Could Twitter be as helpful as a snow plow?

By Fredrick Kunkle  December 3

That snarky Tweet you sent about never seeing a snowplow when you need it might just get you out of bad traffic one of these days. And the same goes for the tweet about the beauty of a snow-covered landscape.

That’s the implication of a recent study by University at Buffalo researchers, who found that Twitter can provide fairly sensitive data about not only current weather conditions, but the condition of roads and highways.

Sifting through on-the-spot observations by Twitter users — who fill the ether with an estimated 9,000 tweets per second – creates a wealth of hyperlocal data that can then be plugged into computer models to better predict traffic patterns and perhaps direct traffic during periods of bad weather, researchers said.

“[That time the Weather Channel created a storm on Twitter]”

“It doesn’t matter if someone tweets about the how beautiful the snow is or if they’re complaining about unplowed roads,” the study’s lead author, Adel Sadek, said in a statement.

Sadek, who is director of the University at Buffalo’s Institute for Sustainable Transportation and Logistics, said Twitter feeds can work like pixels that paint a picture of current conditions in a way that existing traffic- and weather-monitoring stations can’t, even after factoring in for false alarms.
Wet start to the day in the Nation's Capital. #WashingtonDC
#rain #weather #UScapitol
9:02 AM - 30 Nov 2015
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Absolutely pouring in Fort Lauderdale. #weather @wsvn

3:51 PM - 2 Dec 2015

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That’s because Twitter users can comment on whether ice has covered a road or whether snowplows have come through, or whether snow is actually falling at any given place – details that are generally lost on existing traffic- and weather-reporting stations.

(We’re assuming that these observant motorists are not texting and driving at the same time. When we hear from the researchers, we’ll update.)

In Washington, where the sight of a snowflake can bring the Beltway to a halt, no one has to tell you that weather has an impact on traffic (though the University at Buffalo study cites another that real researchers used real computers to prove that rain and snow can slow traffic).

But it’s also a big deal. More than one in five of all vehicle crashes are blamed on bad weather, and 6,250 people are killed and more than 480,000 injured in those weather-related crashes, according to Federal Highway Administration data cited by the study.

Researchers are increasingly interested to see whether social media can complement traditional weather and traffic
observations. In other studies, scientists at the University at Buffalo (formerly known as the State University of New York at Buffalo) looked at D.C. traffic to see whether Twitter feeds could improve detection of crashes.

To test its theory that Twitter could help predict traffic and weather patterns, the team focused on the Buffalo-Niagra, N.Y., metropolitan area, which is notorious for foul weather, heavy snow and unpredictable storms brewed up over Lake Erie. They then analyzed Twitter data from Dec. 1-19, 2013 and compared this with data from nearby weather and traffic-reporting stations.

The researchers combed the tweets for those that simply mentioned snow or other weather phenomena, and for those that offered a report on weather or traffic conditions. Researchers used data from Weather Underground, a commercial reporting service that includes measurements gathered from personal weather stations, and from atmospheric weather stations at Niagara Falls International Airport and Buffalo Niagara International Airport. Traffic data came from the Niagara International Transportation Technology Coalition, which is comprised of 14 transportation-related agencies in the region and provides hourly traffic flow data.

They found that Twitter, when enough people were contributing to the stream of tweets on weather and traffic, was nearly 70 percent reliable in documenting current conditions.

There are limits to Twitter’s usefulness, however. Most people only tweet during the daytime, thereby limiting the data that can be obtained at night. And their Twitter feed must allow their smartphones to give precise GPS coordinates of their location.

The study appeared in the October edition of Transportation Research Record: Journal of the Transportation Research Board.

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