

# Pre-Fire Plans/Inspections

## CHAPTER 7.13

Issued:

Revised: January 18

Submitted by: SOG Team

Approved by:

### PURPOSE

This is a Pre-fire Planning form to be used by all Alachua County Fire Rescue firefighting companies to provide a uniform and comprehensive program for preplanning all special and target hazards within the response district of a given fire apparatus.

### OBJECTIVES

- Perform a Pre-fire Plan on all special and target hazards. IE: as identified by ISO, **all Commercial, Industrial and Institutional facilities**.
- Establish a six (6) month cycle for updating all Pre-fire Plans on file. (See below application time frame).
- Provide a uniform mechanism for all shifts to study and review Pre-fire Plans.
- Standardize filing and placement of completed Pre-fire Plans.

### DEFINITIONS

- Target Hazard: Facility or process which could produce or stimulate a fire that could cause a large loss of life or property (ex. lumberyard, bulk oil storage, hospital, restaurants, 'Jiffy Marts', schools, day cares, etc.).
- Special Hazard: A hazard that arises from the operations or process that is peculiar to the individual occupancy. (Ex. painting, welding, dust).

### RESPONSIBILITIES

- The Company Officers assigned to 'B' shift shall be responsible for the implementation, application, and maintenance of this program at their assigned station.
- The Pre-fire Plan shall be performed/completed by the appropriate Fire-Rescue company in their 1st due area as assigned by the 'B' shift Company Officer.
- The Company Officers assigned to the Station shall jointly identify ALL applicable hazards and create a Pre-plan Master List.
- Each shift will then be assigned specific targets to Preplan from the Master List for that Station.

## APPLICATION

- The Pre-fire Plan shall be as complete as possible with all information legibly printed on the blank 'working copy', while doing the survey, then typed on the computer program back at the Station.
- Actual annual ON-SCENE visits/surveys shall be done on all identified targets during the months of **SEPTEMBER & OCTOBER**.
- PHONE SURVEYS to update key holder information and any other 'quick fix' changes shall be done during the months of **MARCH & APRIL**.
- Any occupancy change that is discovered during the rest of the year will require an update of that specific target at that time.
- There shall be an original placed in the vehicle **PRIMARY RESPONSE PREPLAN BOOK** of all units assigned to that station.
- Pre-fire Plans shall be filed alphabetically using the legal business name of the special or target hazard.

## PRE-FIRE PLAN INSTRUCTIONS

- NOTE: Remember, the facility we are doing a Preplan on is one of our Employers; we serve them. Always Professional demeanor and courtesy.

\*\*This form cannot be changed. Point your mouse on each blank box that you want to fill in with information; do not use 'TAB' or 'ENTER' as this will move the spacing off on the form. To enter more information than is allowed on the line given, just keep on typing and it will move to additional lines without messing up the rest of the form.

- The following are examples of information for each topic on the form. Remember to keep the information concise and accurate as you will likely be reading this en route to a call.
- INSPECTION DATE: Last actual 'on-scene' inspection. (Annually during the months of September & October) BY: Officer in Charge last name. CREW ID's: crew
- BUSINESS: Name of Business
- PHONE SURVEY DATE: Phone update date. (Annually during the months of February & March)
- LOCATION: Physical address
- MAILING ADDRESS: if different from actual
- OCCUPANCY: Identify approximate # of personnel on site during each period
- TYPE OF BUSINESS: Main function IE: Manufacturing, Cafeteria, School, Daycare, Retail Sales, Hospital, Gas Station, etc.
- HOURS OF OPERATION: Hours where 'Personnel' are present on scene or facility is occupied IE: 6am-5pm, etc.
- HAZARDS: Primary hazards to be concerned about IE: Life safety, environmental, personal, security (dogs and razor wire), chemicals or hazardous materials (MSDS & DOT Guide #s, etc.

- EXPOSURE: Any exposure problems. IE: 500 gal. Propane tank rear of building; house on south side of structure 4' away; 2 commercial transformers attached to rear of building; upstairs residential apartments above office complex, etc.
- FIRE FLOW DEMAND: Water demand when 100% involved, 50% & 25%. Depends on overall rough square footage as calculated (L x W x # of floors divided by 3) see in-depth calculation instructions. You can quickly see how much water, how many apparatus and how many personnel will be needed to adequately extinguish the fire.
- NEAREST HYDRANT: Location of hydrant, FLOW and GPM of that specific hydrant.
- NEXT HYDRANT: Same type information as above.
- FD CONNECTION: Size & Location of connection if applicable. IE: 2 2" left front (southwest) corner of structure. SPRINKLERS: Advise if present.
- STAND PIPES: Advise of # of STAND PIPES and locations. IE: Interior stairwells north and south side of structure.
- CONSTRUCTION: Exterior type. IE: Wood frame, masonry, CBS, etc.
- SQUARE FEET: Exterior dimensions ok. Don't forget to account for # of floors.
- NUMBER OF STORIES: self-explanatory
- NUMBER OF STAIRWELLS: Distinguish between interior and exterior stairs and any other unusual features. IE: Exterior enclosed stairwell from 1st to 3rd floor then interior stairs from 3rd to 2nd floor is only access from ground.
- ROOF - TYPE & CONSTRUCTION: **Type**. IE: Flat, pitched, gable, mansard, etc.

**Construction.** IE: pre-stressed concrete, shingle, tar & gravel, metal, etc. Be sure to mention type of trusses, if applicable, IE: lightweight truss, laminated bowstring truss, etc. EXAMPLE – 'Shingle, Mansard style roof with lightweight trusses' or 'rolled tar paper over plywood covered laminated bowstring trusses', etc.

- ROOF ACCESS: Location and type of roof access. IE: locked, interior, drop-down metal ladder access; interior stairwell; No access, Fire Dept. Ladder needed; etc.

NOTE: Be sure to identify location of roof access on floor plan drawing.

- CEILING: State material, type and any unusual features such as double, false or drop ceiling. IE: sheet rock, tongue & groove, insulated drop, etc.
- ATTIC HEIGHT/ACCESS: Describe approximate height so you can anticipate being able to move around in attic; also, any/all attic access locations and BE SURE to locate such access on floor plan drawing.
- VERTICAL OPENINGS: IE: Elevators, escalators, stairwells, skylights, large vents, etc. BE SURE to locate on floor plan drawing.
- AIR HANDLING SYSTEMS: Note type and if gas is involved in any way. IE: Residential type A/C with natural gas heat; Commercial electric roof top air handlers & compressors; Heavy-duty exhaust fans mounted on sheet metal roof; etc. Paint the picture so crews can be alert for any associated hazards such as gas involved or collapse from roof mounted equipment, etc.

- UTILITY COMPANIES: Note Electric, Gas and Water company names. BE SURE to locate on both floor and plot plans the locations of fuel tanks and controls/shut off for electric, gas and water.
- OWNER/KEY HOLDER/TITLE: Name, Title, Work and Home phone #s of **primary** key-holder such as Owner, Manager, etc.
- #2 KEY-HOLDER & #3 KEY-HOLDER information also needed so we know who to contact if no response with the Primary person.
- ALARM COMPANY: Name of Alarm Company if applicable and PHONE # and TYPE of alarm. IE: Residential type smoke detectors; Monitored Police & Fire alarms; Panic/Pull Stations only; etc.
- STRATEGIES: Special notes to assist responding crews with desired tactics. IE: No access for Tankers; lay 700' Rural hitch from front gate to yard in front of structure, etc.
- FORCIBLE ENTRY POINTS: Suggested quick points to assist responding crews with forcible entry. IE: Pry bar to front door; K-12 to rear roll-up metal doors; K-12 to front, double dead bolted steel door; Bolt cutters needed for front chained gate; etc.
- ANTICIPATED PROBLEMS: Any notes that would help responding crews. IE: 1600' to nearest hydrant; NO hydrants in area, respond 3 Tankers; Limited access to attic; No tower access to structure; Heavy wood fuel load in rear storage shed; History of ?? Problems, respond LEA Code 3; etc.
- SAVED AS: 'Title' you saved this preplan as on Pre-fire Plan 3.5" floppy and in MS Word.

Refer to 'SAVING PLAN' in instructions.

## **PLOT & FLOOR PLANS**

REMEMBER, you will probably be reading the PLOT and FLOOR PLANS in dim light en-route to a call. Keep it clear, concise and neat with important information only. If you are computer literate, you can do the drawings in 'Paintbrush' and paste to the appropriate sections. If not, pen and rulers will work fine. WORKABLE INFORMATION is what we need!

## **PLOT PLAN**

The Plot plan will reflect the location of the business. Simple drawing showing important features as below. Do not be so detailed that it becomes congested, but so that you can clearly read important items (One plot plan per business, example Oaks Mall, Progress Center).

LOCATE THE FOLLOWING (IF APPLICABLE):

- Hydrants(s)
- Stand Pipe Connection

- Sprinkler System Connection
- Water Support (Pool, Pond, etc.) if in immediate area
- Utility Control (s)
- Hazards
- Blind Access (Back Entrance)
- Exposures
- Staging Area
- Auxiliary Power and Controls

**\*\*NOTE:** Star the Plot Plan for any additional IMPORTANT information not required by form; Document any information on the bottom of the sheet.

## **FLOOR PLAN**

- Floor plan is to be placed behind front information page in protector sheets.
- May require more than one Floor Plan for a Pre-fire Plan.
- One Floor Plan per story level.
- One Floor Plan per structure within business (i.e. Progress Center, Oaks Mall)
- One Floor Plan for large storage structures or any storage structures containing hazardous materials.

Locate:

- Ingress/Egress
- Fire Doors
- Fire Walls
- Stand Pipe(s)
- Alarm System Control
- Specific Hazards
- Attic Access
- Vertical Openings
- Auxiliary Power and Controls

## **QUICK -CALCULATION FIRE GROUND FORMULA**

The NFA quick-calculation formula is expressed as:

$$\text{Fire Flow} = \frac{(\text{length} \times \text{width})}{3}$$

This formula is most easily applied if the estimated square footage of the entire structure is used to determine an approximate fire flow for the total structure and is then reduced accordingly for various percentages of fire involvement.

The example shown below illustrates how the formula can be used for a typical one-story single-family dwelling with approximate dimensions of 50 ft. by 30 ft.

$$\frac{(50' \times 30')}{3} \times 1 =$$

3

FULLY INVOLVED: 500 gpm

50% INVOLVED: 250 gpm

25% INVOLVED: 125 gpm

The quick-calculation formula indicates that if this structure were fully involved, it would require approximately 500 gpm to effectively control the fire. If only half of the building were burning, 250 gpm should suffice, and 125 gpm should be sufficient if one-fourth of the building were involved.

In multi-storied buildings, if more than one floor in the building is involved with fire, the fire flow should be determined based on the area represented by the number of floors that are actually burning. For example, the fire flow for a two-story building of similar dimensions as that used in the previous example would be:

$$\frac{50' \times 30')}{3} \times 2 =$$

3

FULLY INVOLVED: 1,000 gpm

If other floors in the building are not yet involved, but are being threatened by possible extension of the fire, they should be considered as exposure and 25% of the required fire flow should be added for exposure protection.

Likewise, if adjacent structures are being exposed to fire from the original fire building, 25% of the actual required fire flow for the building on fire should be added to provide protection for each exposure. If the exposure actually becomes involved with fire, either additional floors of a multi-storied building or adjacent structures, the exposure(s) should then be treated as a separate fire area and the required fire for that area determined and added to the required fire flow for the original fire area.

The example shown below illustrates how the quick-calculation formula is applied to a one-story structure that is fully involved and exposing two adjacent structures:

Fire Building:  $(50 \times 30) \div 3 = 500$  gpm

3

Exposure:  $500\text{gpm} \times (25\% \times 2) = 250\text{ gpm}$

Total Fire Flow Required  $= 750\text{ gpm}$