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## Washington State 2021 Energy Strategy – Transportation Sector Framing Document

### Introduction

The Washington Department of Commerce is developing the 2021 State Energy Strategy (SES) to support the state’s ambitious goals to protect our climate while **ensuring an equitable transition to clean energy** and promoting the state’s workforce and economy.

The development of the SES includes a sector-specific Technical Advisory Process (TAP) to evaluate policies and actions with both quantitative and qualitative analysis. The outcome will feed into a set of Advisory Committee recommendations to the Department of Commerce and, ultimately, a final report to the Governor and legislators. Please see the accompanying document for a full description of the description of WA State Energy Strategy TAP.

This document provides an overview of the key questions the SES must address for the **Transportation Sector TAP**, an initial assessment of policy options, and topics for further research and discussion.

### 1. Focus and Framing Questions

The focus for the **Transportation Sector TAP** is on developing policies and actions to enable a transition to accessible, affordable, zero-carbon mobility and transportation options for Washington State. No single policy or approach – by its own – is likely to be feasible for driving emissions to zero; an “all of the above” strategy will be required. General approaches for the transportation sector can be distilled into four categories sometimes expressed by the shorthand acronym “ASIF”:

- **Avoid.** Can the need for motorized travel be avoided altogether, e.g., through urban planning, improved logistics, or telecommuting?
- **Shift.** Can travel be shifted to modes that use less energy per passenger, like walking, cycling, multi-occupancy vehicles, and mass transit?
- **Improve.** Can fuel economy be improved so that less energy is used per vehicle-mile traveled?
- **Fuel-switch.** Can low- or zero-carbon energy be used to power transportation instead of fossil fuels? This could involve electrification and/or use of hydrogen, biofuels, or other non-fossil fuels.

#### A key overarching question is:

For each segment of the transportation sector – passenger, freight, marine, and aviation – what are **appropriate goals for each “ASIF” strategy**, and what are **the most effective, efficient, and equitable policies and actions to achieve those goals**?

#### Related to this question, key issues to address in the SES are:

*On-Road Passenger and Freight Transportation:*

1. **Reducing vehicle miles traveled (VMT).** For passenger transport, what are the most effective, equitable, and efficient policies and actions for reducing VMT, e.g., in the areas of urban planning and accessibility; transit; commute-trip reductions; active transportation (walking and biking)? What are the implications for VMT of new trends such as mobility-as-a-service, transportation network companies, and autonomous vehicles, and what can government do to accommodate or address them? What options are available for reducing freight VMT, both local and long-haul, e.g., improved logistics, mode shifting to rail or water, etc.? How can the State support VMT reductions and GHG savings through local land use and housing policy? What should be the roles of state vs. local governments across all VMT-reduction measures? How should priorities differ for urban vs. rural areas? What are the options for inter-urban transit modes (rail, bus, other)? What is the role of and opportunity for the private sector to reduce VMT independent of government action (passenger and freight)?
2. **Vehicle efficiency.** What role can the State play in improving the efficiency of vehicles purchased and driven in the state? How should the private sector be motivated to contribute to achieving efficiency goals?
3. **Vehicle electrification.** What levels of vehicle electrification would be consistent with meeting the State's climate targets, taking into account the cost and availability of vehicles and supporting infrastructure? What are the most effective policy tools and approaches for achieving these levels? Should the State set explicit electric vehicle (EV) penetration goals for different vehicle classes? What are the strengths and weaknesses of incentives vs. mandates vs. informational approaches in increasing market penetration and affordability? How should the state support expanded access to EVs and charging infrastructure, including in less advantaged rural and urban communities? What should be the roles of state vs. county and local governments in promoting and developing EVs and infrastructure?
4. **Clean fuels.** Are there particular fuels or technologies that should be supported for market development (e.g., renewable natural gas, hydrogen, biofuels, Direct Air Capture (DAC)-to-fuel technologies<sup>1</sup>)? Should the State promote general market innovation and development, or expressly promote certain nascent technologies (and if so, how)?

*Marine Transportation and Aviation:*

5. **Decarbonizing shipping and marine transport.** Are there feasible options for reducing marine travel demand? What potential is there for efficiency improvements and what policies can be used to improve efficiency? What goals should the State set for both electrification and low/zero-carbon fuels, and what policies would be most effective for each? What efforts are needed to decarbonize Washington State ferries?

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<sup>1</sup>DAC = direct air capture of carbon, which [can be used to produce fuel that is burnable in conventional internal combustion engines](#).

- 6. Decarbonizing aviation.** What can the State do to help decarbonize this sector, including with respect to each “ASIF” element? Given that aviation may be uniquely dependent on liquid fuels, what can the State do to promote low and zero-carbon fuels for aviation?

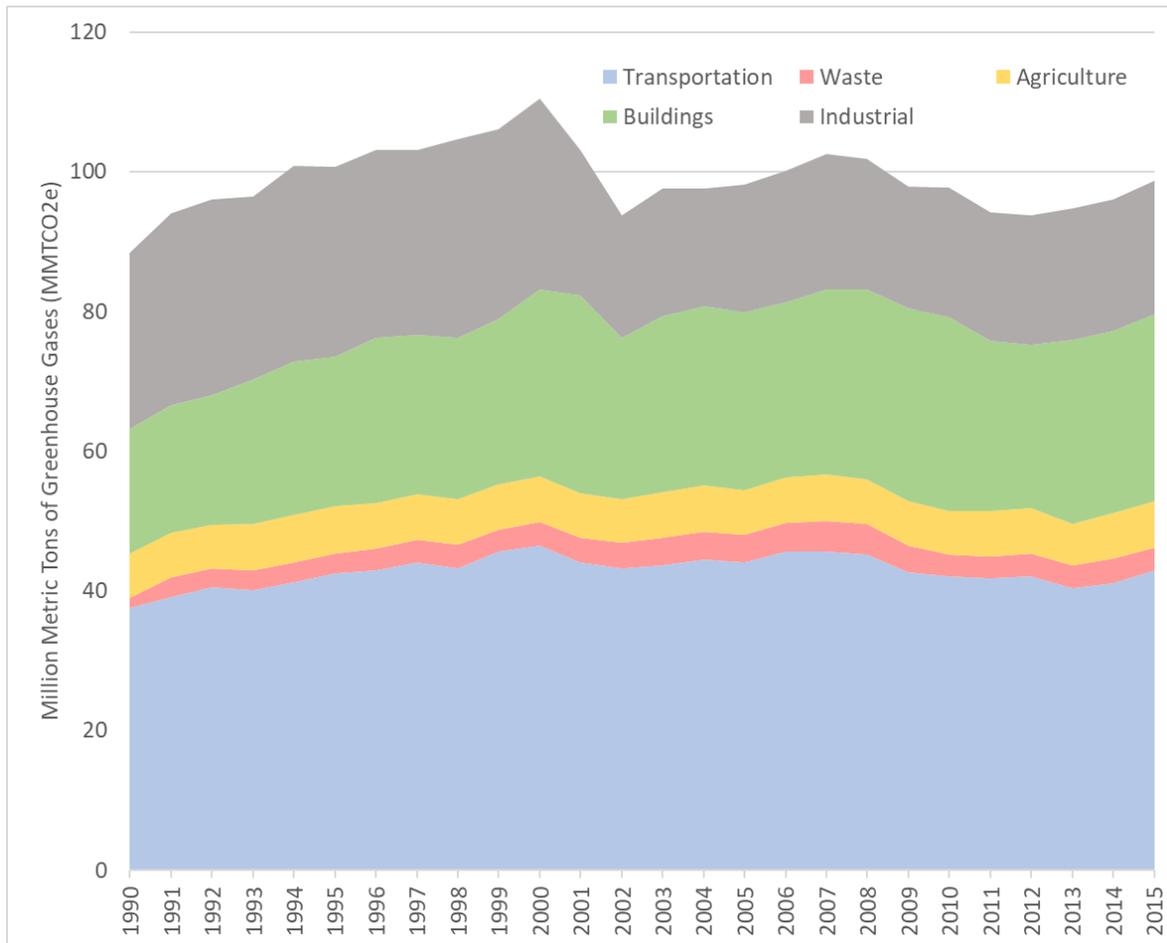
*All Transportation Sectors:*

- 1. Equity.** How might considerations about the distribution of jobs, accessibility, and affordable mobility for urban, suburban, and rural communities; considerations about local health and air and water pollution impacts; and considerations about workers’ interests, resilience and safety, and environmental justice inform answers to the above questions?
- 2. Revenue and finance.** How can cost barriers be overcome, so that all Washingtonians, and especially highly impacted communities and vulnerable populations, can benefit from the shift to low-emissions fuels and technologies? How will greater adoption of electric and other non-petroleum-fueled vehicles affect state transportation funding? What approaches can be used to fill the gaps and integrate EVs and alternative-fuel vehicles into highway and transit funding mechanisms? How can public and private finance enable low-carbon transport infrastructure to be built at the pace and scale needed? How can revenue mechanisms be designed to not fall disproportionately on low income residents, workers, and small business; reduce emissions; and provide flexibility and consistency?

## **2. Current Situation and Key Trends**

The transportation sector accounts for about 45% of the State’s GHG emissions, a fraction that has held fairly steady over time (**Figure 1**). According to “business as usual” projections for the Pacific region (Washington, Oregon, and California) by the U.S. Energy Information Administration (EIA), this contribution is likely to continue to hold for the foreseeable future, making the transportation sector a major target for the State’s energy and decarbonization strategies.

**Figure 1. Washington greenhouse gas emissions by key sector (electricity use allocated by sector)**

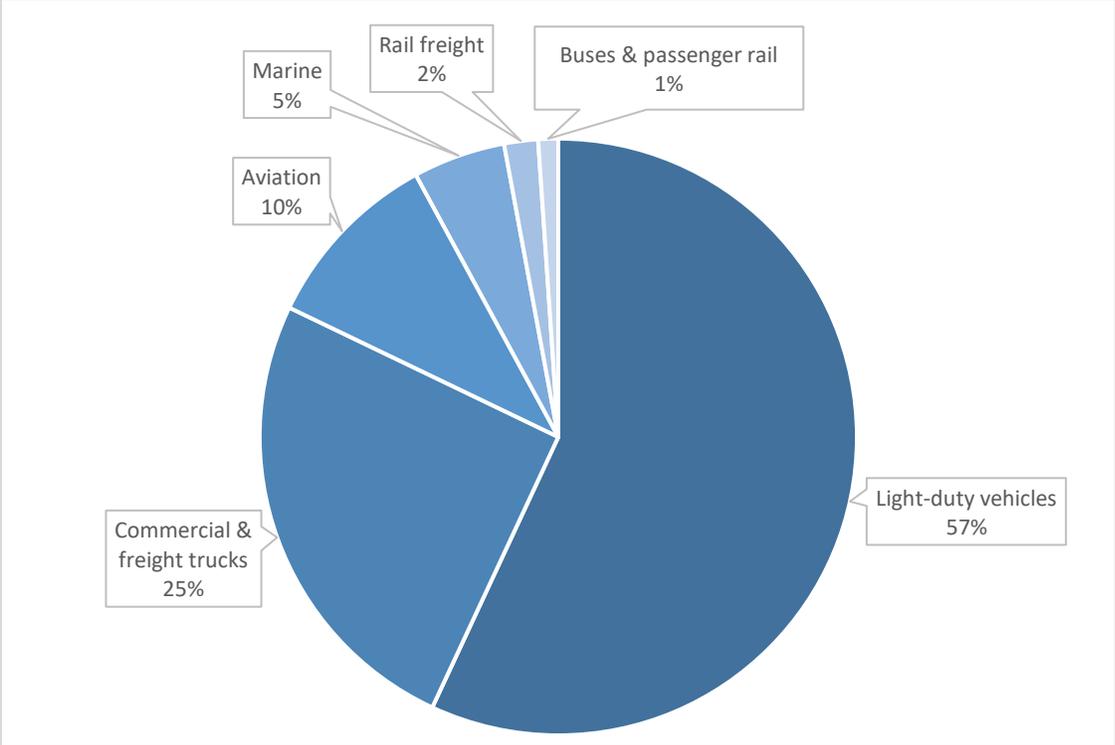


Source: Derived from data from Washington State Department of Ecology

Although the sector as a whole may continue to contribute a steady proportion of total emissions, trends *within* the sector suggest that certain segments may warrant greater attention from policymakers. **Figure 2** shows – for the country as a whole – what the distribution of total energy consumption looks like for different types of transportation. **Figure 3** shows the relative trends in per capita *activity levels*<sup>2</sup> for different segments of the transportation sectors for the U.S. as a whole, along with relative trends in per capita *energy consumption* for these same segments.

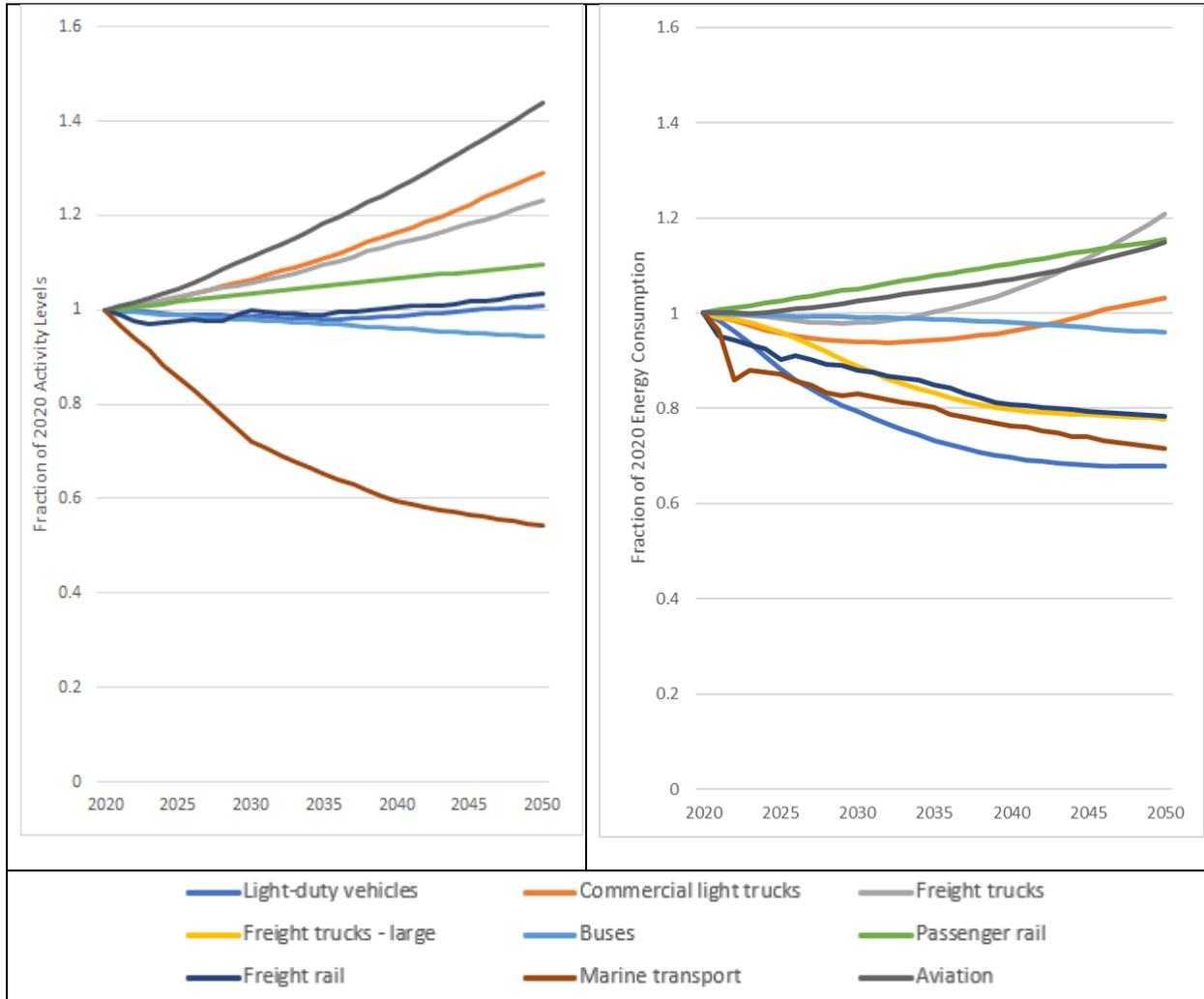
<sup>2</sup> Transportation activity levels are measured in different metrics for different segments, e.g., vehicle-miles for cars and trucks, passenger-miles for mass transit, and ton-miles for rail & marine freight.

Figure 2. Current proportion of energy consumption by type of transportation for the United States



Source: U.S. Energy Information Administration, Annual Energy Outlook 2020

**Figure 3. Relative trends in per capita activity levels and energy consumption for different transportation segments across the United States (EIA “reference” case)**



Source: Derived from U.S. Energy Information Administration, Annual Energy Outlook 2020

A few trends here stand out. Passenger-vehicle (light-duty) travel per capita is expected to hold fairly steady, but due to improving fuel economies, total energy consumption by passenger vehicles is expected to decline significantly. However, given the high percentage of total energy consumption attributed to this segment, passenger transportation will still need to be a major focus of decarbonization policies.

Commercial and freight trucks are also expected to see improving fuel economies, but due to projected *large increases in travel demand* in these segments, total energy consumption is expected to *go up*. This trend is driven by light and medium freight trucks, suggesting that commercial deliveries may drive much of the expected increase in energy demand. This is also a major segment to focus on.

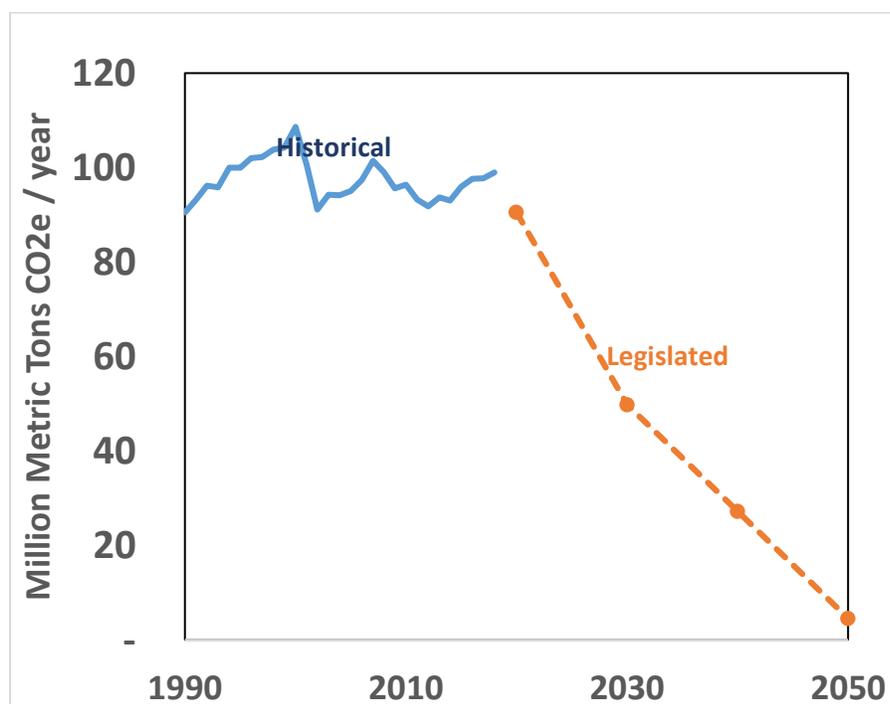
Finally, air travel per capita is projected to increase dramatically, with energy consumption only partly offset by increasing efficiency. Although this is a pre-Covid19 projection, the aviation sector may

nevertheless need particular attention given possible demand increases, the relative contribution of the segment to overall energy consumption and GHG emissions, and technological challenges in decarbonizing air transport.

### 3. Key Goals for the Sector

Unlike the electricity sector, there are no existing state targets for decarbonization of transportation; specific goals for transportation will need to be determined. In general, the transportation sector will need to achieve steep reductions in carbon emissions in line with what is needed from Washington’s energy system as a whole (**Figure 4**), suggesting the need for aggressive and comprehensive policies and actions.

*Figure 4. Historical GHG emissions and Washington’s emission reduction targets*



Source: CETI Team with data from Washington State Department of Ecology

### 4. Potential Policies and Actions

A wide range of new policies will be needed to decarbonize the transportation sector, involving multiple state agencies along with regional and local governments, the private sector, community groups, and non-governmental organizations. At the broadest level, policy options may include:<sup>3</sup>

- **Regulatory measures**, including mandates, requirements, benchmarks, or quotas related to transportation planning, housing development, infrastructure development, vehicle technologies, and mode shares.

<sup>3</sup> These are broadly described in the following paper:  
<https://newclimateconomy.report/workingpapers/workingpaper/national-transport-policy-and-cities-key-policy-interventions-to-drive-compact-and-connected-urban-growth/>

- **Economic measures**, including taxation policies, pricing or fee programs (e.g., congestion pricing), incentive programs, subsidies, public procurement strategies, and direct investment in infrastructure, vehicles, or research and development.
- **Informational measures**, including education campaigns (e.g., promoting EVs or active transport), labeling programs, development and dissemination of data to assist planning, market development, and use of alternative transit modes, etc.
- **Governance reform and innovation**, including improved vertical (state-to-local) and horizontal (inter-agency) coordination efforts related to transportation planning and policy implementation.

The kinds of policies adopted are likely to differ for passenger, freight, marine, and aviation segments of the transportation sector. To develop specific policy recommendations for the SES, we need to answer three basic questions for each segment:

- **What needs to happen?** For each transportation segment the State can pursue a combination of “ASIF” strategies. However, there are numerous ways in which each strategy can be pursued for each segment. A first step is to identify which **approaches** – i.e., general kinds of interventions or methods – for avoiding, shifting, improving, or fuel-switching make the most sense for Washington, taking into account different barriers and opportunities.
- **How should it happen?** Once promising approaches are identified, different **policy instruments** can be used to pursue them. Regulatory, economic, informational, and governance measures may all be feasible, but may have different implications in terms of cost, equity, and effectiveness. Specific policy recommendations will depend on these and other factors, bearing in mind that wholesale changes in transportation energy use and emissions are likely to require comprehensive **policy packages** involving multiple measures at multiple levels of government.
- **Who needs to do it?** Along with recommending specific kinds of policies, it is important for the SES to identify who should be involved in their design and implementation. For different policies, this could include various state agencies, regional governments (e.g., regional transportation planning organizations), local governments, businesses, and community groups.

For this technical advisory process, the CETI Team has developed tables for each transportation segment with some *initial examples* of the possible “what, how, and who” of a comprehensive strategy for decarbonizing the transportation sector (**see Appendix B**). Not every piece has been filled in! Our goal is to *further fill out and refine* these tables using background research and organized discussions around key topic areas, with both transportation experts and AC members.

Based on this input, taking into account key criteria (**see Appendix A**), the CETI team will then identify a set of *recommended* transportation sector policies and actions for inclusion in the SES. These will be discussed with AC members at meetings scheduled for July, August, and September.

## 5. Topics for Further Research and Deeper Dive Discussions

Based on the relative contribution of each segment of Washington’s transportation sector to energy use and GHG emissions, as well as differences in the types of barriers and possible solutions involved, we propose to organize deeper dive discussions with experts and AC members around the following topics:

<b>Transportation segment</b>	<b>Topic</b>
<b>Passenger transportation</b>	Policy solutions for achieving VMT reductions, including reduced travel demand and mode shifting (“AS” options)
	Policy solutions for improving efficiency and adopting zero-emission vehicles (EVs or alternative fuels) (“IF” options)
<b>Freight transportation</b>	Policy solutions for driving “ASIF” transitions in medium duty / local freight transport (VMT reductions, efficiency, and switching to zero-emission vehicles)
	Policy solutions for driving “ASIF” transitions in heavy duty / long-haul freight transport (VMT reductions, efficiency, and switching to zero-emission vehicles)
<b>Marine transportation</b>	Policy solutions for driving “ASIF” transitions in shipping, ferries, & other marine transport
<b>Aviation</b>	Policy solutions for driving “ASIF” transitions in commercial aviation

## Appendix B. Policy Identification Tables for the Transportation Sector

These tables are intended to provide a *framework* for identifying potential goals and policy solutions for the Washington State 2021 Energy Strategy (SES). They are intended to be an anchor for brainstorming and a structure for organizing recommendations. It is NOT envisioned that every possible approach and policy instrument will be exhaustively catalogued (here or in the final SES), nor that every “cell” in the tables needs to be filled out. Rather, the idea is to provide a basis for input and exploration of promising options. The entries in [blue text](#) below are intended to be illustrative, indicating initial examples of the kinds of approaches and policy instruments that could be explored. The SES may ultimately present policy recommendations at a less granular level.

### Passenger transportation

Strategies	Approaches	Key barriers	Policy instruments	Actors
	<p><b>What</b> needs to happen to pursue this strategy?</p> <p>Which approaches should be preferred or emphasized?</p>	<p>What are the most significant barriers to pursuing these approaches?</p>	<p><b>How</b> should each approach be pursued, e.g., through what combination of regulation, incentives, investment, information provision, and institutional innovation?</p> <p>What policy instruments should be preferred or emphasized?</p>	<p><b>Who</b> needs to be involved in designing and implementing preferred policies? Including:</p> <ul style="list-style-type: none"> <li>• State agencies</li> <li>• Regional bodies (RTPOs)</li> <li>• Local governments</li> <li>• Business community</li> <li>• Communities</li> </ul>
<b>Reducing (motorized) travel demand</b>	<p>Improve accessibility (e.g., through denser and/or more mixed-use development)</p>	<p>Local zoning policies</p>	<p>State zoning requirements or guidelines</p> <p>Zoning model rules</p>	
	<p>Improve options for active transportation (walking and bicycling)</p>	<p>Local zoning</p> <p>Lack of infrastructure</p>	<p>State zoning requirements or guidelines</p>	

Strategies	Approaches	Key barriers	Policy instruments	Actors
			Invest in pedestrian and bicycling infrastructure	
	Manage (urban) travel demand	Lack of local implementation capacity  Lack of infrastructure  Need for technology development (e.g., Information and Communication Technology (ICT))  Inequitable distribution of technologies	Legally enable or fiscally support adoption of an array of TDM policy instruments, including congestion pricing  Invest in infrastructure  Fund needed R&D  Subsidize tech adoption	
	Promote commute-trip reduction	Lack of ICT infrastructure  Inequitable distribution of ICT	Invest in digital communication infrastructure in underserved areas  Regulate state ICT prices & service  Business tax incentives for telecommuting  Tax incentives for home office improvements	
<b>Mode shift (to mass transit)</b>	Expand transit service	Investment & operational costs	Provide state-level funding for transit expansion	

Strategies	Approaches	Key barriers	Policy instruments	Actors
		Low consumer preference (esp. post-Covid19)	Subsidize more transit in rural or ex-urban areas	
	Enhance transit service (speed, reliability, usability, safety)	<p>Investment &amp; operational costs</p> <p>Urban form &amp; infrastructure barriers (e.g., lack of dedicated lanes, congestion)</p> <p>Low consumer preference (esp. post-Covid19)</p>	<p>State requirements or incentives to redesign streets to allow dedicated transit lanes</p> <p>Fund or subsidize bus rapid transit infrastructure</p> <p>Fund Covid19-related safety measures or design features?</p> <p>Fund local adoption of digital technologies for tracking transit service &amp; timing</p> <p>Fund local adoption of other “<a href="#">behavioral nudging</a>” measures that encourage transit ridership</p>	
	Lower the cost of transit service	Subsidize cost	Provide new subsidies for transit service	
	Increase cost of private automobile travel	<p>Public opposition</p> <p>Equity / distributional impacts</p>	<p>Congestion pricing or other restrictions</p> <p>Raise cost of or restrict parking</p>	

Strategies	Approaches	Key barriers	Policy instruments	Actors
	Promote transit-oriented development	(Local) public opposition	<p>Enable zoning for higher density around transit hubs</p> <p>Prevent or eliminate local restrictions on such zoning</p> <p>Require new (urban) development to incorporate and accommodate transit options</p>	
<b>Improve vehicle efficiency</b>	Increase supply and demand for high fuel-economy vehicles	<p>Cost</p> <p>Consumer preferences (for large vehicles)</p>	<p>Follow/maintain California vehicle emission standards</p> <p>Subsidize higher fuel-economy cars/trucks</p>	
	Reduce congestion	Increasing travel demand	Congestion pricing	
<b>Electrify vehicles</b>	Increase demand for EVs	<p>Range anxiety</p> <p>Lack of charging infrastructure</p> <p>Inequitable distribution of charging infrastructure</p> <p>Upfront vehicle cost</p>	<p>Subsidize EVs (tax incentives)</p> <p>Fund or subsidize new charging infrastructure</p> <p>Adopt requirements for distribution &amp; quantity of charging infrastructure</p>	

Strategies	Approaches	Key barriers	Policy instruments	Actors
	Increase supply of EVs	Manufacturing capacity Managing grid load Gas tax revenue shortfalls for transportation funding	Set requirements or quotas for EV sales Fund R&D Ban ICE vehicles (e.g., UK example) Require integration of EV infrastructure development into electricity sector IRPs Tax EVs based on annual miles and their gasoline-equivalent fuel economy	
<b>Adopt low carbon, zero carbon vehicles</b>	Increase demand for alt-fuel vehicles	Largely the same as for EVs...	Largely the same as for EVs...	
	Increase supply of alt-fuel vehicles	Largely the same as for EVs...	Largely the same as for EVs...	

## Freight transportation

Strategies	Approaches	Key barriers	Policy instruments	Actors
	<p><b>What</b> needs to happen to pursue this strategy?</p> <p>Which approaches should be preferred or emphasized?</p>	<p>What are the most important barriers to pursuing these approaches?</p>	<p><b>How</b> should each approach be pursued, e.g., through what combination of regulation, incentives, investment, information provision, and institutional innovation?</p> <p>What policy instruments should be preferred or emphasized?</p>	<p><b>Who</b> needs to be involved in designing and implementing preferred policies? Including:</p> <ul style="list-style-type: none"> <li>• State agencies</li> <li>• Regional bodies (RTPOs)</li> <li>• Local governments</li> <li>• Business community</li> <li>• Communities</li> </ul>
<b>Reducing travel demand</b>	Improve local freight logistics	<p>Coordination among different private sector competitors</p> <p>Consumer preferences</p>	<p>Fund and/or require development of centrally run urban logistics centers</p>	
	Reduce demand for (non-locally produced) goods?	<p>Consumer preferences</p> <p>Economic cost</p>	<p>Subsidize clean local industries?</p> <p>???</p>	
<b>Mode shift</b>	Shift long-haul freight transport from trucks to rail or water	<p>Lack of capacity and infrastructure</p> <p>Total delivery cost?</p> <p>Low technical potential?</p>	<p>Subsidize rail and marine freight transport</p> <p>Tax freight truck transport</p>	
<b>Improve vehicle efficiency</b>	Improve vehicle technology	Cost	Adopt stringent vehicle emission standards	

	Avoid congestion	Cost Consumer preferences	Require nighttime or off-peak truck deliveries in urban areas	
<b>Electrify &amp; adopt alternative fuel vehicles</b>	Increase demand for electric and alternative fuel freight trucks (and rail)	Range & refueling time Lack of charging/fuel infrastructure Upfront vehicle cost	Subsidize medium & heavy EVs & alternative fuel trucks  Fund or subsidize new charging/fuel infrastructure  Adopt requirements for distribution & quantity of charging/fuel infrastructure	
	Increase supply of electric and alternative fuel freight trucks (and rail)	Manufacturing capacity Managing grid load Gas tax revenue shortfalls for transportation funding	Set requirements or quotas for clean truck sales (e.g., mirror California clean truck rule)  Fund R&D  Require integration of transportation charging and fuel (e.g., clean hydrogen) infrastructure development into electricity sector IRPs  Tax EVs/alt-fuel vehicles based on annual miles	

			and their gasoline-equivalent fuel economy	
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## Marine transportation

Strategies	Approaches	Key barriers	Policy instruments	Actors
	<p><b>What</b> needs to happen to pursue this strategy?</p> <p>Which approaches should be preferred or emphasized?</p>	<p>What are the most important barriers to pursuing these approaches?</p>	<p><b>How</b> should each approach be pursued, e.g., through what combination of regulation, incentives, investment, information provision, and institutional innovation?</p> <p>What policy instruments should be preferred or emphasized?</p>	<p><b>Who</b> needs to be involved in designing and implementing preferred policies? Including:</p> <ul style="list-style-type: none"> <li>• State agencies</li> <li>• Regional bodies (RTPOs)</li> <li>• Local governments</li> <li>• Business community</li> <li>• Civil society</li> </ul>
<b>Reducing travel demand</b>	Reduce demand for (non-locally produced) goods?	<p>Consumer preferences</p> <p>Economic cost</p>	<p>Subsidize clean local industries?</p> <p>???</p>	
<b>Mode shift</b>	???			
<b>Improve efficiency</b>	Improve vessel design & engine technology	<p>Cost</p> <p>Low technical potential?</p> <p>Inability to influence (limited local production subject to state policies)?</p>	???	
	Adopt more efficient, less polluting port/harbor operations (e.g., cold ironing)?	???	Require electric operation/cold ironing statewide?	

			Invest in needed infrastructure	
<b>Electrify &amp; adopt alternative fuel vehicles</b>	Increase demand for electric and low and zero carbon fuel marine vessels	<p>Range &amp; refueling time</p> <p>Lack of charging/fuel infrastructure</p> <p>Upfront vessel cost</p>	<p>Subsidize electric &amp; low and zero carbon fuel marine vessels (recreational)</p> <p>Fund or subsidize new charging/fuel infrastructure (e.g., at marinas &amp; ports)</p> <p>Adopt requirements for distribution &amp; quantity of charging/fuel infrastructure</p>	
	Increase supply of electric and low and zero carbon fuel marine vessels	<p>Manufacturing capacity</p> <p>Grid infrastructure needs (e.g., need for high MW charging for port, ferry terminal, marina loads)</p>	<p>Set requirements or quotas for clean marine vessel sales</p> <p>Fund R&amp;D</p> <p>Require integration of charging and fuel infrastructure development into electricity sector IRPs</p>	

## Aviation

Strategies	Approaches	Key barriers	Policy instruments	Actors
	<p><b>What</b> needs to happen to pursue this strategy?</p> <p>Which approaches should be preferred or emphasized?</p>	<p>What are the most important barriers to pursuing these approaches?</p>	<p><b>How</b> should each approach be pursued, e.g., through what combination of regulation, incentives, investment, information provision, and institutional innovation?</p> <p>What policy instruments should be preferred or emphasized?</p>	<p><b>Who</b> needs to be involved in designing and implementing preferred policies? Including:</p> <ul style="list-style-type: none"> <li>• State agencies</li> <li>• Regional bodies (RTPOs)</li> <li>• Local governments</li> <li>• Business community</li> <li>• Civil society</li> </ul>
<p><b>Reducing travel demand</b></p>	<p>Discourage air travel</p>	<p>Consumer preference</p> <p>Limited authority and ability to influence</p>	<p>Information campaigns addressing the environmental cost of air travel</p> <p>State-imposed charges on air travel?</p>	
	<p>Promote travel alternatives</p>	<p>Poor substitutability of air travel alternatives</p>		
<p><b>Mode shift</b></p>	<p>Promote alternative long-distance transport modes (rail or road)</p>	<p>Consumer preference</p> <p>Limited ability to influence?</p>	<p>Subsidize inter-urban mass transit (rail or road) within state</p> <p>Fund development of inter-urban mass transit infrastructure?</p>	
	<p>Discourage air travel</p>	<p>Same as above</p>	<p>Same as above</p>	

<b>Improve aircraft efficiency</b>	Improve aircraft design & engine technology	Limited ability to influence	???	
	Promote more efficient ground operation / idling	Cost  Limited ability to influence?	Require engine shutdown & use of electrical power during refueling & passenger loading/unloading?  Require more frequent washing of jet engines?	
<b>Electrify aircraft</b>	Increase supply/demand for electric-powered aircraft?	Technical feasibility (maybe for civil aviation?)	???	
<b>Adopt low or zero carbon fuel aircraft</b>	Increase demand for alternative fuel aircraft	Limited ability for state to influence?	Fund R&D for and/or otherwise support development of in-state alternative fuel production (sustainable aviation fuels)...	
	Increase supply of alternative fuel aircraft	Cost & market demand?  Limited ability to influence?	Fund aircraft R&D?  Support development of in-state alternative fuel production (sustainable aviation fuels)...	

## Appendix C. Overview of Existing Washington State Policies Related to the Transportation Sector

### A. Mode Shifts, VMT Reduction, and Public Transit

See also category L Land Use, Land Use Change and Urban Planning.

- T1.1 Reducing vehicle miles traveled.** Department of Transportation must adopt broad statewide goals to reduce annual per capita vehicle miles traveled by 2050 ([RCW 47.01.440](#))
- T1.2 Commute trip reduction requirements.** Commute trip reduction requirements for large employers ([RCW 70.94.521 - 555](#))
- T1.3 Commute trip reduction for state agencies.** Requires the Department of Transportation to develop a joint comprehensive commute trip reduction plan for all state agencies located in the Olympia, Lacey and Tumwater urban growth area. ([2009 Legislation SSB 6088](#))
- T1.4 Regional transportation planning organizations.** A county or counties with a population of at least 40,000 and covering at least 5,000 square miles may form a regional transportation planning organization. ([RCW 47.80.020](#))
- T1.5 State agency alternate mobility goals.** State agencies must create a modern workplace in part by encouraging mobility including telework; increase telework from 8.8 percent in 2015 to 9% in 2017; use commute trip reduction survey data as an indicator to measure progress. After 2017 agencies must set their own specific telework and flexible work hours goals. ([Executive Order 16-07](#))
- T1.6 Transit agency coordination.** WSDOT must develop an annual report regarding transit agency coordination in counties with population of 700k or more that border the Puget Sound (King, Pierce, Snohomish). Transit agencies in these counties must report to WSDOT on their coordination efforts regarding: integrating marketing efforts; aligning fare structures; integrating service planning; coordinating long term planning and capital project implementation; other functions. Regional mobility grant criteria now consider coordination and integration to the criteria awarding grants in these counties. New transit coordination grant program (expires July 2020) available to these counties proposed by two or more agencies with measurable outcomes. ([RCW 35.58.2796](#), [RCW 47.66](#))
- T1.7 King County property tax for transit expenditures.** King County authorized to impose additional property tax of up to 7.5 cents per \$1,000/assessed value. The first 1 cent is dedicated to expanding transit capacity along SR 520. The remainder will go to transit-oriented expenditures. The governor vetoed a section allowing local transit agencies to

seek voter approval for a congestion reduction tax of up to \$20 per vehicle. ([RCW 84.52](#), [RCW 82.80](#), [RCW 35.58](#), [RCW 36.57](#))

## B. Vehicle Efficiency and Emissions

- T2.1 State CAFE standards.** Adoption of California vehicle emissions standards ([RCW 70.120A](#))
- T2.2 Volkswagen enforcement action grants.** Under the settlements, money can be invested in projects that replace or repower eligible vehicles, vessels, and equipment with new less-polluting diesel engines, alternate fueled (compressed natural gas, propane, or hybrid) or all-electric engines, and developing charging infrastructure for electric vehicles. The governor designated Ecology to lead Washington's efforts to manage the settlement funds. Ecology's goal for investing the funds is to maximize air pollution reductions in communities affected by harmful diesel exhaust.

## C. Electric and Alternative-Fuel Vehicles

- T3.1 Required use of electricity or biofuels for public fleets.** Required use of alternative fuels (electricity/biofuels) for all public fleets by 2015 ([RCW 43.19.570](#) - Motor vehicle transportation service -- Responsibilities -- Agreements with other agencies -- Alternative fuels and clean technologies; [RCW 19.112.110](#) - Special fuel licensees -- Required sales of biodiesel fuel; [RCW 43.41.130](#) - Duty to establish policies as to widest possible use of gasohol and cost-effective alternative fuels in all motor vehicles owned or operated by any state agency)
- T3.2 Zero-emission vehicle mandate.** Requires automobile manufacturers to sell a certain amount of zero-emission vehicles for credits or purchase the credits from other automakers. Requires medium-duty vehicles to meet California standards as well. 5% of auto sales will be required to be zero-emission vehicles, increasing to 8% by 2025. ([RCW 70.120A](#))
- T3.3 Electric vehicle (EV) tax exemption.** Waives up to \$2,500 of sales tax on new EVs that cost less than \$45,000. Used EVs qualify for a tax exemption of up to \$1,600 on cars under \$30,000. Adds a six year tax exemption for businesses that purchase alternative fuel commercial vehicles, electric buses and equipment, etc. Creates a 6 year grant program for fleet electrification of transit agencies and alternative fuel carsharing programs for underserved communities and electric vehicle charging and hydrogen fueling infrastructure, allows investor-owned utilities to provide an incentive rate of return on electric vehicle charging equipment. ([RCW 46.17](#), [RCW 47.04](#), [RCW 47.66](#), [RCW 82.04.4496](#), [RCW 82.08](#), [RCW 82.12](#), [RCW 82.16.0496](#), [RCW 82.29A.125](#))

- T3.4 Tax credits for alternative fuel commercial vehicles.** The purchase of alternative fuel commercial vehicles results in a tax credit between \$10,000 and \$40,000 depending on vehicle weight. ([RCW 82.04.4496](#), [RCW 82.16.0496](#))
- T3.5 Tax credits for businesses using clean alternative fuel commercial vehicles.** B&O and Public Utility Tax credits available to businesses using clean alternative fuel commercial vehicles now include vehicles that are exclusively used to provide commercial services and transport passengers if operate within Washington between fixed points or over a regular route. Mileage/manufacturing date limits increased to 450,000 miles and 10 years past manufacturing date. Amount of credit per vehicle quintupled for each weight class. Expires on January 1 2022. ([RCW 82.04.4496](#), [RCW 82.16.0496](#))
- T3.6 Credits for alternative fuel commercial vehicle acquisitions.** B&O and PUT tax credits for alternative fuel commercial vehicle acquisitions now include credits for leased vehicles equal to the amount of credit claimed for a vehicle acquired outright or 50% of the incremental cost or \$5000 multiplied by a lease reduction factor. This credit lasts through 2021. ([RCW 82.04.4496](#), [RCW 82.16.0496](#))
- T3.7 Required percentage of clean-fuel vehicles bought under state contract.** At least 30% of all new vehicles purchased by state contract must be clean-fuel vehicles; this percentage shall increase 5% each year. Dedicated clean-fuel vehicles are preferred; if they are not available or would not meet operational needs, conventional vehicles may be converted to clean-fuel or dual-fuel use. ([RCW 43.19.637](#))
- T3.8 Biodiesel requirement for certain agencies.** Effective June 1, 2006, agencies complying with EPA's ultra-low sulfur diesel mandate must use at least 2% biodiesel as a lubricity additive, provided the use is warranted and biodiesel is comparable in performance and cost with other additives. ([RCW 43.19.642](#))
- T3.9 Agency biodiesel use reports.** Beginning July 1, 2006, all state agencies using biodiesel shall file biannual reports with GA documenting their fuel use and describing how any problems encountered were resolved. ([RCW 43.19.642](#))
- T3.10 State agency biodiesel requirement.** Effective June 1, 2009, state agencies as a whole are required to use a minimum of 20% biodiesel to operate diesel-powered vessels, vehicles, and construction equipment. ([RCW 43.19.642](#))
- T3.11 State and local governments must use biofuels or electricity for 100% of needs.** Effective June 1, 2015, all state agencies and local governments, to the extent practicable, are required to satisfy 100% of their fuel usage for operating publicly owned vessels, vehicles, and construction equipment from electricity or biofuel. ([RCW 43.19.648](#))
- T3.12 Combining the needs of multiple recipients for biofuel purchase.** Dept of General Administration (GA) may combine the needs of local governments, including ports,

special districts, school districts, and municipal corporations, and contract in advance with public or private producers, suppliers, or other parties for the purchase of biofuels and biofuel blends. ([RCW 43.19.647](#))

## D. EV Infrastructure

- T4.1 Electric vehicle charging network. Electric Vehicles: (2009 Legislation [2SHB 1481](#))** requires the installation of charging outlets for electric vehicles, new tax incentives for electric vehicle infrastructure, and the development of an alternative fuels corridor pilot project.
- T4.2 Electric vehicles and utility responsibilities.** Electric Vehicles: RCW 80.28.360 (HB 1573) allows utilities to recover an additional incentive rate of return on electric vehicle supply equipment (charging) and requires UTC to evaluate policy for EVs going forward. UTC issued policy statement in Docket UE-160799, advising utilities to adopt a portfolio approach to EV programs, and to consult with a broad group of stakeholders, including transportation planning agencies, in developing programs and plans.

## E. Low-Carbon Fuels (including Biofuels)

*Requirements for use of biofuels in fleets appear in subcategory T3.*

- T5.1 Requirements for biodiesel in diesel fuels.** Department of Agriculture content requirements for biodiesel fuel/fuel blended with biodiesel fuel: At least 2% of the total annual diesel sales must be biodiesel by November 30, 2008. At least 5% must be biodiesel when Agriculture determines instate oil seed crushing capacity and feedstocks can satisfy a 3% requirement. ([RCW 19.112.110](#))
- T5.2 Requirements for ethanol in gasoline.** At least 2% of total gasoline sales, measured on a quarterly basis, must be ethanol by December 1, 2008. Ethanol content between 2% and at least 10% may be required if Ecology determines it will not jeopardize air quality standards for ozone pollution, and Agriculture determines instate raw materials are available to support economical production. ([RCW 19.112.120](#))
- T5.3 Repeal of content requirements for biodiesel and ethanol.** Content requirements will be repealed when the diesel supply is at least 10% biodiesel made predominantly from instate feedstocks, and the gasoline supply is at least 20% ethanol made predominantly from instate feedstocks, without jeopardizing air quality standards for ozone pollution. ([RCW 19.112.170](#))

- T5.4 Biofuels B&O tax reduction.** Reduced B&O rate provided for manufacture of wood biomass, alcohol or biodiesel fuels, or biodiesel feedstocks. Reduced rate for biodiesel fuels and feedstocks expired July 1, 2009. ([RCW 82.04.260\(1\) \(e\) & \(f\)](#))
- T5.5 Waste vegetable oil for biodiesel tax exemption.** Sales and use of waste vegetable oil for production of biodiesel for personal use are exempt from retail sales and use taxes. ([RCW 82.08.0205](#), [RCW 82.12.0205](#))
- T5.6 Public Authority contracts for biodiesel.** Public development authorities and conservation districts may contract for crops, produce, sell and distribute biodiesel produced from instate feedstocks, and cellulosic ethanol. Municipal utilities and public utility districts may do the same, and use these fuels to generate power. ([RCW 35.21.465](#), [RCW 35.92.440](#), [RCW 54.04.190](#), [RCW 89.08.570](#))
- T5.7 Renewable diesel counts toward renewable fuel content requirements.** Renewable diesel may now count toward the renewable fuel content requirements in the Motor Fuel Quality Act. Renewable diesel is a diesel substitute produced from nonpetroleum renewable sources. ([RCW 19.112.110](#))
- T5.8 Tax exemption for farm users of biodiesel.** Sales to and use of non-highway biodiesel and biodiesel blends by farm fuel users are exempt from retail sales and use taxes. Fuel used for space or water heating for human habitation not included. ([RCW 82.08.865](#), [RCW 82.12.865](#))
- T5.9 Changes in fossil fuel taxes.** The state use tax exemption for self-produced fuel is narrowed to only include biomass fuels. Refinery fuel gas is 2.889% for 2020 increasing to 3.852% for 2021. Local sales tax does not apply. ([RCW 82.04](#), [RCW 82.08](#), [RCW 82.12](#))

## **F. Transportation System Funding (Including Congestion Pricing/Road Pricing)**

- T6.1 Fuel tax increase and EV fees.** Fuel tax increased by \$0.119 per gallon (gradual increase) - added to Connecting Washington Account. Increase in motor vehicle fuel taxes paid by non-highway users is increased to a total of \$0.349 per gallon until 2031. Weight fees also increased and added into the Multimodal Transportation Fund. Extra \$100 EV fee is expanded to include PHEVs and increased by \$50. Taxes allowed to be imposed by and within the boundary of a regional transit authority with a population of 1.5 million or more if approved by voters. ([RCW 36.57A](#), [RCW 43.135.034](#), [RCW 46.09.520](#), [RCW 46.17](#))
- T6.2 Motor vehicle and special fuel tax consolidated.** Simplified license structure and fuel tax added when fuel enters the state outside the bulk transfer system. Simplifies the statute. Penalty rates unchanged except fines for not filing returns or paying timely taxes. Effective 2015. ([RCW 19.112](#), [RCW 46.68](#), [RCW 47.10](#))

**T6.3 King County temporary congestion charge.** Authorizes King County to impose temporary congestion reduction charge to provide emergency funding for transit service. Charge in effect until 2 years after imposed or June 30, 2014, whichever comes sooner. A charge imposed after the June 2014 date must be approved by a majority vote of the people. ([RCW 82.80](#), [RCW 46.68](#))

## **G. Expired/Superseded**

**Tx.1 Anaerobic digester temporary property tax exemption.** Land, buildings and equipment used for anaerobic digestion, manufacturing alcohol, biodiesel and wood biomass fuels, or biodiesel feedstock are exempt from property and leasehold taxes for six years following the date the facility becomes operational. The exemption is not renewable. No claims may be filed after December 31, 2009 for biofuels; December 31, 2012 for digesters. ([RCW 82.29A.135](#), [RCW 84.36.635](#), [RCW 84.36.640](#))

**Tx.2 Tax exemption for alternative fuel vehicles.** New passenger cars, light duty trucks, and medium duty passenger vehicles powered by a clean alternative fuel (natural gas, propane, hydrogen or electricity) are exempt from retail sales tax. Effective January 1, 2009 until January 1, 2011. ([RCW 82.08.809](#))

**Tx.3 Biodiesel and ethanol sales tax exemption.** Sales and use of equipment, and related services or components, used for retail sale of E85 and biodiesel blends of B20 or higher are exempt from retail sales and use taxes. Sales of fuel delivery vehicles, and related services or components, are exempt if at least 75% of the fuel is E85 or biodiesel blend of B20 or higher. Expires July 1, 2015. ([RCW 82.08.955](#), [RCW 82.12.955](#))

**Tx.4 Biofuel B&O tax deduction.** Retailers of biodiesel, E85 and wood biomass fuel eligible for B&O deduction. Biodiesel and E85 deduction expires July 1, 2015. Wood biomass fuel deduction expires July 1, 2009. ([RCW 82.04.4334](#), [RCW 82.04.4335](#))

**Tx.5 Incentive for biofuels refueling network along interstates.** The Green Energy Incentive Account is established within the Energy Freedom Program to provide financial support for projects supporting development of a biofuels refueling network along the interstate corridors. Expires June 30, 2016. ([RCW 43.325.040](#))

**Tx.6 Expedited permitting for renewable fuel improvements.** Infrastructure improvements subject to the State Environmental Policy Act (SEPA) or other license or permit requirements necessary to implement renewable fuel standards must be processed in a defined and efficient manner. Improvements include installation or replacement of storage tanks and pumps, increases in refining and blending capacity, efficiency improvements, and modifications to loading racks. Biodiesel or ethanol production facilities are not covered. Expires January 1, 2009. ([RCW 43.21C.232](#))

- Tz.7 Sales tax exemption for alternative fuel vehicles.** Sales tax exemption for alternative fuel vehicles only applies to up to \$32,000 of the vehicles selling price. If lowest price determined by the manufacturer is more than \$42,500 then not exempt from sales tax. Leased vehicles lease payments exempt from sales tax. Expired July 2019. ([RCW 82.08.809](#), [RCW 82.12.809](#))
- Tx.8 Energy Freedom loan fund for bioenergy projects.** State loan fund for bioenergy projects – The Energy Freedom program is established to promote public research and development in bioenergy, and to stimulate the construction of facilities in Washington to generate energy from farm sources or convert organic matter into fuels. [Note: not funded in the 09-11 budget] ([RCW 43.325](#))
- Tx.9 Sales tax exemption for hybrids.** Sales tax exemption for high mileage hybrid vehicles ([RCW 82.08.813](#), [RCW 82.12.813](#))