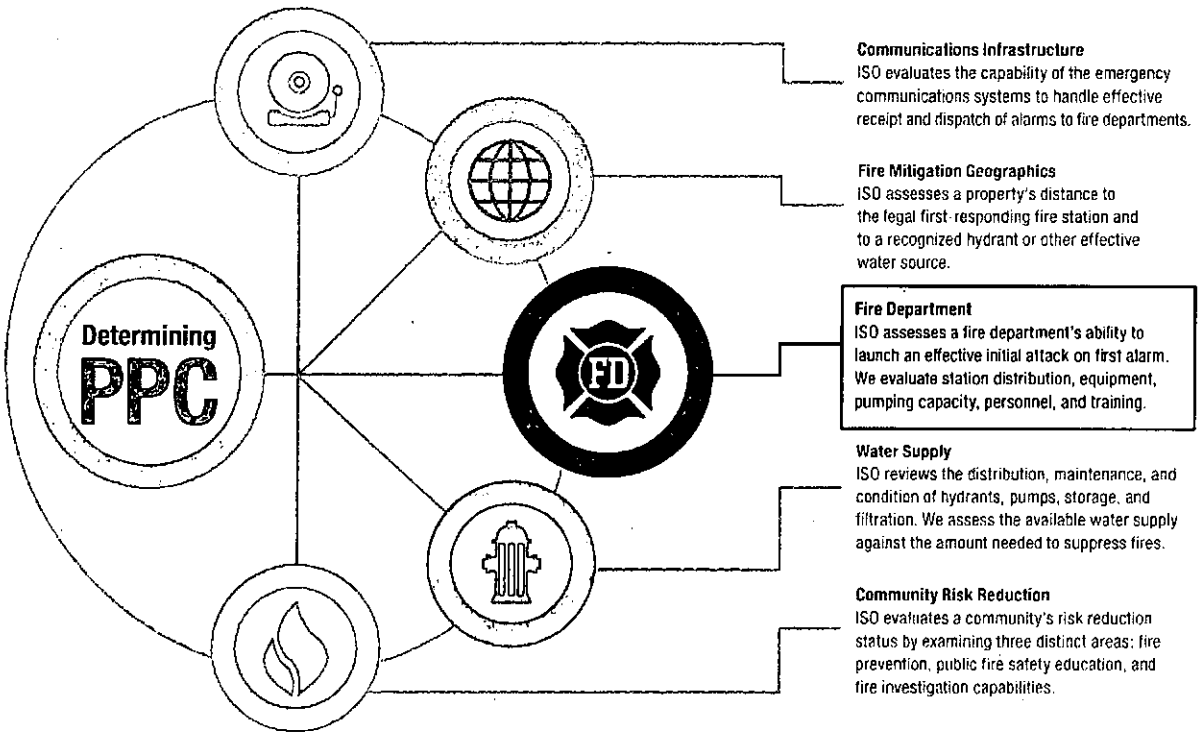
Verisk Insurance Solutions

Late Backup

Part 3 of PPC Series

Fire stations. Training. Equipment. Testing.

We grade fire departments' capabilities in community fire protection.



By Bill Watters, CFPS, Technical Trainer, Risk Engineering, Verisk Insurance Solutions – Commercial Property

ISO's Fire Suppression Rating Schedule (FSRS), revised 2012, is the manual we use in reviewing the firefighting capabilities of individual communities. The schedule measures the major elements of a community's fire suppression system and develops a numerical grading, a Public Protection Classification (PPC™). We assign a PPC from 1 to 10, with Class 1 representing the best public protection and Class 10 indicating no recognized protection. We have extensive information on more than 47,000 fire protection areas and more than 32,000 unique water systems.

A community's PPC depends on its fire department, water supply, emergency communications systems, and community risk reduction efforts. In the last two issues of *OnLocation*, we looked at water supply and emergency communications systems. In this issue, we'll be addressing the fire department.

How many fire engines does a community need to provide adequate protection? Does the fire department need a ladder truck? How high does the ladder need to reach? What kind of training do firefighters

require and how many hours? Are there enough firefighters? We answer all those questions and many more during the PPC fire department evaluation.

PPC grading

Fifty of the approximately 105.5 credit points in the FSRS are based on the fire department evaluation. The three items that receive the largest amount of available credit are company personnel, distribution or deployment analysis, and training. People are important. The number of personnel available for response, their amount of training, and the time it takes to get the right equipment in place for fire suppression activities all largely affect the reduction of loss associated with protected risk.

An adequate number of well-trained firefighters with enough well-equipped and tested fire engines should control most fires.

We evaluate the following additional fire department items:

- engine and ladder/service companies, both in service and those in reserve (but ready to be placed into service)
- pumping capacity available to the community from fire service equipment
- operational considerations

Many of the requirements in the FSRS are based on the size, construction, occupancy, internal protection, and height of the buildings in the community. A large wood-frame building will need a greater commitment of fire suppression resources than a smaller, fire-resistive building. Buildings with occupancies with a high fire load, such as upholstery, wood and paper products, furniture, and certain plastics and chemicals, will also require a larger effort to control a fire.

Apparatus and equipment

When a PPC field representative begins a community survey, one of the first areas reviewed is the building inventory. We use data from our property information database and on-site surveys to develop needed fire flows. The field representative determines the amount of water required to suppress fires at specific locations, how many fire engines a community needs, and how large the pumps should be. The heights of the buildings indicate whether a fire department requires one or more ladder trucks and, if needed, how high the ladders should reach.

The FSRS has a list of equipment necessary for engines and ladders. It also explains how much and what size fire hose the engines should carry. We compare the lists with what's actually on the apparatus and tally the points. We review items such as fire nozzles, ground ladders, breathing apparatus, ventilation and salvage equipment, hand lights, and a host of other necessary tools firefighters need to do an efficient and effective job. The FSRS list relies on the National Fire Protection Association (NFPA) national consensus standards to determine what the fire apparatus must carry.

Testing

Testing of apparatus and hose is critical, both as a high-value item in the FSRS and as a safety issue. If a ladder were to fail during a fireground operation, serious injuries or death could occur. A burst hose can strike a firefighter, again resulting in injuries. If the engine becomes disabled at the scene, firefighters inside the structure could lose their water supply, putting them in danger.

Not only can injuries occur in the event of failures, but a disruption in the firefighting effort can cause a small fire to grow out of control and engulf additional structures. For those reasons, we and the NFPA strongly encourage fire departments to test their apparatus and fire hose to current NFPA standards.

Training

Firefighter training is critical for safe, productive, and coordinated fire suppression. The training portion of the FSRS evaluates a variety of training activities. Firefighters should receive structure fire

ISO PPC Class 1

A PPC Class 1 rating is an elite distinction carried by only a few fire communities in the nation. The firefighters of the Beverly Hills Fire Department respond to fires, chemical releases, medical emergencies, and natural disasters. The department also conducts public education programs to promote fire safety and emergency preparedness throughout the city.

training each month at a local company level, with additional training provided at a fire training facility. A training center needs a drill tower for ladder and rope work and advancing hose lines, a fire building where firefighters can fight live fires, and enough area to allow firefighters to conduct other types of training.

We don't evaluate activities such as CPR and first aid, rescue, other emergency medical training, work sessions, and fundraising. Although important fire department functions, they don't directly affect reducing structure fire severity. The training must be hands-on and stress the strategy and tactics needed for structure fire control to receive credit in the evaluation process.

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We review officer training and certification, new- and existing-driver/operator training, hazardous material training, and recruit training. We also evaluate the prefire planning activities of the fire department. The majority of buildings should have a current prefire plan available in case of an incident. An incident commander needs to know the construction and layout of the building, how to shut off the utilities, whether there are any dangerous or flammable substances stored in the building, how many occupants there are at different times of the day, and if there are areas that could disorient a firefighter. A prefire plan should include all those elements.

Deployment analysis (distribution of companies)

Deployment analysis for a community's fire protection is based on current NFPA standards. The review focuses on the location of equipped fire apparatus relative to the risks the fire station responds to. That includes a measurement of the distance the fire apparatus travels, 1.5 miles from an engine company or 2.5 miles from a ladder or service company.

Company personnel

The next major item in the evaluation is company personnel. Here, we review the number of personnel needed compared with the number available. Are firefighters on duty at the fire station, or are they on-call firefighters, responding to the fire station from home or work? On-call firefighters receive less credit than on-duty firefighters because of their availability and extended response times. As the number of on-call firefighters in the United States drops, more fire departments are becoming combination departments — a mix of on-duty and on-call firefighters. If firefighters bunk or sleep at the fire station periodically and there's a schedule guaranteeing attendance, we can credit those responders as on-duty in the FSRS evaluation.

The fire department must maintain complete and up-to-date records to receive full, and in some cases any, credit for many areas of the fire department survey. The fire department needs records if it's going to evaluate its past performance and plan for the future.

Operational considerations

We also look at operational considerations. That includes standard operating procedures/guidelines (SOP/SOG) and the use of an incident command system (ICS). Fire departments develop SOP/SOG manuals to ensure consistent operations. We anticipate reviewing a fire department SOP/SOG periodically to ensure that the documents are up to date.

The ICS is based on nationally accepted standards. It ensures that fireground operations, no matter how small or large and complicated, are managed properly. The result: Emergencies are successfully mitigated and firefighter health and safety maintained.

Our fire department survey is a comprehensive, in-depth review of the fire suppression capabilities of a community. Fifty points of a community's overall PPC rating is based on the fire department — including apparatus, equipment, training, and personnel. With half of their score on the line, communities — with our encouragement — should strive to improve their fire protection efforts. Community and fire officials recognize PPC as the gold standard for measuring public fire suppression.

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