MAGNOLIA FIRE DEPARTMENT
MONTGOMERY COUNTY EMERGENCY SERVICES DISTRICT NO. 10

PRE-FIRE PLAN

SOG # G - OPS - 04

DATE ISSUED: July 31, 2024

Pre-Fire Plan

G – OPS – 04 **Approved Date:** March 12, 2024

Fire Chief Approval:

1. Purpose

Pre-Fire Plans (PFPs) enable firefighting preparations and operations at the scene of a fire to be carried out as efficiently and effectively as possible. When effective PFPs have been made, less time is spent on making decisions concerning the building during and after the size-up process.

2. Objectives

- To gather information on a building, such as building construction features, occupancy, utility connections, exposures, fire hydrant locations, known hazards, or anything else that would affect operations if a fire should occur.
- To analyze information in terms of what is important and vital to fire ground operations.
- Distribute data to companies that respond to buildings on a first alarm box.
- To have information reviewed by companies that will be involved at the location.
- To provide officers with critical information which will ensure safe operations.

3. Definitions

- **Available Hydrant Flow:** The amount of water volume in GPM, available from the 2 closest hydrants. Some high fire flow locations may require more hydrants.
- **Building Description:** A narrative of the type of construction, number of floors, roof design, and occupancy type and, etc.
- **Data Sheet:** That portion of the PFP that contains a brief description of the information about the building.
- **Exposures:** Adjacent structures and areas that are vulnerable to fire, heat, smoke, and water Health Hazards: Special hazards that present a health risk to firefighters and the community in general.
- **Level II Staging:** A pre-planned staging area away from the emergency scene that provides sufficient space for assembling uncommitted fire companies in an orderly manner.
- **Needed Fire Flow (NFF)**: The Gallons Per Minute (GPM) flow that is sufficient to suppress the fire with x% involvement.
- **Primary Life Hazard:** Areas of a high occupancy load or areas that require special attention due to hazards they present to life safety.
- **Property Hazards:** Hazards that may significantly increase property loss (stored plastics, chemicals, fuels, etc.).
- **Salvage:** A loss-prevention activity that maximizes the value of surviving property.

- **Size-Up:** An important tactical operation that takes place prior to the rescue and extinguishment process. It is a continuous observation of the conditions present throughout the duration of the fire. (Building construction, obstructions, weather, occupancy, size of fire, color of smoke, water supply, etc.)
- **Stairwells with Roof Access:** An open access to the roof through a designated stairwell.
- **Pre-Fire Plan (PFP):** A plan for a course of action against a **possible** fire or other emergency incident. It is based on the collective experiences of those involved in the planning process in relation to known, existing conditions and the expectancy of a fire in an occupancy. It is composed of a PFP Map and Data Sheet.
- **PFP Map:** A scale drawing of a high-risk hazard used by firefighters responding to a building fire.
- **Ventilation:** Possible and/or probable ventilation tactics to be used depending upon the problems presented by the various possible scenarios in any given occupancy. (Vertical, horizontal, mechanical, HVAC, etc.)

4. Scope

This SOP applies to all personnel assigned to Suppression activities.

5. Responsibilities

- **Captain of Community Risk Reduction**:
    - With the aid of the firefighters in the Department, shall identify which buildings/facilities for which a PFP will be completed. The following criteria should be considered when selecting the buildings/facilities to be assessed and they may be prioritized in the following order of precedence:
        - Large life-loss risk - schools, nursing homes, movie theatres, etc.
        - Large economic risk - factories, museums, etc.
        - Unique risks or hazards - large vacant buildings, churches, hazardous materials facilities, etc.
        - Large structures - over 10,000-sq. ft. (warehouses, apartments, etc.)
        - Tier II facilities
        - Any structure requiring a Knox Box
    - Establish a control list based upon priority of which buildings or complexes are to be done first, second, third, etc. All 3 shifts will work from the same control list.
    - Review all PFPs for accuracy and content before forwarding a copy to the departments Pre Fire Plan Officer for final review. Include a list of all of the companies that would normally respond on a first alarm box. After review, the Pre Fire Plan Officer will send the PFPs to the Shift Captains for distribution.
    - Ensure that station personnel become familiar with the PFPs submitted for properties that they would normally respond to on a first alarm box. Multi-company classroom drills and/or on-site visits may be conducted to aid in this learning process.
    - Coordination between station officers is important so that duplication of effort is minimized and/or eliminated.

- **Station Officers:**

- Schedule the PFP with building personnel.
- Collect necessary information during the site visit.
- Arrange any follow-up visits that are necessary to complete the PFP.
- Draw the PFP map, which shall include the following information when possible and practical considering space restrictions:
    - A drawing of the entire building and complex if possible (site plan).
    - Perimeter streets.
    - Two (2) closest hydrants or fill sites for tanker operations.
    - Access to the building/complex.
    - Fire Department Connections (FDC).
    - Individual floor standpipe outlets (hose cabinets).
    - Utility shutoff valves-gas, electricity, water, HVAC.
    - Emergency generator
    - Stairwells.
    - Exposure potentials.
    - Knox locations, if applicable
    - Exterior obstructions to access.
    - Special hazards (chemicals etc.)
- Complete the PFP Data Sheet considering any information that may be deemed essential for the formulation of tactics or safety.
- After completing the PFP map and Data Sheet, turn it in to the Battalion Chief for approval.
- Update the PFP annually and/or whenever needed due to changes.
- Maintain a list of all businesses that have been pre-fire planned.

6. Standing Operating

- Data contained in the PFP may be critical to safe firefighting and rescue efforts. **Firefighters should consider this as a direct program to protect their own lives**. Each map and data sheet should be complete, legible, and accurate.
- Using the PFP:
    - Each completed PFP will be carried on all responding apparatus so that company officers and firefighters can use the information about the building. The PFP shall be placed in alphabetical and numerical order according to street address.
        - Example: 1201 Main, 1234 Main, 1327 Main
    - PFPs may assist the Incident Commander (IC) in planning possible strategies to be used in advance of an emergency and to implement the tactics once on location.
    - The initial size-up and the actions, based on the IC's decisions, may determine if the fireground operation is a success or a failure. The PFP will assist in determining the proper course of action.
    - The Data Sheets may help provide information that assists in decision-making and the assignment of companies to certain key functions such as sprinkler supply, ventilation, and other priority assignments.

- Information to be contained in the Data Sheet:
    - Business Address: Include the address numbers and keymap page.
    - Emergency Phone Number: This should be the telephone number(s) of the responsible party for 24-hour contact per day. Make note of alarm companies serving the building(s).
    - Hydrants or tanker operations: Show the location of the two (2) closest hydrants and calculate the Available Hydrant Flow. The number of tankers needed and possible fill sites.
    - Building Description: This will show the main characteristics of the building items that do not change with ownership. List the number of floors, the type of construction, the roof design, the age of the building, and the type of business. Indicate whether or not there is a 24-hour workforce (maintenance, switchboard, security, etc.).
    - Indicate the building type (1-5)
        - **Type I** Non-combustible or limited-combustible construction with high fire resistance, such as concrete
        - **Type II** Non-combustible or limited-combustible construction with lower fire resistance than Type I, such as steel
        - **Type III** Also known as "ordinary" construction, this type of building has non-combustible or limited-combustible exterior walls and structural elements but combustible interior elements
        - **Type IV** Also known as "heavy timber" construction, this type of building has non-combustible or limited-combustible exterior walls, firewalls, and interior bearing walls, but combustible interior elements
        - **Type V** Wood frame construction, which is made entirely of combustible materials, such as wood
    - Primary Life Hazard: Specific areas of high occupancy load.
    - Hazards: List the locations of any unusual fire or health hazards such as:
        - Storage of flammable or hazardous materials.
        - Halon system for high-tech rooms.
        - Roof loads such as water tanks or large A/C units.
        - Skylights.
        - Concealed ceilings.
        - Special hazards such as laboratories.
    - Ventilation: The location of the HVAC system controls, skylights, roof hatches, etc.
    - Indication of the Level II Staging Area.
    - Occupancy Load Day/Night should be estimated and noted.
    - Significant Exposures.
    - Salvage Priorities-best methods to reach objectives.
    - Calculated Needed Fire Flow (NFF)-The amount of water, expressed in GPM, needed for the percentage of the building involved in fire. To calculate the NFF of a building, use the formula:

        $\frac{L^{x}W^{x}H}{}$ = GPM.

100

L- Length of the building.

W- Width of the building

H- Height of the building.

GPM- GPM needed to extinguish the building with 100 involvement.

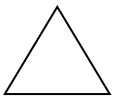
- Available Fire Flow- The GPM is available as calculated from the two closest hydrants or drafting.
- Additional Information: Any other particular item in the building that may assist or detract from the firefighting efforts.

- PFP Map:
  - Scale: any scale to fit the plan.
  - Standard Map Layout:
    - Use 8 ½" x 11" paper.
    - Leave 1 ½" margin on the right side.
    - The upper right-hand corner of the map within the 1 ½" margin lists:
      - Address and street name
      - Building name
      - An arrow indicating **North**.
    - Use symbols to show important building features. Any symbols a member elects to use shall be defined in a legend, located on the map within the 1 ½" margin.
    - The Map must show the entire building (complex if possible) including:
      - 2 closest hydrants or fill sites if tanker operations are required
      - Sprinkler/Standpipe connections (FDC)
      - Individual floor standpipe outlets and hose cabinets
      - Other extinguishing systems
      - Fire department access
      - Perimeter streets
      - Stairwells
      - Utility shutoffs
      - HVAC
      - Water
      - Gas
      - Electricity
      - Other pertinent information
  - Exterior obstructions (RR tracks, security fences, high-voltage power lines, etc.)
  - Special hazards (chemical, biological, explosive, etc.)
  - Note any gates that will restrict access of apparatus and/or personnel.

- Information contained in the PFP is arranged on a form that summarizes activities and assignments. Because it is a tool to assist fireground officers in assigning manpower and equipment, the information contained in the PFP should be reviewed anticipating the different possible emergency situations that could occur at any given property. The assignments and /or adjustments will be made as indicated by the conditions found at the actual emergency.

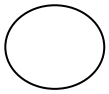
FIRE PROTECTION SYMBOLS

Access, Assessment, and Ventilation Features, Utility Shutoffs:



- Fire Department Access Point
- Fire Department Key Box
- Roof Access
- FCC/Annunciator Panel
- Electrical Shutoff
- Water Shutoff
- Gas Shutoff

Water Flow Control Valves and Water Sources:



- Post Indicator Valve
- Riser Valve
- Sprinkler Zone Valve
- Hose Cabinet or Connection
- Fire Hydrants
- Fire Department Connection (FDC)

Equipment Rooms:

- Emergency Generator Room
- Fire Pump Room
- HVAC Control Room
- Electrical Transformer Room

Identification of Hazardous Materials:

Miscellaneous Symbols: _____

- Railroad Tracks
- Public Water Main (indicate pipe size and material)
- Valves
- FDC Fire Department Connection