

Do private shuttles affect the reliability of public transit?

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A King County Metro bus in Seattle. Credit: University of Washington

While many Puget Sound residents have to choose between taking public transit or personal vehicles to work, Microsoft and Seattle Children's Hospital employees have an additional option: private commuter buses.

Last year, King County Metro and the Seattle Department of Transportation started a [pilot program](#) that allowed these shuttles to pick

up employees at a few public bus stops throughout the city. But some residents are concerned that sharing stops with private shuttles could make [public transit](#) less reliable.

Now a recent study from researchers at the University of Washington suggests that public buses are unaffected by private shuttles most of the time. The study, which will appear in the print edition of the *Journal of the Transportation Research Board* this fall, examined how well public buses adhered to their schedules both before and during the pilot period.

"There's this huge symbolic meaning that these private buses have, and their potential impact on public transit would basically be salt in the wound," said Don MacKenzie, a co-author of the study and an assistant professor in civil and environmental engineering. "Your neighborhood is gentrified, your friends and neighbors have been forced to move out and now your bus is going to be late? But we found that, by and large, the buses aren't running behind."

To determine if the shuttles negatively impacted public buses' reliability, MacKenzie and civil and [environmental engineering](#) doctoral student Elyse Lewis partnered with Swiftly, a company that acquires and cleans up real-time performance data from trackers on public transit.

Lewis and MacKenzie used data for the six weeks leading up to the pilot start date on April 24, 2017, and then six weeks afterward for nine stops included in the trial run. The stops spanned the city, including stops in West Seattle, lower Queen Anne, Capitol Hill, and northeast Seattle. The team compared data from those stops to nearby control stops that were not part of the program, which was set to run for six months.

"We asked questions like: To what degree are buses arriving late? And does that change after the pilot starts?" said MacKenzie, who also leads the Sustainable Transportation Lab at the UW. "We're interested in what

happens in the worst-case scenarios before and after to see if the worst case gets worse. If buses start arriving 10 minutes late, that's really problematic."

On average, bus reliability stayed the same for all of the stops combined. But when the researchers looked at each stop individually, one stop on Sand Point Way in northeast Seattle was affected. The bus that stops there, the 75, was more likely to arrive two to three minutes later after the pilot program started.

It's hard to tell exactly what's happening at that stop without a more in-depth look, the researchers said.

"We wanted to do a quick study with data that's available to see if there was an overall problem with the pilot program," said Lewis, who is the corresponding author on the paper. "So rather than the city having to spend time and resources going out and having someone sit and watch every single stop, now they can follow up with only the problem stops."

From a transportation standpoint, Seattle could benefit from having these private shuttles use public transit stops, the researchers said.

"These companies pay a monthly fee to stop, pick up and drop off passengers there," said Lewis. "So they have the potential to add a new source of income that goes into improving the [transit](#) system."

The team is optimistic that the results show that having access to real-time data like this can answer important questions that will help influence public policy.

"This is just one example of how open data can help us understand the impacts of these services, but there are certainly more questions," said Lewis. "If we want to get at bigger questions, such as whether these

shuttles are causing gentrification, then we need access to more available data."

More information: Elyse O'C. Lewis et al. Private Shuttles and Public Transportation: Effects of Shared Transit Stops on Travel Time and Reliability in Seattle, *Transportation Research Record: Journal of the Transportation Research Board* (2018). [DOI: 10.1177/0361198118758284](https://doi.org/10.1177/0361198118758284)

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