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Washington State Ferries Wait Time Analysis and Rider Experience Study

### **Permalink**

<https://escholarship.org/uc/item/9m95x3wn>

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### **Publication Date**

2021-07-01

July 2021

# Washington State Ferries Wait Time Analysis and Rider Experience Study



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## Issue

Washington State Ferries' (WSF) 2018 Long-Range Plan outlines the agency's priorities, including improving the passenger experience. The agency recognizes that one of the biggest areas for improvement lies in enhancing the waiting experience for passengers traveling with vehicles. WSF allows passengers to drive their vehicle onto the ferry and ride with it to their destination. While a great first/last-mile convenience to many, this means that long lines of vehicles queue when sailing demand is high. This study focuses on determining which terminals are most likely to experience poor wait time experiences, by measuring vehicle wait times and determining how to best disseminate wait time information to passengers in vehicles.

Currently, vehicles enter the terminal holding area, pay their boarding fee, and wait in line for the next ferry to arrive. WSF can calculate the number of vehicles in the holding area based on ticket sales, but when vehicles queue outside the vehicle holding area, they cannot assess demand. Due to this unknown demand, WSF cannot calculate accurate wait times and efficiently convey them to passengers.

The research is divided into two parts:

1. Determine which of the 20 WSF terminals are most likely to frequently experience unknown/excess demand.
2. Find ways to measure excess demand and convey that information to passengers effectively and equitably.

By implementing technologies to calculate and accurately convey wait times, WSF could use data collected from new methods of wait time collection to track traffic patterns more accurately. In the long term, WSF could use this data to inform policy decisions and changes to terminal design and line management.

## Research Findings

This research identifies six priority terminals, Fauntleroy, Southworth, Vashon, Clinton, Edmonds and Kingston, as most at risk of experiencing excess and unknown demand.

The equity analysis reveals the need to convey wait time information to passengers through a format other than a mobile application. WSF could learn from successful wait time hotlines, such as that at the U.S. border crossing in

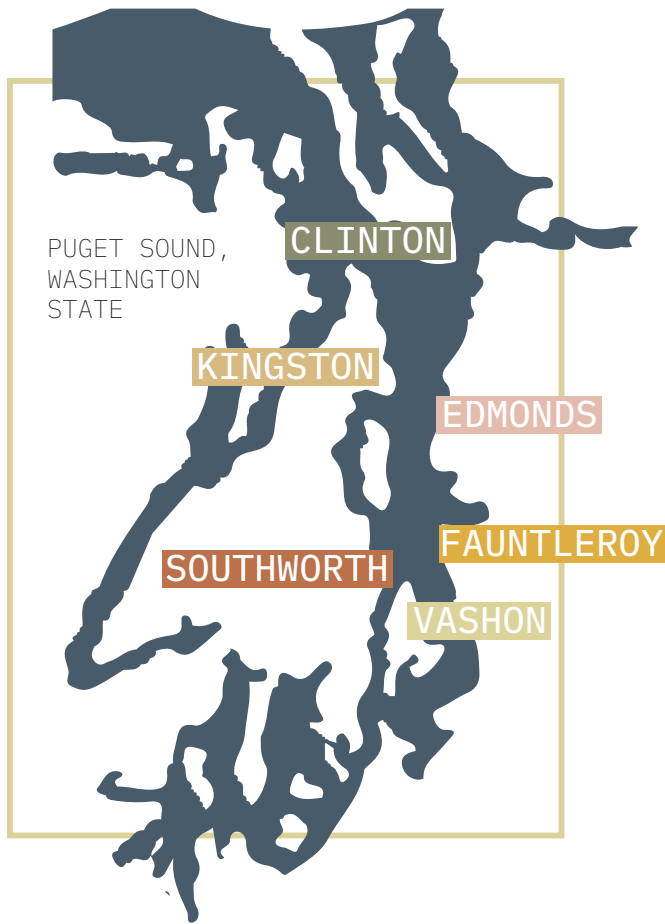


Figure 1. Priority Terminal Map

Tijuana, and create a hotline for passengers to call to obtain real-time, accurate information.

Interviews with terminal supervisors reveal the downsides of installing new physical signage along terminal queuing lanes, which local communities may view as unsightly.

Using Streetlight data, inductive loops and microwave sensors has shown great promise for measuring vehicle wait times for vehicle queuing issues with similar conditions to the WSF system.

## Study Approach

To determine priority terminals, the researcher observed vehicle terminal holding areas (2021), vessel vehicle holding capacity (2016, 2017, 2018), and Best Times to Travel documents (2019) created by WSF. Using six priority terminals identified as at risk of excess demand, the researcher determined best options for line measurement for each individual terminal, as well as the best methods of passenger communication techniques. Interviews with terminal supervisors and ferry advisory committee members helped understand the feasibility and popularity of certain technological interventions for each terminal.

## Terminal-Specific Recommendations

- **Southworth:** Inductive loops placed in 200-foot increments along queuing lanes. Sync information from inductive loops with WSDOT app for real-time wait-time information.
- **Clinton:** Inductive loops placed in 200-foot increments along queuing lanes along W-525. Current wait time posted on exit sign board.
- **Kingston:** Purchase Streetlight data along terminal queuing lanes. Sync information from Streetlight data with WSDOT app/hotline.
- **Vashon:** Microwave sensors on existing light posts along Vashon Island Highway SW for 2 miles past the terminal entrance. Purchase Streetlight data. Connect microwave sensor to WSDOT app/hotline.
- **Edmonds:** Microwave vehicle sensors on existing light posts along terminal queuing lanes. Sync information from microwave sensors with WSDOT app/hotline.
- **Fauntleroy:** Paint perpendicular stripes down Fauntleroy Avenue. Purchase Streetlight data along terminal queuing lanes. Avoid installing wait time signs along the roadside. Sync data to WSDOT app/hotline by terminal supervisors or automatically with Streetlight data.



Weber, A. (2021). Washington State Ferries wait time analysis and rider experience study (Master’s capstone, UCLA). Retrieved from: <https://escholarship.org/uc/item/3rn042nm>

Project ID UCLA ITS-LA2028 | DOI: 10.17610/T66592