



The Best Evidence Yet That Real-Time Arrival Info Increases Transit Ridership

New York's Bus Time program led to about a 2 percent rise overall, according to new research.

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It's obvious why transit riders love [real-time information](#): they can plan their trip and shed the [psychological angst](#) that comes with waiting for the next bus or train. But the question for cities is whether or not people love it enough to choose transit over another mode. In other words, is real-time data just a nice way to keep existing riders happy, or is it an investment that will pay off in brand new riders over time?

A new study of a real-time bus arrival program in New York City offers an encouraging (if qualified) answer: it does generate new trips, though mostly for high-traffic routes. Candace Brakewood of the City College of New York and collaborators analyzed ridership patterns following the city's roll-out of its [Bus Time website](#). In a [new paper](#) they report a measurable jump in ridership (around 2 percent) that works out to upwards of \$6.3 million in new revenue over the three-year study period:

Although the increase in weekday route-level ridership may appear modest, on aggregate these increases exert a substantial positive effect on farebox revenue.

Brakewood and company tracked bus ridership from January 2011 through December 2013. During that time New York launched real-time bus tracking in all of Staten Island, the Bronx, and Manhattan. (The program has since launched in every borough.) The researchers compared pre- and post-launch ridership to get a sense of just how influential Bus Time was in rider decisions. They accounted for key variables such as fare and service changes, seasonal patterns, the opening of the Citi Bike system, and Hurricane Sandy.

On average, across all the bus lines included in the Bus Time scope, real-time information contributed to about 118 new weekday trips—a 1.7 percent bump. The more significant increases only occurred on the most-traveled routes, where real-time info led to 340 new daily trips, or a 2.3 percent spike.

At a practical level, it makes sense that real-time arrival information might have the greatest impact on popular routes. If you check Bus Time for the next bus and see it's nearby because that particular line runs frequently, you might integrate the real-time tool into your daily travel decisions. But if Bus Time tells you the next bus is 15 minutes away, you might choose another mode or not take the trip at all. (It's also possible ridership gains on the less-traveled routes did exist but were lost to statistical noise.)

The ridership growth observed by Brakewood is in line with [previous research](#)

[on Chicago buses](#), which found a rise of around 2 percent thanks to real-time information. But Brakewood and company took their results a step further than previous work and performed some back-of-the-envelope calculations on real-time revenue—new riders multiplied by average fares. By December 2013, the end of the study period, that revenue had reached about \$400,000 a month (below). The total estimates ranged from \$5.6 million to \$6.3 million over the whole study period.

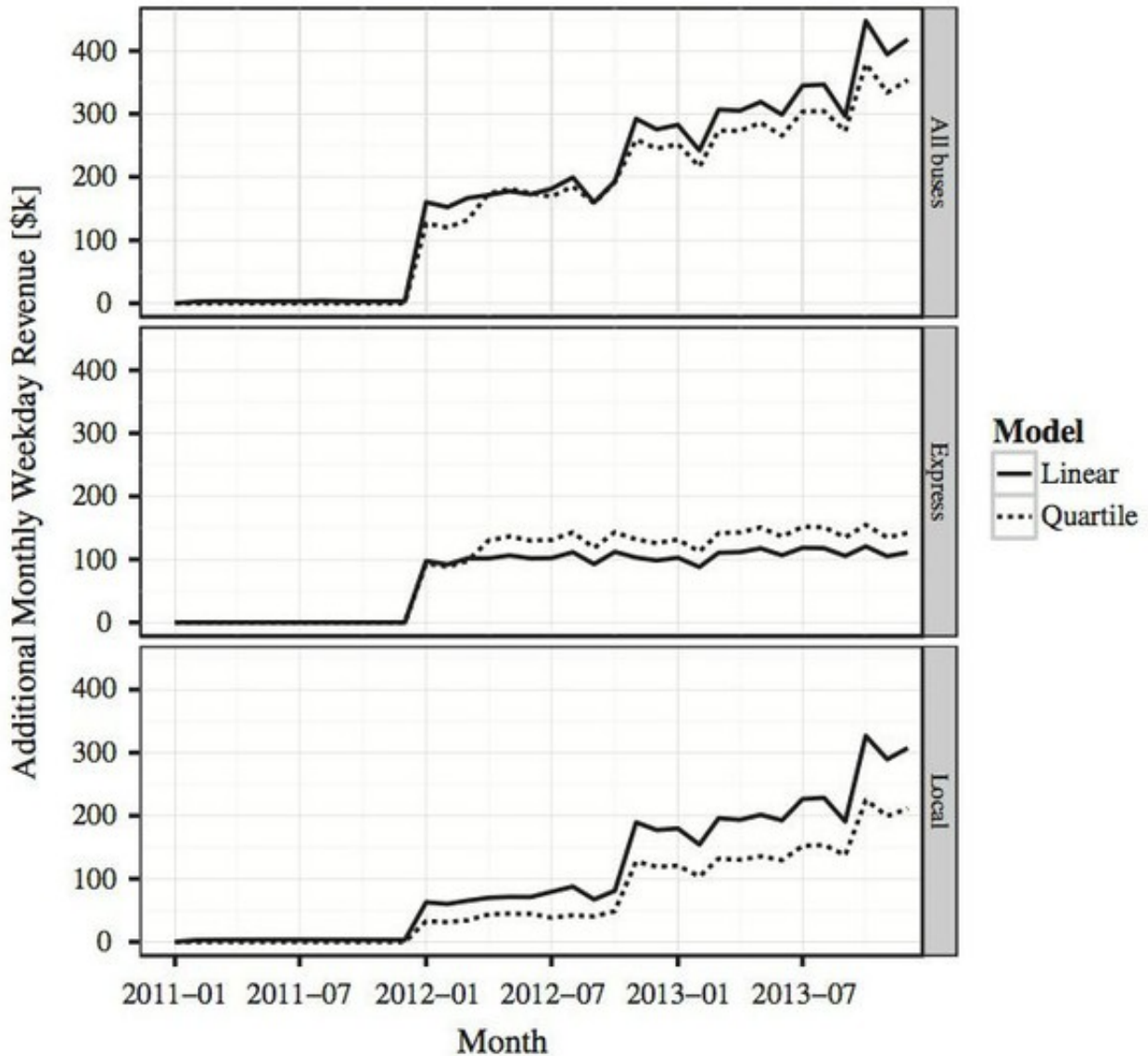


Fig. 3. Additional estimated weekday farebox revenue per month attributable to RTI.

Bus Time was generating about \$400,000 a month in new fare revenue by December 2013. (Transportation Research Part C: Emerging Technologies)

The researchers stress that these revenue figures are broad outlines. If the new

rides are taken primarily by people with monthly passes, for instance, then the totals might overestimate the actual revenue. Then again, the figures only reflect weekday travel and real-time info in three of the five boroughs—meaning the true revenue gains, at the present time, may be much higher.

Even if these revenue calculations aren't exact, they offer cities and cash-strapped transit agencies a blueprint on how best to implement real-time tracking. A city struggling to pay for real-time programs may find it easier to locate money for the highest-traffic lines and then use the new revenue to expand system-wide. And in New York, where officials chose to pursue Bus Time instead of [more expensive countdown clocks](#), the additional revenue could now be used toward that upgrade.

About the Author



Eric Jaffe is a senior associate editor at CityLab. He writes about transportation as well as behavior, crime, and history, and has a general interest in the science of city life. He's the author of *A Curious Madness* (2014) and *The King's Best Highway* (2010), and lives in New York.

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