



Background Information for AWG Meeting #6

Nevada Sustainable Transportation Funding Advisory Work Group

March 8, 2022



**CDM
Smith**

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Meeting schedule and key milestones to complete the AWG's study and recommendations to the Nevada legislature.

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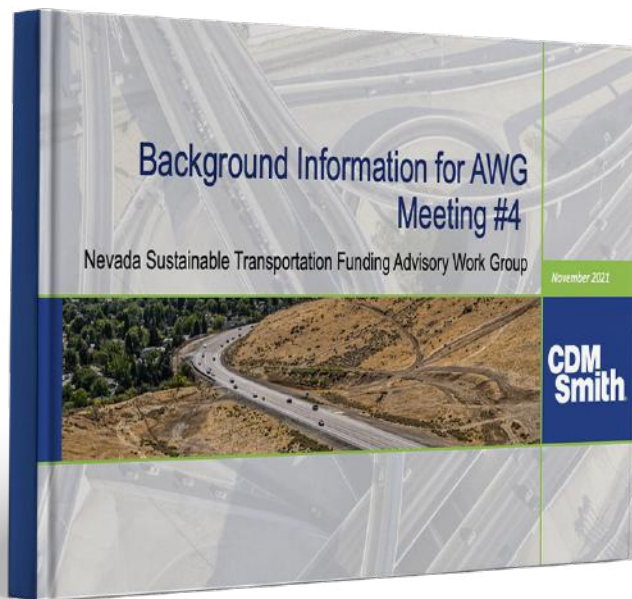
Per AWG's direction in January, sample groupings of revenue mechanisms are provided to help focus discussion for the March 2022 AWG meeting.

A

Appendix: UPDATED for March 2022 Transportation revenue options analysis

Updated financial and qualitative assessment of the revenue options under consideration.

How to use this briefing book



This briefing book is provided to Advisory Working Group members as background for the March 8, 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.)



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.



DRAFT AGENDA TOPICS

The March AWG meeting agenda was developed in January. The last two scheduled AWG meetings (April and June) are under development now.

About eight weeks ahead of an AWG meeting, we begin building the draft meeting agenda in greater detail. The remaining AWG meetings (March, April and June 2022) are outlined below, illustrating the meeting topics, activities, and expected outcomes.

For March 8, 2022, AWG Meeting:

- Consider the role that land use can play in creating a more sustainable transportation system (both funding and operations)
- Review two or more sample revenue groupings best able to meet the AWG's guiding principles
- Identify the short-list of feasible revenue options for more detailed analysis on administrative costs and timelines to implement.
- Packet for members to present Nevada Sustainable Transportation Funding study

For April 12, 2022, AWG Meeting:

- Land use and transportation: potential findings, and specific revenue and growth management tools that could be employed
- Proposed revenue mechanisms for further AWG discussion and shaping
- Identify time frames for transportation funding options, and issues that must be addressed before mechanisms can be implemented
- Review and feedback of short "findings" statements

For June 12, 2022, AWG Meeting:

- Findings statements (revised based on AWG feedback)
- Draft recommendations for AWG consideration and possible adoption
- Process and schedule for final report-drafting and adoption



Section 2

The Role of Land-Use Planning in Transportation

SB 413 requires the AWG to study “[t]he role of land use and smart growth strategies in reducing transportation emissions and improving system efficiency and equity.”

Goals

- A Provide a high-level understanding of the link between land use and sustainable transportation
- B What are the constraints Nevada law places on land use regulation?
- C Examples from two other states
- D Successful land use planning
- E Open up for conversation

How is land use and transportation related?

Linking transportation and land use refers to the process of guiding development and expansion of communities with the goal of better coordination of land use and transportation that accommodates pedestrian and bike safety, mobility, enhances public transportation service, improves road network connectivity, and includes a multi-modal approach to transportation. Thus, the choices a community makes about land use affect the viability of transportation options, which makes the link between land use policy as a critical part of any conversation about sustainable transportation.

Creating Sustainable Communities

- Mix land uses
- Take advantage of compact building design
- Create housing opportunities and choices
- Create walkable communities
- Foster distinctive, attractive communities with a strong sense of place
- Preserve open space, farmland, natural beauty, and critical environmental areas
- Strengthen and direct development toward existing communities
- Provide a variety of transportation choices
- Make development decisions predictable, fair, and cost-effective
- Encourage community and stakeholder collaboration in development decisions

Source: <https://www.iowaeda.com/land-planning/sustainable/>

Land Use Law in Nevada



Nevada law reserves most of the planning responsibilities to local governmental organizations:

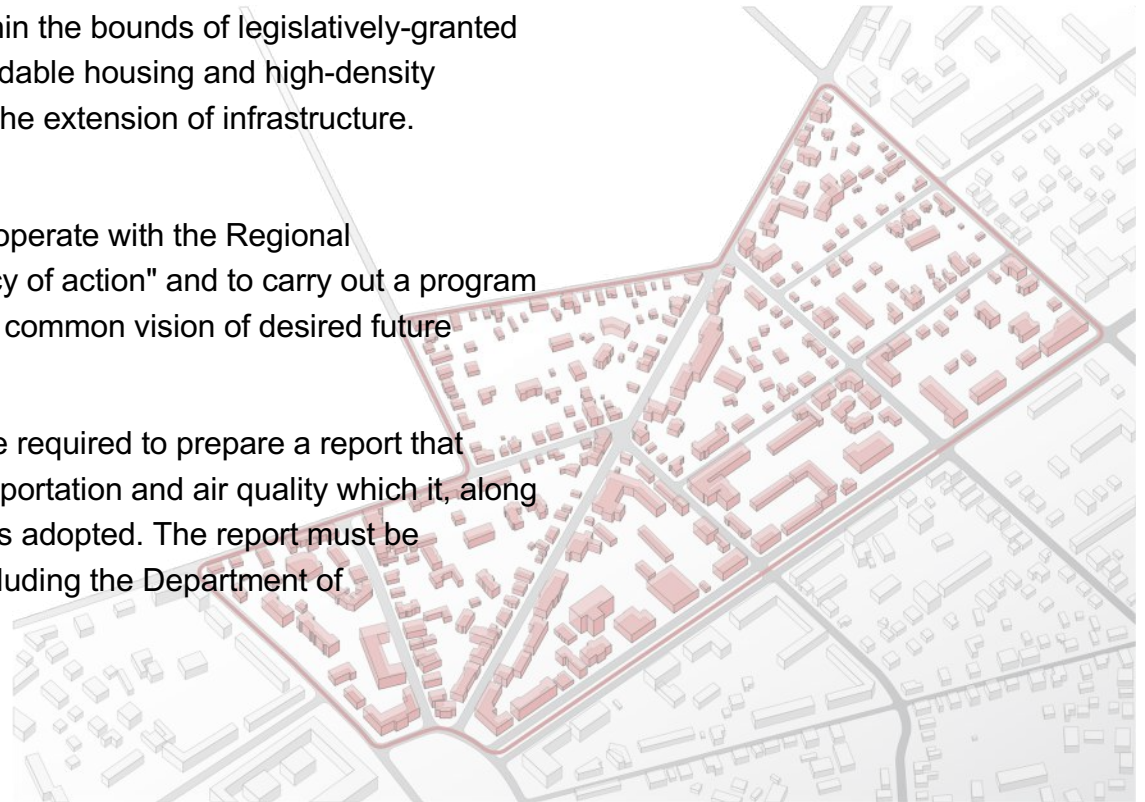
"State participation in land use planning should be limited to coordination of information and data, the acquisition and use of federal lands within the State, providing land use planning assistance in areas of critical environmental concern when directed by the Governor or requested by local governments, and providing assistance in resolving inconsistencies between the land use plans of local governmental entities when requested to do so by one of the entities." NRS 321.640.

State law, however, governs the general requirements of local land use policy.

Under Nevada law, regional planning is conducted at the county and local level. Counties are required to form a Regional Planning Coalition and cities and towns are required to form Planning Commissions, which are responsible for the development of comprehensive regional and local plans, respectively. These comprehensive plans are developed to provide for the "orderly management of the growth of the region for a period of . . . 20 years," NRS 278.02528 et seq. "[G]oals, policies . . . and other documents relating to . . . land use and development . . . and transportation," amongst other things, must be included in these plans, which must be approved by the governing boards of these governmental entities. The Regional Transportation Commission is permitted to administer the approved plans.

Land Use Law in Nevada (continued)

- The Regional Planning Coalition is permitted, within the bounds of legislatively-granted authority, to provide incentives to encourage affordable housing and high-density development, including the imposition of fees for the extension of infrastructure. NRS 278.02535.
- The Regional Planning Coalition is required to cooperate with the Regional Transportation Commission to ensure "consistency of action" and to carry out a program of integrated, long-range planning that supports a common vision of desired future conditions. NRS 278.02584(1).
- Every two years, Regional Planning Coalitions are required to prepare a report that summarizes the policies related to land use, transportation and air quality which it, along with the Regional Transportation Commission, has adopted. The report must be submitted to regional and statewide agencies, including the Department of Transportation. NRS 278.02584(4).



Other State Efforts to Mitigate Unsustainable Growth



Oregon

Like Nevada, planning in Oregon is conducted at the local level; however, the foundation for statewide program for land use planning rests in the set of 19 Statewide Land Use Planning Goals, which were enacted in 1973 as a part of Oregon's movement to manage land more sustainably. The law created the Land Conservation and Development Commission, responsible for crafting the rules that guide the land use system and tie local planning to those set of rules. The rules express the state's policies on land use and related topics, such as citizen involvement, housing, urbanization, and natural resources. The law places a strong emphasize coordination -- keeping plans and programs consistent with each other, with the goals, as statutes are updated, and with acknowledged local plans.

To facilitate coordination, Oregon provides a Model Development Code for local governments to follow

<https://www.oregon.gov/lcd/TGM/Pages/Model-Code.aspx>

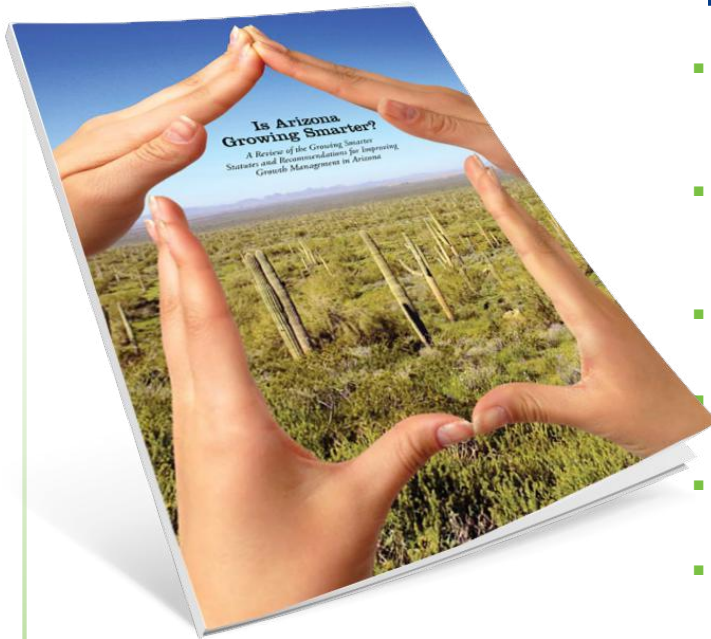


Arizona

Like Nevada, Arizona has struggled with continued growth. In 1998, the Growing Smarter Act was enacted. This legislation was an attempt to create an urban growth management framework by strengthening land use processes, providing for open space preservation, and establishing a Growing Smarter Commission to make recommendations on long-term urban growth issues. Specifically, the legislation increased the level of public participation in the development and implementation of local plans; increased the scope of plans by requiring new, growth-related elements in the plan; and, finally, strengthened the implementation power of local plans. While the legislation prompted more cities and towns to adopt plans, it appears that the plans do not provide sufficiently specific policies, objectives and metrics by which to measure the plans effectiveness in mitigating growth.

Themes of Effective Land Use Policies

- A land use reform effort should create a strong, compelling and comprehensive vision for the community (state) that involves strong stakeholder and public participation.
- Developing stronger land use planning regimes involves participation from many diverse stakeholders and constituency groups--from transportation to economic development to environmental to housing, and more.
- Effective land use policy is comprehensive in scope and does not involve individual or "one-off" policies.
- Integration and coordination of plans is key. Otherwise, entities are creating their plans and policies in isolation.
- Effective and sustainable land use regulation involves strong, measurable implementation guidelines, metrics, and evaluation methods.
- Financial or other incentives may be helpful, even needed, in order for local governments to implement overarching policy set at the state level.
- Regular evaluation of effectiveness of state and local policy is important to making progress on key policy goals.
- Continual education of community members and policymakers about the importance of sustainable land use planning is important.



<https://sonoraninstitute.org/files/pdf/is-arizona-growing-smarter-growing-smarter-statutes-and-recommendations-for-improving-growth-management-in-arizona-10022008.pdf>



Section 3

Status of revenue options after January AWG meeting

REVISIONS SINCE JANUARY AWG MEETING

Based on AWG discussion in January 2022, adjustments were made to the staff ratings assigned to certain revenue mechanisms.

During the January 2022 AWG meeting, members proposed the following adjustments to the staff-assigned ratings given to each of the revenue options. Short explanations for the ratings changes are provided below. To hear the verbatim discussion of these adjustments, please refer to the recorded AWG meeting, accessible at: <https://youtu.be/IO3aiu2KcXE> or www.NVTransportationFuture.org

- **Option 1: Fuel tax increase.** The transparency rating was raised to yellow, since commercial vehicles that report their fleet mileage are very aware of the applicable fuel tax rates.
- **Option 4: Sales tax on price of fuel.** The efficiency rating was lowered to yellow due to the potential for multiple entities needing to participate in the collection, reporting, receipt, and distribution of the tax proceeds.
- **Option 12: Distance charge for light duty vehicles.** The compatibility with GHG reduction goals was lowered from green to yellow, as each of the three operational programs in the U.S. (Oregon, Utah, and Virginia) have not offered any incentives (such as discounted rates) for electric or high-mpg vehicles, as has been proposed (but not yet implemented) for mileage-based fee programs being considered in other states.
- **Option 13: Weight-distance tax for heavy vehicles.** The compatibility with GHG reduction goals was lowered from green to yellow, as no means of incentivizing more fuel-efficient or electric fleets are in use in the four states that collect a weight-distance tax on heavy vehicles.

GUIDING PRINCIPLES COMPOSITE RATINGS

Members requested an easier way to view the results of the updated ratings

Important limitations of this information: created upon AWG request, this summary view combines the ratings for each of the Guiding Principles into a single composite score for each revenue option, then displays the relative rankings of all options by color. **Shortcomings of this information:** it treats all principles as numerically "equal" to one another, disregarding whether certain principles should be "pass-fail" or whether certain principles are more compelling (for public policy reasons) than others; and comparing one revenue mechanism directly against another ignores the synergistic benefits possible if multiple revenue sources are combined into a single package.

42 Increase value-based rate of governmental services tax	38 Add fuel economy index to flat per-gallon excise tax	36 Increase flat rate of per-gallon excise tax (gasoline and diesel)	37 Add inflation index to flat per-gallon excise tax rate
45 Add a distance-based charge for light-duty vehicles	49 Add a tax on EV batteries	41 Increase basic license fee	40 Add variable-rate excise tax based on price of fuel
55 Cordon charges in urban areas	56 Carbon tax	44 Add fee based on vehicle fuel economy rating	58 Payroll tax
46 Add fee based on vehicle age	59 Land use impact fees	50 Add a tax on tires	39 Add sales tax based on price of fuel
48 Add a weight-distance-based charge for medium- and heavy-duty vehicles	General funds	51 Add a tax on EV electricity consumed	
53 Parcel delivery fees		52 Value added tax on goods movement	
57 Street utility fee			
43 Add fee based on vehicle weight			
45 Add fee based on vehicle engine type			
54 Ride-share surcharges			

= Briefing book page number for full description

RESULTS OF AWG JANUARY 2022 AWG DISCUSSION

Status of revenue options after discussion at AWG’s January meeting

At the January 2022 AWG meeting, there was lively discussion and deliberation on all revenue mechanisms. Based on the discussion, the revenue mechanisms have been sorted into categories thought to best reflect the AWG’s discussion.

Under consideration for statewide revenue

- | | |
|---|--|
| 36 Increase rate of flat per-gallon excise tax | 41 Increase the basic vehicle license fee |
| 37 Add inflation index to flat per-gallon excise tax rate | 43 Add fee based on vehicle weight |
| 38 Add fuel efficiency index to flat per-gallon excise tax | 44 Add fee based on vehicle fuel economy rating |
| 39 Add sales tax based on price of fuel | 46 Add fee based on vehicle age |
| 40 Add variable-rate excise tax based on price of fuel | 45 Distance-based charge for light-duty vehicles |
| 56 Carbon tax | 53 Parcel delivery fee |
| 42 Increase value-based rate of governmental services tax (GST) | |

Better suited as local revenue source

- 57 Street utility fee
- 55 Cordon charge in urbanized areas
- 54 Ride-share surcharges+
- 24 Land use impact fees+

In reserve (for now)

- 54 Ride-share surcharges+
- 50 Add a tax on tires
- 45 Add fee based on vehicle engine type
- 24 Land use impact fees+

Very little support

- 48 Weight-distance-based charged for medium- and heavy-duty vehicles
- 51 Taxes on electricity consumed by electric vehicles
- 49 Add a tax on batteries

Eliminated (to be confirmed)

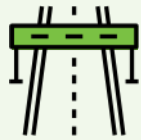
- 58 ~~Payroll tax~~
- ~~Income tax~~ [n/a]
- General fund transfers [n/a]
- 52 Value added tax on goods movement

Key:

= Briefing book page number for full description + appears in two categories ● ● ● ● = Guiding Principles composite rating

TOP PERFORMERS, BY GUIDING PRINCIPLE

UPDATED: Top performers, by Guiding Principle



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

TOP PERFORMERS, BY GUIDING PRINCIPLE

UPDATED: Top performers, by Guiding Principle



Flexibility

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



GHG emissions

1. Carbon tax
2. Cordon charges in urban areas
3. Fuel tax with fuel economy index
4. 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



Section 4

Sample revenue package options

THREE SAMPLE REVENUE PACKAGES FOR AWG RE-SHAPING

The project team created three sample revenue packages for AWG consideration.

During the January 2022 AWG meeting, members asked the project team to develop a few different revenue package options to help members focus their deliberations on the most viable mechanisms during the March AWG meeting. The three samples lean most heavily on **a)** mechanisms that are still under “active consideration” by the AWG (see page 17); **b)** mechanisms that rated highly across all the Guiding Principles; **c)** groupings (or packages) capable of raising between \$400M - \$600M by Year 6 to fund estimated needs (regardless of which recipients, programs or exact projects are ultimately funded); and **d)** addresses the core AB 413 requirement to identify a sustainable State Highway Fund source for the future.

The intent is for AWG members to deliberate and then reshape one (or more) of these samples until a single preferred option emerges for more detailed analysis. Details for each of these are found on pages 22 through 30 of this Briefing Book.

	Sample 1	Sample 2	Sample 3
Near term funding:	<ul style="list-style-type: none"> Gas tax increase, plus 1 cent/yr. for 6 years (renewable) Model year-based vehicle registration fee increase 	<ul style="list-style-type: none"> Phased in gas tax increase, indexed to fleet fuel efficiency Basic vehicle registration fee increase 	<ul style="list-style-type: none"> Gas tax increase, indexed to inflation and fleet fuel efficiency Registration fee increase based on vehicle MPG
Flexible funding sources:	<ul style="list-style-type: none"> GST increase earmarked for transportation Shipping and delivery fee 	<ul style="list-style-type: none"> Increase in Transportation Connection (rideshare) tax Tax on auto parts 	<ul style="list-style-type: none"> Carbon tax on motor fuels
Longer-term sustainable funding:	<ul style="list-style-type: none"> Gradual transition to a road usage charge for light duty vehicles 	<ul style="list-style-type: none"> Gradual transition to a road usage charge for light duty vehicles 	<ul style="list-style-type: none"> Gradual transition to a road usage charge for light duty vehicles

THREE SAMPLE REVENUE PACKAGES FOR AWG RE-SHAPING

Sample Package 1: about \$600 million per year by 2029 (\$230 million flexible)

State highway funding – <i>near term</i>	Advantages	Est. Revenue
Statewide fuel tax increase – 10 cents + 1 cent per year thereafter		
<p>An initial 10 cent increase in the statewide gas tax. Thereafter, the fuel tax rate (both gasoline and diesel) will be increased by 1 cent every year. The 1 cent per year must be renewed by the legislature or voters every 6 years.</p>	<ul style="list-style-type: none"> • Dime increase in gas tax at a time when gas prices are rising • Since Clark and Washoe already have FRI, the 1 cent annual increase mimics an index. Must be renewed by the legislature or voters every 6 years. 	<p>\$140m in year 1 \$154m in year 2 \$168m in year 3 \$182m in year 4 \$196m in year 5 \$210m in year 6</p>
Model Year-based vehicle registration fee		
<p>An <i>additional</i> vehicle registration fee (“roadway equalization fee”) is assessed on vehicles based on model year (MY). The MY categories correlate to major changes in CAFE standards: MY 2017 – 2025 would pay \$45 roadway equalization fee. MY 2009 -2016 vehicles would pay \$27, or 40% less, matching the CAFE standard differential. Vehicles older than model year 2009 would pay \$15, as these vehicles are more likely to be owned by lower-income households, driven less miles, and are gradually disappearing from the vehicle fleet.</p>	<ul style="list-style-type: none"> • The fee levels correlate to years when CAFE standards were increased, reinforcing philosophy that higher MPG vehicles should contribute proportionately for their roadways. • All newer vehicles pay a bit more – not just EVs and hybrids. Addresses concerns that EVs are being unfairly singled out for special taxes. • Best for social equity, as lower income households tend to own older vehicles. 	<p>\$60m per year</p>

THREE SAMPLE REVENUE PACKAGES FOR AWG RE-SHAPING

Sample Package 1: about \$600 million per year by 2029 (\$230 million flexible)

Highway or Flexible transportation funding	Advantages	Est. Revenue
<p>Dedicated increase in GST</p> <p>An additional 0.2% increase in the statewide GST, statutorily dedicated for statewide transportation needs, including multimodal programs such as safe-routes-to-schools and transit assistance grant programs.</p>	<ul style="list-style-type: none"> • A special 0.2% increase in the GST just for transportation projects is less likely to be diverted to the state's General Fund. • Significant flexible funds are raised for statewide purposes. "Flexible" can also include roadway improvements when warranted. • If this revenue source is pledged for repayment of capital construction bonds (roadway or other), it cannot be diverted other purposes. 	\$166m per year
<p>Shipping and delivery fee</p> <p>A transportation fee of 50 cents would be collected from sellers of goods (including food services) that are delivered to Nevada addresses. For goods delivered in a zero-emission vehicle, the fee is reduced to 25 cents.</p>	<ul style="list-style-type: none"> • Makes the goods seller the point of taxation (just like sales taxes) • Responds to concerns that e-commerce is overburdening roadways and not paying fair share • 50% discount if goods are delivered by ZEV • Very similar to Colorado's recently-enacted fee 	\$67m per year

THREE SAMPLE REVENUE PACKAGES FOR AWG RE-SHAPING

Sample Package 1: about \$600 million per year by 2029 (\$230 million flexible)

Gas tax replacement – long term	Advantages	Est. Revenue
<p>Road usage charge – light duty vehicles</p> <p>Research the feasibility of RUC for light-duty vehicles in Nevada as a long-term replacement to the gas tax and to the roadway equalization fee (proposed above). Research must address critical policy, administrative, and financial issues. Tap into federal funds to conduct the research and testing. Report results by December 2026.</p>	<ul style="list-style-type: none"> • Allows deeper investigation of the benefit/cost of a RUC system in Nevada, while allowing several other states to push ahead, taking on the first-mover risks and providing a pathway for other states. • Near-term revenue stabilization is provided from the Model Year vehicle fee increase, buying some time to research and test RUC in a way that makes sense for Nevada. 	TBD

THREE SAMPLE REVENUE PACKAGES FOR AWG RE-SHAPING

Sample Package 2: about \$445 million per year by 2029 (\$30 million flexible)

State highway funding – near term	Advantages	Est. Revenue
<p>Statewide fuel tax increase – 6 cents + 6 cents + 6 cents</p> <p>Statewide fuel tax rate (both gasoline and diesel) will be increased by 3 cents for three years, for a total increase of 9 cents</p>	<ul style="list-style-type: none"> A slight increase, spread out to alleviate the immediate impact of an upfront 12 cent increase, but limits increases to just three years (no unending tax increases). Although per-mile revenue is quickly eroding, the gas tax still can provide a substantial and immediate influx of revenue 	<p>\$84m in year 1 \$168m in year 2 \$252m in year 3 \$252m in year 4 \$252m in year 5 \$250m in year 6</p>
<p>Statewide fleet fuel efficiency index</p> <p>Fuel tax would be indexed to the average fuel efficiency of all light duty vehicles and increase accordingly. Revenue must be spent on roadway projects.</p>	<ul style="list-style-type: none"> In lieu of indexing to CPI, indexing to fleet fuel efficiency links the related concepts of increasing fleet fuel efficiency and declining funds Indexing to fuel efficiency is not already in place in parts of the state and could therefore be implemented statewide. 	<p>\$5m in year 1 \$14m in year 2 \$27m in year 3 \$39m in year 4 \$49m in year 5 \$59m in year 6</p>
<p>Increase base vehicle registration fee</p> <p>The current base license fee would increase from \$33 to \$75.</p>	<ul style="list-style-type: none"> Represents a modest increase in a fee that is tied to roadway usage. This is not a new tax, but one people are familiar with. 	<p>\$105-120m per year</p>

THREE SAMPLE REVENUE PACKAGES FOR AWG RE-SHAPING

Sample Package 2: about \$445 million per year by 2029 (\$30 million flexible)

Flexible transportation funding	Advantages	Est. Revenue
<p>Increase in Transportation Connection Tax</p> <p>An additional 1-3% surcharge would be added on all rideshare and taxicab trips.</p>	<ul style="list-style-type: none"> • Links the increase in ride sharing to increased number of vehicles on the roads. • Ride sharing is often used by visitors, providing a way to export some of the tax burden. 	<p>\$25m per year</p>
<p>Tax on auto parts</p> <p>A 2% tax would be levied on the purchase of auto parts such as tires, motor oil, EV batteries.</p>	<ul style="list-style-type: none"> • This is a tax on items directly related to the use of roads. • At 2%, the tax on safety-related items such as tires is much lower than a flat fee of, say, \$50 tire, which could deter drivers from replacing worn tires, causing safety issues on roadways. 	<p>\$10m per year</p>

THREE SAMPLE REVENUE PACKAGES FOR AWG RE-SHAPING

Sample Package 2: about \$445 million per year by 2029 (\$30 million flexible)

Gas tax replacement – long term	Advantages	Est. Revenue
<p>Road usage charge – light duty vehicles</p> <p>Research the feasibility of RUC for light-duty vehicles in Nevada as a long-term replacement to the gas tax. Research must address critical policy, administrative, and financial issues. Tap into federal funds to conduct the research and testing. Report results by December 2026.</p>	<ul style="list-style-type: none"> • Allows deeper investigation of the benefit/cost of a RUC system in Nevada, while allowing several other states to push ahead, taking on the first-mover risks and providing a pathway for other states. • Near-term revenue stabilization is provided from the Model Year vehicle fee increase, buying some time to research and test RUC in a way that makes sense for Nevada. 	TBD

THREE SAMPLE REVENUE PACKAGES FOR AWG RE-SHAPING

Sample Package 3: about \$500 million per year by 2029 (\$98 million flexible)

State highway funding – near term	Advantages	Est. Revenue
Statewide fuel tax increase and indexing to fuel efficiency and inflation statewide		
<p>Statewide fuel tax rate (both gasoline and diesel) will be increased by 15 cents in year 1, with the full amount of the increase indexed to inflation and vehicle fleet fuel economy</p>	<ul style="list-style-type: none"> Raises substantial revenue quickly and in alignment with environmental priorities to increase the cost of fossil fuel. 	<p>\$210m in year 1 \$234m in year 2 \$241m in year 3 \$249m in year 4 \$257m in year 5 \$266m in year 6</p>
Registration fee increase based on vehicle MPG		
<p>An additional registration fee of \$1 for each Combined City/Highway MPG rating on light duty vehicles is assessed. Higher MPG (or MPGe) vehicles would pay more (\$52 for a vehicle with a combined MPG rating of 52) than lower MPG vehicles (e.g., \$23 for the average vehicle that has an MPG rating of 23).</p>	<ul style="list-style-type: none"> Similar to RUC, this “dials up” over time to stay in alignment with near-term environmental priorities and addresses user equity of gas/hybrid vehicles that pay little in gas tax. 	<p>\$109m in year 5 \$112m in year 6 \$115m in year 7 \$118m in year 8 \$121m in year 9</p>

THREE SAMPLE REVENUE PACKAGES FOR AWG RE-SHAPING

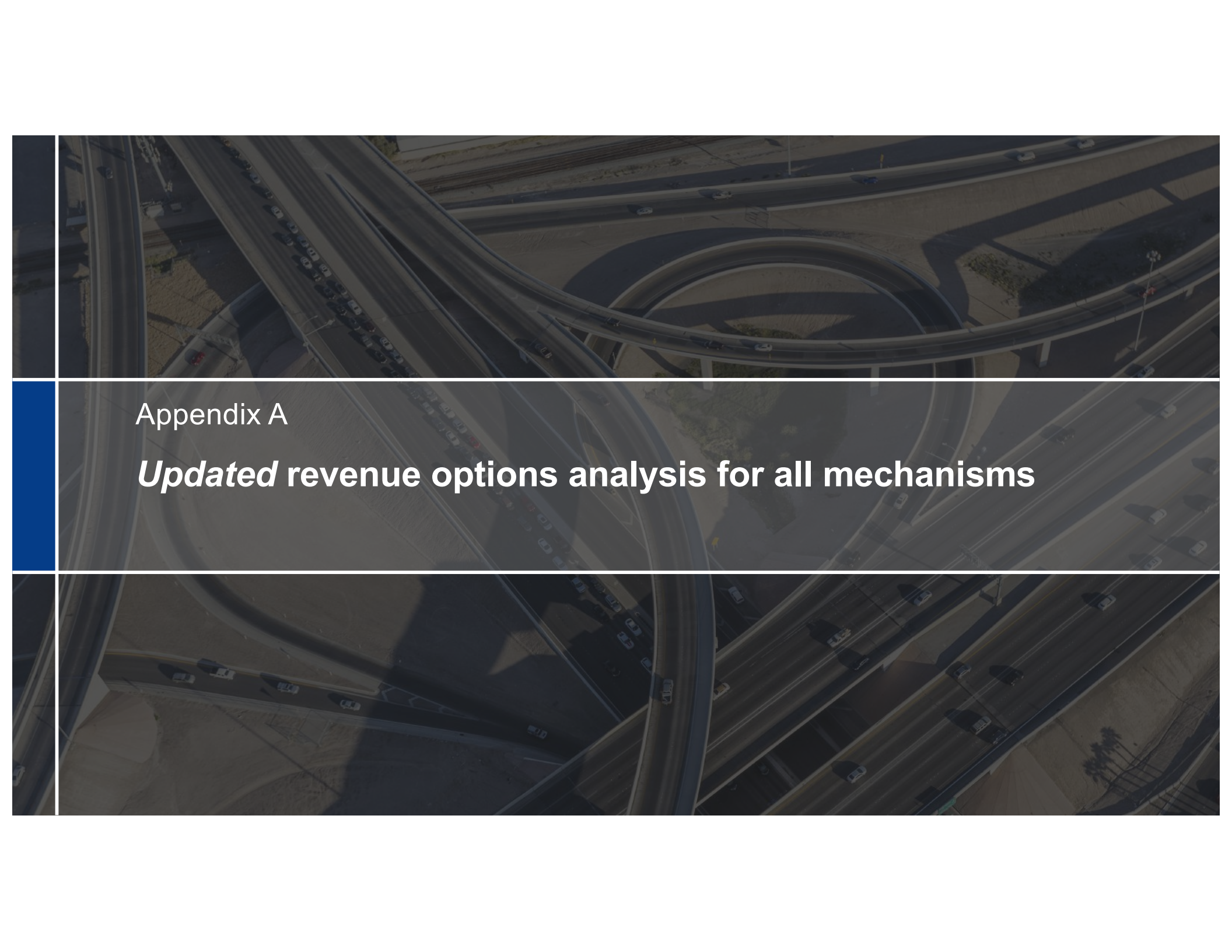
Sample Package 3: about \$500 million per year by 2029 (\$98 million flexible)

State highway funding – near term	Advantages	Est. Revenue
<p>Carbon tax</p> <p>A carbon tax of \$40 per metric ton would be applied to motor fuels.</p>	<ul style="list-style-type: none"> • This is effectively another form of fuel taxation but more clearly labeled to align with environmental priorities. flexible funding source. • Unlike fuel taxes, this revenue mechanism is a flexible source of funding. 	<p>\$107m in year 1 \$107m in year 2 \$107m in year 3 \$107m in year 4 \$106m in year 5 \$104m in year 6</p>

THREE SAMPLE REVENUE PACKAGES FOR AWG RE-SHAPING

Sample Package 3: about \$500 million per year by 2029 (\$98 million flexible)

Gas tax replacement – long term	Advantages	Est. Revenue
<p>Road usage charge for non-gasoline vehicles</p> <p>A per-mile road usage charge (RUC) would be applied to all non-gasoline vehicles (i.e., electric drive vehicles). The per-mile rate would increase in proportion to falling gas tax revenue collections.</p>	<ul style="list-style-type: none"> • Preserves the user pay principle of fuel taxes for the longer term. This will not be ready for at least 5 years, but by gradually increasing the rate for RUC on EVs after an initialization period, this addresses both social and user equity without compromising environmental priorities. 	<p>\$6m in year 5 \$9m in year 6</p>



Appendix A

***Updated* revenue options analysis for all mechanisms**

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.

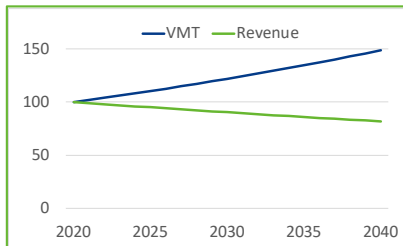
Transparency. This principle relates to the ability of taxpayers to see the revenue mechanism. We also assess the relative ability of end customers to understand the mechanisms and its personal impact on them.

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.

Indicates Rating Change since January 2022 AWG meeting

Appendix: Updated revenue options analysis for all mechanisms

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

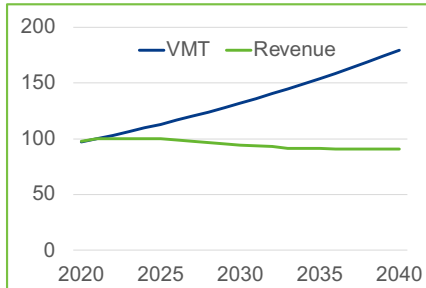


● Mechanism is capable of strong alignment with guiding principle ● Mechanism is capable of some alignment with guiding principle ● Mechanism is poorly capable of alignment with guiding principle

Transparency rating upgraded to yellow

Appendix: Updated revenue options analysis for all mechanisms

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

While fuel taxes are invisible to end consumers, they are more apparent to commercial fleet operators due to the tax reporting requirements of these businesses.

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

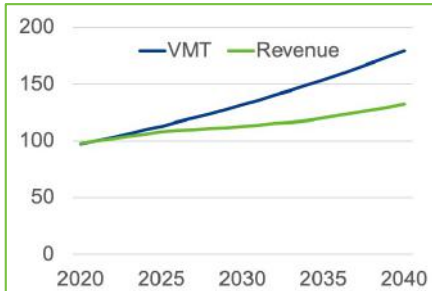


Efficiency



● 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

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

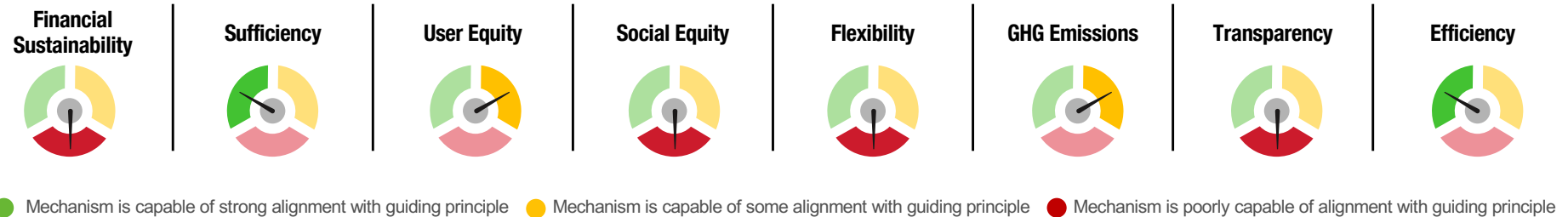
Excise fuel taxes with an inflation index historically have not significantly discouraged fuel consumption.

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%.



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

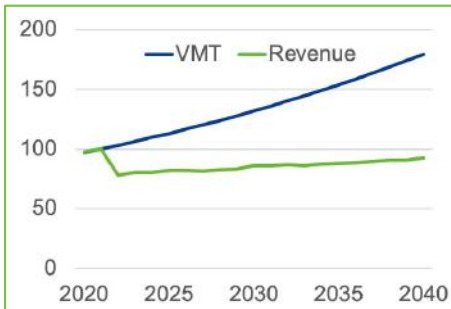


● Mechanism is capable of strong alignment with guiding principle ● Mechanism is capable of some alignment with guiding principle ● Mechanism is poorly capable of alignment with guiding principle

Efficiency rating
downgraded to yellow

Appendix: Updated revenue options analysis for all mechanisms

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%. However, when collected as a retail sales tax, several entities must collect, process and remit the tax proceeds.

Financial Sustainability



Sufficiency



User Equity



Social Equity



Flexibility



GHG Emissions



Transparency

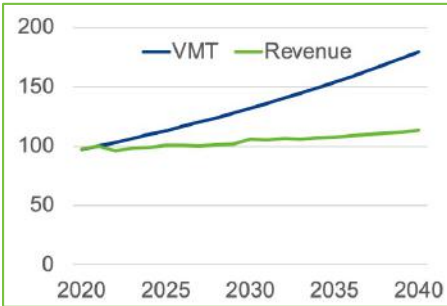


Efficiency



● 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

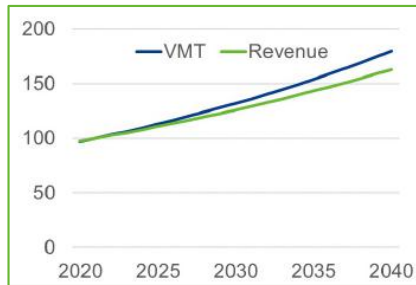


Efficiency



● 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

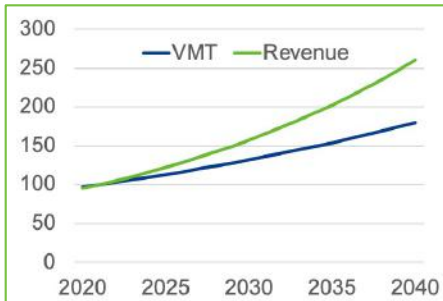


Efficiency



● 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

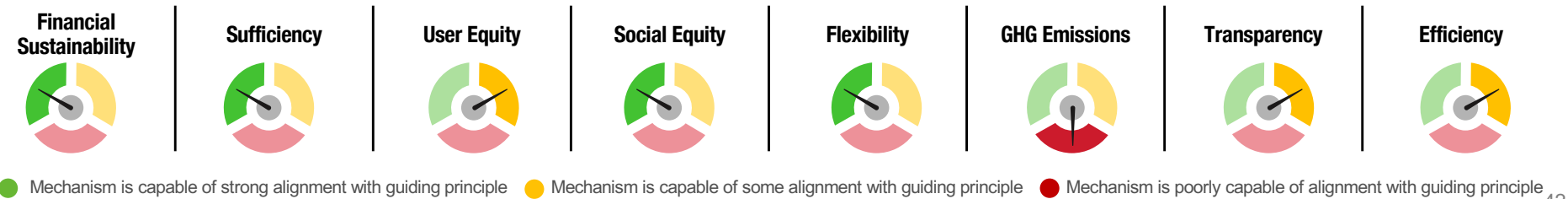
Zero-emission vehicles tend to be newer and more costly than other vehicles. Value-based taxes will result in higher tax incidence on owners and purchasers of such vehicles.

Transparency

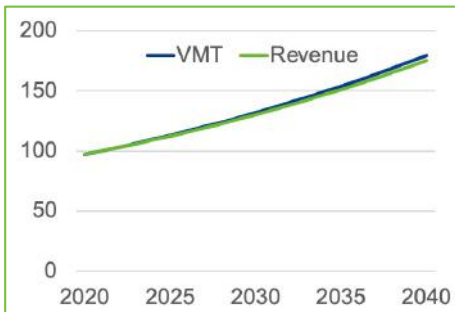
Although transparent, the method of calculating vehicle value can be difficult to explain, resulting in questions and complaints from customers.

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%).



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

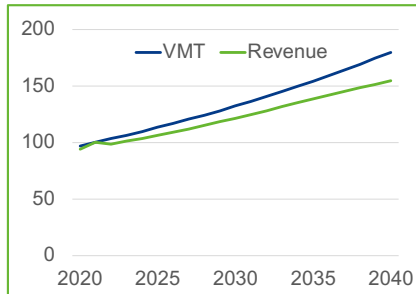


Efficiency



● 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

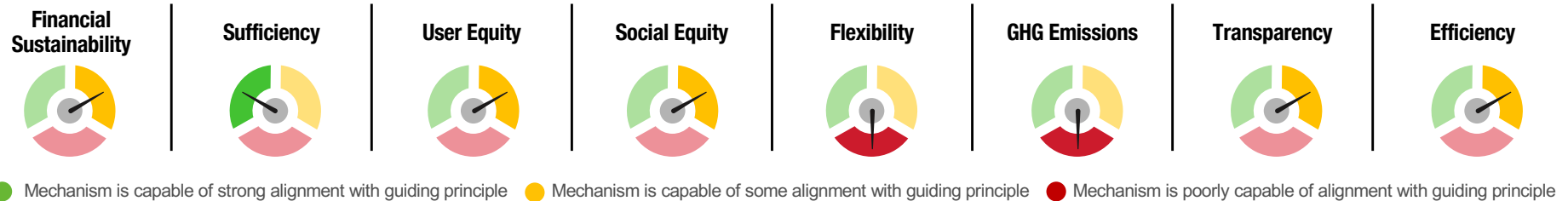
By itself, this mechanism creates a small but clear disincentive to adoption of cleaner vehicles.

Transparency

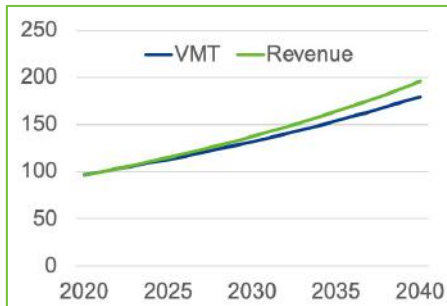
Although transparent to the end customer, the method of determining MPG can be difficult to explain and individual results vary widely from EPA ratings, resulting in questions and complaints from customers.

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.



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

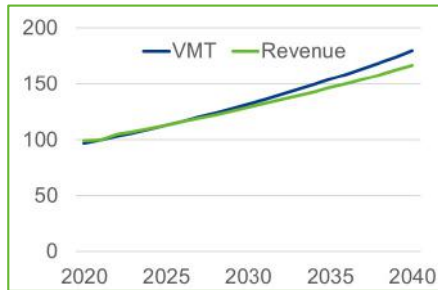


Efficiency



● 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

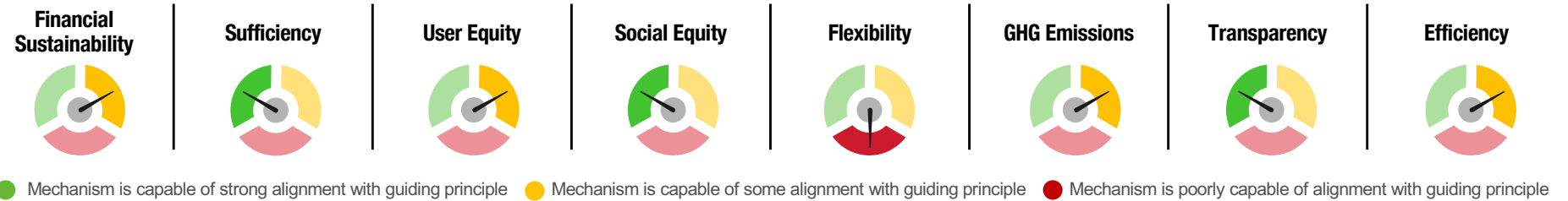
The fee would fall more heavily on newer vehicles which tend to be more fuel-efficient, electric and zero-emission vehicles. However, the difference in cost among vehicles could be modest as in the example rate schedule..

Transparency

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

Efficiency

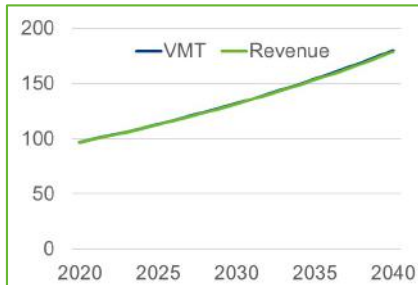
The marginal cost of an age-based registration fee is modest, on par with other vehicle registration surcharges given the need only to effect additional transaction costs at the time of registration.



GHG emissions rating downgraded to yellow

Appendix: Updated revenue options analysis for all mechanisms

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. Its capable of aligning more directly by varying rates based on emissions. However, the three states with RUC have not taken this approach.

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.

Financial Sustainability



Sufficiency



User Equity



Social Equity



Flexibility



GHG Emissions



Transparency



Efficiency

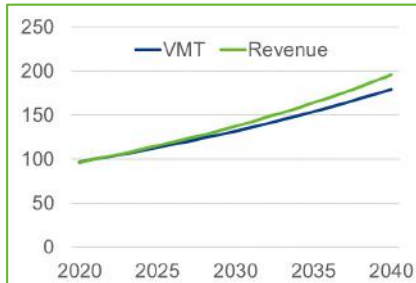


● Mechanism is capable of strong alignment with guiding principle ● Mechanism is capable of some alignment with guiding principle ● Mechanism is poorly capable of alignment with guiding principle

GHG emissions rating downgraded to yellow

Appendix: Updated revenue options analysis for all mechanisms

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. However, reconfiguring loads is not a common practice so this may prove difficult.

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.

Financial Sustainability



Sufficiency



User Equity



Social Equity



Flexibility



GHG Emissions



Transparency

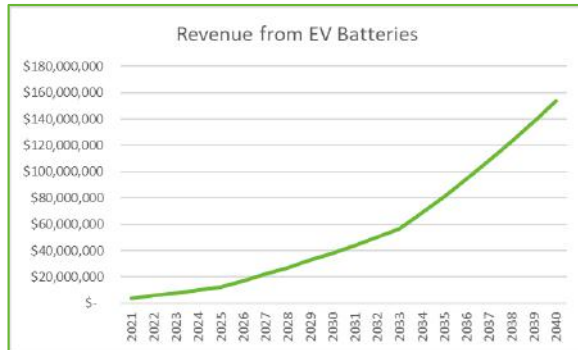


Efficiency



● 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

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

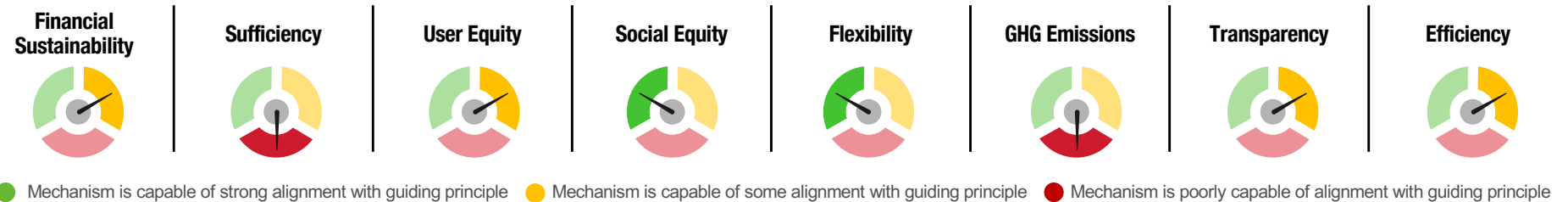
Age-based fees would be visible to end customers and straightforward to understand.

Flexibility

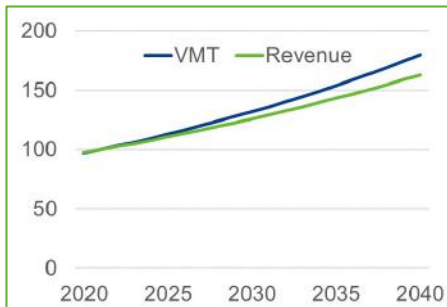
The revenue is likely not subject to constitutional limits on its use.

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.



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

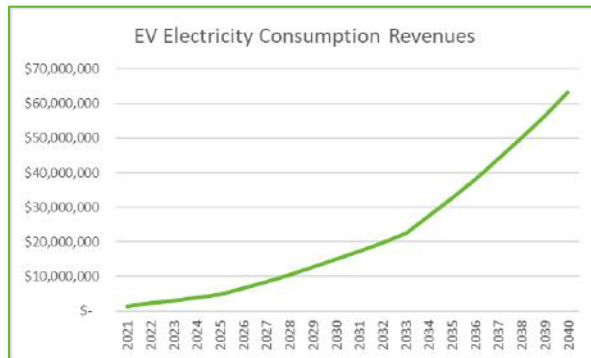


Efficiency



● 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

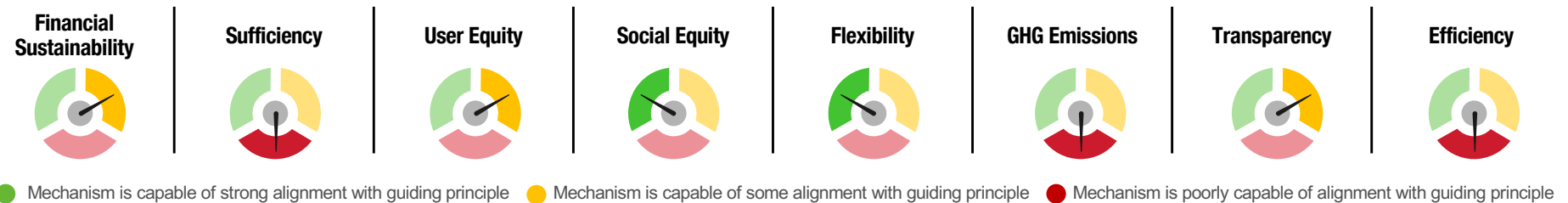
It is challenging to configure a tax on electricity used in zero-emission vehicles in a way that aligns with GHG reduction goals.

Transparency

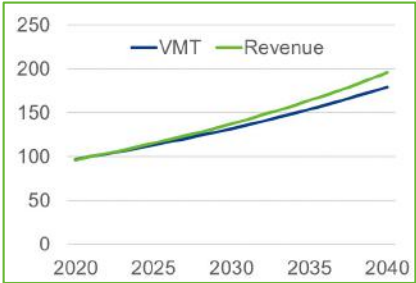
If the tax is collected by utilities, drivers may never notice it. If the tax is collected from end users, they may notice it but understanding declines as part of a larger utility bill.

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.

Financial Sustainability



Sufficiency



User Equity



Social Equity



Flexibility



GHG Emissions



Transparency

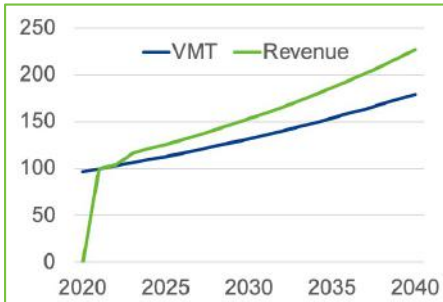


Efficiency



● 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

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

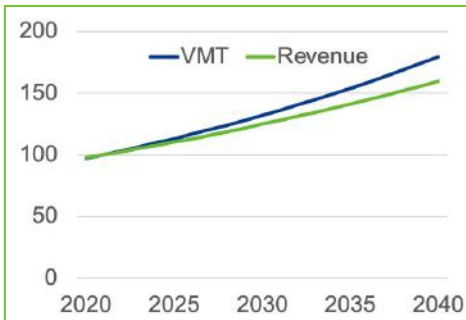


Efficiency



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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

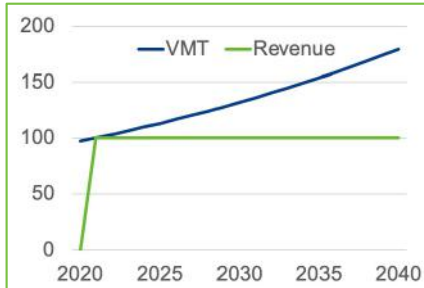


Efficiency



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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.

Financial Sustainability



Sufficiency



User Equity



Social Equity



Flexibility



GHG Emissions



Transparency

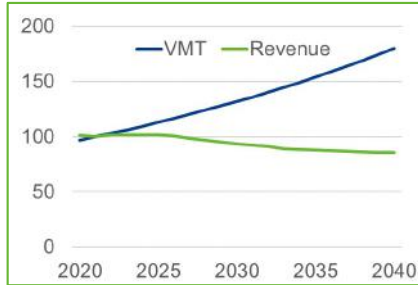


Efficiency



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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

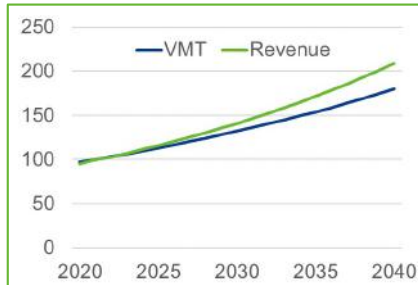


Efficiency



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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 of 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



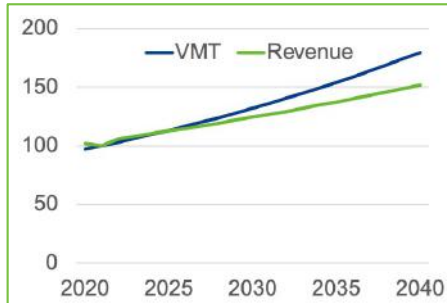
Efficiency



● 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.

