



## Milwaukee database, statistical software show pothole disparity

By **BEN POSTON** and **GRANT SMITH**  
[bposton@journalsentinel.com](mailto:bposton@journalsentinel.com)

Posted: Aug. 30, 2008

The Journal Sentinel wanted to see if there were any disparities in how the City of Milwaukee repaired potholes this past winter.

Reporters mapped 11,326 “pothole locations” the city had fixed from January to mid-July using mapping software and aggregated them by aldermanic districts and U.S. census tracts. A location may be one pothole or many spread over a city block.

Reporters were unable to map 559 pothole locations because there was incomplete data on the repair time or location or because the mapping software could not match the location.

Reporters calculated the average number of days it took the city to fix potholes broken down by aldermanic district and by census tract. The 223 census tracts in Milwaukee are less than half a square mile on average.

The analysis identified geographical disparities in the time it took to repair potholes — specifically, that potholes in mostly minority census tracts took an average of 11 days to repair, while potholes in mostly white census tracts took seven days.

Next, reporters used statistical software to run a multiple linear regression to see how the different

factors were associated with the time to repair potholes. Linear regression allows statisticians to determine how two or more variables are related, the strengths of those relationships and if one variable predicts another.

Using this method, the Journal Sentinel was able to control for other variables such as median income and population density to determine that the higher the minority population percentage in a census tract, the longer it took crews to fix potholes. Minority population percentage includes all races not counted as white by the census.

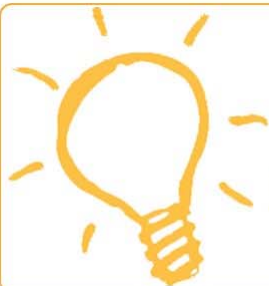
Reporters also found that while median income and population density together accounted for nearly 6% of the chance of getting a quicker repair, minority percentage accounted for about an additional 16%.

The analysis could not account for the remaining factors: the age or size of roadways, citywide traffic counts or pothole severity, which the city considers as priorities. The city’s own database doesn’t include information on these factors.

The findings and methodology were sent for review to Razia Azen, an educational psychology professor at the University of Wisconsin-Milwaukee, and Pamela Oliver, a sociology professor at UW-Madison. The professors confirmed the results of the statistical analysis and said they were interpreted correctly.

City officials said arterial streets are a higher priority than residential streets. Given that, reporters next isolated potholes on eight of the city’s arterial streets. Those response times ranged from 11 days on the north side of town to three days in the south. Using a map that listed traffic counts provided by the city, reporters were able to adjust for average daily traffic and still found a disparity between north and south.

Advertisement



A bright idea in online advertising.

PrinterStitial® ads by Format Dynamics.



FormatDynamics®

Print Powered By  FormatDynamics™



Reporters also examined pothole locations on residential streets in 17 neighborhoods south of Capitol Drive, which is the closest major street that parallels a clear boundary of unequal service. It showed that response times for high-priority arterial streets north of Capitol Drive were longer or equal to low-priority residential streets in the south of the city.

© 2005-2007, Journal Sentinel Inc. All rights reserved. |  
Produced by [Journal Interactive](#) | [Privacy Policy](#)

Advertisement

A bright idea in online advertising.  
PrinterStitial® ads by Format Dynamics.

The logo for Format Dynamics, consisting of a stylized orange and grey 'F' and 'D' shape.

Print Powered By FormatDynamics™