



UTILITY STUDY OF A HOUSEHOLD TRAVEL SURVEY

Presentation to the JTC

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May 14, 2024 | John A. Cherberg Building

OUR TEAM



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PROJECT OVERVIEW

Study Questions

- What would be the utility of conducting a statewide HTS?
- What are the potential options for methods and costs to conduct a statewide HTS?

Proviso

\$125,000 of the motor vehicle account–state appropriation and \$125,000 of the multimodal transportation account–state appropriation are for the Joint Transportation Committee to evaluate potential options and make recommendations for a statewide household travel survey and additional analytical capacity regarding transportation research.



APPROACH

- **Staff technical team engagement**
- **Gather information:** Understand utility and options
 - Interviews with interested parties to discuss potential uses of statewide HTS data
 - Analysis of existing HTS and other travel data collection in WA
 - Analysis of need for HTS data in recent studies by the JTC and others
 - Analysis of statewide HTS in other states
- **Options development:** Develop cost estimates for statewide HTS



BACKGROUND



WHAT IS A HOUSEHOLD TRAVEL SURVEY?

A household travel survey collects data on weekday travel and transportation patterns for **all members of a given household.**

- For each trip:
 - Purpose
 - Means of transportation
 - Who traveled
 - Travel time
- Information available at the household and individual level
- Gathers demographic information about respondents - enables crosstabulations if sample is large enough
- Typically does not include weekend travel or air, seasonal, or commercial travel

POTENTIAL USES OF HTS DATA

Use 1: Travel Demand Modeling

- Uses current travel behavior to predict future travel patterns
- No statewide TDM in WA

Use 2: Policy and Planning Research

- Can answer questions such as:
 - How many people travel to work using transit?
 - How has transit use changed over time?
 - Who is riding transit to work?
- There are many questions that HTS data cannot directly answer
- Many of the questions an HTS can answer can also be answered from other sources (see slide 9)

Both options require investment in data analysis

EXISTING HTS IN WASHINGTON

Washington currently does not conduct a statewide HTS, but there are HTS in the state

RTPO/MPO Regional HTS

6 of 19 RTPOs conduct an HTS, primarily for TDMs

Collectively cover 78% of WA population

1. Puget Sound Regional Council
2. Skagit Council of Governments
3. Southwest Washington Regional Transportation Council
4. Spokane Regional Transportation Council
5. Thurston Regional Planning Council
6. Whatcom County of Governments

NextGen National Household Travel Survey (NHTS)

- Administered by the Federal Highway Administration
- Conducted every 2 years
- Sample size of 7,500 households nationally
 - We estimate ~175-185 WA households, too few for disaggregated state-level analysis

OTHER AVAILABLE TRAVEL DATA IN WASHINGTON

- Public data
 - ACS - American Community Survey
 - AASHTO CTPP - American Association of State Highway and Transportation Officials Census Transportation Planning Products
 - BLS - Bureau of Labor Statistics
 - MRSC - Municipal Research and Services Center
 - NHTS - National Household Travel Survey
 - OFM - Office of Financial Management
 - PSRC - Puget Sound Regional Council
 - Sound Transit and other agencies
 - WSDOT - Washington Department of Transportation
- For purchase: mobile phone data

Example of U.S. Census Bureau ACS Journey to Work Statistics

View Results for a State

Washington

GET DATA

Washington

Average Commute Time

27.3 minutes

Source: Latest ACS 5-Year Estimates Data Profiles/Economic Characteristics

Workers Who Used Public Transportation

4.6 percent

Source: Latest ACS 5-Year Estimates Data Profiles/Economic Characteristics

Workers Who Worked at Home

15.5 percent

Source: Latest ACS 5-Year Estimates Data Profiles/Economic Characteristics

View Results for a County or City / Town in Washington (↑ change state using menu above ↑)

County

City/Town

Clark County, Washington

GET DATA

Clark County, Washington

Average Commute Time

25.8 minutes

Source: Latest ACS 5-Year Estimates Data Profiles/Economic Characteristics

Workers Who Used Public Transportation

1.4 percent

Source: Latest ACS 5-Year Estimates Data Profiles/Economic Characteristics

Workers Who Worked at Home

15.1 percent

Source: Latest ACS 5-Year Estimates Data Profiles/Economic Characteristics

↑ CLOSE STATE AND LOCAL DATA



KEY FINDINGS





POTENTIAL UTILITY OF A STATEWIDE HTS IN WASHINGTON

Use 1: **Travel Demand Modeling**

- Further engagement needed with WSDOT and RTPOs/MPOs

Use 2: **Policy and Planning Research**

Backward-looking analysis

- 6 out of 25 JTC studies (24%) conducted over the past 6 years could have used statewide HTS data
- Some other recent research could have used statewide HTS data, though would have needed supplemental data
- Nationally, there is significant usage of national HTS data for academic studies

Forward-looking analysis

- Many potential future research topics could be informed by statewide HTS data or by existing data

POTENTIAL OPTIONS FOR A STATEWIDE HTS

NextGen National Household Travel Survey Add-On Program

- Option to oversample within Washington
- Additional 6 custom questions

Independent Statewide HTS

- Statewide survey conducted by a state agency
- Most flexible option

Expansion of Existing PSRC HTS

- No commitment yet from PSRC
- Many questions are similar to NHTS, with some questions tailored to regional needs

COST ESTIMATES

Estimated costs: \$1.9M - \$8.8M per biennium

- Assumes a biennial survey
- Main factor is the number of households surveyed
 - Low (5k households): \$1.9M - \$2.1M
 - Mid (10k households): \$3.2M - \$3.4M
 - High (30k households): \$8.2M - \$8.8M
- Each option's costs are similar, with some differences:
 - Likely lower project management costs for NHTS Add-On
 - Possible opportunity for cost-sharing arrangements with PSRC

NEXT STEPS

The Legislature should evaluate two questions:

1. What is the desired outcome(s) of additional travel data collection or analysis?

- Use 1 - statewide TDM
- Use 2 - policy and planning research

2. What is the best method to achieve the desired outcome(s)?

- Use 1 - statewide TDM: engage WSDOT and RTPs/MPOs. A statewide HTS would be a necessary step.
- Use 2 - policy and planning research: compare the utility of HTS data with other existing transportation data

APPENDIX

PLANNING AND POLICY QUESTIONS THAT AN HTS CAN AND CANNOT ANSWER

HTS can help answer

- How many car trips does the average resident make on a typical weekday?
- How does transit use vary by income?
- What are the peak travel hours, by trip purpose, throughout the day?
- How often do employed persons typically telecommute (vs. commuting to work)?

Additional data is needed to fully answer

- Where do visitors go when they travel to the region?
- How many miles do ride-hail drivers (e.g., Uber, Lyft) travel without passengers in their vehicles?
- How many airplane trips does the average resident make each year?
- Where does freight travel around the region?

Source: Puget Sound Regional Council

HTS OVERVIEW CONTINUED

How does an HTS collect information?



Data collection via multiple methods

- Online form
- Phone line
- Smartphone tracking (typically longer timespan)

How frequently does an HTS collect information?



Data typically collected every ~2 to 10 years depending on who's administering

INTERESTED PARTY INTERVIEWS

Organization	Interviewee(s)	Interviewee Title
Association of Washington Cities	Brandy DeLange	Government Relations Advocate
Governor's Office	Debbie Driver	Senior Policy Advisor for Transportation
Office of Financial Management	Erik Hansen	Senior Budget Advisor for Transportation
Puget Sound Regional Council	Brian Lee	Program Manager of Data Solutions and Research
UW TRAC	Ryan Avery	Interim Director
Washington State Association of Counties	Axel Swanson	Managing Director, WA Association of County Engineers
	Paul Jewell	Senior Policy Director
WSDOT	Karena Houser	Director of Multimodal Planning & Development
	Natarajan Janarthanan	Manager of Travel, Data, Modeling, and Analysis
Washington State Transportation Commission	Reema Griffith	Executive Director
	Carl See	Deputy Director
Washington Traffic Safety Commission	Staci Hoff	Research Director

Department of Commerce, Department of Licensing, and Municipal Research and Services Center declined to participate.

FULL COST ESTIMATES

Component		NHTS Core Add-On	Independent Survey	PSRC Expansion
Data collection and cleaning	<i>Low (5,000 households)</i>	\$1,350,000	\$1,250,000	\$1,350,000
	<i>Medium (10,000 households)</i>	\$2,700,000	\$2,500,000	\$2,700,000
	<i>High (30,000 households)</i>	\$8,100,000	\$7,500,000	\$8,100,000
Data analysis		\$520,000	\$520,000	\$520,000
Project management and scoping		\$20,000	\$200,000	\$200,000
Cost-sharing opportunities		(TBD)	(TBD)	(TBD)
Total	Low (5,000 households)	\$1,890,000	\$1,970,000	\$2,070,000
	Medium (10,000 households)	\$3,240,000	\$3,220,000	\$3,420,000
	High (30,000 households)	\$8,640,000	\$8,220,000	\$8,820,000