

# Optimizing Local Smoke Alarm Inspections with Federal Data

Jeremy Krinsley  
Engineer, Enigma  
jak@enigma.io

Brian Abelson  
Engineer, Enigma  
brian@enigma.io

## ABSTRACT

This paper outlines a fully-realized civic tool that predicts municipal blocks least likely to have homes with functioning smoke alarms and most likely to have residents who are at highest risk for fire fatality. Using a novel merge of the American Community Survey (ACS) and the American Housing Survey (AHS), we are able to model these two risk factors at the geography of census block groups, and with the aid of the TIGER Census dataset, return actual street addresses with associated risk scores. This tool represents a potential model for developing reusable civic analytic applications that can serve multiple cities while responding to local particularities.

## Keywords

Civic Analytics, Fire Prevention, Census, ACS, AHS, TIGER

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, to republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

*Data For Good Exchange, 2015*

Copyright 20XX ACM X-XXXXX-XX-X/XX/XX ...\$15.00.