Rooftop geo-placement of fire stations brings PPC™ accuracy to a whole new level

The project

During the third quarter of 2009, ISO embarked on an ambitious project — to identify all structures that house fire apparatus in the United States. To accomplish the project's goals, trained ISO field representatives visited more than 50,000 fire stations across the United States[1] and in Puerto Rico. At each fire station, an ISO field representative collected precise geographic coordinates for the property, confirmed the actual physical street address, photographed the buildings, compiled basic construction and exposure information, and recorded square footage. Now that ISO has completed this challenging and extensive job, we have the most accurate and comprehensive geographic information systems (GIS) database of fire stations in the country.

Why visits for rooftop geo-placement?

ISO felt the best method to get the most accurate placement of fire stations was to have a field representative physically go on-site and record the "rooftop" placement of each station. That method is especially useful in suburban and rural areas, where there are longer street segments and a greater likelihood of making a positional error. Rooftop geo-placement is also optimal in border situations, where even a small inaccuracy may lead to placing a fire station in an incorrect fire protection area — and that can affect the Public Protection Classification (PPC™) assignment. In addition, having a field representative visit each location allows us to verify the operational status of each responder — a critical element of insurance rating.

"The project will allow us to create the most accurate database of fire station information through placing the exact geo-coordinates of the rooftop of each recognized responding fire station. We're also adding all the fire stations — more than 50,000 buildings — to SPI Plus®, ISO's property information database of about 3 million commercial buildings and businesses. Our full-time staff of trained ISO field representatives has surveyed the stations on-site and has recorded the construction class, size, and other building characteristics," says Robert Andrews, ISO regional vice president and coordinator of the project.

"The project gives us the opportunity to refresh and reload the fire station database in LOCATION®, which includes up-to-date fire-protection information," says Mike Waters, vice president, ISO's Risk Decision Services. "We're using the rooftop placement of each station to make the 'distance to the responding fire station' calculation more accurate. The project reinforces the dynamic nature of fire protection around the country. We removed stations that are no longer in operation and added nearly 2,700 new stations to the LOCATION database. Many of the new fire stations are in growing communities or new locations that replaced existing fire stations."

Geo-placement and PPC

Now that the project is complete, ISO Community Mitigation field representatives will use the results to update PPC gradings as necessary. For example, if repositioning a fire station results in a change to a fire district boundary, distance to responding fire station, or an automatic-aid agreement, that can affect a property's PPC. When conditions in a community change, we may give the fire district a new PPC code — and assigning the right PPC codes can improve your bottom line.

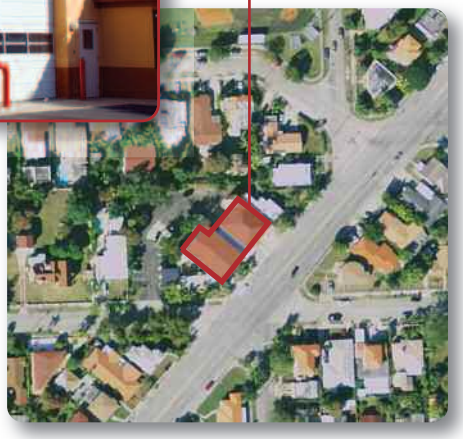
Numbers that count

- ISO recognizes more than **47,000** fire protection areas. A fire protection area is a fire district, community, county, or any other legally defined geopolitical jurisdiction providing fire-suppression services and assigned a unique Public Protection Classification (PPC).
- ISO has mapped **51,478** unique recognized fire stations and **948** unrecognized fire stations in our PPC GIS files.
- Of the **51,478** recognized fire stations, **8,510** provide automatic aid.

1 Excluding the bureau states of Hawaii, Idaho, Louisiana, Mississippi, and Washington

Examples of surveyed fire stations

1



Fire District: Oakwood
Automatic Aid: Yes
Station: Oakwood Station 3
Address: 456 Chestnut Street
City: Oakwood
County: Ocean
State: Florida
Lat/Long: 43.643183, -79.379027
ISO Public Protection Class: 3
Construction Class: 2 – Joisted Masonry
Stories: 1
Basement: No
Automatic Fire Sprinklers: Yes
Total Square Footage: 6,800

For illustration only — actual locational information changed for security reasons

2

Fire District: Brooke
Automatic Aid: Yes
Station: Brooke Fire Station
Address: 191 Miller Road
City: Brooke
County: Adams
State: Alabama
Lat/Long: 32.325160, -73.05145
ISO Public Protection Class: 4
Construction Class: 4 – Masonry Noncombustible
Stories: 1
Basement: No
Automatic Fire Sprinklers: Yes
Total Square Footage: 7,250

3

Fire District: Pine Grove
Automatic Aid: Yes
Station: Pine Grove Station 5
Address: 375 River Road
City: Pine Grove
County: Monroe
State: Ohio
Lat/Long: 42.325160, -83.05145
ISO Public Protection Class: 3
Construction Class: 4 – Masonry Noncombustible
Stories: 1
Basement: No
Automatic Fire Sprinklers: Yes
Total Square Footage: 5,700

geocoding: the process of assigning geographic coordinates, such as latitude and longitude, to street addresses and other nonaddress-based features. By determining the coordinates, you can then map and enter the features into a geographic information system (GIS). Geo-placement takes that to the next level of accuracy.

rooftop placement: a process that links geocoding with actual physical buildings — precisely locating the building rooftop.

recognized fire station: a fire department deployment point meeting minimum criteria for fighting a structure fire, including:
- 24x7x365 operational availability
- sufficient personnel, equipment, and training to support structure fire-suppression operations
- fire alarm facilities and arrangement such that there is no delay in the receipt of alarms and dispatch of firefighters and apparatus
- a building that provides protection of the fire apparatus from the weather, including freezing temperatures

Lacking those capabilities, ISO considers a fire station *"unrecognized."*

For more information...

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Or visit these websites to learn more:

- **www.iso.com** — ISO's website for property/casualty insurers
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- **www.isomitigation.com** — ISO Mitigation Online for community officials

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