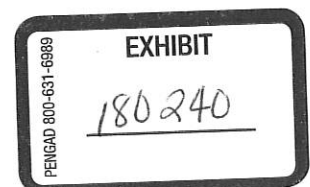# Fire Community Assessment Response Evaluation System (FireCARES) Project

What is FireCARES?

The Fire-Community Assessment Response Evaluation System, known as FireCARES, is a "big data" analytical system providing important information to fire service and community leaders about their local fire department and the risk environment in which firefighters are called to respond. FireCARES includes more than a decade of research on structure fires and related injuries and death, as well as building footprints, housing and mobile home units, public health and census data, and vulnerable populations. FireCARES combines large sets of data from various sources to "tell the story" of a fire department in regard to its risk environment, resource capacity, and overall capability to respond to emergency incidents.
The FireCARES project, funded by FEMA AFG, raises the bar for the technical discussion of community hazards and risks and the impact of changes to fire department resource levels.

Who built FireCARES?

The same team of researchers, academics, and fire service professionals who conducted the landmark NIST Residential Fireground Experiments (NIST TN 1661) and the NIST High-Rise Fireground Experiments (NIST TN 1797) built FireCARES. FireCARES partners include NIST, the International Association of Fire Chiefs (IAFC), the Metropolitan Fire Chiefs Association, the International Association of Fire Fighters (IAFF), the Commission on Fire Accreditation International (CFAI-Risk), Underwriters Laboratory (UL), the Urban Institute, the University of Texas at Austin, and Worcester Polytechnic.

FireCARES

When developing deployment and staffing strategies for fire departments, virtually every fire department relies on National Fire Protection Association (NFPA) 1710, *Standard for the Organization and Deployment of Fire Suppression Operations*

FireCARES is a "Big Data" analytical system that provides the necessary and quantitative information to fire service and community leaders about the response capabilities of their fire departments. Moreover, it provides the same view of the community's risk environment in which firefighters will be operating, thereby allowing fire department planners to manage the risks to firefighters as well.

FireCARES identifies a community's risk of fire based on several major demographics such as infrastructure, built environment, population, and socio-economic risk factors, also known in the econ and data industries as social-welfare criteria

Partners in the project include:
The International Association of Fire Fighters (IAFF)
The International Association of Fire Chiefs (IAFC)
IAFC's Metro Fire Chiefs Association
Commission on Fire Accreditation
Underwriters Laboratories
Urban Institute

"FireCARES is a platform that takes the complex issue of data analysis and develops the tools to make data useful for the fire service. It can become a total launch point for the fire service to recognize the power of data and the value of quality data entry."
Stephen Kerber, PE
Director, UL Firefighter Safety Research Institute

"FireCARES' uses of advancements in measurement science allow for a better understanding of how community characteristics uniquely define their fire risks and demand for fire department services."
David T. Butry, Ph.D.
Chief, Applied Economics Office National Institute of Standards and Technology

"FireCARES was created and designed to be a tool for fire chiefs to assess their community needs and help reduce risk to citizens and firefighters. It can be an essential planning and budgeting tool that provides a granular look at the risk and resources within the community."
Chief John Sinclair
IAFC President and Chairman of the Board

Effective Response Force Coverage
NFPA 1710 Standard (National Fire Protection Agency)

Low Hazard- 15 members under 8 min.
Milwaukee- 83.97% of the time

Low Hazard includes: one, two or three family dwellings and small business and industrial occupancies.

Medium Hazard- 27 members under 8 min.
Milwaukee- 58.35% of the time

Medium Hazard includes: apartments, offices, mercantile and industrial occupancies that may require extensive use of firefighting forces.
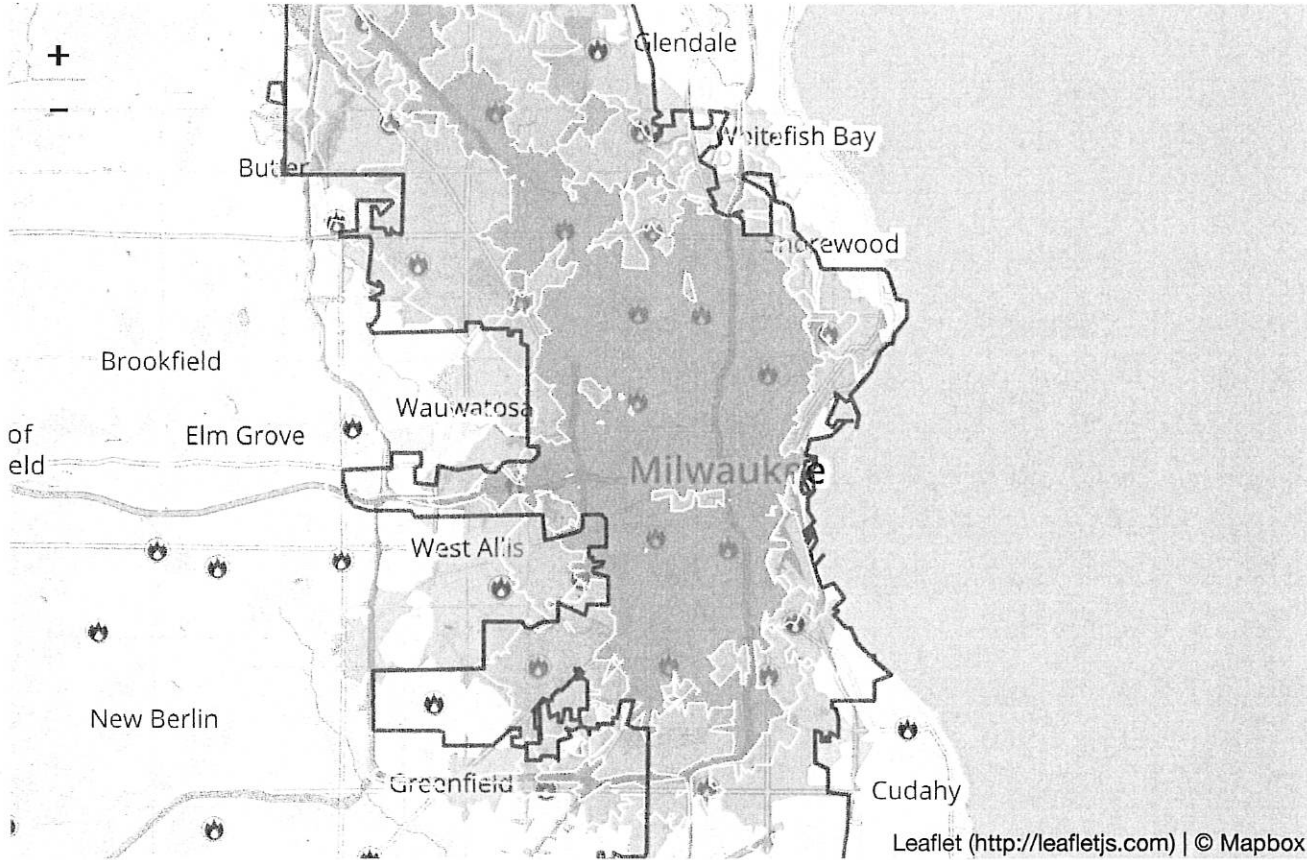
High Hazard- 38 members under 10min 17 sec
Milwaukee- 47.69% of the time

High Hazards include: high-rise buildings, hospitals, schools, nursing homes, explosives plants, refineries, public assembly structures, and other high-life hazard or large potential occupancies.
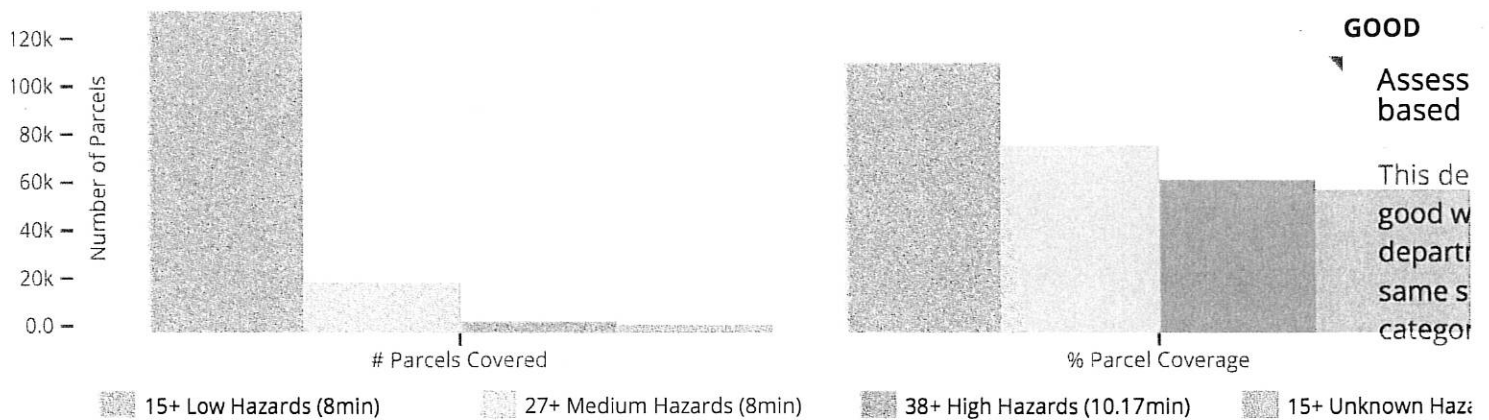
Milwaukee Fire Department

Milwaukee, WI, 53233-1403

FDID: 40200

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Effective Response Force Coverage

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| 15+ Low Hazards (8min) | 27+ Medium Hazards (8min) | 38+ High Hazards (10.17min) | 15+ Unknown Haza |

197 Personnel/Assets Available