January 24, 2024

TO: **Members of the Senate and House Transportation Committees**

SUBJECT: **Joint Transportation Committee Annual Activity Report**

During 2023, the Joint Transportation Committee (JTC) completed six studies as directed by the Legislature. Attached are brief summaries of these studies:

1. Nondrivers: Population, Demographics and Analysis (page 3)
2. Encouraging High Consumption Fuel Users to Buy Electric Vehicles (page 4)
3. Independent Review of Cascadia Ultra-High-Speed Rail (page 6)
4. Powered Micromobility Device Lending Libraries (page 8)
5. Work Group on Local Government and State Partnership to Deliver State Projects (page 9)
6. Design of Infrastructure and Incentive Program for Medium and Heavy-Duty Zero Emission Vehicles (page 11)

Six additional studies were initiated in 2023 and will be completed in 2024 or 2025.

1. Public-Private Partnership (P3) Work Group
2. Statewide Household Travel Survey Utility Analysis
3. Retail Delivery Fee Analysis
4. Evaluating Fuel Conversion Projects and Programs Funded through the Carbon Emissions Reduction Account (CERA)
5. Independent Review of Transportation Impacts Assessment from Removal of Lower Snake River Dams
6. Ferry Procurement Expert Review and Assistance

The Joint Transportation Committee held four meetings in 2023:

1. June 20 in Spokane in conjunction with the Association of Washington Cities conference
2. October 9 in Olympia
3. November 16 in Spokane in conjunction with Washington State Association of Counties conference
4. January 4, 2024 in Olympia (originally scheduled for December)

Our annual tour took place September 26 – 28. The group visited nearly all the bridges over the Columbia River between Washington and Oregon with an additional stop in Aberdeen to learn about the maintenance challenges with several critical bridges in that community.

Additional information about JTC activities including links to all current and past studies with meeting presentations and reports is available on the JTC website at leg.wa.gov/jtc.

If you have any questions, please contact the JTC staff:

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Summary of 2023 Joint Transportation Committee Studies

January 24, 2024

Nondrivers: Population, Demographics and Analysis

JTC Project Manager: Alyson Cummings

In 2022, the Legislature directed the JTC to conduct a study on nondrivers in Washington State. The study focus was to identify and analyze the demographics of Washington State nondrivers and how current transportation infrastructure and services serve nondrivers throughout the state.

The JTC contracted with Toole Design to conduct the study. Toole Design was assisted by Cascadia Consulting Group and Strategic Research Associates.

Background

Nondrivers include people of all backgrounds and abilities such as aging adults, youth, students, recent immigrants, low-income individuals, those with physical, mental, intellectual, or developmental disabilities, and people who prefer not to drive. Prior estimates on nondrivers indicated approximately twenty-five percent of Washington State's population and about one-third of the national population do not drive. Existing information on demographics of the Washington State nondriver population and types of transportation utilized by nondrivers was limited.

The JTC Study

The specific elements of the study included:

- Research and summarization of the prior data on the number and characteristics of nondrivers.
- Identification of the types of transportation utilized by nondrivers, the availability of these options throughout the state, and the cost to utilize these options.
- A statewide survey to determine the reasons people do not drive; the demographics of nondrivers; and available transportation options for nondrivers, as well as the impact those options have on their access to services, economic opportunity, recreation, education, and other aspects of community life.
- With the survey dataset, the availability of transportation options for nondrivers throughout the state was analyzed by geographic region.

Key findings

Data on the nondriver population and availability of transportation options for nondrivers throughout the state was developed by census block and included in GIS maps that are publicly available:

- Navigation of Maps - Overview/Instructions
- Nondriver population in Washington State webmap
- Distribution of daily life activities in Washington State webmap
- Access to daily life activities by mode of transportation webmap

The final report is available here: https://leg.wa.gov/JTC/Pages/Nondrivers.aspx

Encouraging High Consumption Fuel Users to Buy Electric Vehicles

JTC Project Manager: Paul Neal

In 2022, the Legislature directed the JTC to examine strategies to encourage high consumption fuel users to switch to electric vehicles. The JTC contracted with CDM Smith to conduct the study. CDM Smith was assisted by IPSOS, a market research firm.

Background

RCW 70A.45.020 requires meeting specific carbon emission reduction goals. Reducing emissions from the transportation sector, i.e., reducing the amount of fossil fuel burned, would contribute to meeting those goals. An earlier study identified that a minority of users produced a disproportionate amount of vehicle emissions. The study hypothesized that strategies targeting those users (high consumption fuel users or "HCFU") to convert to zero emission vehicles could reduce emissions more than strategies directed at all drivers.

The JTC Study

The study tasks fell into two categories:

- Identifying potential benefits of HCFU switch to EVs:
    - Identifying which HCFUs can switch to EVs
    - How much money would those users save?
    - How many gallons of fuel would be displaced?

- Analyzing consumer data to identify potential strategies:
    - HCFUs attitudes and perception of EVs
    - Perceived barriers to HCFU adoption of EVs
    - Identifying effective messages to encourage the transition
    - Identifying policies to encourage the transition.

Key Findings

This study confirms that encouraging HCFUs to adopt EVs faster than the general population would result in faster displacement of GHG emissions. The study identified HCFUs as drivers who consumed more than 1000 gallons of gasoline per year. This included drivers who logged high miles, drivers of low-mile-per-gallon vehicles, and drivers who fell into both categories. The consultants found many of the policy interventions that motivate HCFUs to purchase EVs likewise would increase the motivation of non-HCFUs to purchase EVs. As a result, successfully encouraging more HCFUs to adopt EVs requires more targeted policy interventions.

Policy Options

Based on analysis of EV market conditions and consumer sentiments among HCFUs and non-HCFUs, the report proposed four targeted policy interventions to motivate faster EV adoption among HCFUs:

- **Lease incentive:** Providing an EV lease incentive for drivers trading in low-mile-per-gallon (mpg)/high-mileage vehicles, where rebates would be provided to dealers for every electric mile driven by an EV above 12,000 miles per year.

- **EV purchase incentive:** Providing an additional EV purchase incentive for drivers trading in low-mile-per-gallon (mpg)/high-mileage vehicles as either direct rebates or sales tax credits based on the displaced fuel consumption of a traded-in vehicle.

- **Vehicle loaner program for HCFUs**. Some HCFU drivers only need higher powered vehicles occasionally, such as when towing a boat or a travel trailer. An effective policy option would allow HCFUs to use gas-powered towing/hauling vehicles for occasional trips.

- **Free home charger incentives**. Some HCFU drivers live in rural areas where public charging facilities are scarce. This issue could be addressed by creating a free home charger incentive program for HCFUs. While the State of Washington already offers a sales tax exemption on the purchase and installation of a home-based charger, the value of this exemption (about $192) this is far less than the value of a free home charger with subsidized installation costs (about $2,000).

The final report is available here:
https://leg.wa.gov/JTC/Documents/Studies/2022%20studies/HCFUFinalReport.pdf

Independent Review of Cascadia Ultra-High-Speed Rail

JTC Project Manager: Dave Catterson

In 2022, the legislature directed the JTC to oversee an independent review of the proposed ultra-high-speed rail system being considered for the Cascadia Megaregion that could connect Vancouver, BC; Seattle, WA; Portland, OR, and points in-between and beyond.

For this review the JTC contracted with RSG who was assisted by STV.

Background

In 2016, while attending the Emerging Cascadia Innovation Corridor Conference, Washington Governor Jay Inslee and British Columbia Premier Christy Clark signed a formal agreement that included a commitment to explore an ultra-high-speed ground transportation system (UHSGT) between Vancouver, British Columbia and Portland, Oregon to serve the Cascadia Megaregion. Since that time, at the direction of the Governor and with approval and funding from the legislature the Washington State Department of Transportation (WSDOT) has overseen several studies examining the potential for UHSGT. Funding for this work has also come from the State of Oregon, the Province of British Columbia and Microsoft Corp.

The studies that had been completed were:

- Initial feasibility study – 2017. (An economic impact addendum was added to the report in 2018).
- Business case analysis - 2019
- Framework for the Future report - 2020

As described in the Business case analysis "UHSGT is defined as a system that could connect Vancouver, BC; Seattle, WA; Portland, OR, and points in-between and beyond, with frequent trains running at speeds as high as 250 miles per hour (400 kilometers per hour) that could reduce travel time between the major cities to less than an hour."

The JTC study

The purpose of this study was to conduct an independent review of the proposed ultra-high-speed ground transportation corridor being considered for the Cascadia Megaregion. The consultants conducted a "due diligence analysis" of three studies previously completed for this proposed corridor by examining the assumptions and methods underlying the findings from those studies.

In addition, the consultants conducted a "trade-offs analysis" of three potential build-out scenarios to show comparisons of ridership, cost, economic potential, environmental impacts, constructability, and governance. The three build-out scenarios were:

1. Incremental – Improvements to existing Amtrak Cascades corridor to achieve speeds of 79+ mph
2. State of the Art – Dedicated corridor to achieve speeds of 200+ mph ("Ultra-high-speed")
3. Hybrid – Mix of existing (urban) and new (rural) corridor, 79 to 200+ mph

Key findings:

The charts below summarize the key findings from the due diligence and trade-offs analyses. Most notable was that the consultants had significant concerns with the capital cost estimates that WSDOT had developed for the build out of an Ultra High-Speed system in the corridor. The consultants cited three primary factors leading to their concerns: escalating construction costs, low estimates for costs of tunnelling, and significant areas of major constraint in the corridor, especially in urban areas, that would require significant investment (tunneling or elevated track) to support 200+ mph operation.

Detailed Findings
Due Diligence Analysis

No Concerns
Minor Concerns
Significant Concerns

TOPIC AREA	ANALYSIS ELEMENTS	FINDINGS
Ridership and Revenue	Analysis Tools	
	Population and Employment Forecasts	
	Level of Service Assumptions	
	Travel Survey	
	Demand Estimation	
Economic Impact Analysis	Tools & Methods	
	Results	
Cost Analysis	Capital costs	
	O&M Costs	
	Cost Recovery Ratio	

Detailed Findings
Trade-Offs

- State-of-the-art & hybrid scenarios result in faster travel times & higher ridership
- But these benefits come with increased costs and impacts

	INCREMENTAL	STATE-OF-THE-ART	HYBRID
Ridership	○	●	◑
Capital costs	○	●	◑
O&M costs	○	●	◑
Community & enviro. impacts	○	●	◑
Construction complexity	○	●	◑
Operational complexity	●	○	◑

RSG ○ Lower → ● Higher

The final report is available here: https://leg.wa.gov/JTC/Pages/ultrahighspeedrail.aspx

Powered Micromobility Device Lending Libraries

JTC Project Manager: Alyson Cummings

In 2022, the Legislature directed the JTC to examine options and provide recommendations for a state program to assist in establishing powered micromobility device (AKA electric-bikes/e-bikes, e-scooters, and e-cargo bikes) lending libraries.

This study was conducted by JTC staff, in consultation with Senate and House Transportation Committee Staff.

Background

In the past decade, lending libraries have taken on new collections beyond traditional books. During a similar timeframe, the availability and use of powered micromobility devices has grown dramatically. Various entities (including libraries, non-profits, universities, cities, etc.) have stood up e-bike lending libraries over the past several years with a variety of funding sources. As of 2022, no state had initiated powered micromobility device lending libraries (PMDLL) or a specific grant program supporting powered micromobility libraries.

The JTC Study

This study was centered on examining options and providing recommendations for a state program that could assist with the establishment of PMDLL and direct-to-consumer incentives for PMDLL users to purchase powered micromobility devices. The stated intent of the libraries noted in the study proviso would be 'to provide low-cost or no-cost, reliable, and healthier modes of transportation to vulnerable communities'.

The specific elements of the study included:

- Literature review of prior studies and resources on existing (and former) lending library, powered micromobility, and purchase incentive programs
- Interviews with practitioners and funders from around the country regarding best and promising practices
- Development of a framework for a state program and summary of characteristics of successful powered micromobility programs and purchase incentive programs

Key findings

- Powered Micromobility Lending Library programs that are community centered and have administratively strong, nimble, and supportive grantors demonstrated lasting positive community impact.
- Purchase incentive programs for Powered Micromobility devices are increasingly prevalent and have been rigorously studied by the Portland State University, Transportation Resource and Education Center.

Current status

The 2023-25 biennial transportation budget (ESHB 1125) included funding for the Washington State Department of Transportation (the department) to: "…establish an e-bike lending library and ownership grant program. The department may accept grant applications from other state entities, local governments, and tribes that administer or plan to administer an e-bike lending library or ownership program for their employees for commute trip reduction purposes. The department may also accept grant applications from nonprofit organizations or tribal governments that serve persons who are low-income or reside in overburdened communities and that administer or plan to administer an e-bike lending library or ownership program for qualifying persons. Grant recipients must report program information and participation data to the University of Washington…"

WSDOT Active Transportation Division is lead on the grant program and is working to get it launched this year.

The final report is available here: https://leg.wa.gov/JTC/Pages/micromobility.aspx

Work Group on Local Government and State Partnership to Deliver State Projects

JTC Project Manager: Dave Catterson

The 2023-25 Transportation Budget directed the JTC to contract with the Municipal Research and Services Center (MRSC) to convene a work group to create a procedure by which WSDOT can partner with a local jurisdiction to perform preservation and maintenance or construct projects on state highways.

The work group consisted of four legislators and representatives from cities, counties, public ports, the County Road Administration Board, the Transportation Improvement Board and WSDOT.

MRSC contracted with BERK Consulting and Performance Plane LLC to assist with this project.

Background

It is relatively uncommon for cities or counties to carry out project delivery on state highways (for the purposes of this study the term "Locally Delivered Projects" is used). To date, the process for deciding upon and managing local delivery of state highway projects has been determined on a case-by-case basis and has been relatively uncoordinated, undocumented, and suboptimal for all parties.

Locally Delivered Projects typically originate in one of three ways, summarized below

Locally initiated project	Locally expedited project	Project assigned to local
Project is created due to a locally-identified (public or private) need or desire. Local jurisdiction secures the requisite funding.	A local jurisdiction has a strong interest or need for an existing WSDOT programmed project. Due to a number of factors, including internal capacity, WSDOT cannot deliver all budgeted projects within established timeframes.	The Legislature includes the project in the State Transportation Budget designated for local administration (Program Z).

Sources: MRSC, 2023; Performance Plane, LLC, 2023; BERK, 2023.

Study Approach

In addition to engagement with the work group the study team:

- conducted individual interviews with work group members, additional WSDOT staff and consultants and local government staff members who had participated in Locally Delivered Projects.
- conducted an online survey of cities and counties in Washington to gauge overall interest in partnering with WSDOT to deliver projects on state highways
- researched practices in other states
- reviewed WSDOT policies, procedures, and existing agreements to understand how Locally Delivered Projects could be standardized to work more effectively for all parties.

Key findings

Issues with the current state of Locally Delivered Projects:

- There is a lack of clear, standardized roles and responsibilities for WSDOT and local jurisdictions.
- WSDOT may lack capacity to oversee Locally Delivered Projects
- Locally Delivered Projects can lead to inefficiencies because they require staff capacity from both WDSOT and the local jurisdiction.

Overall, local jurisdiction interest in participating in Locally Delivered Projects is generally limited to medium- and

larger-sized cities and counties and is highly dependent on the jurisdiction's capacity, availability of adequate secured funding for the project, and alignment with local priorities.

Key Recommendations

The following two principles should guide all Locally Delivered Projects:

- Locally Delivered Projects should occur if and only if WSDOT and a local jurisdiction mutually agree to have a local jurisdiction deliver a project on a state route.
- There should be a consistent process for the selection and delivery of Locally Delivered Projects that promotes efficiency and clarifies respective roles and responsibilities. The recommendations section of the final report describes these processes.

The proviso included an inquiry into preservation and maintenance partnerships. Recommendations include:

- Coordinate resurfacing projects to maximize efficiency and economies of scale across levels of government.
- Research opportunities to use county road crews for some maintenance activities on state highways.
- No increases in statutory city maintenance responsibilities are recommended based on this study.

The final report may be found here: https://leg.wa.gov/JTC/Pages/stateandlocalpartnership.aspx

Design of Infrastructure and Incentive Program for Medium and Heavy Duty Zero Emission Vehicles

JTC Project Manager: Dave Catterson

The 2023-25 Transportation Budget directed the JTC to oversee a project to design and document an infrastructure and incentive strategy to drive the purchase and use of zero emission medium and heavy-duty vehicles, as well as cargo handling and off-road equipment, in the state including, but not limited to: programs for tractor trucks, box trucks, drayage trucks, refuse trucks, step and panel vans, heavy and medium-duty buses, school buses, on and off-road terminal tractors, transport refrigeration units, forklifts, container handling equipment, airport cargo loaders, and railcar movers. The strategy design must include an implementation plan documenting the steps to roll out the vehicle and infrastructure incentive programs.

For this project the JTC contracted with CALSTART assisted by PNWER and S-Curve Strategies.

Background:

Transportation is the largest contributor of greenhouse gas (GHG) emissions in Washington state. Medium and heavy-duty vehicles (MHD), including buses, big trucks and delivery vans make up approximately ten percent of the vehicles on Washington's roads but are responsible for 30 percent of the state's on-road GHG emissions, and even higher percentages of fine particulates and nitrogen oxides. These tail pipe pollutants disproportionately contribute to reduced air quality in low-income and overburdened communities. Battery electric and hydrogen powered trucks and buses (collectively called Zero Emission Vehicles, ZEVs) eliminate tailpipe pollutants compared with their conventional counterparts and reduce carbon emissions.

The JTC Study

The purpose of this project was to design and document an infrastructure and incentive strategy to drive the purchase and use of zero emission medium and heavy duty vehicles, as well as cargo handling and off-road equipment, in the state including, but not limited to, programs for tractor trucks, box trucks, drayage trucks, refuse trucks, step and panel vans, heavy and medium-duty buses, school buses, on and off-road terminal tractors, transport refrigeration units, forklifts, container handling equipment, airport cargo loaders, and railcar movers. In the 2023 – 25 transportation budget the following allocations from the Carbon Emissions Reduction Account are held in unallotted status until the completion of this project:

- $100 million for "implementation of zero-emission commercial vehicle infrastructure and incentive programs and for the replacement of school buses powered by fossil fuels with zero-emission school buses, including the purchase and installation of zero-emission school bus refueling infrastructure." (Sec. 215 (7)(b))
- $3 million for hydrogen refueling infrastructure investments (Sec. 215 (8)).
- $2.5 million for zero emission cargo handling equipment incentives (Sec. 215 (10)).
- $5 million for clean off-road equipment incentives (Sec. 215 (11)).

In addition, the consultant conducted a review of the clean alternative fuel passenger vehicle tax incentive in current Washington state law to evaluate its utility, and to evaluate possible modification of the criteria for eligibility and tax incentive amount maximums.

The recommended program design was informed by significant stakeholder engagement that occurred through focus groups, interviews with industry representatives, and meetings with legislators.

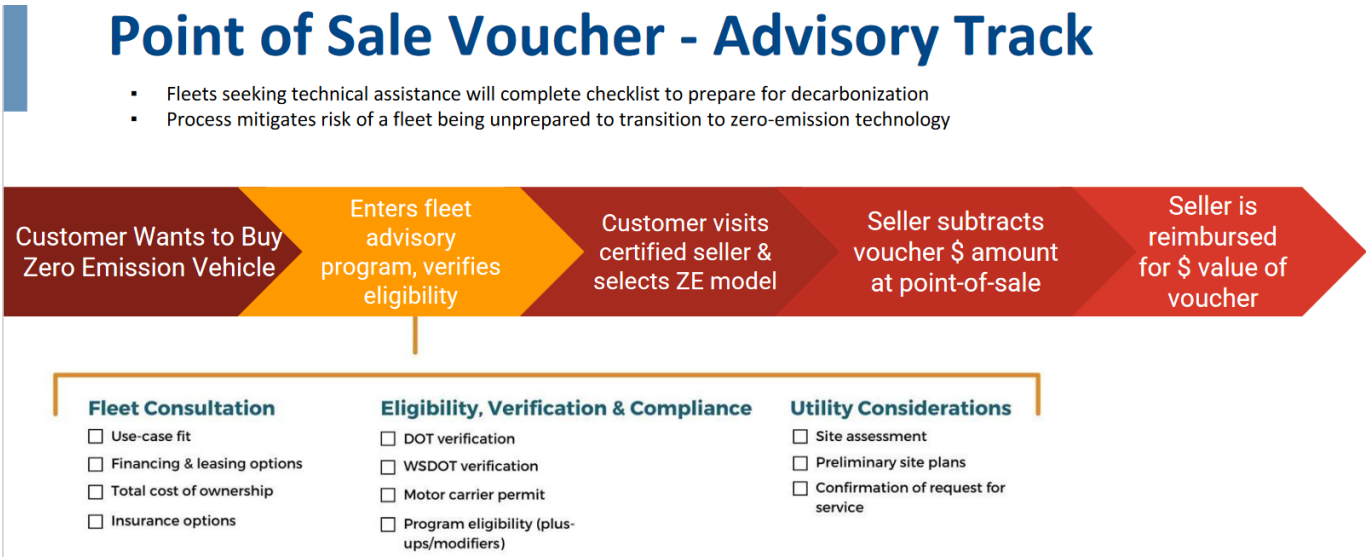
Key elements of the recommended incentive program

- Third-party administered point-of-sale voucher program for zero-emission MHDV fleets and the infrastructure to support their operation.
- Voucher amount plus-ups, or modifiers, for select fleet types, vehicles, or environmental impacts, such as vehicles domiciled in disadvantaged communities or owned by small, minority-owned businesses.
- A reduced incentive for secondary market (used) vehicles.
- Allow for vouchers to be stackable with other federal, state, or local incentives

It is also recommended that the following innovative approaches be incorporated in the point-of-sale voucher incentive program to greatly enhance the offering by streamlining participation:

- Develop integrated technical assistance for fleets.
- Streamline proactive coordination with utilities who will provide power to charging infrastructure.
- Develop a single program online portal for fleet applicants that includes on-road and off-road vehicles/equipment.
- Develop a front-end pre-approval process and paperwork verification.
- Create an education and outreach effort that targets fleets by sector with customized messaging that is important to each sector.

The graphic below summarizes a point-of-sale voucher process.



Highlights of Implementation Plan

Goal: Grow MHD ZEV market in Washington State

- Spend incentive money before end of biennium.
- Demonstrate value of incentive program to accelerating MHD ZEV deployment.

Phase 1 - Establish Incentive Program to Kick Start MHD ZEV Market in WA (2023-26)
Year 1: Move quickly, launch with success.
Year 2-3: Refine program, add additional elements.
Phase 2 - Explore Novel Market Acceleration Tactics (2027-33)
Phase 3 - Evaluate, Assess, Revise (2033-Onward)

Phase 1 will require hiring staff at WSDOT (or other lead agency) to contract with and oversee third-party administrator – approximately two FTEs.

The report contains additional detailed steps to launch the program.

Key Takeaways from Stakeholder Engagement

Barriers to Purchasing MHD ZEVs

- Vehicle cost
- Limited availability and cost of charging infrastructure
- Weight of Battery Electric Vehicles
- Vehicle range
- Insurance costs for ZEVs
- Existing technology does not match current needs, duty cycles

Point-of-Sale Voucher Programs Work Well

- Proven, effective tool for getting more MHD ZEVs on the road.
- Third Party Administrator is the best option for implementation.
- "Plus Ups" on base voucher amount encourage equity in program outcomes
- Existing voucher incentive programs put too much financial risk on vendors.
- Fleet advice and explanation of program requirements should not be responsibility of vendors.

Program should be easy to use

- Users want a centralized place to get information and apply to the program
- Users want stackability between state, local, and federal programs
- Vehicle/Equipment manufacturers and vendors want coordination between WA and CA programs (ex. vehicle eligibility)

The final report is available here: https://leg.wa.gov/JTC/Pages/MHDZEV.aspx