

# Background Information for AWG Meeting #5

Nevada Sustainable Transportation Funding Advisory Work Group

*January 11, 2022*

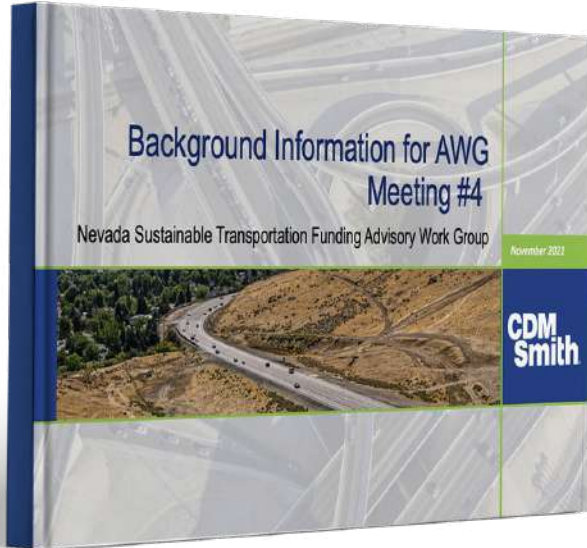


**CDM  
Smith**

# Contents

- 1 Advisory Working Group meeting roadmap**  
Meeting schedule and key milestones to complete the AWG's study and recommendations to the Nevada legislature.
- 2 Legal and policy considerations for select revenue options**  
Analysis and guidance on additional revenue options suggested at the November 2021 AWG meeting: tolls, impact fees, street utility fees, zonal pricing, income taxes, and payroll taxes.
- 3 Revenue options analysis: financial and qualitative performance against the Guiding Principles**  
Analysis and project team assessment of how each of the potential revenue mechanisms perform relative to the AWG's adopted Guiding Principles.

## How to use this briefing book



This briefing book is provided to Advisory Working Group members as background for the January 11, 2022, meeting. These materials are aligned with the Agenda for the meeting and provide background information on several of the topics to be reviewed and discussed.

During the meeting, slide presentations will summarize each of these topics (but not repeat everything), so it will be helpful to read the content of the briefing book prior to the meeting.

The project team is happy to answer any questions that arise prior to or during the meeting ([info@NVtransportationfuture.org](mailto:info@NVtransportationfuture.org).)



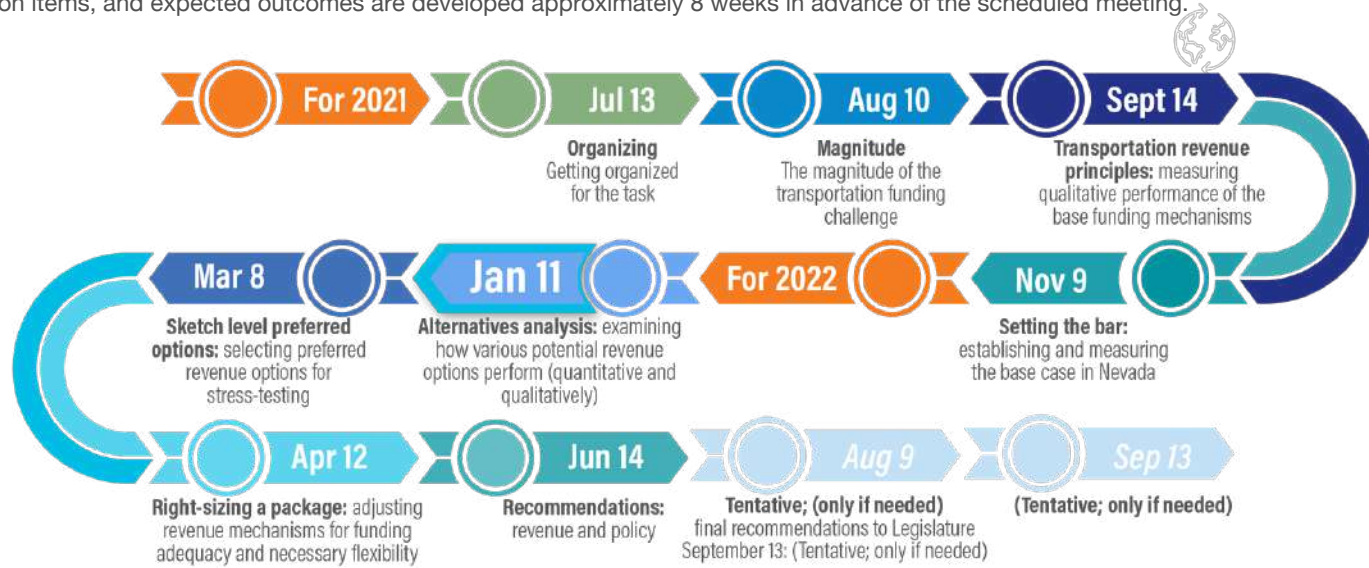
Section 1

**Advisory Working Group  
Meeting Roadmap**

## AWG MEETINGS

## Each AWG meeting has an overall objective, with specific agenda items and outcomes to support that objective.

The meeting information provided below is a roadmap of what is planned for coverage. Meetings that are several months out are planned only in low-fidelity, keeping the agenda more open to respond to issues raised during earlier meetings, or to adjust to new information. More detailed agendas, presenters, activities, action items, and expected outcomes are developed approximately 8 weeks in advance of the scheduled meeting.



## 8-WEEK AGENDA BUILD

## The January AWG meeting agenda was developed in November. The March and April AWG meeting agendas are under development now.

About eight weeks ahead of an AWG meeting, we begin building the draft meeting agenda in greater detail. The January and March 2022 AWG meetings shown below illustrate how the meeting topics, activities, and expected outcomes come into sharper focus as the dates approach.

### For January 11, 2022, AWG Meeting:

- Receive an early overview of how the new federal infrastructure funding bill will impact NDOT's state-managed transportation system
- Review 25+ potential revenue mechanisms and how they perform financially
- Assess how the potential transportation revenue mechanisms perform relative to the AWG-adopted revenue principles
- Discussion and short-listing of most viable revenue options for further analysis and stress-testing

### For March 8, 2022, AWG Meeting:



- Examine stress-tested financial results of shortlisted revenue options
- Develop groupings of two or more revenue options that are best able to meet the AWG's guiding principles
- Consider the role that land use can play in creating a more sustainable transportation system (both funding and operations)
- Further details on new federal transportation funding programs



Section 2

**Legal and policy constraints on select new revenue options suggested at November 2021 AWG meeting**

BACKGROUND ON QUESTIONS RAISED ABOUT SELECT REVENUE OPTIONS

## In November, AWG members requested additional information on certain revenue mechanisms that had not been analyzed previously.

At the November AWG meeting, members were provided with a long list of potential transportation revenue options for continued analysis and comparison with other states. The AWG was asked to strike options they viewed as infeasible and to suggest any revenue mechanisms not already identified that might be of further interest. A small number of potential revenue options were suggested based on structures and successes from other states for further legal and policy analysis. All brainstormed options are now highlighted in this section of the Briefing Book. Their ultimate plausibility in Nevada will be discussed at the AWG's January 2022 meeting.

### **Potential revenue mechanisms highlighted in this section:**

- Tolling public highways in Nevada
- Transportation utility fees
- State-level development impact fees
- Payroll taxes
- Income taxes in Nevada



TOLLING PUBLIC HIGHWAYS IN NEVADA

## Tolling: considerations for Nevada (1/2)

Currently, there are no toll roads operating in Nevada. Three potential limitations to tolling exist in the state: federally-imposed limitations, state constitutional limitations, and state statutory limitations. Each is discussed below, with some general conclusions on the following page.

### Federal limitations:

Tolling of federal-aid highways, generally considered interstate highways or major state highways, is prohibited under federal law. However, Congress has provided for two primary exceptions to this general prohibition. These exceptions allow states to:

- toll new capacity, reconstruction of roadways, or replacement of capital facilities; and
- toll HOV lanes, otherwise referred to as HOT (High-Occupancy Tolling) lanes

Several states have successfully requested permission from USDOT to toll segments of federal-aid highways under one of these exceptions in federal law.

### State constitutional limitations:

Art. 9, Sec. 5 of the Nevada Constitution requires revenue collected from license or registration fees, or fuel tax, to be used for construction and maintenance of state highways.

The issue of tolling as it relates to this constitutional clause arose in 2009 when the Legislature considered SB 206, which would have permitted private companies to operate toll roads in the state. While the bill did not pass, Legislative Counsel indicated the clause would likely require toll revenue to be deposited directly into the State Highway Fund. Therefore, it was determined that the Constitution likely prohibits a potential private toll operator from directly collecting any revenue from a toll road. Instead, should a private company operate a toll road, the revenue would need to be deposited into the State Highway Fund first.

In the Boulder City Bypass Toll Road Demonstration Project Act, the provision regarding toll funds being deposited into the Highway Fund first was written into the bill, likely to avoid constitutional issues. However, the Boulder City Bypass was constructed and is now operational without funding support from tolls.

## TOLLING PUBLIC HIGHWAYS IN NEVADA

## Tolling: considerations for Nevada (2/2)

The third – and potentially most controlling – law affecting the provision of toll roads in Nevada is found in state legislation, summarized below.

### State statutory limitations:

Statutory limitations on tolling are more restrictive than federal law or lawyers' interpretations of the Nevada constitutional provisions. However, statutory law is easier to amend than what is required to amend the Nevada constitution.

Current state law permits the Nevada DOT to authorize a person to develop, construct, improve, maintain or operate of a transportation facility; however, a “transportation facility” specifically excludes a toll bridge or road. NRS 338.161. See NRS 408.5471. To overcome this statutory hurdle, the law could be amended to remove the exclusion and specifically include a toll facility as a transportation facility the Nevada DOT is authorized to permit.

### Tolling Public Highways in Nevada: conclusions

- Nevada could pursue an exception to tolling of federal-aid highways by tolling additional capacity, reconstruction or replacement of facilities; however, it is unlikely that any federal-aid highway can be tolled for the purposes of raising revenues to fund the broader highway system in Nevada.
- Tolling could be implemented on non-federal-aid highways (i.e., state-funded) highways; however, tolling those facilities is unlikely to raise sufficiently robust revenue to provide sustainable funding for the statewide transportation system.
- While the Nevada statute states that the DOT is not permitted to authorize "a person" to construct a toll facility, the statute is unclear as to whether NDOT itself or, for example, a tolling agency could operate one.



## TRANSPORTATION UTILITY FEES

## Transportation utility fees: a revenue option used by local governments (1/2)

There has been interest in the idea of managing public highways and roadways like other public utilities (water, electricity, etc.). For example, consider the similarities between the public power system (below, left) and the transportation system in the U.S (below, right): both are wide-scale public networks providing universal access and service to all; both have high upfront infrastructure costs; both require ongoing maintenance and operations; both rely primarily on user fees to pay for their facilities and services; both struggle to meet demand during peak periods; both have a history of negative environmental externalities that are now being addressed through advanced technologies and new fuel sources; and other parallels. Looking to successful models from the public power sector, some governments are beginning to manage (or at least finance) their roadways through *transportation utility fees* (sometimes known as “street” utility fees).

### What is a transportation utility fee?

A transportation utility fee is a governmental charge on residents and businesses based on their calculated use of the system. These fees are distinct from taxes on property owners based on the assessed value of the property. Transportation utility fees are intended to reflect the number of vehicle trips generated by different types of land uses. The calculation of those vehicle trips might be based on the number of parking spaces, square footage of a building, gross floor area within a building, or on the number of people using or occupying improved real property. In each case, the method of calculating the transportation utility fees are *proxies* for actual system usage – much in the way that gasoline consumption is a proxy for actual roadway usage.

### Shared traits: public power and transportation systems in the U.S.



U.S. electricity network



U.S. highway network

## TRANSPORTATION UTILITY FEES

## Transportation utility fees: a revenue option used by local governments (2/2)

### Benefits of transportation utility fees.

Transportation utility fees have several benefits. First, they can be administered similar to (or coincident with) other public utilities that property owners and tenants pay for. For example, the City of Austin sends residents and owners a combined utility bill that includes, among other utility charges, a “transportation user fee” which funds street maintenance, repair, overlays, striping, etc. necessary to keep the city streets in a state of good repair. Second, the amount of the fee can vary based on the expected trip generation based on the property’s features – single family residence, triplex, mobile home, etc. Third, transportation utility fees are typically billed monthly rather than quarterly, semi-annually or annually like property taxes, making them more affordable on a monthly cash-flow basis for many households. Fourth, special discounts or categorical exemptions can be applied, similar to other public utilities that offer low-income “lifeline rates”, senior discounts, etc. Finally, because most transportation utility fees are considered proprietary charges for the provision of service rather than general “taxes,” the rates can be adjusted more frequently and precisely to match the cost of services. In some jurisdictions, transportation utility fees are not subject to the higher approval thresholds (supermajority, voter ratification, etc.) that property or other general taxes must attain.

### Drawbacks and considerations.

There are drawbacks to transportation utility fees as well as some legal considerations. One drawback: the methods of calculating (or approximating) roadway usage may not closely reflect how a ratepayer in fact uses the transportation system. While estimating trips based on the type of building occupied may be sufficient in the aggregate for government, it might be grossly inaccurate as applied to an individual person’s transportation use (both quantity and mode). Furthermore, if the jurisdiction also collects a property tax, persons charged a transportation utility fee might feel they are being “double-charged” for ownership of their property, particularly if property tax proceeds also pay for transportation.

A further consideration is that transportation utility fees have been subject to strict legal scrutiny as to whether they are truly a proprietary “charge or fee” or whether they are a tax, from a legal standpoint. Many states require that property taxes be apportioned based on the value of the property – not on how many people live on the property or how many trips the improvements might generate. If the statute implementing a transportation utility fee operates more like a property tax, courts have struck down these utility fee statutes for failure to meet legal requirements for property tax apportionment.

STREET SERVICE		
Service Dates	11/01/2021	12/01/2021
City of Austin Transportation User Fee - Residential		
Transportation User Fee - Residential		\$14.96
<b>TOTAL CURRENT CHARGES</b>		<b>\$14.96</b>
<small>Are you over 65? You may be eligible for a waiver of your Transportation User Fee. Call 512-494-9400 for more information.</small>		

City of Austin Utility Bill

## DEVELOPMENT IMPACT FEES

## State-level impact fees on new development: primarily a local option

SB 413 requires the Advisory Working Group to study “[t]he role of land use and smart growth strategies in reducing transportation emissions and improving system efficiency and equity.” The issues of land use and equity will be discussed more fully in March 2022; however, incentivizing sustainable land use and growth is tied to the issue of state-level impact fees, which, in November 2021, was raised as a potential source of revenue.

At last count, 36 states have enacted development impact fees, including Nevada. Some of these extractions are only intended to mitigate limited impacts, for example for schools or parks. Other types of impact fees have been extended to include affordable housing mitigation, or local environmental impacts. In this section we consider only *transportation-related impact fees*.

### What is an Impact Fee?

An impact fee is a one-time capital charge imposed on developers by municipalities to help fund the capital cost of the additional public services, infrastructure, or transportation facilities necessitated by, and attributable to, new development. To date, impact fees have been imposed almost exclusively by local governments.

### How might they work in Nevada?

State-level impact fees to mitigate impacts specific to the state’s highway facilities have not been implemented in Nevada. They can be formulated as revenue-generating fees or as disincentives for certain types of development. No impact fee assessment is likely to be sufficiently robust to generate substantial revenue for the statewide transportation system. And while impact fees may incentivize certain growth patterns, some businesses, intent on locating in a certain place, may consider the fee ‘the cost of doing business’ and proceed with developments anyway. Thus, *more study as to how impact fees are assessed, where they are assessed, and the size of the fees would be needed to better understand their viability.*



## PAYROLL TAXES

## Payroll taxes for transportation: could they be used for statewide funding?

### What are payroll taxes?

Payroll taxes refer to federal, state and local taxes that are levied on wages or salaries, generally paid by the employer and used for specific programs such as unemployment insurance. Nevada levies a Modified Business Tax (also called General Business Tax) on all businesses. The amount paid varies depending on the size of the payroll. There are also industry-specific payroll taxes, including taxes for businesses in the financial and mining industries.

### Payroll taxes are not used widely for statewide transportation funding

In Nevada, no significant transportation investments are derived from the state payroll tax. However, at the federal level, and in some states, the tax code has been used to induce certain transportation behavior, such as commuting. For example, a tax deduction is permitted for parking and transit up to \$270. This means employees can contribute \$270 pre-tax towards transit. Employers can benefit from this as well because they can deduct a certain percentage of money when employees cover their commuting expenses with pre-tax dollars. If significant numbers of employees participate in this program, the amount an employer can save in payroll taxes can be considerable. This tax deduction was designed to incentivize commute reduction, thereby reducing traffic and congestion. While the deduction may be helpful for employees and employers, it does not address the significant and long-term needs the transportation system faces. Moreover, there are few, if any, states that rely on income



taxes for a substantial portion of transportation revenue. Most often, states provide local jurisdictions the ability to utilize local payroll and income taxes for their local transportation purposes, but it is not a source of statewide revenue.

### Can Nevada use payroll taxes for transportation?

Because Nevada has no income tax, the state cannot enact incentives in the tax code to induce certain behavior. The payroll tax encounters similar obstacles. Generally, the payroll tax is used to pay for specific social safety net programs, and in order to raise significant money for transportation, the state would either have to redirect those funds or increase the tax rate substantially. However, a local option payroll tax could be implemented by regions experiencing high levels of needed investment, such as Clark County. This money could be used for multimodal purposes, including transit. To explore this option, further analysis of whether Nevada law permits local option income or payroll taxes would be needed.

# State income taxes for transportation: a very high degree of difficulty

## Where is the income tax used for transportation?

Income taxes are not generally used to fund statewide transportation projects due to its political and economic volatility; however, it can provide states more flexibility because the income tax need not be used solely for maintenance of roads and bridges. Only a handful of states, such as Michigan and Oklahoma, use a portion of income tax revenue for transportation. Other states use the income tax in different ways, such as for local purposes. For example, Indiana allows counties to increase the income tax by .10 percent to .25 percent to fund approved public transportation projects. Additionally, Maryland uses its corporate income tax for transportation purposes.

## Is using the income tax an option in Nevada?

Yes, but it is difficult. In Nevada, utilizing a personal income tax is not currently an option because it is constitutionally prohibited. Article 10, section 1(9) of the Nevada Constitution states that “[n]o income tax shall be levied upon the wages of personal income of natural persons.” To impose an income tax, the Nevada Constitution would have to be amended. Article 19 prescribes two ways to amend the Constitution. The first involves a Legislature-initiated amendment. In this scenario, a majority of all members in the Assembly and Senate must pass the proposed amendment in two consecutive Legislatures, meaning the next biennial session. If this occurs, the amendment gets referred to a popular vote at the next general election. If a majority of voters approve the amendment, the Constitution is amended.

The second way is a citizen-initiated amendment. A citizen-initiated constitutional amendment requires a majority of voters in two consecutive general elections to approve an amendment for it to take effect. The amendment appearing on both general election ballots must be identical and only proceeds to the second general election if the first general election resulted in the amendment's approval by a majority of voters. This is how the amendment prohibiting the income tax was adopted in 1990.

## The Nevada amendment prohibiting an income tax

In 1988, Question 9, a constitutional amendment to prohibit a personal income tax, was initiated by the people. A majority of voters approved the amendment in the general election that year by a vote of 82% to 18%. As required by the Constitution, the same amendment appeared on the 1990 general election ballot and was again approved overwhelmingly, 72% to 28%, thereby amending the Nevada Constitution. Since the Constitution was amended in 1990 to prohibit the imposition of a personal income tax, no other efforts to repeal the prohibition have made it to the ballot.

The income tax prohibition was popular when it was enshrined in the Nevada Constitution, and it remains popular today. If the Legislature were to repeal the constitutional prohibition on an income tax, it would involve significant procedural and political hurdles, along with taking a significant amount of time. For example, the Legislature would need to approve any amendment in two consecutive Legislatures. Then, the amendment would go out to the people for a vote. Even if the Legislature moved as quick as legislatively possible, this process alone could take at least four years. Moreover, any repeal of the income tax prohibition would not affirmatively enact such a tax. Following the vote by the people, the Legislature would have to reconvene and enact an income tax. This, at a minimum, would take an additional year. Moreover, direct enactment of this tax would require a 2/3 vote in each chamber.



Section 3

**Revenue options analysis: financial and qualitative performance against the Guiding Principles**



Guiding Principles

## Guiding Principles for Future Transportation Revenue Sources

*Alone or in combination, transportation revenue sources should be capable of:*



**Financial Sustainability:** Yielding sufficient revenue that correlates with ongoing maintenance needs; and demand for future transportation needs, regardless of changes in population, vehicle technologies, ownership, travel patterns, fuel sources, or consumer spending.



**Sufficiency:** Generating sufficient revenue over targeted investment timeframes for existing and future transportation infrastructure needs.



**User Equity:** Recovering a proportionate share of the costs from those who use the transportation network.



**Social Equity:** Improving the distributional impact on historically underserved communities and low-income households.



**Flexibility:** Funding a wide range of transportation-related projects, programs, or priorities across various agencies to meet the needs of system users across all modes.



**Greenhouse Gas Emissions:** Aligning with state transportation GHG reduction goals.



**Transparency/ Efficiency and Ease of Compliance:** Simple to explain, with awareness of how funds are used, cost-effective, and readily administered at statewide and local levels.

## Revenue Mechanisms

## Revenue mechanisms analyzed

**Fuel taxes**

1. Increase rate of flat per-gallon excise tax
2. Add inflation index to flat per-gallon excise tax rate
3. Add fuel efficiency index to flat per-gallon excise tax
4. Add sales tax based on price of fuel
5. Add variable-rate excise tax based on price of fuel

**Vehicle fees**

6. Increase basic license fee
7. Increase value-based rate of governmental services tax
8. Add fee based on vehicle weight
9. Add fee based on vehicle fuel economy rating
10. Add fee based on vehicle engine type
11. Add fee based on vehicle age

**Usage-based fees**Direct

12. Add a distance-based charge for light-duty vehicles
13. Add a weight-distance-based charge for medium- and heavy-duty vehicles

Indirect

14. Add a tax on batteries
15. Add a tax on tires
16. Add a tax on EV electricity consumed

**Other**

17. Value added tax on goods movement
18. Parcel delivery fees
19. Ride-share surcharges
20. Cordon charges in urban areas
21. Carbon tax
22. Street utility fee
23. Payroll tax
24. Land use impact fees

## Methodology for revenue option evaluation against the Guiding Principles

**Financial Sustainability.** To measure financial sustainability, we compare expected future changes in one aggregate measure of transportation demand (vehicle miles traveled, or VMT) against the expected revenue generated by each mechanism. To compare VMT with revenue, we index the value of both to 100 in the year 2021, then compare the trend through 2040. Total VMT is expected to grow statewide by 50% over that time frame, to an indexed value of 180. We compare the expected growth of each revenue mechanism to this VMT trend. Revenue mechanisms that match or exceed the pace of VMT growth are regarded as sustainable.

**Sufficiency.** For sufficiency, we offer two measures: (1) the tax rate required to generate \$100 million in 2021 and (2) the net present value of the total revenue generated at that tax rate through 2040, using a discount rate of 4%. The tax rate offers an indication of reasonability. For example, a 9.4 cent per gallon fuel excise tax generates \$100 million in 2021. Subjectively, 9.4 cents is a “reasonable” proportion of the total cost of fuel (less than 5%). By contrast, a tax of \$50 per kWh of EV battery capacity would generate \$100 million in 2021, which equals approximately \$4,000 for a typical EV, or between 5-10% of the value of the vehicle each year. Subjectively this rate is not “reasonable,” so the tax is not regarded as capable of the same level of sufficiency as the fuel tax.

**User Equity.** For this principle, we consider the degree to which each revenue mechanism recovers revenue from users of the transportation system and whether that recovery is equitable.

**Social Equity.** For this principle, we consider the degree to which each revenue mechanism impacts low-income households and/or the relative impacts of the mechanism by household income. Mechanisms which have a high impact or a high relative impact on low-income households score poorly.

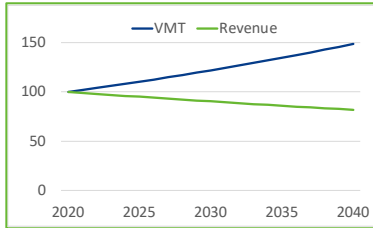
**Flexibility.** This measure is binary. Either a revenue mechanism is subject to the state constitutional restrictions for highway spending, or it is not. Nevertheless, there are two hypothetical mechanisms for which it is unclear whether the constitutional restriction applies.

**GHG Emissions.** For this measure, we consider the degree to which a revenue mechanism is capable of aligning with or supporting Nevada’s objective to reduce greenhouse gas emissions. For example, a tax on EV batteries could discourage adoption of such vehicles and be out of alignment with GHG reduction goals.

**Transparency.** This principle relates to the ability of taxpayers to see the revenue mechanism. We also assess the relative ability of end customers to understand the mechanisms and its personal impact on them.

**Efficiency.** Short of calculating the precise cost of collection of any mechanism, the evaluation offers relative assessments of the complexity of each mechanism. Existing efficient mechanisms such as excise fuel taxes score well.

# Presentation format of Guiding Principles assessment



Description of what currently exists in NV and how this mechanisms could take shape in NV.

## Financial Sustainability and Sufficiency

A rate of **XXX per YYY** would generate \$100 million in 2021.

This translates to a net present value of **ZZZ** over the period through 2040 at a 4% discount rate. As shown in the chart, revenue **declines** | **keeps pace with** | **increases** relative to usage as measured by VMT by an indexed value of **AA%**.

## User equity

Qualitative discussion

## Social equity

Qualitative discussion

## Flexibility

This revenue source **is** | **is not** subject to constitutional restrictions on spending.

## GHG emissions

Qualitative discussion

## Transparency

Qualitative discussion

## Efficiency

Qualitative discussion

**Financial Sustainability**



**Sufficiency**



**User Equity**



**Social Equity**



**Flexibility**



**GHG emissions**



**Transparency**

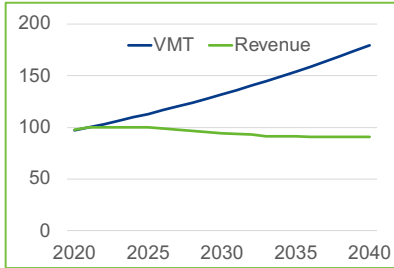


**Efficiency**



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle

# 1. Increase rate of flat per-gallon excise tax



Nevada’s state fuel taxes includes 17.3 cents per gallon on gasoline and 27 cents per gallon on diesel, dedicated to the State Highway Fund. Increasing the rate of these existing per-gallon fuel excise taxes would generate additional revenue.

## Financial Sustainability and Sufficiency

An additional rate of \$0.072 per gallon of diesel and gasoline would generate \$100 million in 2021. This translates to a net present value of \$1.23 billion through 2040 at a 4% discount rate. This mechanism generates revenue that decline relative to demand for road usage, reaching 89% less in 2040.

### User equity

Fuel taxes historically captured a share of revenue from users in an equitable manner. However, as the distribution of vehicle fuel economy grows, the share of contributions made through fuel taxes varies widely.

### Social equity

Vehicle fuel economy increases with income. Lower-income vehicle owners bear a greater share of fuel tax increases on average, per mile driven.

### Flexibility

This revenue source is subject to constitutional restrictions on spending.

### GHG emissions

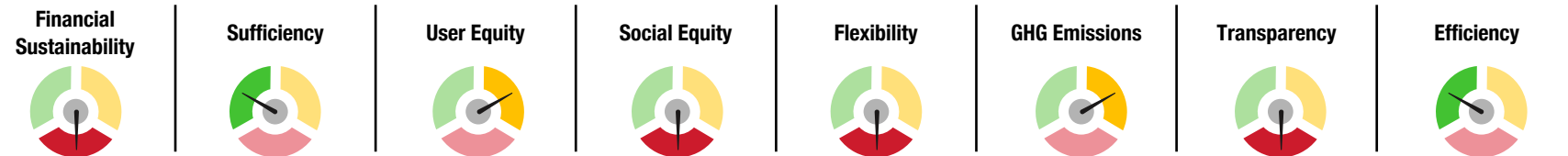
Excise fuel taxes alone historically have not significantly discouraged fuel consumption.

### Transparency

Fuel taxes are invisible to end consumers.

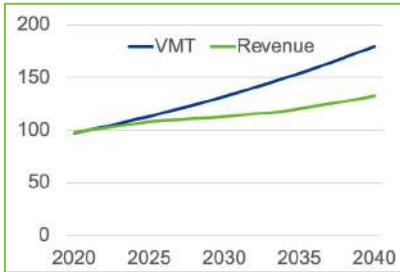
### Efficiency

Fuel taxes are among the least costly to collect, with 2% of revenue going to fuel distributors and overall costs of administration less than 4%.



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle

## 2. Add inflation index to flat per-gallon fuel excise tax rate



Although county fuel taxes contain inflation indices, Nevada’s state fuel taxes do not. Adding one would increase the rate of the existing excise taxes each year to generate additional revenue.

### Financial Sustainability and Sufficiency

An inflation index averaging 2% per year on top of a \$0.072 per gallon excise tax would result in a rate of \$0.104 per gallon by 2040. This translates to a net present value of \$1.496 billion through 2040 at a 4% discount rate. This mechanism generates revenue that increases but slower than demand for road usage, reaching 47% less in 2040.

### User equity

As the distribution of vehicle fuel economy increases, the share of contributions through fuel taxes changes. An inflation index shifts the share increasingly to lower MPG vehicles.

### Social equity

Vehicle fuel economy increases with income. Lower-income households bear an increasing share of indexed fuel taxes per mile driven.

### Flexibility

This revenue source is subject to constitutional restrictions on spending.

### GHG emissions

Excise fuel taxes with an inflation index historically have not significantly discouraged fuel consumption.

### Transparency

Fuel taxes are invisible to end consumers.

### Efficiency

Fuel taxes are among the least costly to collect, with 2% of revenue going to fuel distributors and overall costs of administration less than 4%.

**Financial Sustainability**



**Sufficiency**



**User Equity**



**Social Equity**



**Flexibility**



**GHG Emissions**



**Transparency**

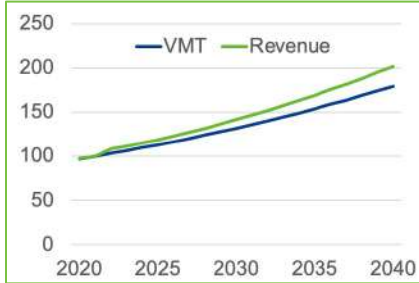


**Efficiency**



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle

### 3. Add vehicle fuel economy index to flat per-gallon fuel excise tax rate



Georgia is the only state that currently indexes fuel taxes to vehicle efficiency. It uses 2014 as the baseline year and multiplies the excise tax by the increase in average fuel economy. Adding an index on fuel economy would increase the rate of fuel taxation along with increasing fuel economy.

#### Financial Sustainability and Sufficiency

A vehicle fuel economy index ranging from 3-5% per year on top of the \$0.072 per gallon tax would increase the per gallon rate to \$0.157 by 2040. This results in a net present value of \$1.888 billion through 2040 at a 4% discount rate. Indexing fuel prices to fuel economy generates revenues faster than the demand for road usage, exceeding demand by 22% by 2040.

#### User equity

As the distribution of vehicle fuel economy increases, the share of contributions through fuel taxes changes. An inflation index shifts the share increasingly to lower MPG vehicles.

#### Social equity

Vehicle fuel economy increases with income. Lower-income households bear an increasing share of indexed fuel taxes per mile driven.

#### Flexibility

This revenue source is subject to constitutional restrictions on spending.

#### GHG emissions

Excise fuel taxes historically have not discouraged fuel consumption. However, indexing rates to vehicle efficiency could place a sufficiently high burden on some vehicles to discourage their usage.

#### Transparency

Fuel taxes are invisible to end consumers.

#### Efficiency

Fuel taxes are among the least costly to collect, with 2% of revenue going to fuel distributors and overall costs of administration less than 4%.

#### Financial Sustainability



#### Sufficiency



#### User Equity



#### Social Equity



#### Flexibility



#### GHG Emissions



#### Transparency

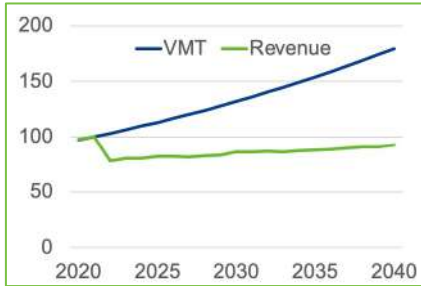


#### Efficiency



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle

## 4. Add sales tax on the price of fuel



A sales tax applied at the point of purchase would generate additional revenue on top of a per-gallon excise tax. However, the amount generated would fluctuate with the price of fuel. There could be sharp spikes or declines as oil, and therefore gasoline and diesel prices at the pump, fluctuate.

### Financial Sustainability and Sufficiency

A 2.3% sales tax on the spot price of gasoline as of December 2021 (approximately \$3.07 per gallon) would generate \$100 million in 2021. This translates to a net present value of \$1.112 billion through 2040 at a 4% discount rate. Revenue would not keep pace with road usage, reaching 87% lower by 2040.

### User equity

As the distribution of vehicle fuel economy increases, the share of contributions through fuel taxes varies. A sales tax would place a greater burden on lower MPG vehicles.

### Social equity

Vehicle fuel economy increases with income. Lower-income households bear a heavier tax incidence.

### Flexibility

Although excise taxes on fuel are subject to constitutional restrictions, it is unclear whether a sales tax would be subject to the same constraints, especially if it differs from the state's general sales tax rate.

### GHG emissions

Like fuel excise taxes, sales taxes generally are not designed to be punitive or to discourage consumption of the product being taxed.

### Transparency

Fuel taxes are invisible to end consumers.

### Efficiency

Fuel taxes are among the least costly to collect, with 2% of revenue going to fuel distributors and overall costs of administration less than 4%.

Financial Sustainability



Sufficiency



User Equity



Social Equity



Flexibility



GHG Emissions



Transparency



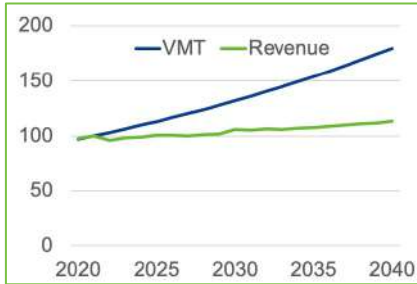
Efficiency



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle



## 5. Add variable-rate excise tax based on the price of fuel



A variable-rate excise tax is similar to a sales tax in that it applies to the price of fuel. However, rather than applying to the spot price, the tax is set periodically, for example yearly, based on the average price of fuel over the preceding year or the expected average price over the coming year. This approach has the effect of moderating spikes and sharp declines in revenue although they can still occur.

### Financial Sustainability and Sufficiency

A 2.9% variable-rate excise tax on based on the 2021 average price of fuel of approximately \$2.50 would generate \$100 million in 2021. This translates to a net present value of \$1.364 billion through 2040 at a 4% discount rate. Revenue would not keep pace with road usage, reaching 66% lower by 2040.

### User equity

As the distribution of vehicle fuel economy increases, the share of contributions through fuel taxes varies. A variable-rate excise tax would place a greater burden on lower MPG vehicles.

### Social equity

Vehicle fuel economy increases with income. Lower-income households bear a heavier tax incidence.

### Flexibility

Although excise taxes on fuel are subject to constitutional restrictions, it is unclear whether a variable-rate tax would be subject to the same constraints, especially if it differs from the state's general sales tax rate.

### GHG emissions

Like fuel excise taxes, variable-rate taxes generally are not designed to be punitive or to discourage consumption of the product being taxed.

### Transparency

Fuel taxes are invisible to end consumers.

### Efficiency

Fuel taxes are among the least costly to collect, with 2% of revenue going to fuel distributors and overall costs of administration less than 4%.

**Financial Sustainability**



**Sufficiency**



**User Equity**



**Social Equity**



**Flexibility**



**GHG Emissions**



**Transparency**

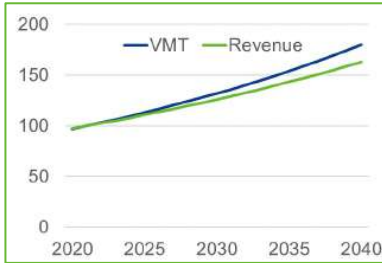


**Efficiency**



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle

## 6. Increase basic vehicle registration fee for passenger vehicles



Passenger vehicles currently pay \$33 per year for basic registration. A blanket fee increase for all passenger cars is a common means to collect revenue. This mechanism would not impact commercial vehicles.

### Financial Sustainability and Sufficiency

A \$40 additional basic registration fee per vehicle would generate \$100 million in 2021. This translates to a net present value of \$1.665 billion through 2040 at a 4% discount rate. The fee tracks relatively closely with the increase in road usage, with indexed revenues being 17% lower in 2040 than VMT.

### User equity

The tax is somewhat equitable on a user basis since it falls evenly on all vehicles; however, it does not consider *usage*.

### Social equity

Since the rate is fixed across all vehicles the incidence falls heaviest on those with the lowest incomes.

### Flexibility

This revenue source is subject to constitutional restrictions on spending.

### GHG emissions

An increase in the basic vehicle license fee would not have an impact on GHG emissions since it does not vary with fuel consumption.

### Transparency

Flat licensing fees are transparent and easy to understand since the fee is paid directly by customers.

### Efficiency

Assessing a license fee is costlier than the fuel tax since it requires individual transactions. However, since it occurs as part of the existing vehicle registration process, the marginal cost includes transaction costs (credit card fees of about 3%).

Financial Sustainability



Sufficiency



User Equity



Social Equity



Flexibility



GHG Emissions



Transparency

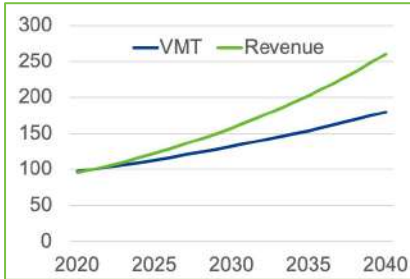


Efficiency



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle

## 7. Increase vehicle value-based rate of governmental services tax (GST)



Nevada assesses a value-based “governmental services tax” on vehicles at 4% of the DMV Valuation, which is 35% of the manufacturer’s suggested retail price (MSRP). Statutes provide a depreciation schedule based on vehicle age. The amount of revenue generated could be increased by increasing the tax rate, increasing the DMV Valuation percentage, or reducing the depreciation schedule.

### Financial Sustainability and Sufficiency

The current GST is about 0.7% of the value of the entire state vehicle fleet. Increasing that to 0.82% would generate \$100 million in 2021 and a net present value of \$2.129 billion through 2040 at a 4% discount rate. This mechanism increases revenue faster than road usage, reaching 81% higher by 2040.

### User equity

Value-based vehicle taxes capture revenue from users of the system, but do not correlate to system usage.

### Social equity

Vehicle value-based taxes tend to perform well along lines of social equity since lower-income households tend to own older (therefore more depreciated) vehicles and lower-value vehicles.

### Flexibility

This revenue source is not subject to constitutional restrictions on spending. Currently the vast majority is dedicated to uses other than transportation spending.

### GHG emissions

Zero-emission vehicles tend to be newer and more costly than other vehicles. Value-based taxes will result in higher tax incidence on owners and purchasers of such vehicles.

### Transparency

Although transparent, the method of calculating vehicle value can be difficult to explain, resulting in questions and complaints from customers.

### Efficiency

Assessing a vehicle value-based license fee is costlier than the fuel tax since it requires individual transactions. However, since it occurs as part of the existing vehicle registration process, the marginal cost includes transaction costs (credit card fees of about 3%).

**Financial Sustainability**



**Sufficiency**



**User Equity**



**Social Equity**



**Flexibility**



**GHG Emissions**



**Transparency**

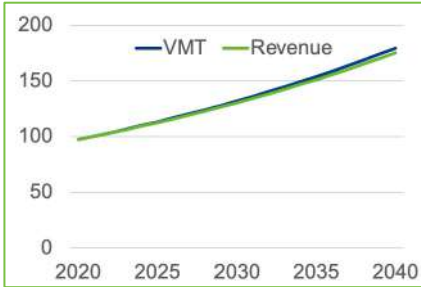


**Efficiency**



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle

## 8. Add fee based on vehicle weight



Nevada assesses a weight-based registration fee on vehicles ranging from \$33 to vehicles under 6,000 pounds to \$1,360 for the heaviest vehicles. Increasing the schedule of weight-based fees on vehicles over 10,000 pounds would generate additional revenue.

### Financial Sustainability and Sufficiency

Although difficult to estimate precise revenues from weight fees, it is estimated that an across-the-board rate increase of about 30% would yield \$100 million in revenues in 2021. Assuming an annual growth rate of 3%, this would generate a net present value of about \$1.727 billion through 2040 and would nearly track with road usage.

### User equity

Weight-based registration fees directly assess users of the system. Since weight is a factor in road usage costs, weight-based fees better capture user costs than flat fees or value-based taxes.

### Social equity

Typically heavier commercial vehicles bear the largest share of weight-based registration fees. These costs are passed on to end consumers in the form of higher prices.

### Flexibility

This revenue source is subject to constitutional restrictions on spending.

### GHG emissions

Zero-emission vehicles tend to weigh more than gasoline counterparts due to the weight of batteries, and would therefore bear a higher share of costs.

### Transparency

Weight-based fees are transparent and easy to understand since they are paid directly by customers.

### Efficiency

Assessing a weight-based license fee is costlier than the fuel tax since it requires individual transactions. However, since it occurs as part of the existing vehicle registration process, the marginal cost includes transaction costs (credit card fees of about 3%).

**Financial Sustainability**



**Sufficiency**



**User Equity**



**Social Equity**



**Flexibility**



**GHG Emissions**



**Transparency**

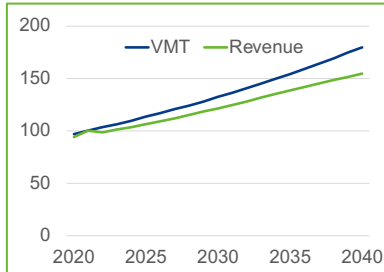


**Efficiency**



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle

## 9. Add fee based on vehicle fuel economy rating



This type of fee assesses a higher rate on vehicles with a higher EPA-rated miles per gallon. The fee can be coarse, with higher fees for vehicles in a range of MPG ratings, or fine, with a graduated rate for each increment of MPG. Where implemented this fee intends to work in conjunction with fuel taxes.

### Financial Sustainability and Sufficiency

Assessing a fee of \$30 for vehicles rated at less than 20 MPG, \$40 for 20-29 MPG, \$50 for 30-39 MPG, \$60 for 40-59 MPG, and \$100 for vehicles over 100 MPG would generate \$100 million in 2021 and a net present value of \$1.600 billion through 2040 when discounted at 4%. This mechanism lags VMT by 25% in 2040.

### User equity

Alone this form of registration fee results in disparate contributions based on a vehicle factor that has nothing to do with roadway usage or impacts. However, in conjunction with a fuel tax, this type of fee can counteract revenue axes losses among vehicles that are not contributing through fuel taxation.

### Social equity

Since more efficient vehicles are typically new, this fee would be somewhat progressive in its incidence.

### Flexibility

This revenue source is subject to constitutional restrictions on spending.

### GHG emissions

By itself, this mechanism creates a small but clear disincentive to adoption of cleaner vehicles.

### Transparency

Although transparent to the end customer, the method of determining MPG can be difficult to explain and individual results vary widely from EPA ratings, resulting in questions and complaints from customers.

### Efficiency

Assessing an MPG-based fee could occur as part of the existing vehicle registration process, but in addition to transaction costs (credit card fees of about 3%), it would require DMV to determine MPG of each vehicle, data which is not readily available for all makes and models.

Financial Sustainability



Sufficiency



User Equity



Social Equity



Flexibility



GHG Emissions



Transparency

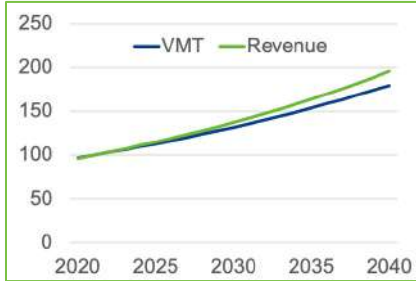


Efficiency



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle

## 10. Add fee based on vehicle engine type



Nearly 30 states have enacted annual registration surcharges on electric and/or hybrid vehicles to counteract the impact of increasing adoption of such vehicles on fuel tax revenues. Nevada could enact a similar fee based on engine type, namely a surcharge on electric vehicles.

### Financial Sustainability and Sufficiency

Charging \$100 for EVs would generate very little revenue in 2021 given the small population of EVs currently. A \$100 surcharge on EVs coupled with a \$39.13 surcharge on all other passenger vehicles would generate \$100 million in 2021 and \$1.870 billion through 2040, discounted at 4%. Revenue outpaces VMT by 43% in 2040.

### User equity

The tax is somewhat equitable since it increases costs for vehicles with the lowest operating expenses.

### Social equity

Since more EVs are typically newer, this fee would be somewhat progressive in its incidence.

### Flexibility

This revenue source is subject to constitutional restrictions on spending.

### GHG emissions

Charging an increasing rate base upon a vehicle's efficiency would disincentivize EV adoption, increasing GHG emissions.

### Transparency

Licensing fees are transparent since the fee is paid directly.

### Efficiency

Assessing an engine type-based surcharge requires accurate collection of engine type data, but otherwise the cost is modest, amounting to additional transaction costs (e.g., credit card fees approximately 3%).

### Financial Sustainability



### Sufficiency



### User Equity



### Social Equity



### Flexibility



### GHG Emissions



### Transparency

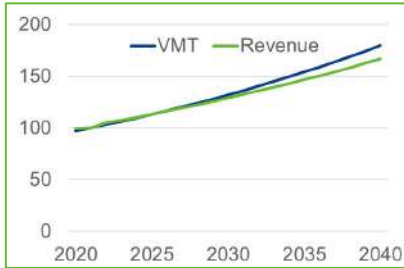


### Efficiency



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle

# 11. Add fee based on vehicle age



An age-based registration fee involves creating a schedule of fees that varies by vehicle age, with older vehicles paying less than newer vehicles.

## Financial Sustainability and Sufficiency

Assessing a fee of \$55 for vehicle less than 5 years old, \$45 for vehicles between 5 and 10, \$35 for vehicles 10 to 15, \$25 for vehicles 15-20 and \$15 for vehicles greater than 20 years of age would generate \$100 million in 2021 and \$1.702 billion through 2040 when discounted at 4%. Revenue nearly tracks with road usage, reaching 13% less than VMT in 2040.

### User equity

The tax is has no direct relationship to road usage. However, new vehicles in general tend to be driven more than older vehicles, and the fee would be generated from road users.

### Social equity

Since the fee decreases with vehicle age, the incidence would fall less on owners of older vehicles, which tend to be lower-income households.

### Flexibility

This revenue source is subject to constitutional restrictions on spending.

### GHG emissions

The fee would fall more heavily on newer vehicles which tend to be more fuel-efficient, electric and zero-emission vehicles. However, the difference in cost among vehicles could be modest as in the example rate schedule..

### Transparency

Age-based fees are visible to end customers and straightforward to understand.

### Efficiency

The marginal cost of an age-based registration fee is modest, on par with other vehicle registration surcharges given the need only to effect additional transaction costs at the time of registration.

Financial Sustainability	Sufficiency	User Equity	Social Equity	Flexibility	GHG Emissions	Transparency	Efficiency
● Mechanism is capable of strong alignment with guiding principle	● Mechanism is capable of some alignment with guiding principle	● Mechanism is capable of strong alignment with guiding principle	● Mechanism is capable of some alignment with guiding principle	● Mechanism is poorly capable of alignment with guiding principle	● Mechanism is capable of strong alignment with guiding principle	● Mechanism is capable of some alignment with guiding principle	● Mechanism is capable of strong alignment with guiding principle

## 12. Road usage charge (RUC) for light vehicles



RUC assesses a fee based on distance traveled on the road network by light-duty vehicles. There are many methods of collecting distance traveled data and setting rates, which can vary by vehicle or owner characteristics.

### Financial Sustainability and Sufficiency

A \$0.004 per mile RUC would generate \$100 million in 2021. This generates \$1.744 billion in net present value through 2040 at a 4% discount rate. A RUC keeps pace with increases in VMT over the period since it is a direct function of VMT.

### User equity

RUC assesses all road users directly and in proportion to their consumption.

### Social equity

RUC falls equally on all users per mile driven; therefore, the incidence is proportionally greater on lower income households. However, total miles driven increases with income, so the total burden falls more on higher-income households.

### Flexibility

This revenue source is subject to constitutional restrictions on spending.

### GHG emissions

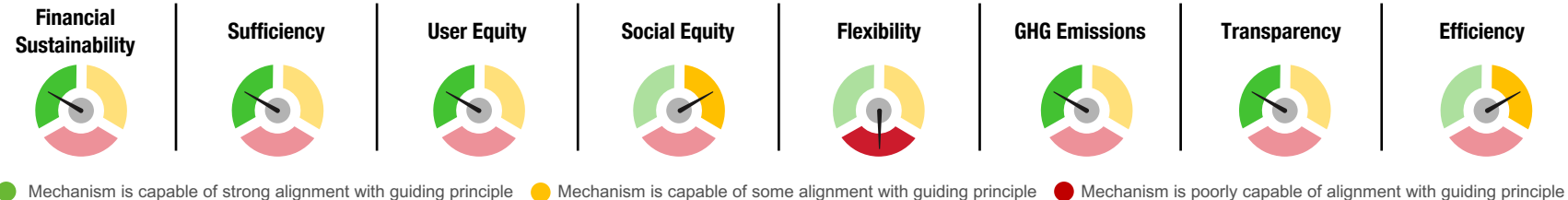
RUC in its most basic form falls equally on all vehicles regardless of efficiency and is a modest fee. It is capable of aligning more directly by varying rates based on emissions.

### Transparency

RUC is visible and simple to understand since it shows the amount charged and total miles driven, paid by end customers directly.

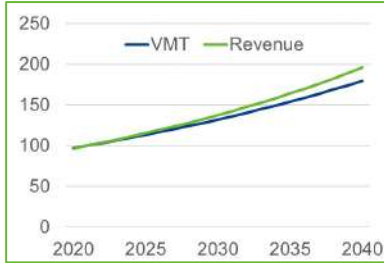
### Efficiency

DMV collects annual miles driven data. A low-cost method of assessment would be to collect payment at the time of registration, which would incur additional transaction costs. Other methods of collecting mileage data are more costly.





# 13. Weight-distance tax for heavy vehicles



Three states (Oregon, New Mexico, and New York) collect weight-distance taxes for trucks over 26,000 pounds. The per-mile amount varies based on a truck's weight and number of axles. Kentucky collects a flat amount per mile driven for all trucks 60,000 pounds and over.

## Financial Sustainability and Sufficiency

A blended average rate of \$0.061 per mile would generate \$100 million in 2021. Through 2040 a weight-distance tax would generate \$1.829 billion in net present value at a 4% discount rate. A weight-distance tax outpaces total VMT by 16% by 2040, because truck VMT are expected to grow faster than light-duty VMT.

### User equity

A weight-distance tax can assess vehicles directly and proportionally to the costs imposed on the road system based on axle-weight.

### Social equity

A weight-distance tax is largely passed through to all consumers via increased shipping prices.

### Flexibility

This revenue source is subject to constitutional restrictions on spending.

### GHG emissions

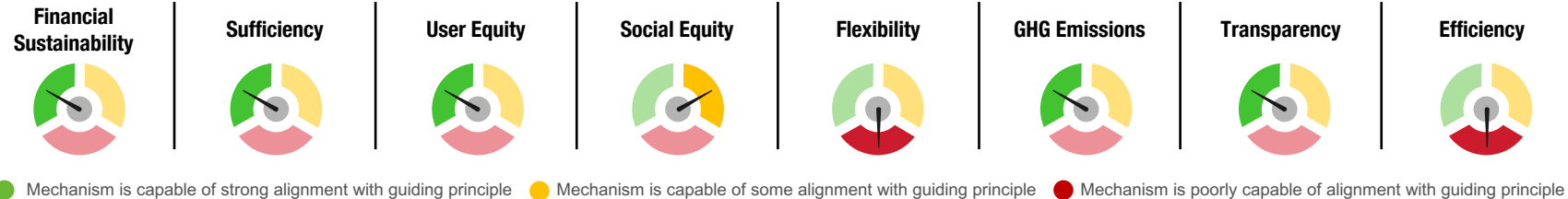
A weight-distance tax could result in optimizing miles traveled at declared weights, thereby lowering truck emissions

### Transparency

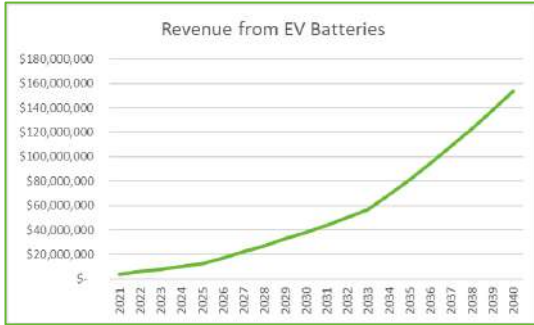
A weight-distance tax is visible and easy to understand since it shows the amount charged and total miles driven, paid by fleets directly.

### Efficiency

Although trucks already report miles traveled for IFTA and IRP, declaring and reporting weight and axle-counts adds complexity and cost for tax reporting and enforcement.



# 14. Electric vehicle battery taxes



## Financial Sustainability and Sufficiency

Assuming a rate of \$2 per kWh of vehicle battery capacity and a battery size of 75 kWh, a battery fee assessed annually would generate approximately \$4 million in 2021. Through 2040, a battery fee at this rate would generate \$635 million in NPV at a 4% discount rate.

Imposing an annual fee on battery size has limited revenue potential due to the reasonableness of rates. To raise significant revenues initially, the rates would be so high as to make owning an EV prohibitively expensive for most.

### User equity

The fee increasing with larger batteries would mean owners who drive larger vehicles or need greater range would pay more, resulting in heavier road users paying more.

### GHG emissions

A fee on batteries would likely increase GHG emissions by making the purchase and operation of EVs less economical.

### Social equity

The incidence of a battery fee would fall heaviest on high income households due to EVs high costs and current dominance by luxury brands.

### Transparency

Age-based fees would be visible to end customers and straightforward to understand.

### Flexibility

The revenue is likely not subject to constitutional limits on its use.

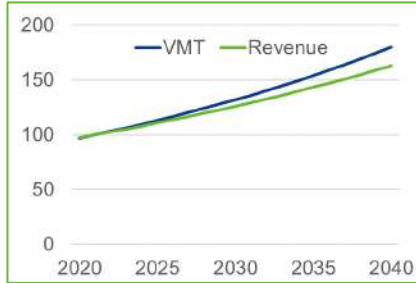
### Efficiency

A battery fee assessed annually could be collected as part of the vehicle registration process, thus incurring additional transaction costs. However, it would also require DMV to determine battery capacity of each vehicle and associate this information to a transaction.

Financial Sustainability	Sufficiency	User Equity	Social Equity	Flexibility	GHG Emissions	Transparency	Efficiency

● Mechanism is capable of strong alignment with guiding principle  
 ● Mechanism is capable of some alignment with guiding principle  
 ● Mechanism is poorly capable of alignment with guiding principle

# 15. Tire excise taxes



One revenue mechanism associated with highway usage is assessment of a per-tire excise tax. The federal government taxes heavy vehicle tires. Currently, although sales taxes apply, there is no tire excise tax in Nevada.

## Financial Sustainability and Sufficiency

Assessing a rate of \$50 per tire and assuming every vehicle purchases four new tires every five years, a tire fee would generate \$100 million in revenues in 2021 and \$1.665 billion through 2040 discounted at 4%. Revenue does not keep pace with usage, lagging by 17% in 2040.

### User equity

Given heavy road users wear out tires faster than light users, the fee would fall more heavily on those who drive more.

### Social equity

The fee would fall equally on all users leading to a higher tax incidence on lower income individuals.

### Flexibility

The revenue is likely not subject to constitutional limits on its use.

### GHG emissions

The fee would have little impact on GHG emissions since it is not associated with fuel consumption.

### Transparency

Depending on the point of collection, consumers may or may not be exposed to the surcharge.

### Efficiency

A tire fee would have a relatively low cost of collection since it could be imposed at the merchant level similar to a sales tax.

**Financial Sustainability**



**Sufficiency**



**User Equity**



**Social Equity**



**Flexibility**



**GHG Emissions**



**Transparency**

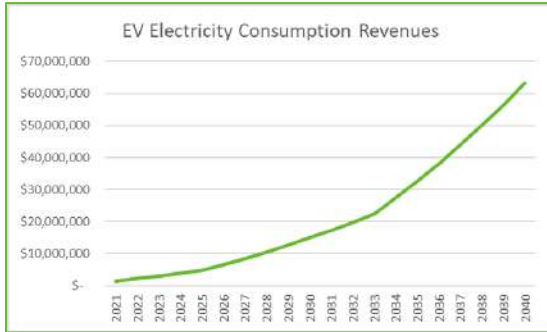


**Efficiency**



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle

## 16. Taxes on electricity consumed by electric vehicles



### Financial Sustainability and Sufficiency

Given the low numbers of EVs, the kWh rate was set at \$0.02 which is equivalent for the average EV to a gas tax of \$0.094 per gallon on the average combustion engine vehicle. At this rate, \$1.4 million would be collected in the 2021 and \$254 million through 2040 in net present value at a 4% discount rate.

Collecting a tax on EV electricity consumed is analogous to the gas tax for internal combustion engines. To generate substantial revenue this mechanism requires separate metering of electricity used to charge electric vehicles at public charging stations and at home where most charging occurs.

### User equity

Charging based on electricity consumption would approximate usage, but individual results vary widely.

### Social equity

The fee on electricity consumption for travel would likely be greater for higher incomes since they are more likely to drive more expensive larger and heavier vehicles that would correlate with greater electricity consumption.

### Flexibility

The revenue is likely not subject to constitutional limits on its use.

### GHG emissions

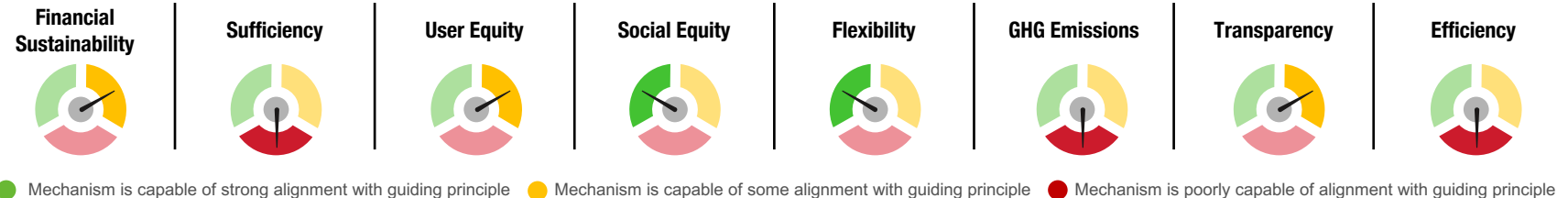
It is challenging to configure a tax on electricity used in zero-emission vehicles in a way that aligns with GHG reduction goals.

### Transparency

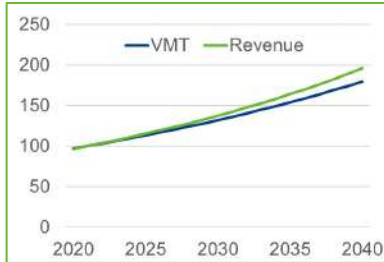
If the tax is collected by utilities, drivers may never notice it. If the tax is collected from end users, they may notice it but understanding declines as part of a larger utility bill.

### Efficiency

This mechanism would require the installation sub-meters at each EV charging points (including residences) and assessment of taxes on kWh by utilities metered at those locations.



## 17. Fee on value of trucking costs



This mechanism involves placing a surcharge on goods movements as a function of the cost of moving those goods. Effectively this mechanism represents a Value Added Tax on transportation.

### Financial Sustainability and Sufficiency

A tax rate of 2%, based on a flatbed per mile cost of \$3.07, would generate \$100 million in 2021 and \$1.829 billion through 2040 assuming a discount rate of 4%. Revenues would outpace VMT by 16% by 2040.

### User equity

The fee would fall equally on trucking operators and be a function of distances traveled. At least for heavy vehicles, the fee would indirectly correspond to roadway usage.

### Social equity

The fee would increase the cost of shipping all goods, resulting in higher goods prices across the board.

### Flexibility

The revenue is likely not subject to constitutional limits on its use.

### GHG emissions

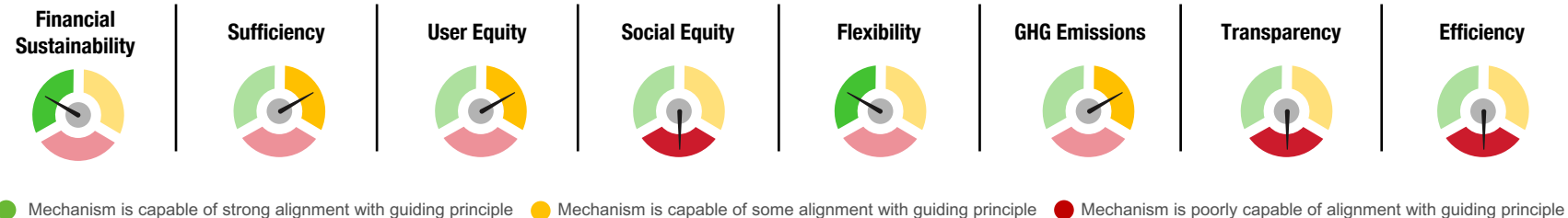
The fee is unlikely to have an impact on GHG emissions since the fee is not related to fuel consumption and would be passed through to consumers.

### Transparency

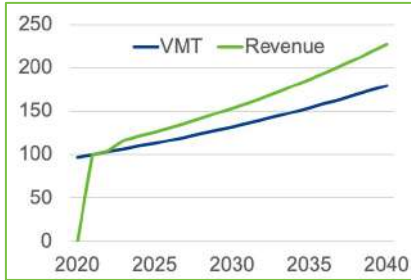
Given the fee would be assessed within the supply chain and incorporated in the final cost of goods, the fee would not be apparent to eventual goods.

### Efficiency

The fee would be difficult to assess and require significant new reporting requirements and processes likely infeasible for many operators.



# 18. Parcel delivery fees



This mechanism involves placing a surcharge on parcel deliveries such as USPS, FedEx, UPS and Amazon. Colorado recently enacted a fee of \$0.27 per delivery to generate additional revenue.

## Financial Sustainability and Sufficiency

A per-delivery fee of about \$0.75 would generate \$100 million in 2021. The revenue mechanism would generate a net present value of \$2.040 billion through 2040 and outpaces road usage, reaching 47% higher by 2040.

### User equity

The fee would indirectly approximate road usage of largely medium-duty trucks, many of which are converting to electric and avoiding fuel taxes.

### Social equity

The fee would increase the cost of direct-to-consumer shipping. The impact of this fee increase by income is indeterminate.

### Flexibility

The revenue is likely not subject to constitutional limits on its use.

### GHG emissions

A parcel delivery fee is unlikely to encourage GHG emissions reductions by itself, given it is not the driving cost of operating delivery fleets.

### Transparency

A parcel delivery fee would be transparent only to shippers unless directly passed on to consumers at the point of purchase.

### Efficiency

The fee would require new reporting and assessment infrastructure and could be challenging to administer across all shippers.

Financial Sustainability



Sufficiency



User Equity



Social Equity



Flexibility



GHG Emissions



Transparency

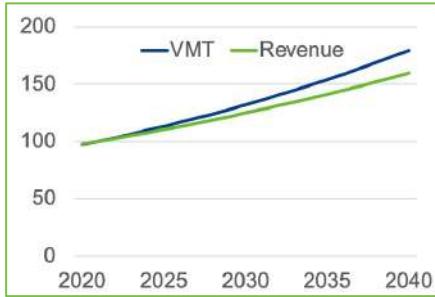


Efficiency



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle

## 19. For-hire service surcharges



Nevada imposes a 3% excise tax on the value of all for-hire ride services including traditional taxis as well as services such as Uber and Lyft. The first \$5 million in revenue each biennium is deposited in the State Highway Fund and available for transportation expenditures. This mechanism would increase the excise tax rate and dedicate the revenue to transportation.

### Financial Sustainability and Sufficiency

An excise tax of approximately 11% on the price of for-hire rides would generate approximately \$100 million in 2021. At that rate, it would generate a net present value of \$1.608 billion through 2040. It would not keep up with road usage, falling 20% below by 2040.

### User equity

A fore-hire ride service surcharge assesses a fee based on a portion of road usage. However, it does not assess fees based on distance or empty miles of for-hire operators.

### Social equity

There is little data available on the average income of for-hire passengers. The impact of a surcharge by income is indeterminate.

### Flexibility

The revenue is likely not subject to constitutional limits on its use.

### GHG emissions

The fee is unlikely to have an impact on GHG emissions since the fee is not related to fuel consumption and would be passed through to consumers.

### Transparency

For-hire ride service users see the tax rate and amount on their receipts, but it is a line-item among numerous taxes, fees, and commercial surcharges.

### Efficiency

The cost of imposing a fee increase would be marginal given the infrastructure is already in place.

Financial Sustainability



Sufficiency



User Equity



Social Equity



Flexibility



GHG Emissions



Transparency

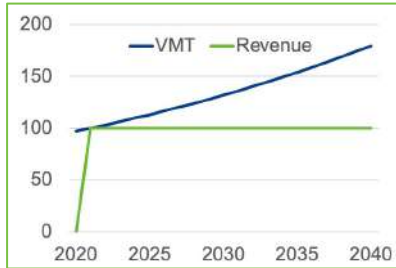


Efficiency



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle

## 20. Cordon charge in congested areas



This mechanism involves assessing a fee on vehicles that enter officially-designated congested areas such as Las Vegas and Reno at congested times. Such charges can take many forms, but the purpose is to use price to discourage driving and moderate traffic congestion, similar to “surge pricing” used by ride share companies.

### Financial Sustainability and Sufficiency

For illustration purposes, a fee of \$1.37 per trip along I-15 in downtown Las Vegas in both directions would generate \$100 million in 2021. Absent any increases in capacity, this mechanism would generate a net present value of \$1.313 billion through 2040, but would not keep up with overall road usage, falling short by 80% by 2040.

### User equity

Cordon charges would directly fall on only those users of the system causing congestion and not other users.

### Social equity

Depending on the details of how a cordon charge is designed, it could improve social equity by improving travel times for workers, through discounts for low-income drivers, and other mechanisms.

### Flexibility

The revenue may be subject to constitutional limits on its use.

### GHG emissions

A cordon charge can double as an emissions fee, thereby discouraging emissions and congestion that exacerbates emissions.

### Transparency

To be effective a cordon charge must be transparent and understandable to end users, otherwise it will not have the desired effect of discouraging driving at certain places and times.

### Efficiency

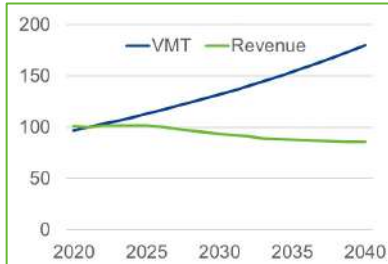
Regardless of configuration, a cordon charge requires substantial infrastructure for detecting and billing individual vehicles.



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle



## 21. Carbon taxes



No states currently have a carbon tax, although several do have cap and trade systems, most notably California. A carbon tax involves assessing a fee on each ton of carbon dioxide emitted, which can be done “upstream” at the level of refineries and factories, “midstream” at fuel distributors (like the gas tax), or “downstream” on drivers.

### Financial Sustainability and Sufficiency

Assessing a \$38 per ton fee, translating to \$0.10 per gallon, would raise \$100 million in 2021 and a net present value of \$1.242 billion through 2040 when discounted by 4%. When indexed to VMT, revenues would lag by 95% due to declining carbon emissions.

### User equity

The taxes paid would not reflect the miles traveled due to the range of fuel economies in the vehicle fleet.

### Social equity

Vehicle fuel economy increases with income. Lower-income vehicle owners will bear a greater share of carbon taxes on average, per mile driven. However, a carbon tax can be designed to refund revenues to low-income households to offset its regressive effects.

### Flexibility

Revenue is not subject to constitutional limits on its use.

### GHG emissions

A carbon tax can have a major impact on reducing emissions by charging explicitly for and discouraging their creation.

### Transparency

If assessed upstream, consumers would have little knowledge as to their costs or how their vehicle’s MPG impacts their costs. If assessed downstream on consumers directly, a carbon tax could be highly transparent and even more effective at achieving reductions.

### Efficiency

Where a carbon tax is levied would dictate the tax’s efficiency. Upstream, it would likely have the same costs as the current fuel tax. If levied at the consumer level, it would have higher costs akin to vehicle registration fees or road usage charges.

**Financial Sustainability**



**Sufficiency**



**User Equity**



**Social Equity**



**Flexibility**



**GHG Emissions**



**Transparency**

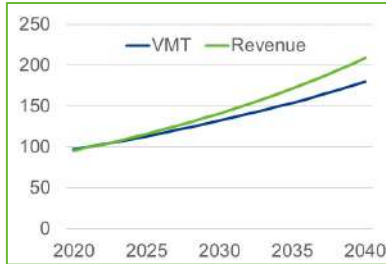


**Efficiency**



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle

## 22. Street (or transportation) utility fee



A street utility fee would assess a statewide surcharge on residents and businesses based on the estimated road usage impacts of the property type.

### Financial Sustainability and Sufficiency

To estimate the financial performance of this mechanism, an annual street utility fee per household was modeled. A rate of \$80 per household per year would raise \$100 million in 2021 and \$1.881 billion through 2040 at a 4% discount rate. The mechanism outpaces VMT growth by 29% in 2040.

### User equity

A street utility fee does not bear a direct relationship to road usage and does not fall on road users.

### Social equity

A utility fee could be constructed to reduce the per-household cost to multi-family units, thereby reducing the impact on low-income households and households near transit availability.

### Flexibility

The revenue is not subject to constitutional limits on its use.

### GHG emissions

The fee does not have any connection to GHG emissions and would not alter their production. However, the fee could be constructed to impose higher rates for land uses that generate more traffic.

### Transparency

The tax would likely be transparent if it appeared with other annually assessed taxes, although perhaps difficult for end customers to understand if bundled with other taxes, fees, and utility charges..

### Efficiency

A street utility fee would be most efficiently collected as part of an existing mechanism such as property taxes or utilities, neither or which are assessed by the state. This would require an additional layer of coordination.

**Financial Sustainability**



**Sufficiency**



**User Equity**



**Social Equity**



**Flexibility**



**GHG Emissions**



**Transparency**



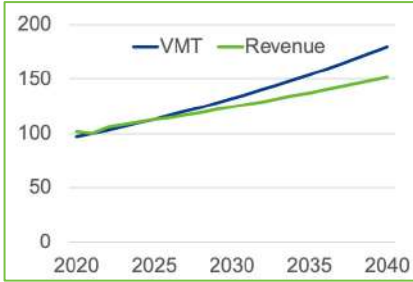
**Efficiency**



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle

## 23. Statewide employer payroll tax

A statewide payroll tax would collect payments from employers as a function of wages paid, similar to the current Modified Business Tax in Nevada. Employers would pay a tax based on total wages, although currently in Nevada taxable wages are those about \$50,000. Oregon is an example of a state that generates transportation revenue via a statewide payroll tax for transit, currently at 0.1%.



### Financial Sustainability and Sufficiency

A tax of 0.2% on wages statewide would generate approximately \$100 million in 2021. At a discount rate of 4%, the tax would collect \$1.637 billion through 2040. However, the tax would not outpace VMT, lagging by 28% in 2040.

### User equity

A payroll tax does not fall directly or indirectly on road users and bears no relationship to road usage.

### Social equity

The tax would fall equally as a portion of all wages earned, making it a regressive source of taxation. Rates could not be varied by income due to the prohibition on collecting income tax from individuals.

### Flexibility

The revenue is not subject to constitutional limits on its use.

### GHG emissions

The tax would have no ability to impact on GHG emissions since it would not have any relationship to their formation.

### Transparency

The tax would be visible to employers, may be visible to employees (appearing as a line item on pay stubs), and invisible to road users.

### Efficiency

A state payroll tax could utilize the same mechanism as unemployment insurance; however it is unclear whether the Department of Employment, Training and Rehabilitation, which currently collects premiums, would be capable of implementing such changes.

**Financial Sustainability**



**Sufficiency**



**User Equity**



**Social Equity**



**Flexibility**



**GHG Emissions**



**Transparency**



**Efficiency**



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle

## 24. Land use impact fee



A land use impact fee is imposed on developers based on the expected impacts of development on the transportation system. To approximate the performance of such a revenue mechanism, a statewide tax was assumed as a percentage of the overall spend on construction in the State of Nevada.

### Financial Sustainability and Sufficiency

Assuming a tax rate of 1% and an annual growth rate in the construction sector of 4%, the tax would generate \$100 million in 2021 and a net present value of \$1.952 billion through 2040 at a 4% discount rate. Revenue outpaces VMT given the faster expected relative growth of the development sector, reaching 37% higher in 2040.

### User equity

Impact fees have no direct relationship to road usage, and costs would not fall on road users directly or indirectly.

### Social equity

The tax would be absorbed as a cost of doing business by developers and passed on to tenants and purchasers of property. Depending on the nature of a given development, abatements could allow for discounts or exemptions for developments targeted at low-income households.

### Flexibility

The revenue is not subject to constitutional limits on its use.

### GHG emissions

Depending on its formulation, the tax could be used to discourage developments that result in GHG emissions.

### Transparency

End users would not discern or understand the tax.

### Efficiency

A land use impact fee could be complex and costly to administer given the disparate number and type of developers and the lack of clarity around valuation of what gets taxed.

**Financial Sustainability**



**Sufficiency**



**User Equity**



**Social Equity**



**Flexibility**



**GHG Emissions**



**Transparency**



**Efficiency**



● Mechanism is capable of strong alignment with guiding principle   ● Mechanism is capable of some alignment with guiding principle   ● Mechanism is poorly capable of alignment with guiding principle

Revenue mechanisms – initial analysis

## Top performers



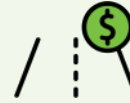
### Financial Sustainability

1. Increase value-based rate of governmental services tax
2. Street utility fee
3. Parcel delivery fee
4. Fuel tax with fuel economy index
5. Weight-distance-based charged for heavy-duty vehicles
6. Distance-based charge for light-duty vehicles



### Sufficiency

1. Increase value-based rate of governmental services tax
2. Fuel tax with fuel economy index
3. Street utility fee
4. Weight-distance-based charged for medium- and heavy-duty vehicles
5. Distance-based charge for light-duty vehicles
6. Fees based on vehicle engine type



### User equity

1. Distance-based charge for light-duty vehicles
2. Weight-distance-based charged for medium- and heavy-duty vehicles
3. Increased registration fees based on vehicle weight
4. Cordon charge in congested areas



### Social equity

1. Increase value-based rate of governmental services tax
2. Age-based vehicle tax
3. Taxes on electricity consumed by electric vehicles

Revenue mechanisms – initial analysis

## Top performers



### Flexibility

1. Value-based vehicle tax
2. Carbon tax
3. Street utility fee
4. Statewide payroll tax
5. Parcel delivery fees
6. Land use impact fees



### GHG emissions

1. Carbon tax
2. Cordon charges in urban areas
3. Weight-distance-based charged for heavy-duty vehicles
4. Fuel tax with fuel economy index
5. Distance-based charge for light-duty vehicles



### Transparency

1. Distance-based charge for light-duty vehicles
2. Weight-distance-based charged for heavy-duty vehicles
3. Basic vehicle registration fee
4. Cordon charges in urban areas
5. Vehicle fee based on weight
6. Vehicle fee based on age



### Efficiency

1. Fuel tax (all forms)
2. Basic vehicle registration fee
3. For-hire ride service surcharge
4. Statewide payroll tax