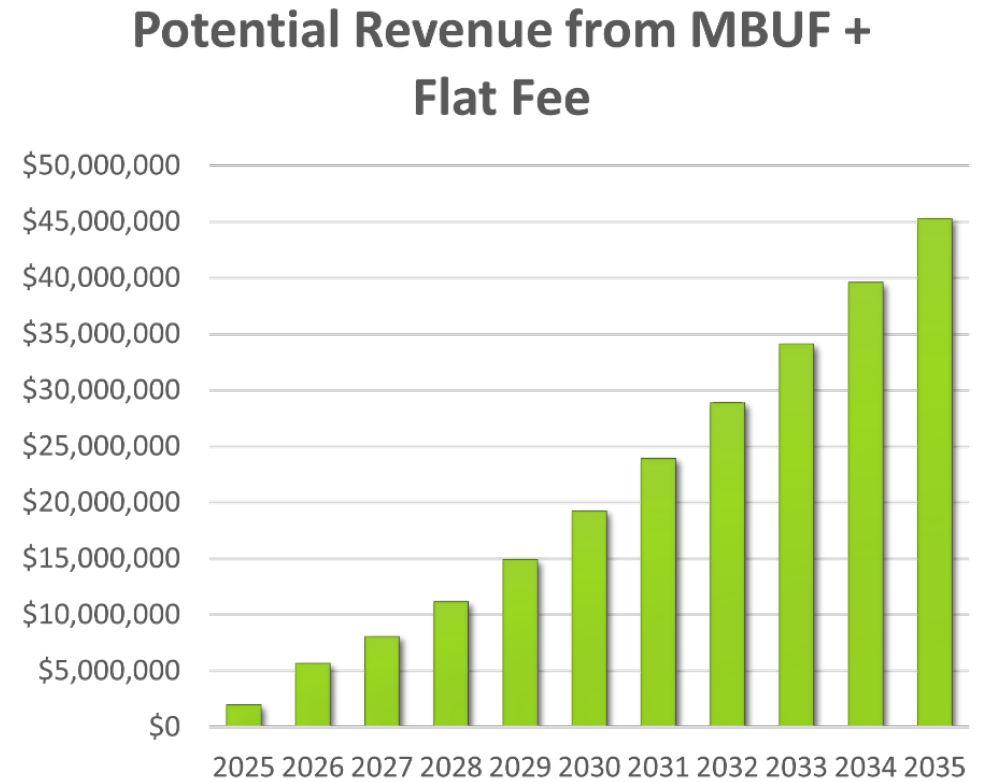
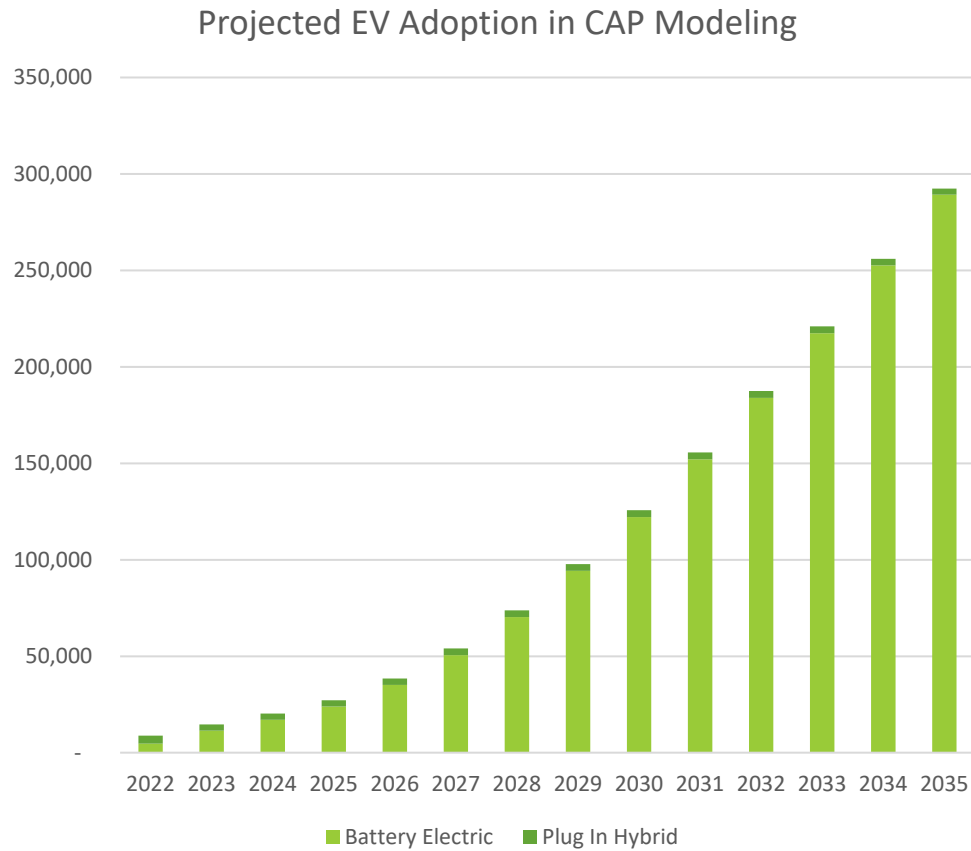
The new regulation accelerates requirements that automakers deliver an increasing number of zero-emission light-duty vehicles each year beginning in model year 2026. Sales of new ZEVs and PHEVs will start with 35% that year, build to 68% in 2030, and reach 100% in 2035.



35% of new vehicle sales by 2026

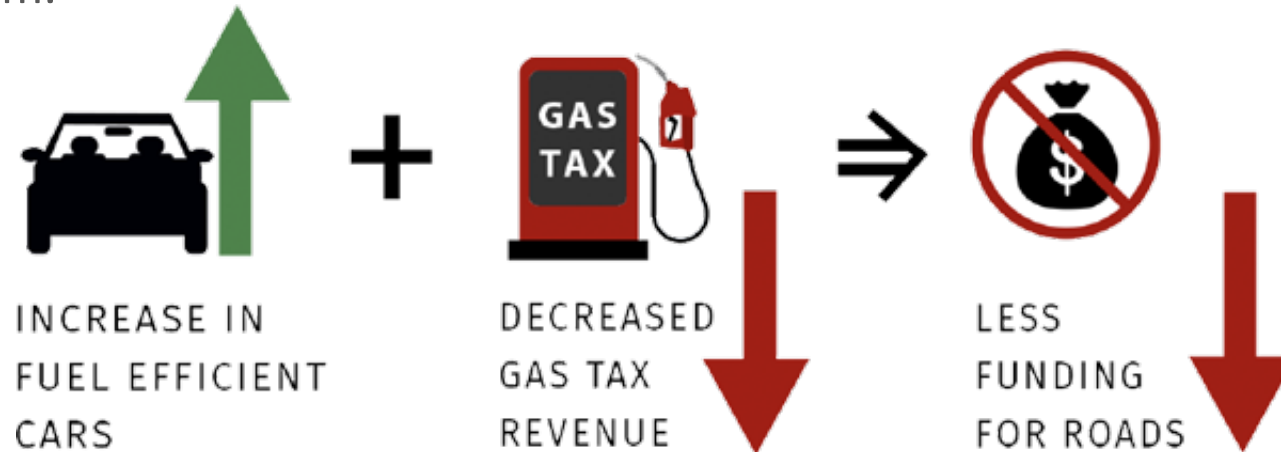


Climate Action Plan Modeling and MBUF Projections



What is a road usage charge?

A **road usage charge** is a fee on vehicle use of the public road system.



Examples:

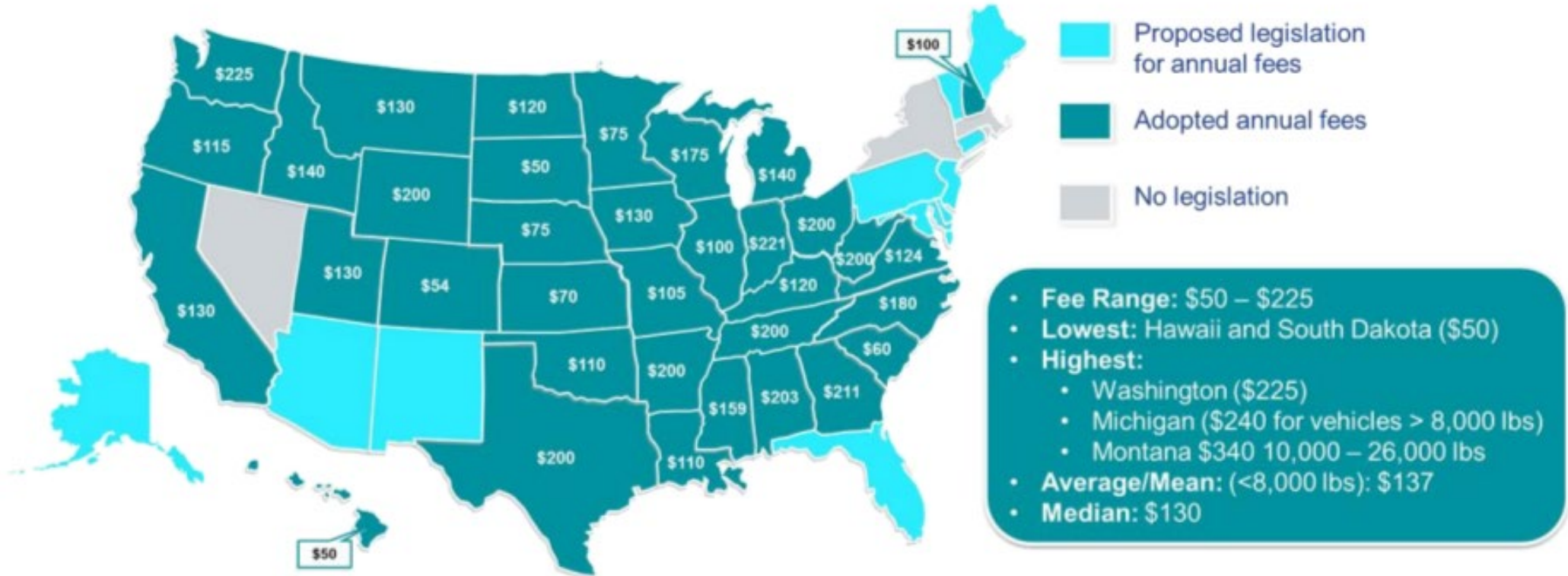
Chicago Congestion

- A mileage-based user fee (MBUF)
- An annual flat fee
- A per kilowatt hour fee

Basis of MBUF: A roadway consumption tax, with distance, stated in miles, as the measure of consumption.

An **annual flat fee** is collected at vehicle registration.

Where are annual flat fees happening in US?



Source: [Special Fees on Plug-In Hybrid and Electric Vehicles \(ncscc.org\)](https://www.ncscc.org) cross referenced with State DMV websites

Figure ES-4: Light EV Fees in January 2024 (rounded to nearest dollar)

Where are per kWh fees happening in US?

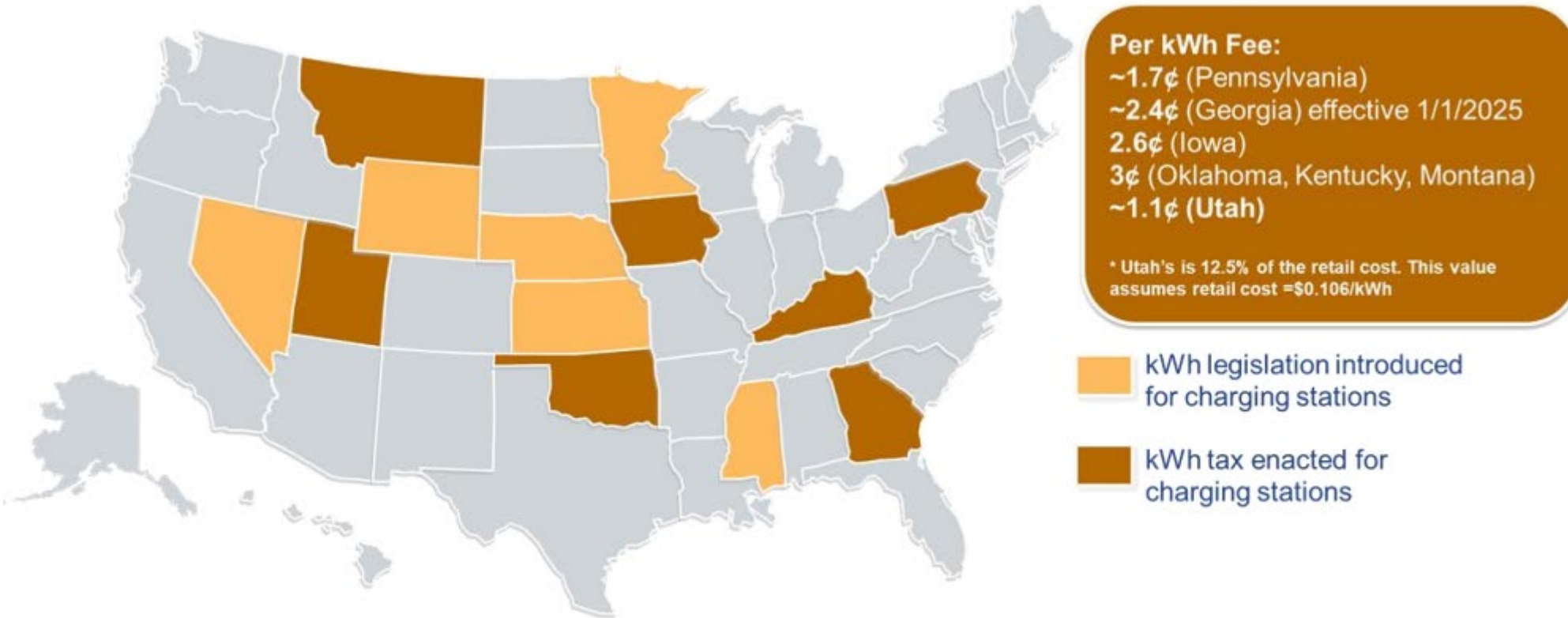


Figure ES-5: Kilowatt-Hour Tax in January 2024

Where are mileage-based user fees happening in US?

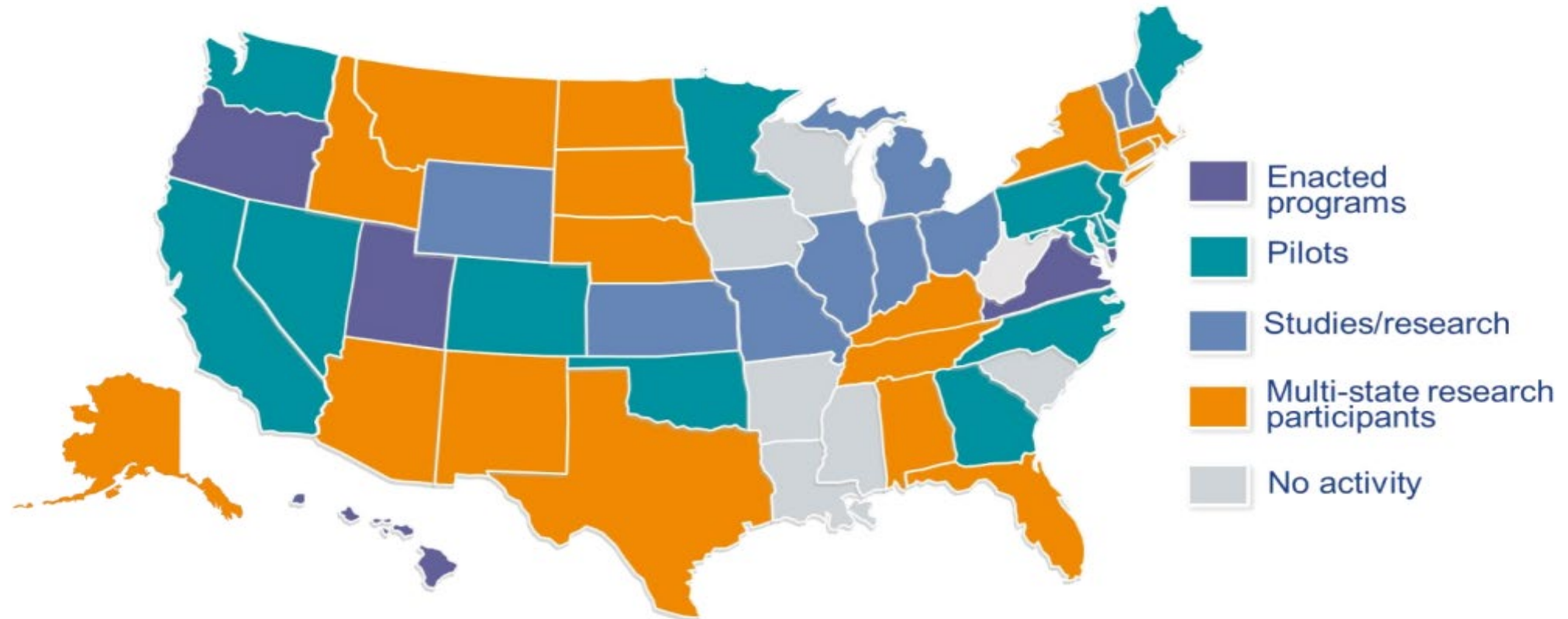


Figure 2-1: January 2024 MBUF Landscape

2024 Compendium of Revenue Alternatives
[The Eastern Transportation Coalition](#)

Road Usage Charge Study

Road Usage Charge Advisory Committee and subcommittees convened stakeholders several times in Fall 2021 to consider impacts of a variety of policy scenarios and alignment with shared goals:

- Vermont needs to develop long-term, sustainable revenue to maintain our roads and bridges
- Future funding must be fair where all drivers contribute to the maintenance of the road network
- Any funding policy must be aligned with Vermont's Climate Action Plan



Road Usage Charge Study – Recommendation

Road Usage Charge Study Advisory Committee recommended in its final report a mileage-based user fee for plug-in electric vehicles:

- Best opportunity to align sustainable transportation revenue and climate goals
- Cost-effectively utilizes existing inspection process with odometer reading
- Flexible payment options/frequencies
- Fairness: drivers only pay for what they use
- Avoids privacy concerns of reporting devices
- Federal money can be leveraged to assist with implementation



Equity Impacts of Road Usage Charges

University of Vermont Transportation Research Center study investigated the geographic and demographic impacts of move to a mileage-based user fee (MBUF):

- Most Vermont households would see minimal difference from gas tax burden to mileage-based user fee
- Rural and lower-income households would be least impacted, while urban and higher-income households would see greater increases
- MBUF would be more progressive than gas tax, and much more so than a high flat fee, supporting the findings of prior studies but with a much more robust data set

[A Data Driven Analysis of Rural Equity and Cost Concerns for Mileage-Based User Fees in Vermont \(uvm.edu\)](https://scholarworks.uvm.edu/trc) (2022)

University of Vermont
UVM ScholarWorks

University of Vermont Transportation Research Center Research Centers and Institutes


2022

A Data Driven Analysis of Rural Equity and Cost Concerns for Mileage-Based User Fees in Vermont

Clare Nelson
The University of Vermont, clare.nelson@uvm.edu

Gregory Rowangould
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Mileage-based User Fee vs. Cost of Ownership

Estimated annual savings

The annual cost comparison shown below is based on the above cost and efficiency information combined with estimated annual vehicle use of 12,000 miles per year.

Gasoline Vehicle: \$1,795 a year



Electric Vehicle: \$830 a year



EV savings over 5 years

Savings add up! The following cost and savings estimates are based on the information provided above multiplied over 5 years. Think of all the things you could do with potential savings like this!

Gasoline Vehicle: \$8,975 over 5 years



Electric Vehicle: \$4,148 over 5 years



\$965

Switch to electric and save big on fuel. Estimated annual savings.

\$4,827

Switch to an EV and your 5 year savings could look like this.

Estimated Annual MBUF payment

\$214

(\$97)

federal taxes avoided

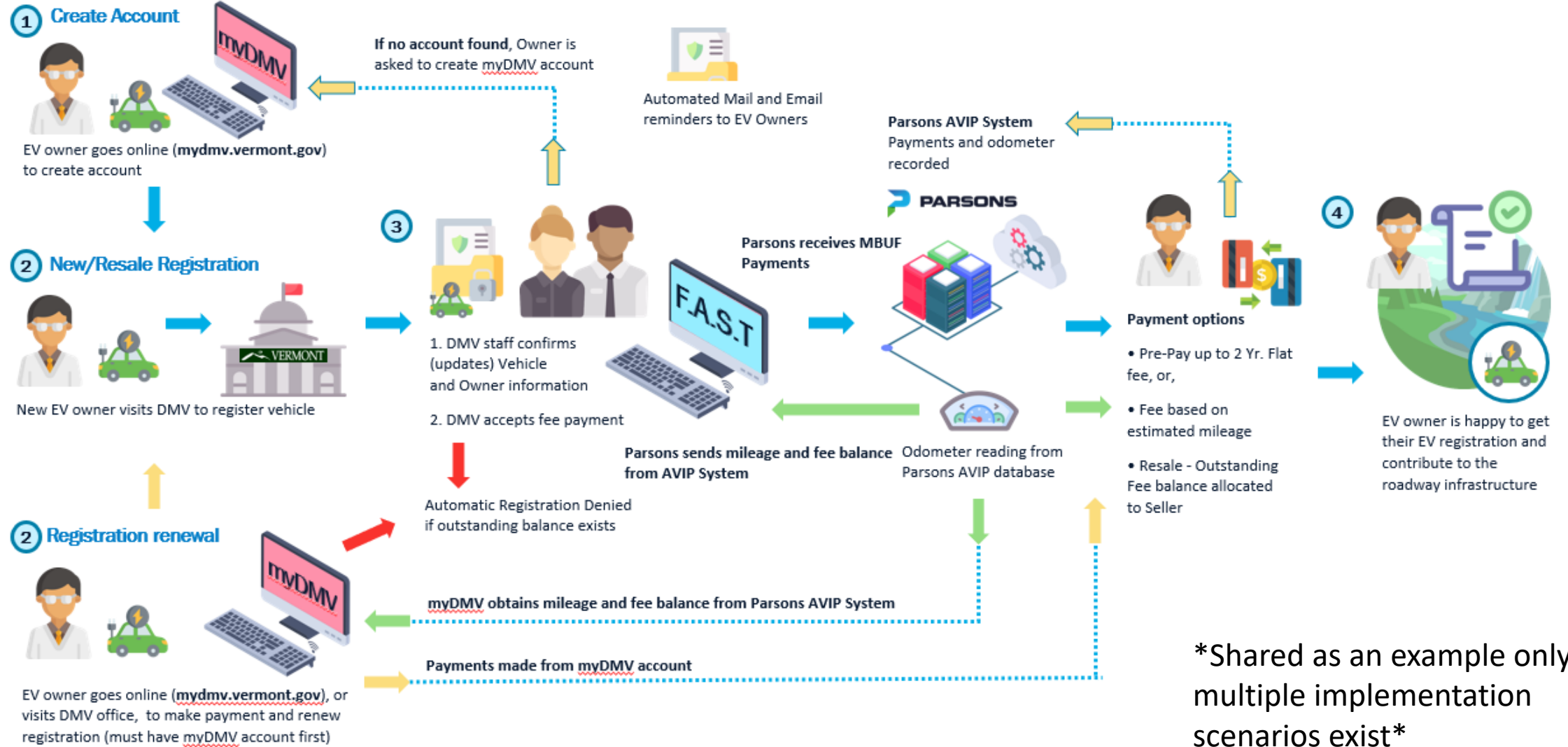
Fees designed to achieve net-revenue parity with *state* gas tax for fossil-fueled vehicles

\$1070

(\$485)

federal taxes avoided

POTENTIAL SYSTEM WORKFLOW



Shared as an example only; multiple implementation scenarios exist

Rate-Setting Considerations

How to achieve revenue-neutrality while avoiding the erosion of road usage charge revenue:

- Incorporate the cost of administering the mileage-based user fee, so that net revenues are equivalent?
- Address the ongoing erosion of revenue by pointing backwards in time to when the Legislature last adjusted fuel taxes to meet transportation needs. What was the fuel economy of the fleet at that point?
- Allow for adjustments over time to deal with inflationary pressures on transportation and construction costs?

Fiscal Year	Number of Registered AEVs (Thousands)	MBUF Revenue (Millions)
2026	24	\$5.1
2027	35	\$7.5
2028	50	\$10.7
2029	70	\$15.0
2030	94	\$20.1

Compliance

Early compliance through significant education and outreach to EV owners/lessees

Enforcing payment of an MBUF can rely on the same or similar procedures as other vehicles, with an emphasis on the subject vehicles versus the owners/drivers

- **Currently preferred enforcement approach is to apply a registration hold** to enforce reporting and payment of MBUF (and enrollment, if necessary), until MBUF is assessed and paid during annual (or bi-annual) vehicle registration renewal. This is consistent with existing practice for other registration fees.
- **If the odometer reading is unavailable, the preferred approach is to assess a flat fee at registration/time of sale set at the 98th percentile of annual miles driven.** This percentile can be determined based on the odometer readings reported by compliant vehicles

Strategic Innovation for Revenue Collection (SRIC)

Authorized by IJA:

To test the design, acceptance, equity, and implementation of user-based alternative revenue mechanisms, including among—

- (i) differing income groups; and
- (ii) rural and urban drivers, as applicable.

FEDERAL SHARE.—The Federal share of the cost of a pilot project carried out under this section may not exceed **80 percent** of the total cost of a project carried out by an eligible entity that has not otherwise received a grant



Project & Federal Grant Timeline



*USDOT announcement of Federal SIRC grantees varies from cycle to cycle. January 2024 may be an optimistic date

Project & Federal Grant Timeline



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Contact

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