

# Passenger Counting Report

**Roger Millar**  
Secretary of Transportation

**Amy Scarton**  
Assistant Secretary, WSDOT Ferries Division

November 3, 2017



Washington State  
Department of Transportation

In response to the Coast Guard requiring WSF to begin counting all passengers on every sailing, the legislature included a proviso in the 2016 Supplemental Transportation Budget directing us to report on the most effective way of doing so:

\$300,000 of the Puget Sound capital construction account— state appropriation is provided solely to issue a request for proposals and purchase pilot program customer counting equipment. By June 30, 2017, the department must report to the governor and the transportation committees of the legislature on the most effective way to count ferry passengers. (ESHB 2524, Sec. 309(12))

WSF submitted a Request for Quotes (RFQ), asking vendors to bid on an automated passenger counting system that utilizes cameras to count passengers as they are boarding our vessels at six terminals with an overhead passenger loading process. We received only two responses. CountWise had the most competitive bid and came with good references from Staten Island ferries, where their system is being used with positive results. The other RFQ response was by a company being used at Sound Transit, but whose bid was 50% higher than the legislative funding provided for this initiative. We signed a contract with CountWise in September 2016.

CountWise worked with WSF to design and install a system that worked with our current infrastructure and manner in which we load our passengers at our Seattle ferry terminal for a “proof of concept.” The proof of concept was to prove that their technology could count passengers with 95 percent accuracy on all sailings, along with a real-time dashboard and historical reports for our terminal operations use. The system was installed in April/May 2017 and after thorough calibration of the cameras, the system was turned over to WSF for our proof of concept in June 2017.

Our proof of concept compared the manual staff counts and turnstile counts to the CountWise system at our Seattle ferry terminal. With unfavorable results from the commencement of our proof of concept, the vendor continued to take steps to improve the performance of their system – installing different cameras, adjusting the calibration, installing sun shades, etc. Unfortunately, the system was unable to overcome the following challenges:

- **Varying Levels of Traffic:** The volume of passengers boarding each sailing varies by time of day and varies through the boarding process for a single sailing. A majority of sailings have passenger counts less than 200, while our peak commuter sailings have 400-1,200 per sailing. Our peak sailings have heavy volumes for the first part of the loading process, with passengers trickling in until the boarding process concludes. Additionally, the first part and last part of the load process has passengers moving at a fast pace, sometimes running, while the middle part is heavily congested with passengers barely moving. All of these conditions impacted the cameras ability to accurately identify the passengers walking shoulder-to-shoulder, kids walking in the shadow of their parents, and ignoring large luggage.

- **Count by Sailings:** Due to sailing departure times varying from our published schedule, the system needed a mechanism for capturing the actual departure time to allocate the passenger count to a specific sailing. The vendor was not able to do this in an automated manner, requiring staff to push a button prior to and after boarding a vessel. This opened the system to human error when staff was focused on other critical operational tasks, not pushing the button at the exact time.
- **Environmental Impacts:** The cameras were located on the overhead open-air bridge, which has variable levels of natural lighting. In September, we noticed that the sun was lower in the sky, causing more glare and required a large sun shade to be installed.

Due to the complexity of our operations and our desire to make the CountWise system work for WSF operations, we requested of the leadership of the House and Senate Transportation Committees a 90-day extension to the proviso deadline, to September 30. We then requested and were granted another extension to October 31. The vendor continued to not meet the 95 percent accuracy threshold and was issued a cure letter on September 18, giving them 30 days to have their system within contractual compliance. Unfortunately, the vendor was only able to meet the 95 percent accuracy threshold on 76 percent of all sailings by October 18 and therefore has been issued a letter of termination.

In closing, WSF has identified that manual counting is currently the most accurate means of counting passengers based on our recent proof of concept effort. Because the Coast Guard continues to mandate we count all passengers, WSF will continue with our manual counting process by terminal staff. We will also continue to explore what other automated technologies are available for the most effective means of counting passengers.