



Financing Roads in Oregon

User Fees & Mile Charges

Federation of Tax Administrators (FTA)

Revenue Estimating Conference

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Oregon Legislative Revenue Office

October 19, 2021

How Should Roads Be Financed?

- Equity
 - Principle: users should pay in proportion to the costs they impose.
 - Users (different classes)
 - Costs
 - Planned expenditures for construction, ... , operation; or
 - Damage to the system (marginal cost)
 - Congestion costs. Pollution costs.
- Economic Neutrality (no winners and losers)
- Cost Efficient (efficient building, the right facilities)
- Economic Efficiency (highest utilization of resources)

Principles of Oregon Highway Finance (System)

- Public Finance (Government owned) system
- Financed through taxes and fees, Simulating Road user fee.
- Revenue are constitutionally restricted to be only used for constructing, improving, and maintaining roads.
- Road users (weight classes) are required constitutionally to pay in proportion to the costs for which they are responsible.

constitutional dedication

Oregon Road User Taxation

Oregon uses a four- instrument structure of road user fees

1. fuel tax
 - Gasoline 36 cents/Gallon as of 1/1/2020
 - Use-fuel: Diesel, CNG and other (equivalent)
2. weight-mile tax
 - Table A and B
 - Flat fees
 - Road Use Assessment Fees
3. vehicle registration fee
 - Light
 - Heavy
4. Title fees
 - Other
 - Light
5. Operation ?? (Drivers)

Oregon Road User Taxation instruments (Fixed Element)

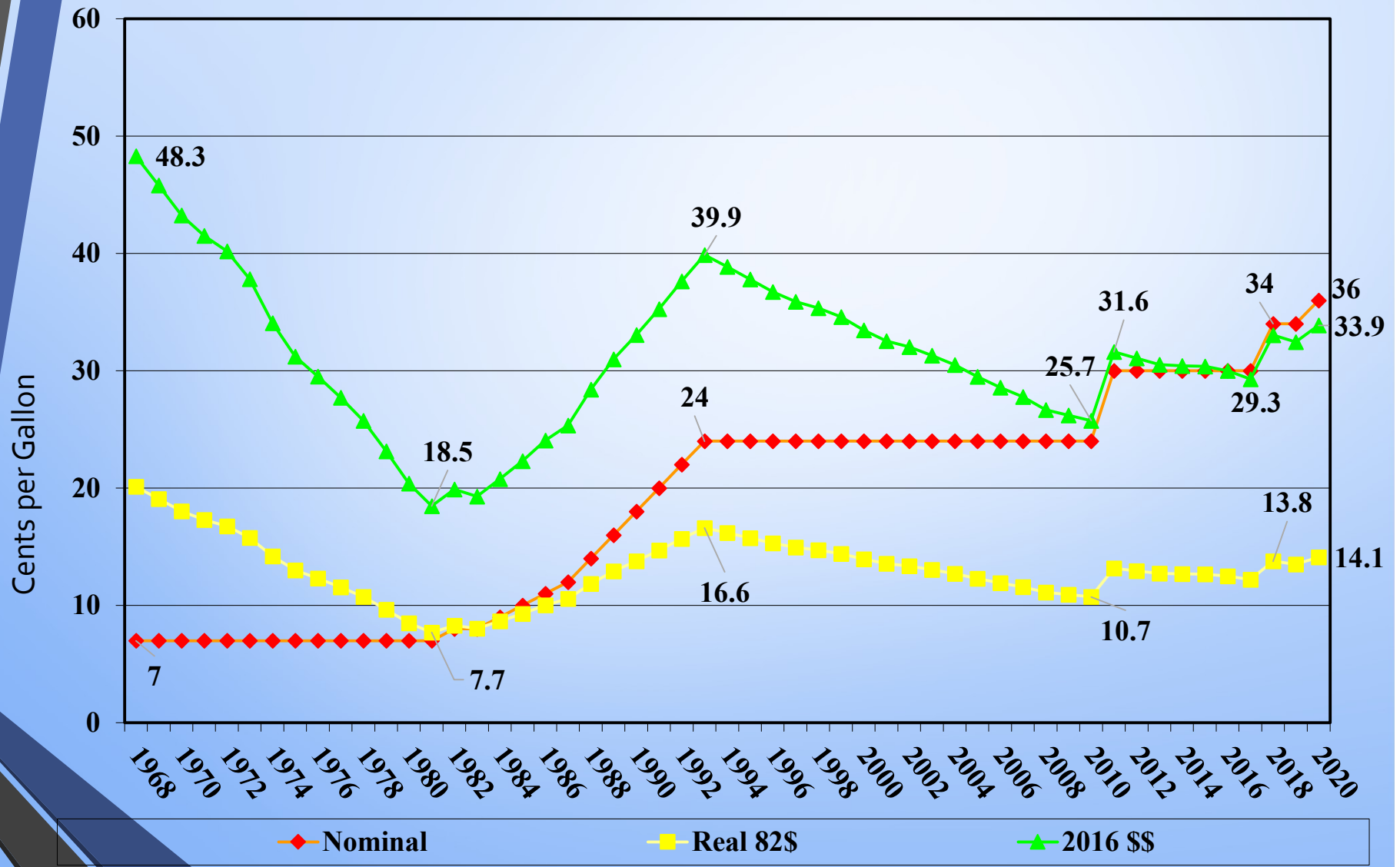
- vehicle registration fee
 - pays for fixed and non direct use-related costs
 - Fees for cars and other light vehicles weighing 10,000 pounds or less (\$112) 1st increase in HB 2017, then tiered by MPG
 - Continues to be relatively low compared to other states.
 - Fees for heavy vehicles (above 10,000 lb) based on Gross weight (2000 lb increments) from \$344 to \$1295 no increase in HB 2017
 - New County Reg. Fee \$19/Y (\$38/BN) (Multnomah)
- Title Fees: the **new** fixed cost component.
 - \$55 light, \$90 Heavy
 - \$77 light, \$27 salvage and duplicate Titles for light
 - Add (\$16) in 2018 by HB 2017 then tiered by MPG starting 2020

Oregon Road User Taxation instruments (Variable)

Fuel Taxes

- Gasoline (any fuel the chief use of which is for)
 - Propulsion of Motor Vehicle (36¢ since 1/1/2020)
 - Local Gas Taxes
 - Counties (Mult, Wash)
 - Cities (24)
- Diesel, CNG, & etc (Use fuel) . Used to
 - Propel a Motor Vehicle (36¢ after 1/1/2020)
- Fuel not used to propel. Refund or other funds.
 - Aviation, ATV, Snowmobile, or operating (lawnmower) fund.

Motor Vehicle Fuel Tax Rates



Oregon Road User Taxation instruments

(Variable by weight and distance since 1947)

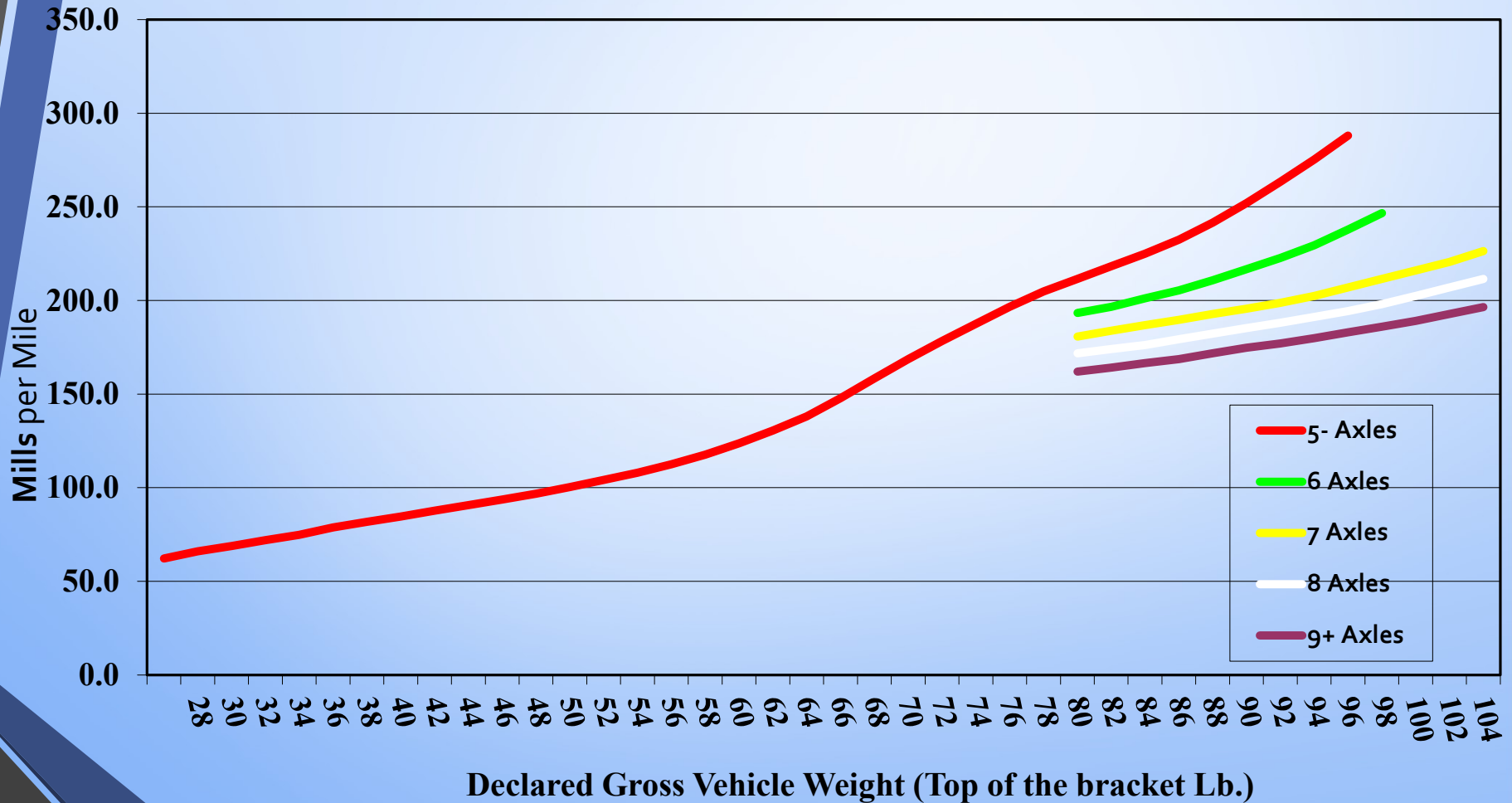
Weight-Mile Taxes

until 2020

- **Table A: 26,000 to 80,000 Pounds**
 - Graduated Based on Weight
 - 6.23¢ per Mile @ 26 to 28,000 Pounds
 - 20.48¢ per Mile @ 78 to 80,000 Pounds
- **Table B: 80,000 to 105,500 Pounds**
 - Graduated based on Weight and Axles
- **In Lieu (Flat Fees)**
 - Log, Sand & Gravel, and Chip Trucks
- **Road Use Assessment Fee (RUAUF)**

Weight-Mile Tax Rates

Adjusted for Current Law changes (HB 2017) until 2020



In Lieu Taxes (Less Variable)

Reflecting HB 2017 rates

- Flat Fees
 - Log Trucks \$9.10 per Hundred pounds of declared weight
 - Farm Trucks \$7.50 per Hundred pounds of declared weight
 - Dump Trucks \$9.10 per Hundred pounds of declared weight
 - Chip Trucks \$36.80 per Hundred pounds of declared weight
- Road Use Assessment Fee
 - 8.5¢ per ESAL* Mile

equivalent single-axle load” means the relationship between actual or requested weight and an 18,000 pound single-axle load as determined by the American Association of State Highway and Transportation Officials Road Tests reported at the Proceedings Conference of 1962. (ORS 818.225)

Oregon Constitution

second level (Connection) system Design

- (Tools) Revenue dedicated to construction, ..., operation of road systems
 - Any tax levied on motor vehicle fuel,
 - Any charge for ownership or operation of motor vehicles.
- (System) State Imposed User Fee Structure
 - Vehicle classes pay in proportion to costs incurred on their behalf.

(HCAS) Highway Cost Allocation Study

- Highway Cost Allocation Study
 - Cost responsibility study to determine a fair share that each class of road users should pay for the maintenance, operation, and improvement of the state's highway system
 - The HCAS establishes "fair share". It does not establish the tax system or tools to accomplish this goal.
 - Recent studies have been asked to recommend rate changes
- Oregon has conducted studies in 1937, 1947, 1963, 1974, 1980, 1986, 1990, 1992, 1994, 1999, 2001, 2003, 2005, 2007, 2009, 2011, 2013, 2015, 2017, 2019 and 2021.
- All studies prior to 1999 were conducted by ODOT
- In early 1999, the study was transferred to the Department of Administrative Services (DAS), Office of Economic Analysis (State Economist) . Done by consultants

Basic Approach of Study

- Allocate projected expenditures (responsibilities) to vehicle classes.
- Attribute projected revenues (tax payments) to vehicle classes.
- Calculate equity ratio (= revenues/expenditures allocated) for each class or group of vehicles:
 - Ratio <1 : Underpayment
 - Ratio $=1$: Class pays its "fair share"
 - Ratio >1 : Overpayment
 - Current 1.0076 Heavy, and 0.9865 light

HB 2017 of the 2017 session

Transportation Package

Revenue Review

Innovative Transportation Package raise \$700 million per year (\$500 highway)

Some traditional, some innovative, and some new taxes

Increases Commonly considered in packages:

- State **gas tax** (motor fuel and use fuel)
 - 30¢ per gallon goes to 40¢
 - **Reg Fees:** \$13 in addition to the current \$43 January 1/2018 to December 31st/2019 (\$56)
 - **Title Fees:** Adds a surcharge of \$16 to the current title fee of \$77 / \$90 for heavy vehicles. on January 1 / 2018 to December 31st, 2019 (\$93)

Vehicle Fees Innovative registration

On January 1/2020 a new way of treating Vehicle fees that is based on MPG rating (tiered).

Alternative for flat registration fee - Tiered based on fuel-economy

- Then change the recovery (**registration**) fee in alignment to use (responsibility) of the road (sec 32-37)
 - The fee is variable and based on MPG rating starting on January 1/2020
 - 0-19 MPG, \$18
 - 20-39 MPG, \$23
 - Over 40 MPG, \$33
 - Electric vehicles, \$110 unless the owner has registered the vehicle in the OReGO program.
 - The variable MPG fee is increased on January 1/2022
 - 0-19 MPG, \$20
 - 20-39 MPG, \$25
 - Over 40 MPG, \$35
 - Electric vehicles, \$115 unless the owner has registered the vehicle in the OReGO program.

Vehicle Fees Innovative Titles

On January 1/2020 a new way of treating Vehicle fees that is based on MPG rating (tiered).

Electric vehicle Title fee. tiered structure based on fuel-economy

- Alternative – adopt a higher Title fee for electric vehicles

- change the Fixed Cost **Title** (buy in) fee in alignment to (potential) use of the road
 - The fee is variable (tiered) and based on MPG rating starting on January 1/2020
 - 0-19 MPG, \$21
 - 20-39 MPG, \$26
 - Over 40 MPG, \$36
 - Electric vehicles, \$110
 - The variable MPG **Title** surcharge is increased on January 1/2022
 - 0-19 MPG, \$24
 - 20-39 MPG, \$29
 - Over 40 MPG, \$39
 - Electric vehicles, \$115

Rest of the responsibility Picture

- OTC studies and reports on the different vehicles contributions to cost by 2023 (Electric, Hybrids, Etc.)
- Increases The weight mile and Flat fees by **53.3%** in four increments 2018, 2020, 2022, and 2024.
- Cost responsibility aligned at :
62.87% light and 37.13% heavy.

New Taxes

Administered by the Department of Revenue (DOR)

- **Privilege Tax:** A tax on dealer's sales of New vehicles in Oregon. 0.5% of retail price. Not a highway fund source, thus can be used to do other endeavors not on the highway. Dealers have the choice to show it on sales receipt. 1/1/18
 - \$12 million to the **Zero-Emission Incentive Fund** to provide rebates for the purchase of light-duty zero-emission or plug-in hybrid electric vehicles. The balance to the **Connect Oregon Fund**.
- **Use Tax:** a tax equivalent to the privilege tax on vehicles bought outside of Oregon. This is considered highway Fund revenue and goes to the Highway Fund. 1/1/18
 - Vehicle Use tax –consumers and dealers. All verified by DMV before registration and title

New Taxes

Administered by the DOR

Bicycle Excise tax: a \$15 flat fee imposed on new bicycles at the point of sale with price higher than \$200.

proceeds of the excise tax on bicycles, net of administrative and enforcement expenses go to Connect Oregon Fund for the purposes of grants for bicycle and pedestrian transportation projects.

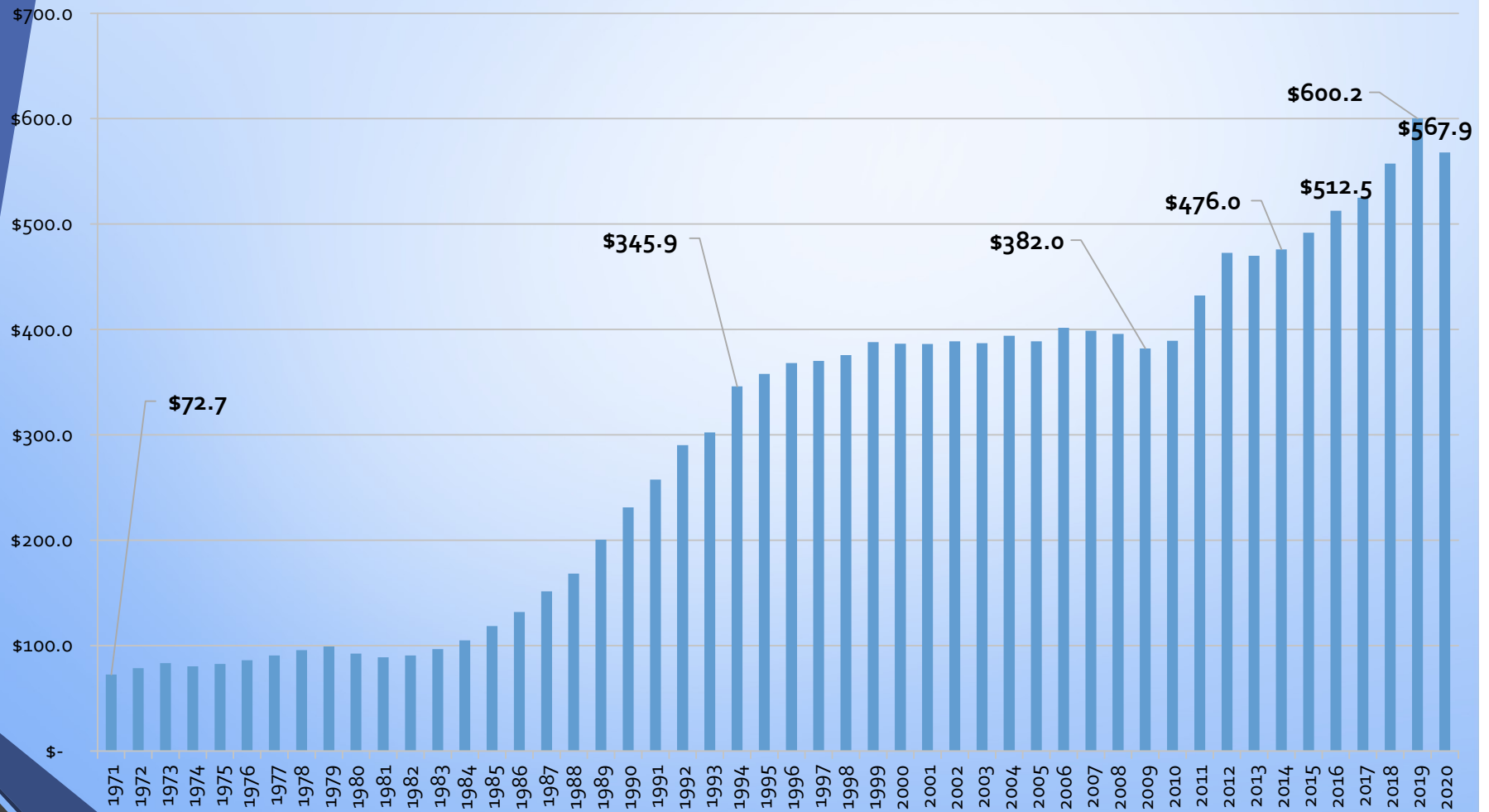
Payroll Tax: Employee paid payroll tax of 0.1% of wages earned in Oregon

Directs employers to withhold the tax and deduct it from wages. report and pay withholding to the Oregon Department of Revenue. file an annual report of the tax paid by employees with Oregon Department of Revenue. Penalizes employers for failure to withhold the tax from wages.

- **90%** to mass transit and transportation districts in proportion to the amount of tax paid, in counties where no district exists, and federally recognized tribal governments, provided no entity receives less than \$100,000.
- **5%** to Public transportation districts, counties where no district exists, and federally recognized tribal governments for competitive grants.
- **4%** for intercity public transportation service providers to improve service between communities.
- **1%** for a public transportation technical resource center to assist in rural areas.

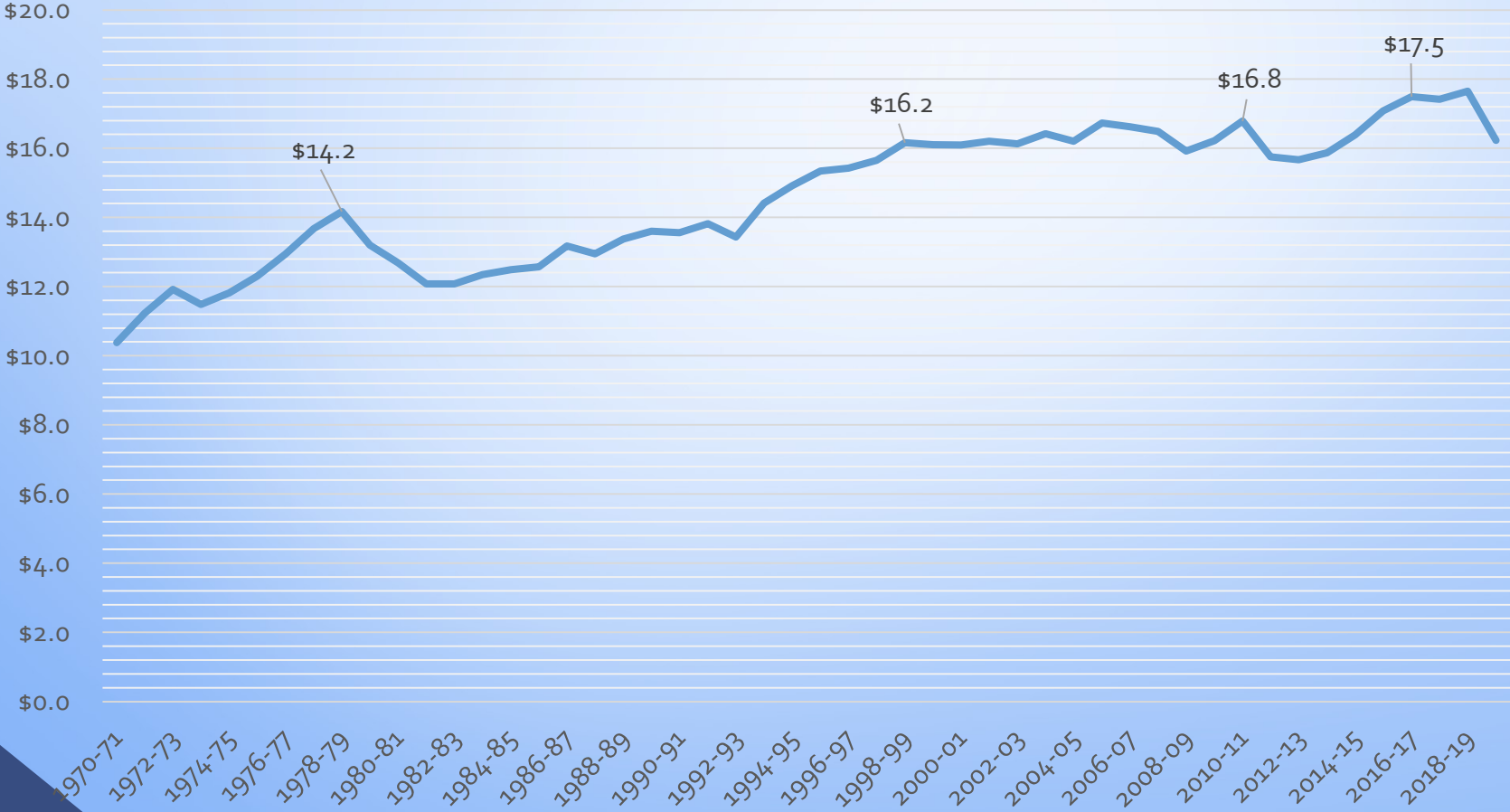
Fuel Tax Revenue (variable)

Millions of Dollars



Fuel Tax Revenue per penny

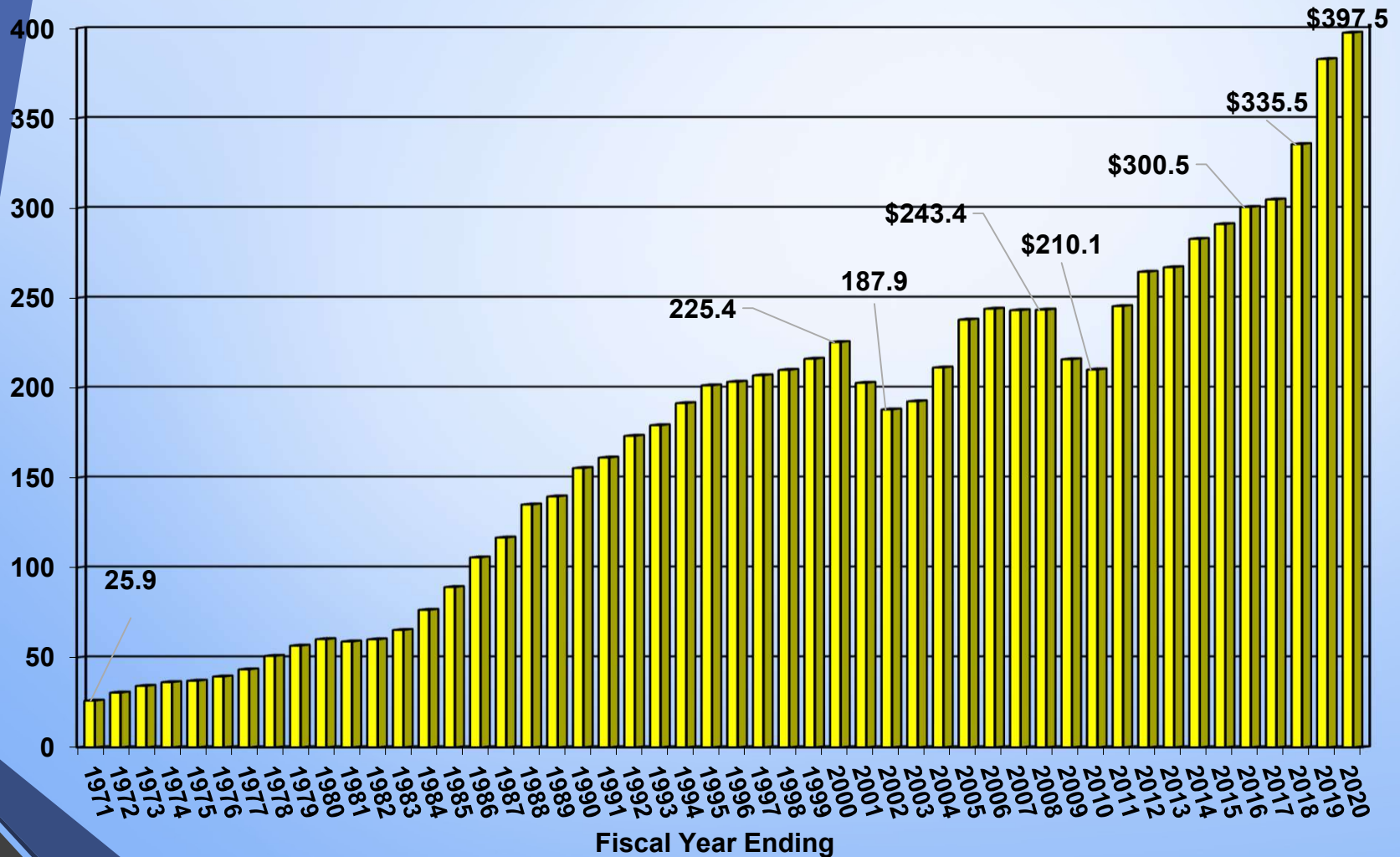
Millions of \$\$ per Penny of Tax



Weight-Mile Tax Revenue

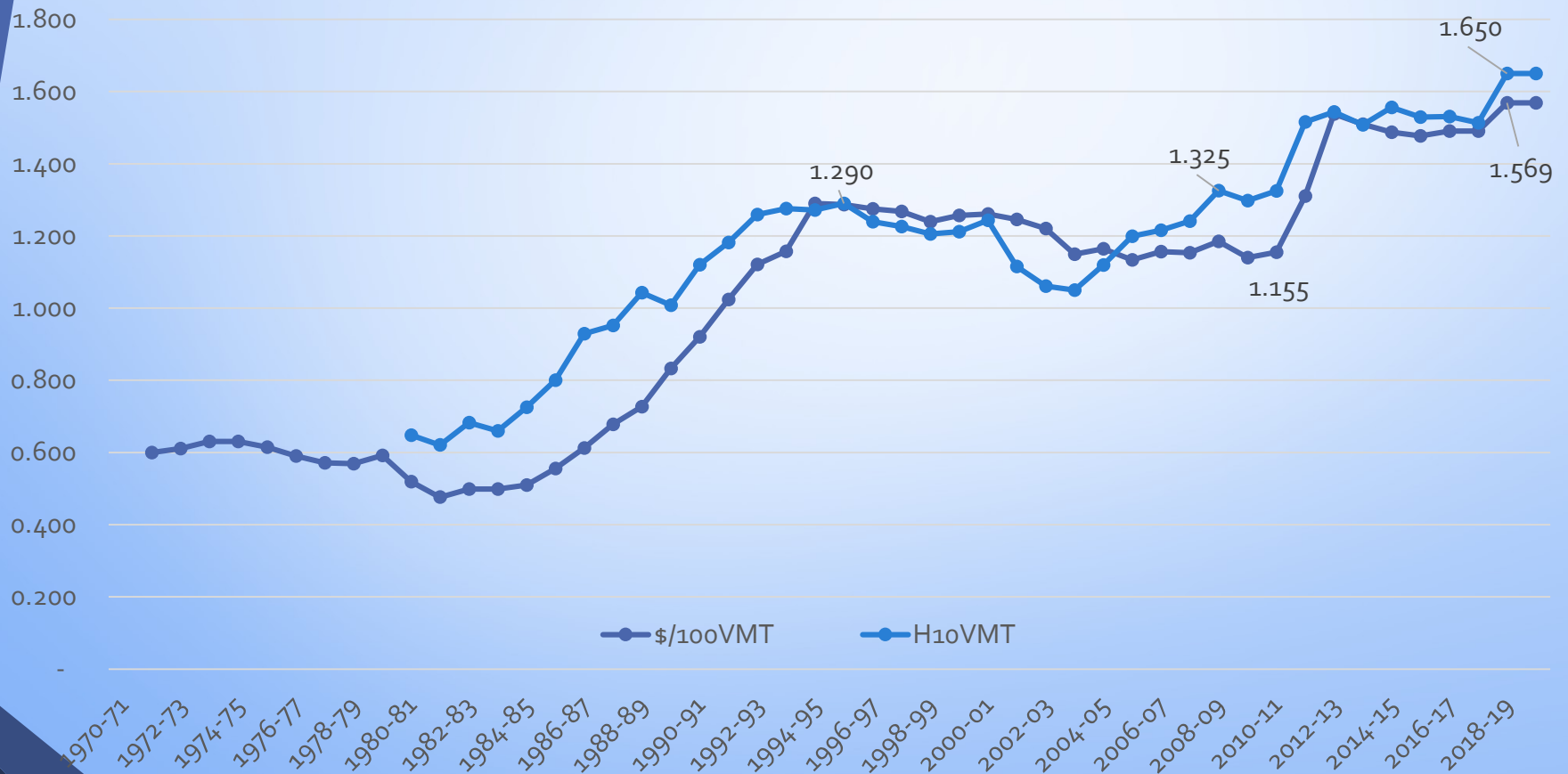
(including FF & RUAF)

Millions of Dollars



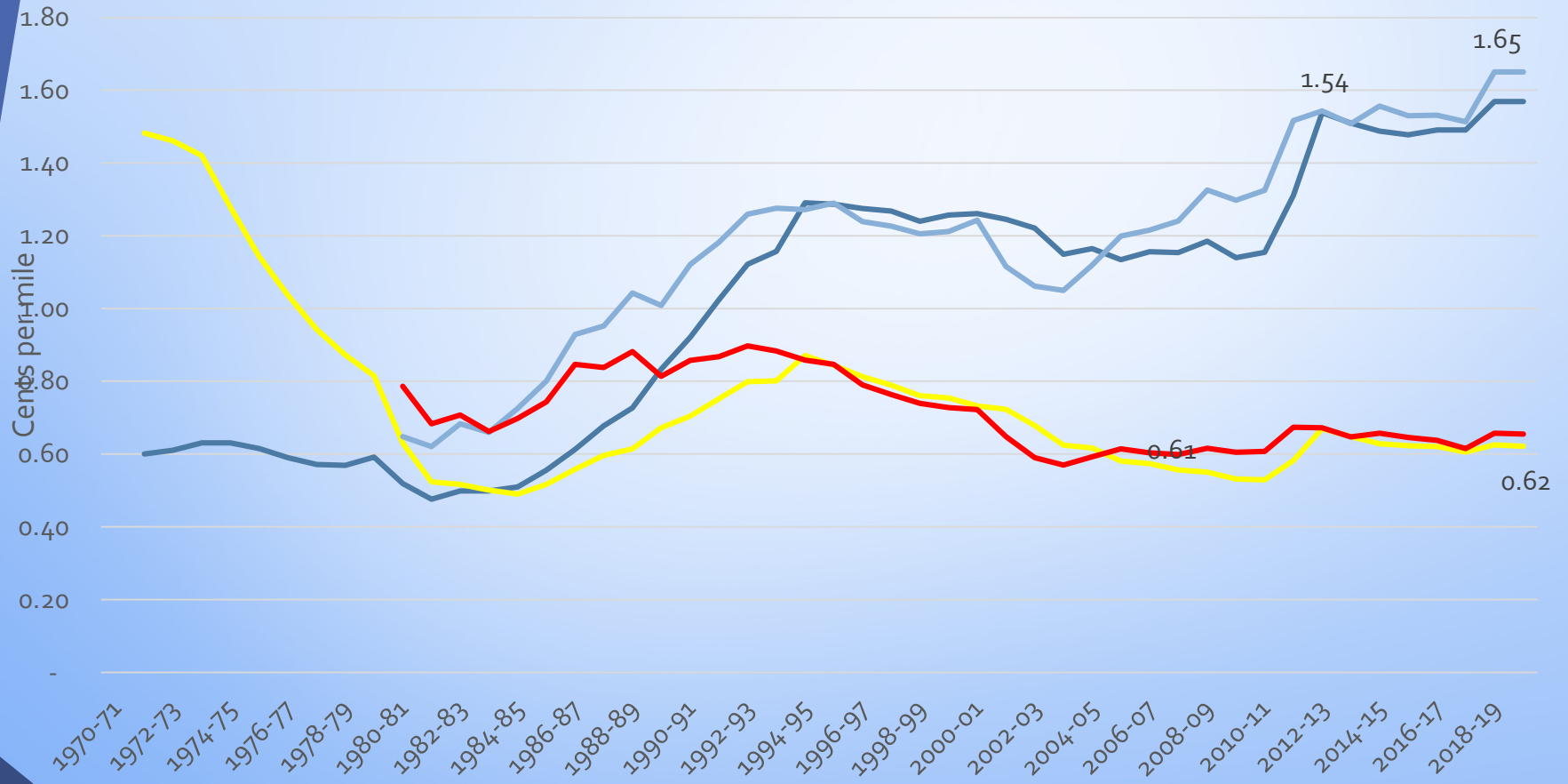
How effective is the pricing system?

Cost of 100 VMT light vs. 10 VMT Heavy



The pricing system in constant \$\$

Cost of 100 VMT light vs. 10 VMT Heavy



— \$/100VMT — \$Rel/VMT — H10VMT — Hvy Indexed

Road Use Fees

- Roadway tolling
- Fair Pricing
- Per-mile road user charges (RUC)
- Fixed and variable (congestion)
- The coming change in 10 years.
 - **Things no longer staying the same**

Oregon Started Road User Fee Task Force (RUFTF), 20 years ago in (2001)



Legislative Purpose

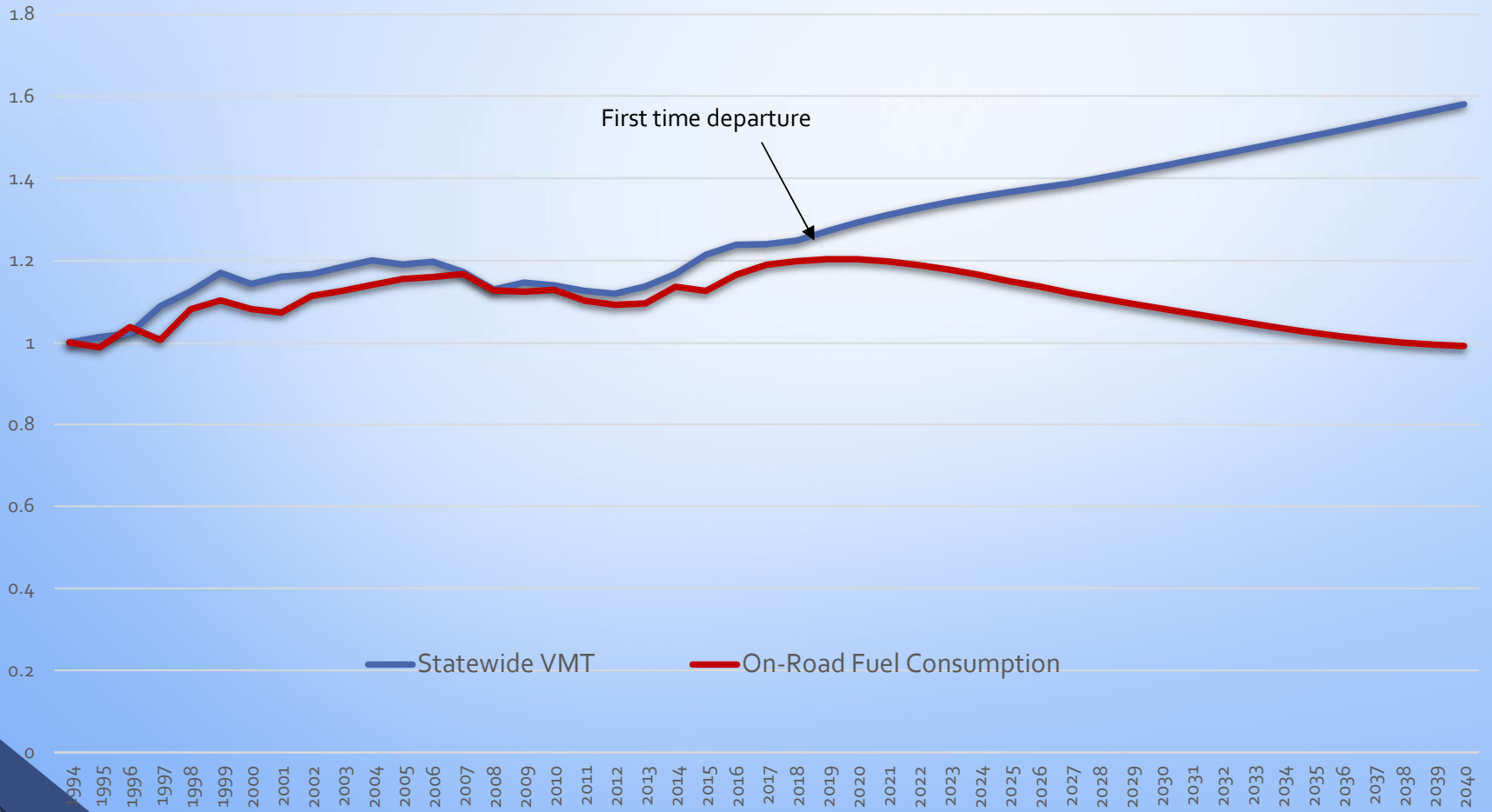
“Develop a design for revenue collection for Oregon’s roads and highways that will replace the current system for revenue collection.”

See: ORS 184.843

We already have the per mile (and weight) system for heavy trucks. So for now, we are looking for a substitute of light vehicle fuel

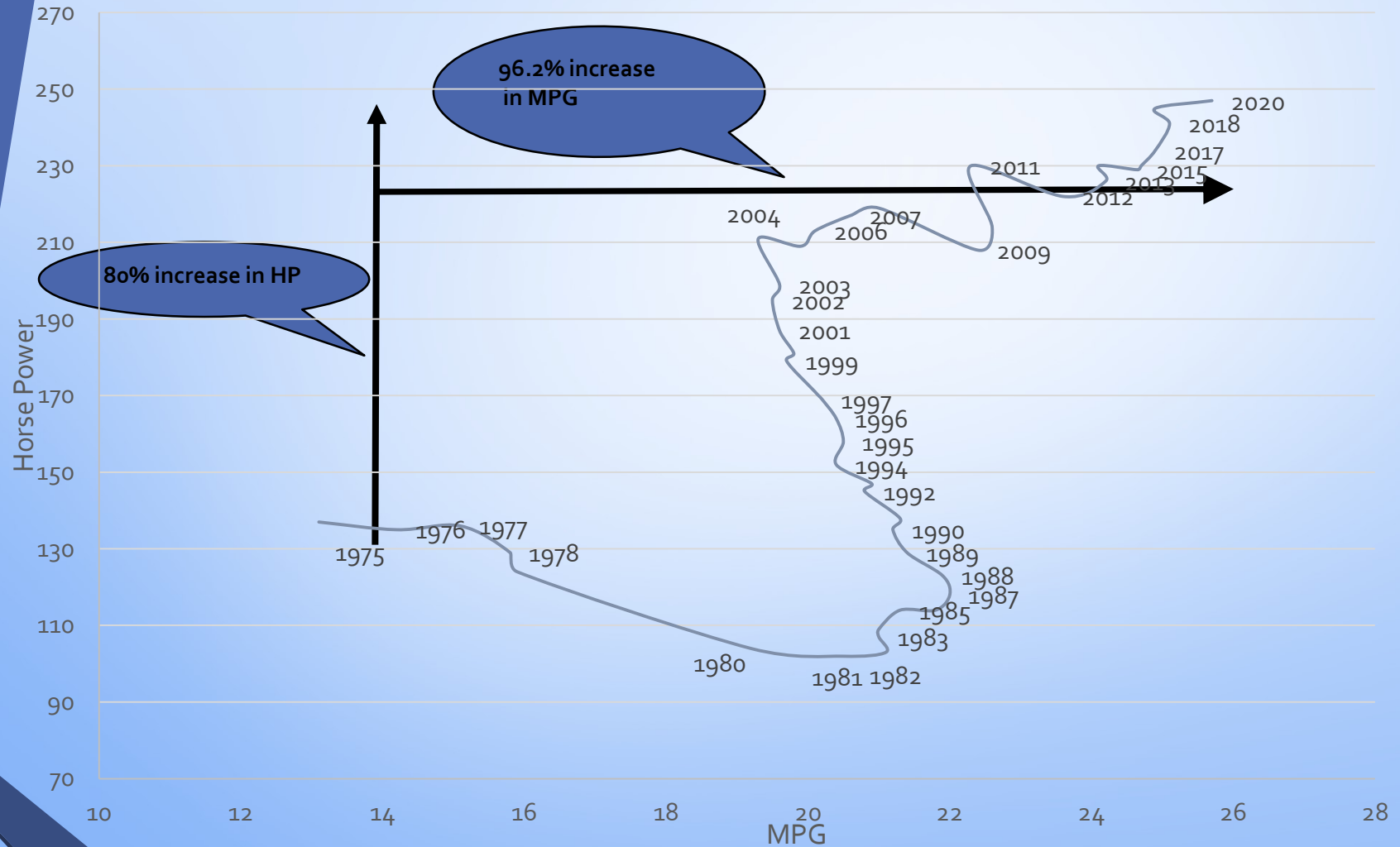
Forecasting a Departure from VMT

VMT and Fuel Consumption indexed to scale



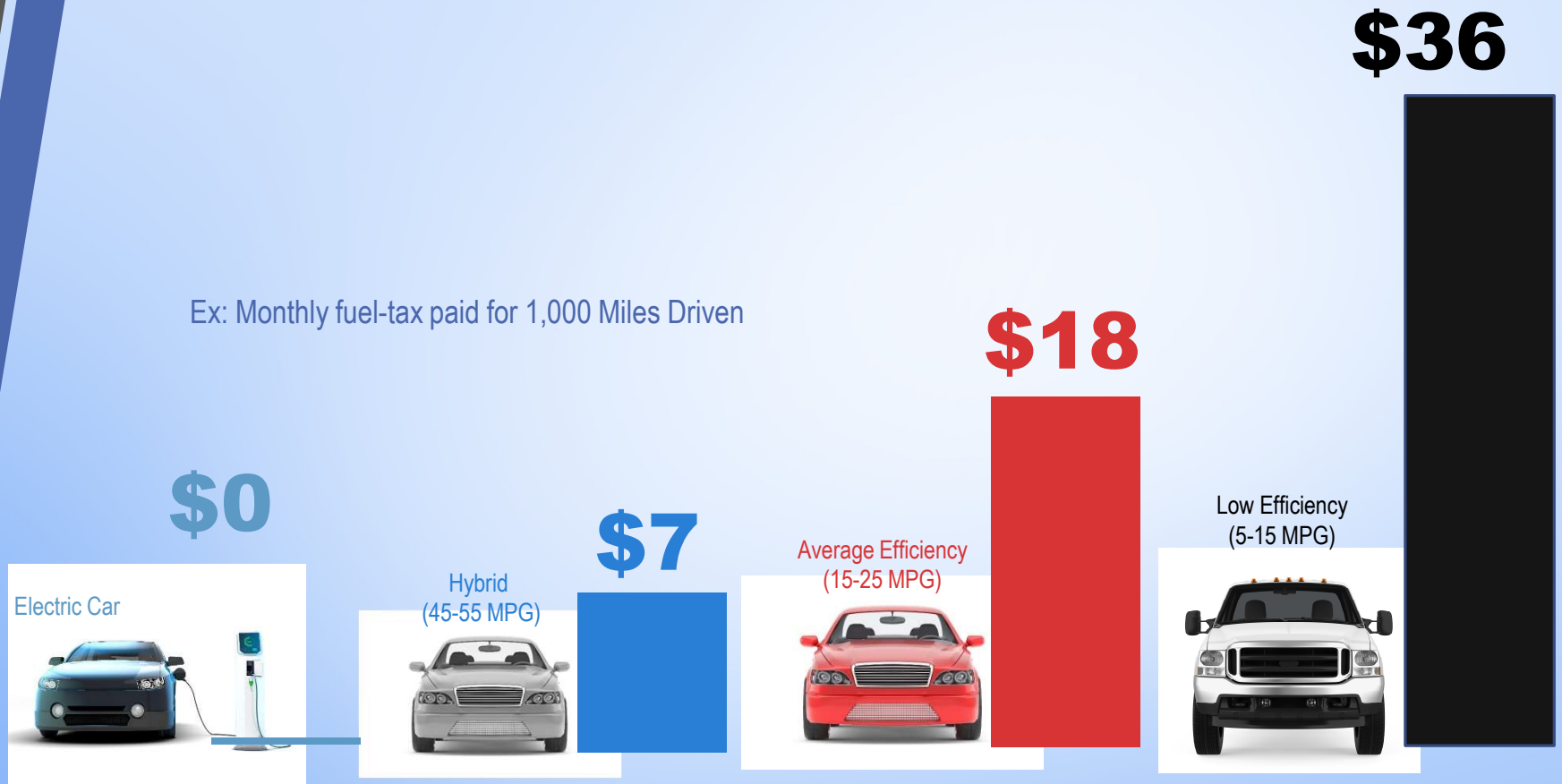
Change in MPG and Engine power

FUEL Economy and Horse Power 1975 to 2020



Fuel efficiency is increasing.

Ex: Monthly fuel-tax paid for 1,000 Miles Driven



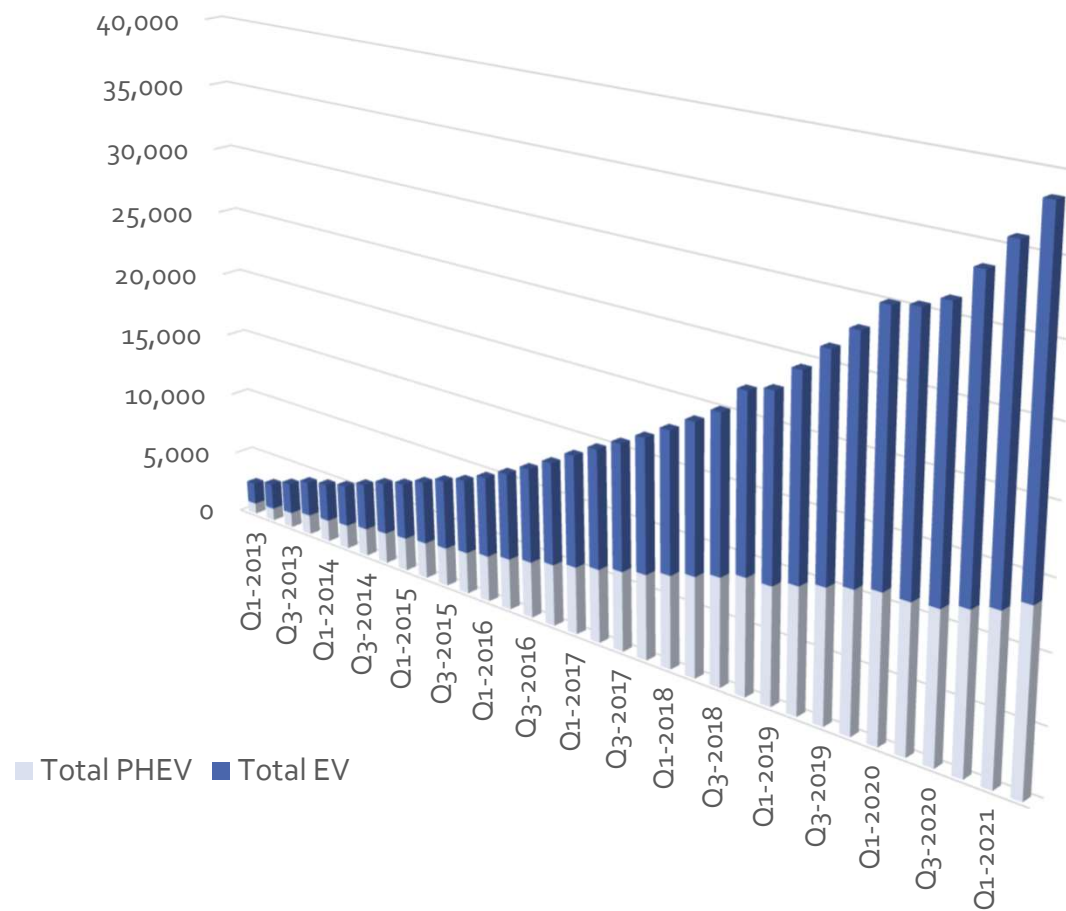
The world is changing.

The future of fuel tax-based funding might become Unsustainable.

Transportation funding needs to adapt.



Electric Vehicle Registrations in Oregon (adjusted for enter and leave the fleet)



Oregon established a voluntary program in 2015



Two pilots in 2008, and 2012.

Then a voluntary opt-in program in 2015. OReGO

In 2020 Vehicles can opt in in lieu of higher registration Fees for Higher MPG vehicles

Enhanced Registration Fees

Effective January 1, 2022, passenger vehicle registration rates.

Tiers	4-year reg	4-year reg, joins RUC
0-19 mpg	\$252	\$252
20-39 mpg	\$272	\$272
40+ mpg	\$312	\$172
Electric Vehicle	\$632	\$172

EV enrollments, are currently about 48% of the enrolled vehicles. People seem to prefer the road usage charge over the registration surcharge.

Our transportation funding system needs to modernize.



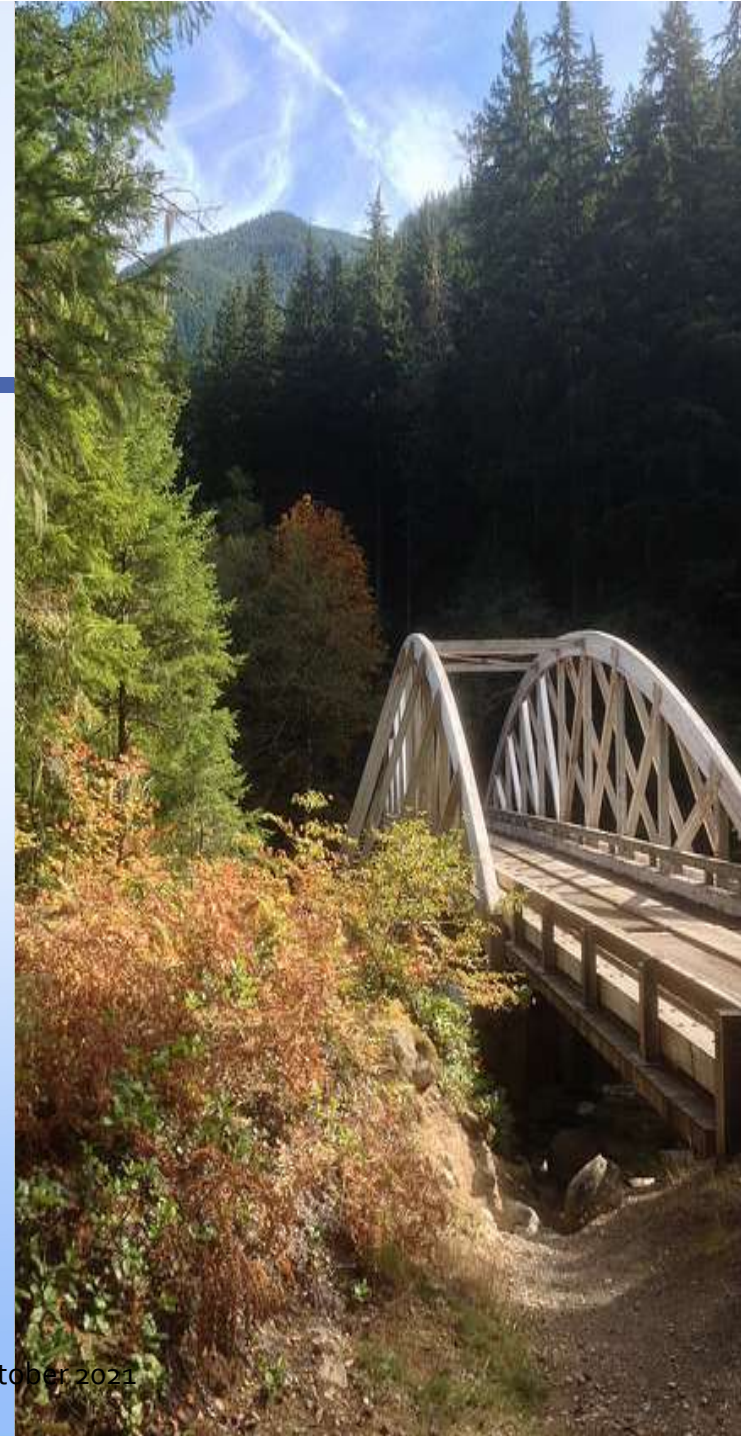
Road usage charge (RUC) & other funding methods

Road Usage Charge is:

- A base rate that all users pay (\$0.018 going to \$0.020/mile)
- Not variable by time of day
- Applicable to the entire system

The future of road usage charge:

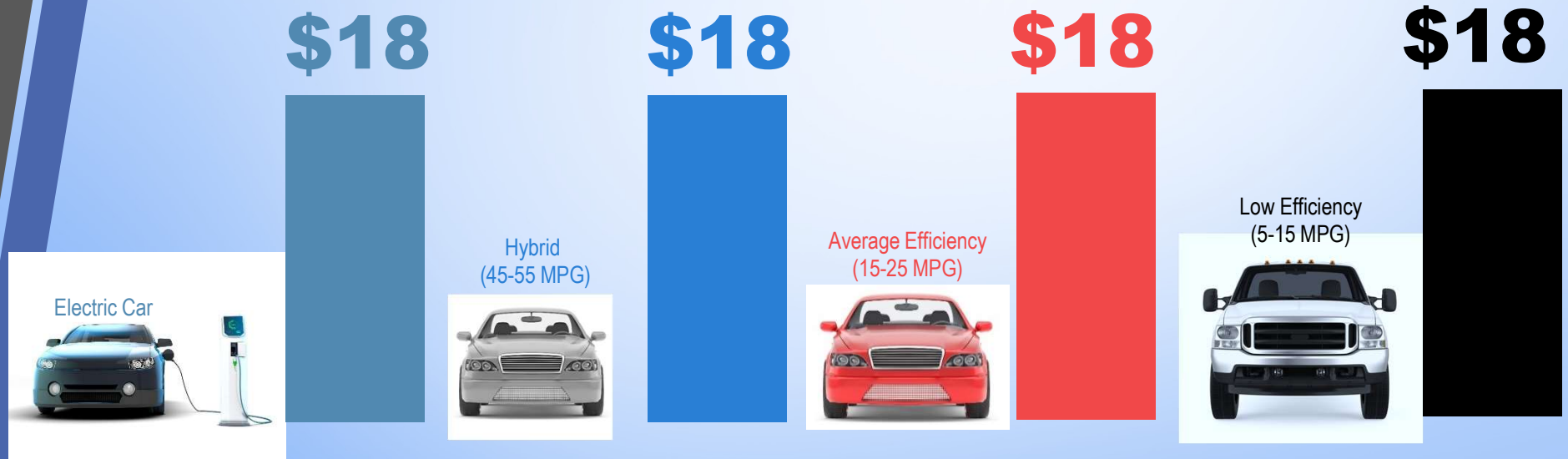
- Potential to be a platform for congestion pricing and flexible taxation



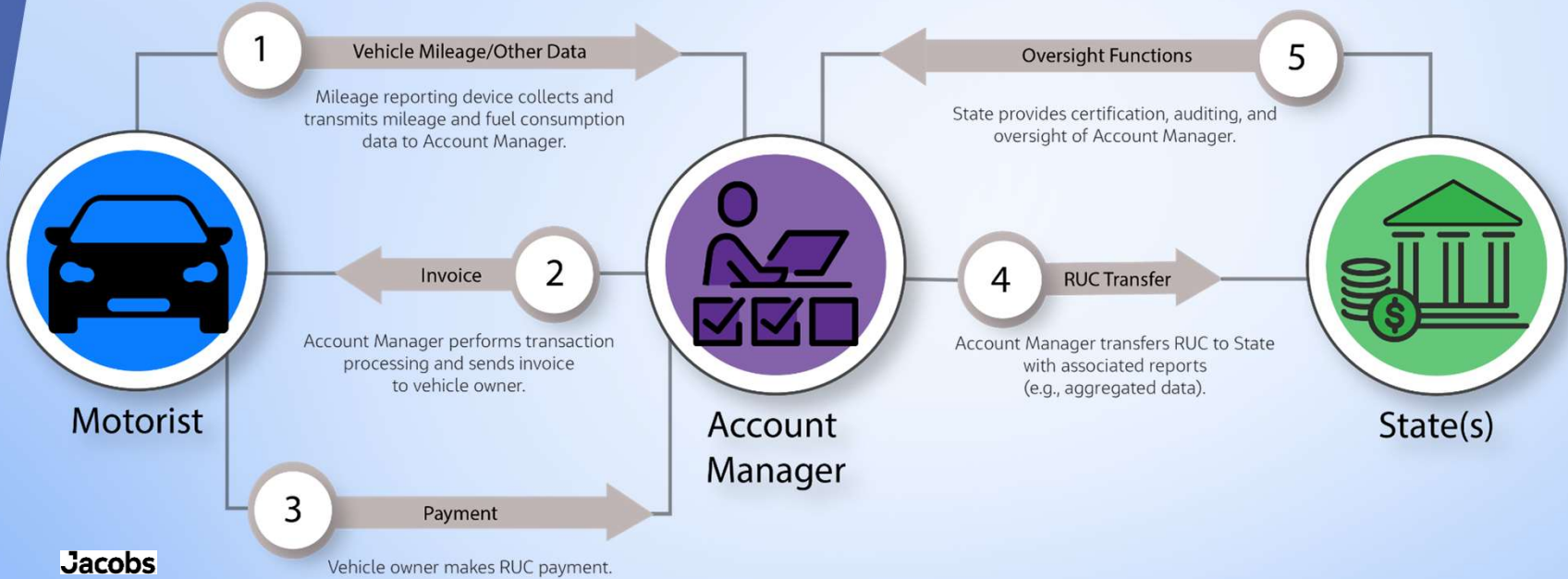
RUC Model:

Pay for what you use.

Ex: Monthly RUC paid for 1,000 Miles Driven



How it works:

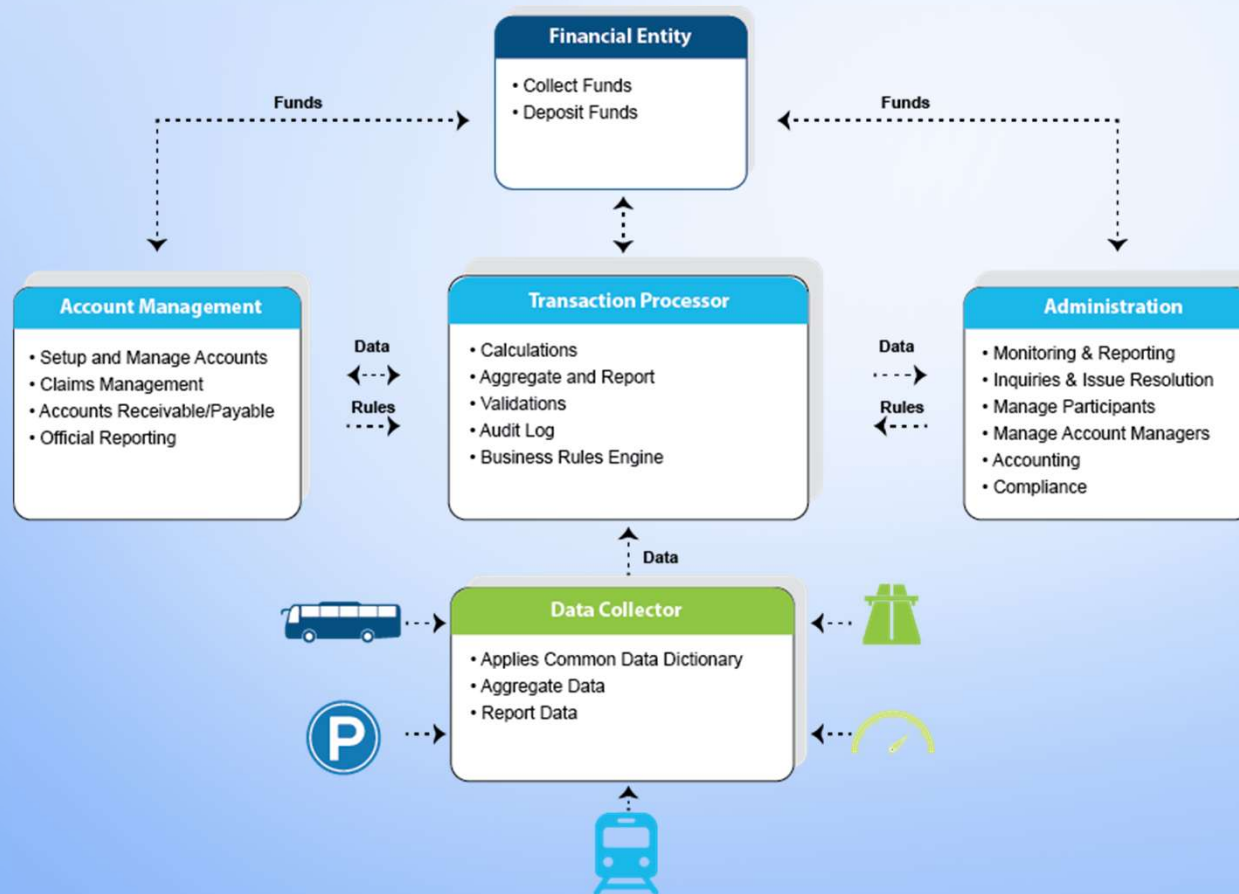


800 vehicles currently (was 1200)

3 Account Managers:
Azuga, Emovis (CAM, OAM)

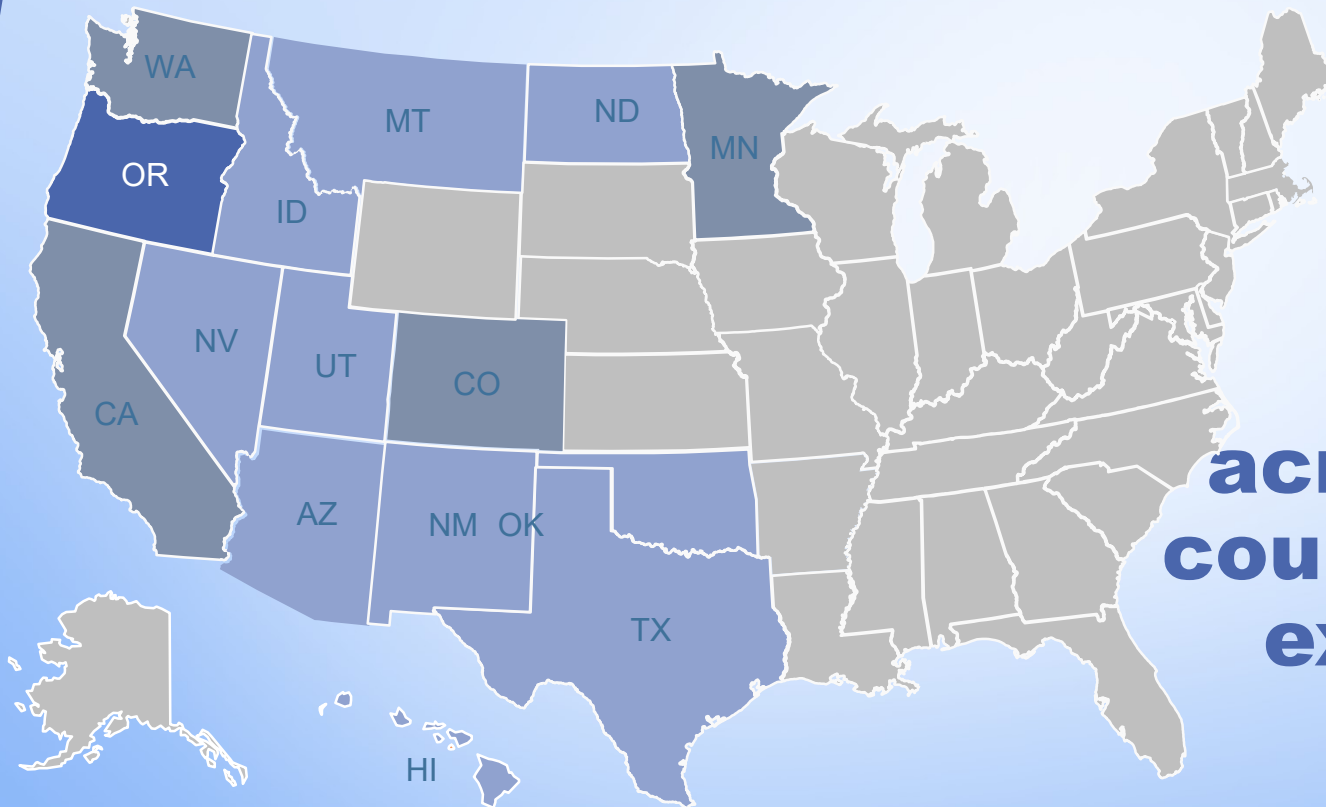
0.5 million revenue, \$20 K revenue transferred (inception to date).
33.7 Million miles

Open Architecture is essential





2016



States across the country are exploring RUC.

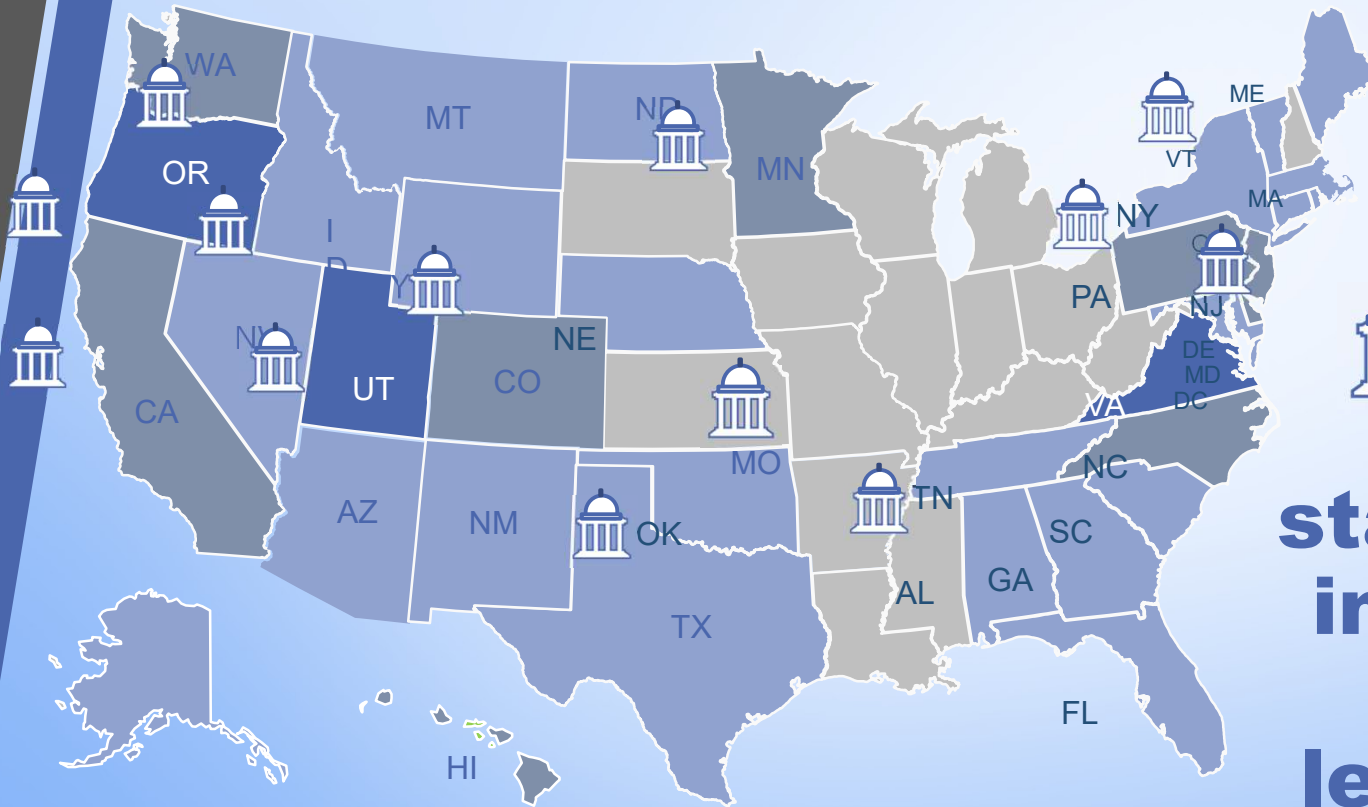
Conducted MBUF Pilot

Legislation for Voluntary MBUF Program

MBUF Studies through Multistate Consortium



2021



In 2021 alone, 13 states have introduced RUC legislation.

Conducted MBUF Pilot

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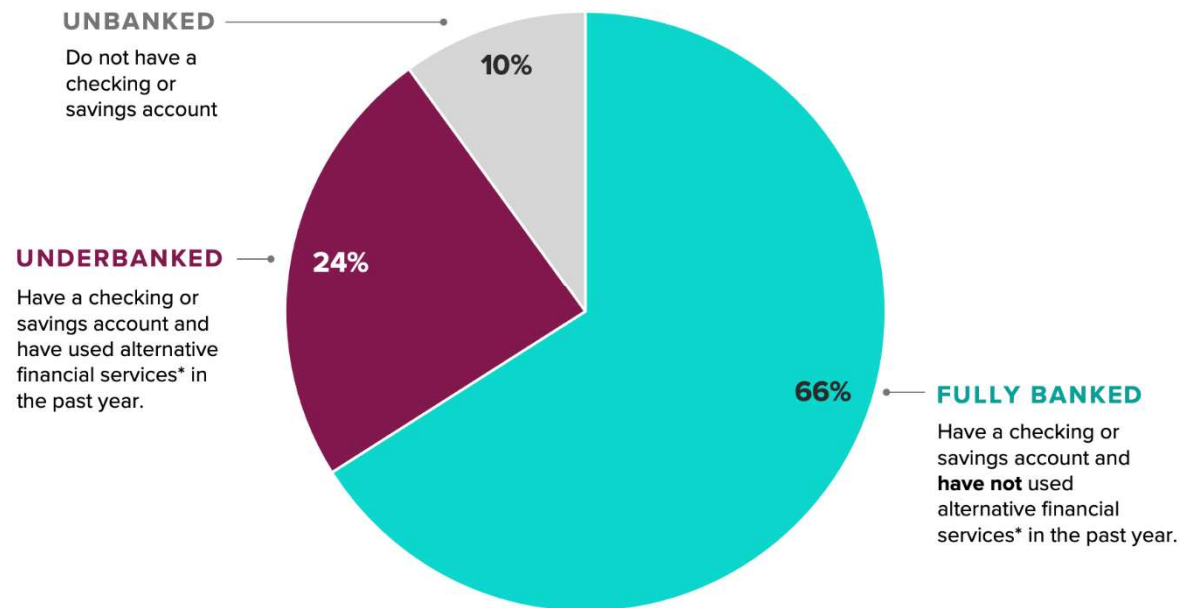
Impediments and constraints

- Privacy concerns, government tracking
- The unbanked and underbanked
- Paying taxes separate from price.
- General Acceptance
- Negating the advantage of MPG improvement
- Number of payers (767 today), down from 1200
- Collection costs (economies of scale)
- Frequency of payment and prepay
- Perceptions of users and payers
- Compliance and enforcement
 - (only if they exceed \$125 today), but no need now



Almost One-Quarter of the U.S. Public is Underbanked

Share of U.S. adults who are fully banked, underbanked, and unbanked



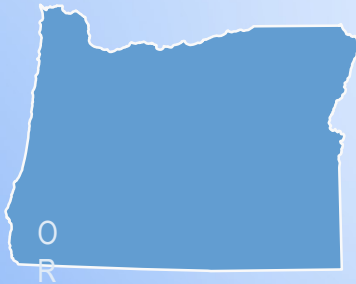
 MORNING CONSULT

*Using alternative financial services is defined as purchasing a money order, paying bills or cashing a check through a service other than a bank or credit union in the past year.

Poll conducted July 29 - August 1, 2021, among 4,400 U.S. adults, with a margin of error of +/-2%.

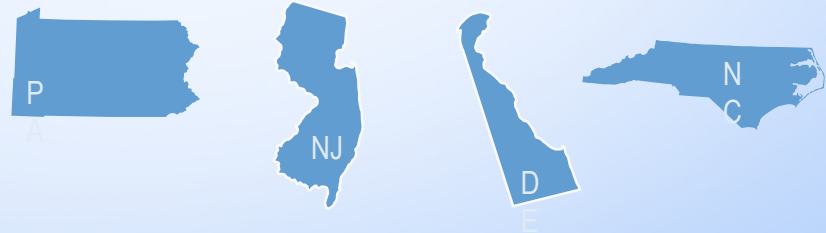
Most drivers don't know how roads are funded or that there is a funding issue.

Oregon DOT



- 27% were surprised they pay a fuel tax
- 56% pay more or less than thought

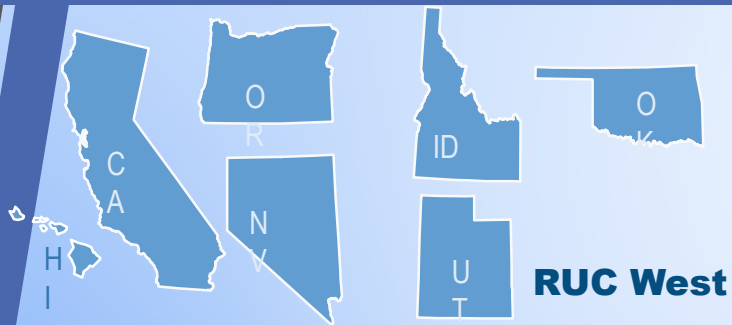
The Eastern Transportation Coalition



- Ex: 70% of New Jersey residents think funding is increasing or staying the same

Technological Innovation

Automated Vehicle Demonstration Project



- Investigate how a RUC may be applied using:
 - Exchanged vehicle data
 - On-board telemetry
 - Other information systems

Connective Vehicle Ecosystem

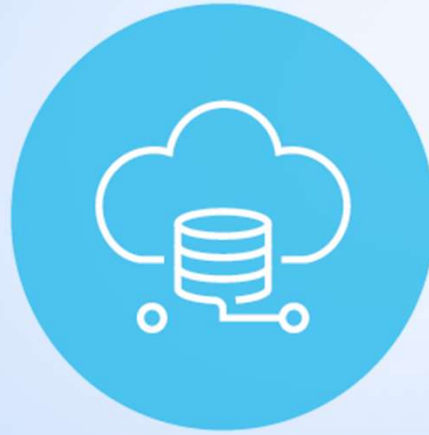


- Evaluate feasibility of data collection and sharing to and from vehicles and infrastructure

Connected Vehicle Ecosystem



IoT/Edge
Connected devices,
systems & facilities



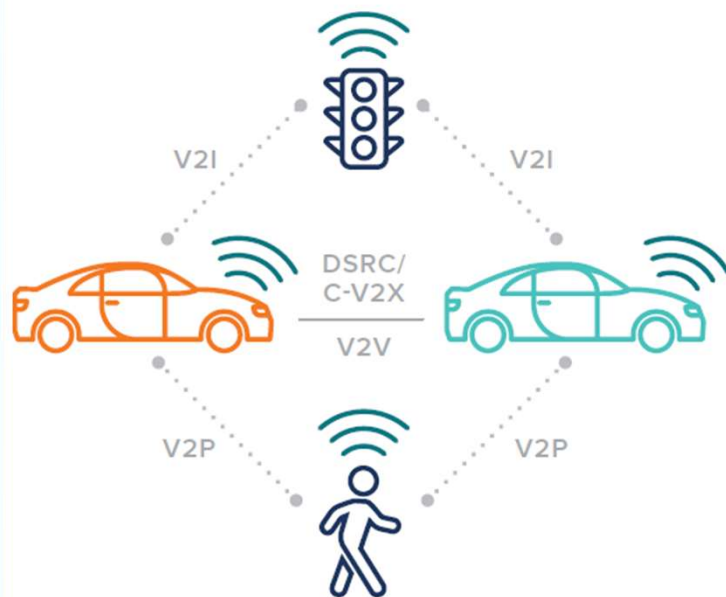
Cloud Analytics
Data processing,
analytics & storage



Open Ecosystem
Open development
environment for 3rd party
partners to deliver services &
apps

Connected Vehicle Ecosystem

V2X VEHICLE-TO-EVERYTHING



DIRECT COMMUNICATIONS

- USES DSRC/C-V2X
- OPERATES IN THE ITS BAND (5.9 GHz)

V2N VEHICLE-TO-NETWORK



NETWORK COMMUNICATIONS

- LTE/5G FOR V2N
- OPERATES IN LICENSED CELLULAR SPECTRUM AND OVER THE INTERNET

Contact Info:

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What is the Highway Fund?

Constitutional dedication

Except as provided in subsection (2) of this section, revenue from the following shall be **used exclusively** for the **construction, reconstruction, improvement, repair, maintenance, operation and use** of public highways, roads, streets and roadside rest areas in this state:

(a) Any tax levied on, with respect to, or measured by the storage, withdrawal, use, sale, distribution, importation or receipt of **motor vehicle fuel** or any other product **used for the propulsion of motor vehicles**; and

(b) Any tax or excise levied on the **ownership, operation or use** of motor vehicles.

(2) Revenues described in subsection (1) of this section:

(a) May also be used for the cost of **administration and any refunds** or credits authorized by law.

(b) May also be used for the **retirement of bonds** for which such revenues have been pledged.

(c) If from levies under paragraph (b) of subsection (1) of this section on **campers, motor homes, travel trailers, snowmobiles, or like vehicles**, may also be used for the acquisition, development, maintenance or care of **parks or recreation areas**.

(d) If from levies under paragraph (b) of subsection (1) of this section on vehicles used or held out for use for commercial purposes, may also be used for **enforcement of commercial vehicle weight, size, load, conformation and equipment regulation**.

Oregon Constitution

Constitutional Article IX, Section 3A

*"(3) Revenues described in subsection (1) of this section that are generated taxes or excise imposed by the state shall be generated in a manner that ensures that the share of revenues paid for the use of light vehicles, including cars, and the share of revenues paid for the use of heavy vehicles, including trucks, is fair and proportional to the costs incurred for the highway system because of each class of vehicle. **The Legislative Assembly shall provide for a biennial review and , if necessary, adjustment, of revenue sources to ensure fairness and proportionality."***

Basic Economic Assumptions

- Everything Else staying the same “ceteris paribus”
- Change can be understood and managed
- Fair Pricing
- The more of a good thing the better
- The less of a bad thing
- We like what we have (Hwy system) and paid for

Increases in Rates and Revenue Raised

Some traditional, some innovative, and some new
Increases Commonly considered in packages:

- State gas (motor fuel and use fuel) tax
 - 30¢ per gallon goes to 40¢
 - 14th highest gas tax in the country
 - \$28 million additional for each 1 cent increase (Average Balanced)

- Gas Tax and use fuel increase (Total 10 cents increase)

• 4 cents on January 2018	30 to 34
• 2 cents on January 2020	34 to 36 Conditional on OTC report (sec 45)
• 2 cents on January 2022	36 to 38 Conditional on OTC report
• 2 cents on January 2024	38 to 40 Conditional on OTC report

Vehicle Fees

Typical increase for one time

Registration Fee increase

- **43rd highest registration in the country**
- **\$5.9 million additional for each \$1 increase (Avg balanced)**
- \$13 in addition to the current \$43 January 1/2018 to December 31st/2019 (\$56)
- Many other fixed fees changed. Example fixed load, for hire, Antique, special use, motorcycle, racing and government owned. (Sections 34-36)

Title Fees Surcharge

- Adds a surcharge of \$16 to the current title fee of \$77 / \$90 for heavy vehicles. on January 1 / 2018 to December 31st, 2019 (\$93)
 - 39th highest title fee in the country
 - \$1.2 million additional for each \$1 increase in light fee

New Taxes

Administered by the Department of Revenue (DOR)

- **Privilege Tax:** A tax on dealer's sales of New vehicles in Oregon. 0.5% of retail price. Not a highway fund source, thus can be used to do other endeavors not on the highway. Dealers have the choice to show it on sales receipt. 1/1/18
 - with moratorium on local taxes for 3 years.
 - Expedites court challenge to supreme court (section 112)
 - Stay on expenditures but not collections until Decision
- Directs the Department of Revenue to deposit proceeds of the privilege tax, net of administrative and enforcement expenses, until December 31, 2023, as follows:
 - \$12 million to the **Zero-Emission Incentive Fund** to provide rebates for the purchase of light-duty zero-emission or plug-in hybrid electric vehicles.
 - The balance to the **Connect Oregon Fund**.
 - All privilege tax Revenue, net of administrative and enforcement expenses to the **Connect Oregon Fund,** after January 1, 2024.
- Vehicle Privilege tax
 - Q3 ---\$8M approximately \$ 33 M / year.

New Taxes

Administered by the DOR

- **Use Tax**: a tax equivalent to the privilege tax on vehicles bought outside of Oregon. This is considered highway Fund revenue and goes to the Highway Fund. 1/1/18
- All verified by DMV before registration and title
- Vehicle Use tax –consumers and dealers
 - \$2.2 M Q2 ---\$9 M/ year
- **Bicycle Excise tax**: a \$15 flat fee imposed on new bicycles at the point of sale with price higher than \$200. 1/1/18
- proceeds of the excise tax on bicycles, net of administrative and enforcement expenses go to Connect Oregon Fund for the purposes of grants for bicycle and pedestrian transportation projects.

Bicycle tax \$250K Q2 ---\$1 M/ year

New Payroll Taxes (Transit)

Payroll Tax: Employee paid payroll tax of 0.1% of wages earned in Oregon 07/1/18

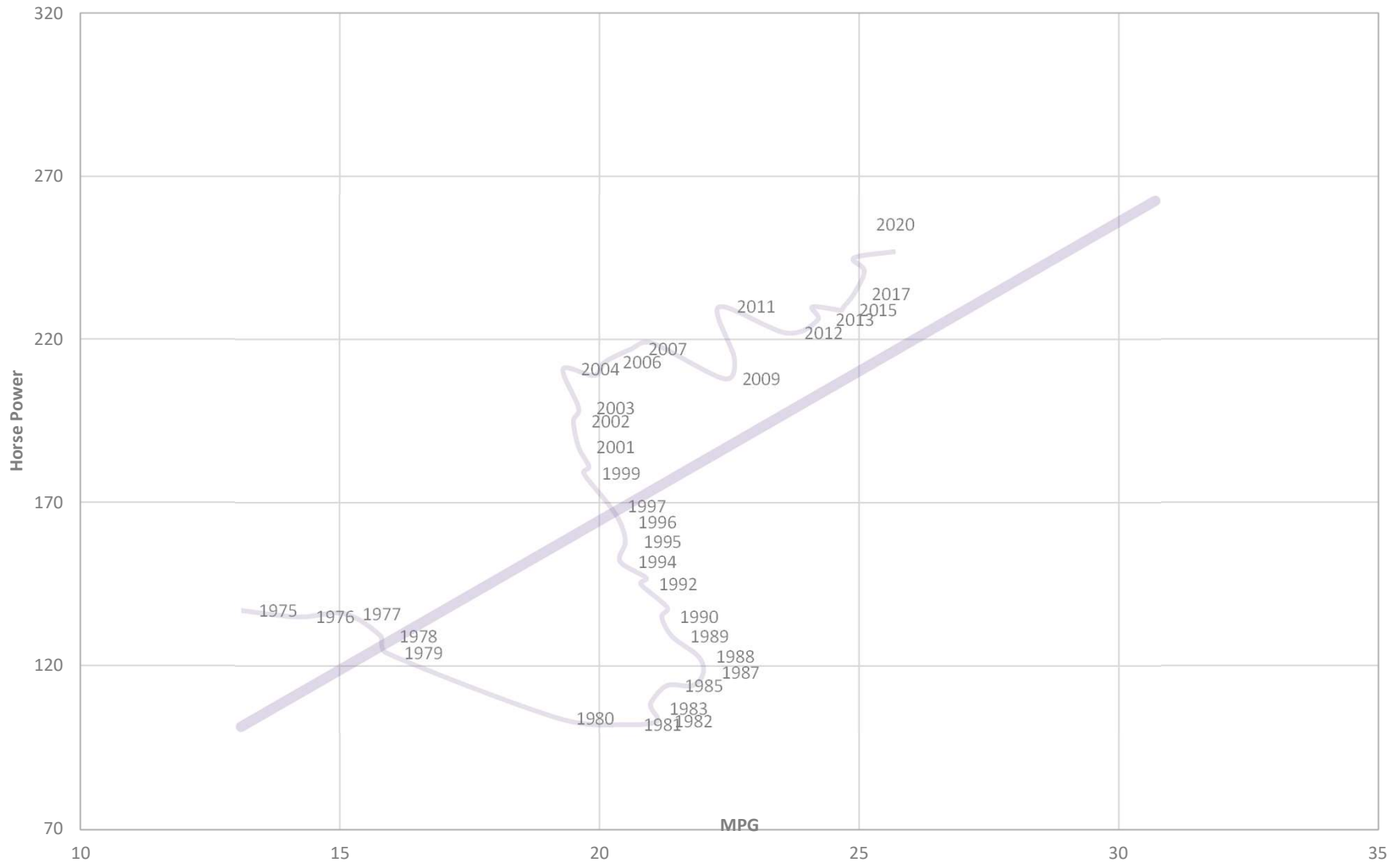
Directs employers to withhold the tax and deduct it from wages. report and pay withholding to the Oregon Department of Revenue. file an annual report of the tax paid by employees with Oregon Department of Revenue. Penalizes employers for failure to withhold the tax from wages.

- quarterly -- \$27.5 M high Compliance rate (\$117 M per year)

Uses and distributions of the payroll Tax

- Prescribes the formula to be used by the OTC for distribution of money from the Statewide Transportation Improvement Fund:
- **90%** to mass transit and transportation districts in proportion to the amount of tax paid, in counties where no district exists, and federally recognized tribal governments, provided no entity receives less than \$100,000.
- **5%** to transportation districts, counties where no district exists, and federally recognized tribal governments for competitive grants.
 - 4% for intercity public transportation service providers to improve service between communities.
 - 1% for a public transportation technical resource center to assist providers in rural areas.

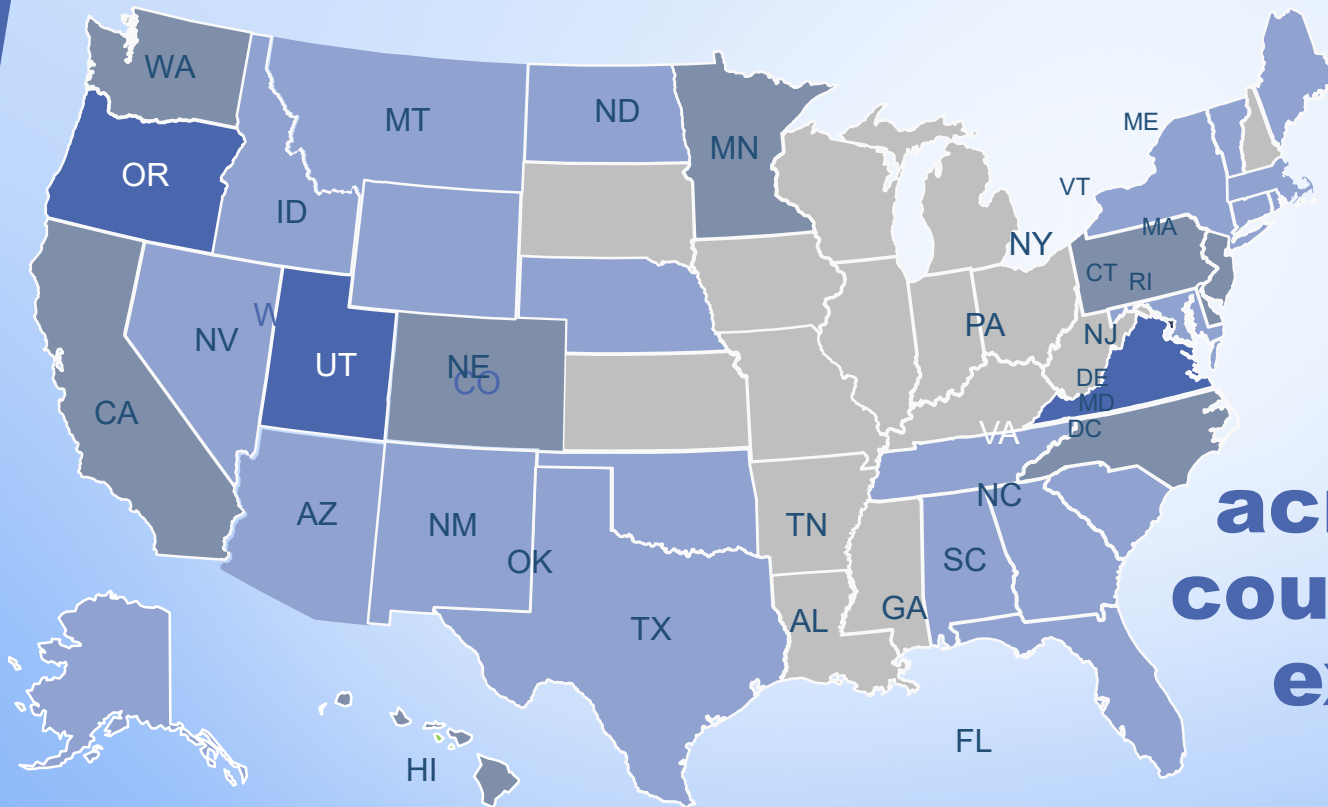
FUEL Economy and Horse-Power 1975 to 2020 5 year linear trend Forecast



• Source: EPA Trends Report



2021



States across the country are exploring RUC.

Conducted MBUF Pilot

Legislation for Voluntary MBUF Program

MBUF Studies through Multistate Consortium