Where's the bus? UW student's new web tool tracks transit through the Seattle region

April 10 2019, by Michelle Baruchman

Credit: CC0 Public Domain

Have you ever run to a bus stop just in time for its scheduled arrival only to end up waiting for the bus to show up?

University of Washington junior Kona Farry has, so he built a website, that lets transit users to track the whereabouts of all the buses, ferries, streetcars and light-rail trains in service in the Seattle region.

The goal is to provide more real-time transit information to riders.

His website, called the Puget Sound Transit Operations Tracker—or P-Track for short—uses GPS and other data publicly available from local and regional transit agencies to plot the positions of buses, trains and ferries along their routes.

His page automatically updates every 30 seconds so users have up-to-date information.

"It was born out of a desire to be able to see all the buses all at once and know what's going on with the system," said Farry, 21, who studies community, environment and planning at UW.

For hard-core transit enthusiasts, information about each vehicle's make and model, unique identification number, and even the size of the vehicle is available in the website.

The site is free, and Farry does not make money off it. But users can support his work by making a one-time contribution or paying for a monthly subscription that supports ongoing development and server costs.

P-Track differs from other transit trackers like King County Metro's OneBusAway in that riders can see how individual buses are moving along a route as opposed to getting an estimate of when the bus will arrive. It also says whether a bus or train is running behind or ahead of schedule.

For example, if you're waiting for a bus on Third Avenue downtown, you can use OneBusAway or the Transit App to see that your bus is scheduled to arrive in 4 minutes. Then, you can open up P-Track, input the route you are tracking and see that your bus is still making its way through Pioneer Square.

That can provide riders with additional information: Your bus is on its way, but it might take 5 or 6 minutes to get to your stop, not 4 as the other apps might say.

"If a bus misses a light cycle or hits traffic, suddenly that estimate is off by several minutes," Farry said. "You don't watch that number slowly tick upward. You get a much better feel when you can say, 'Oh the bus is right there, but it's not moving. That's why it's not here yet.' "

On his site, Farry considers a bus on-time if it arrives between 2 minutes early and 5 minutes late. That's the same as Metro's definition.

The website also can tell you how often buses on a particular route are late, very late, on time or early. Late buses are those that arrive between 5 and 15 minutes after they are expected. Very late buses come more than 15 minutes later than scheduled, and early buses come more than 2 minutes sooner than scheduled.

Farry started working on the idea in December and, with limited coding experience, developed the website in less than four months, he said. He tapped Google, people on various internet forums and his roommate, a computer-science major, to help build the system.

"I pretty much had to learn everything as I went," he said.

Farry said he became a self-described "transit geek" in the fall of 2016 when he moved from Marysville to Seattle for school and got to thinking

about how to make transit work better.

"That opened up this whole new world of riding the bus and going places for me," he said. "I thought it was fascinating how there were so many buses out there going all over the city."

He regularly takes Metro's Route 45, which runs between Loyal Heights and the University of Washington light-rail station. Farry also rides the Sound Transit Express Route 512 to Everett, where he then switches buses to get home to Marysville. And he sometimes rides Community Transit commuter buses between Snohomish and King counties.

Over the summer, he plans to develop the website into an app for Apple phones. Android users could continue to view the platform on their mobile browser.

In future versions, he'd like to add a traffic overlay so riders can see traffic conditions that could delay their trip.

Farry would also like to collect timeliness information over time so passengers can see which routes tend to be early or late.