1. Acting Chair Farr calls meeting to order on May 16, 2012 at 8:00 am.

2. Introduction of attendees (Attachment A).

3. Approval of minute of the January 23-24, 2012 Tampa, FL meeting (Attachment B).

4. Review purpose of meeting and document schedule.

5. Review draft (Attachment C).

6. Old business.


8. Date and location of next meeting.

ATTACHMENT A
<table>
<thead>
<tr>
<th>Name</th>
<th>Address/Position</th>
<th>Office/Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael Bodnar</td>
<td>Principal</td>
<td>Sereca Fire Consulting Ltd.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>106.5855 9th Street SE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calgary, AB T2H 1Z9 Canada</td>
</tr>
<tr>
<td>Timothy L. Bradley</td>
<td>Principal</td>
<td>North Carolina Office of State Fire Marshal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1202 Mail Service Center</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raleigh, NC 27699-1202</td>
</tr>
<tr>
<td></td>
<td>National Association of State Fire Marshals</td>
<td></td>
</tr>
<tr>
<td>Gregory D. Chesser</td>
<td>Principal</td>
<td>US Department of the Air Force</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FE Warren AFB &amp; Emergency Services</td>
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<tr>
<td></td>
<td></td>
<td>6205 10th Cavalry Avenue</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FE Warren AFB, WY 82005</td>
</tr>
<tr>
<td>Joseph S. Davis</td>
<td>Principal</td>
<td>Town of Tryon Fire Department</td>
</tr>
<tr>
<td></td>
<td></td>
<td>301 North Trade Street</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tryon, NC 28782</td>
</tr>
<tr>
<td>Bruce D. Faust</td>
<td>Principal</td>
<td>Washington DC Fire &amp; EMS Department</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1100 4th Street SW, Suite E-700</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Washington, DC 20024</td>
</tr>
<tr>
<td>Brett T. Lacey</td>
<td>Principal</td>
<td>Colorado Springs Fire Department</td>
</tr>
<tr>
<td></td>
<td></td>
<td>375 Printer Parkway</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Colorado Springs, CO 80910-3191</td>
</tr>
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<td></td>
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<tr>
<td>Michael T. Larabel</td>
<td>Principal</td>
<td>Amway Inc.</td>
</tr>
<tr>
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<td>7575 East Fulton Street, 44B-1C</td>
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<td>Ada, MI 49357</td>
</tr>
<tr>
<td>William F. Bowman, Jr.</td>
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<td>Louisville Fire &amp; Rescue</td>
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<tr>
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<td>1135 West Jefferson Street</td>
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<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td>Lisa M. Cockerill</td>
<td>Principal</td>
<td>City of Burlington Fire Department</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1255 Fairview Street</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Burlington, ON L7S 1Y3 Canada</td>
</tr>
<tr>
<td>James R. Dawson, Jr.</td>
<td>Principal</td>
<td>Chesterfield County Fire &amp; EMS</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td></td>
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</tr>
<tr>
<td>Robert J. James</td>
<td>Principal</td>
<td>Underwriters Laboratories Inc.</td>
</tr>
<tr>
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</tr>
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<td>Tampa, FL 33647</td>
</tr>
<tr>
<td>Frank Lamie</td>
<td>Principal</td>
<td>Toronto Fire Services</td>
</tr>
<tr>
<td></td>
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<td>4330 Dufferin Street</td>
</tr>
<tr>
<td></td>
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<td>Toronto, ON M3H 5R9 Canada</td>
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<tr>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>Alternate: Jim Jessop</td>
<td></td>
</tr>
<tr>
<td>Paul D. Martin</td>
<td>Principal</td>
<td>New York State Office of Fire Prevention &amp; Control</td>
</tr>
<tr>
<td></td>
<td></td>
<td>One Commerce Plaza</td>
</tr>
<tr>
<td></td>
<td></td>
<td>99 Washington Avenue, Suite 500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Albany, NY 12210-2833</td>
</tr>
</tbody>
</table>
Address List No Phone

Fire Prevention Organization and Deployment

Brian F. McQueen  L  10/18/2011  Principal  Firemens Association of the State of New York  10 Bermuda Road  Whitesboro, NY 13492  National Volunteer Fire Council

Laura Mueller  C  3/1/2011  Principal  Texas Municipal League  1821 Rutherford Lane, Suite 400  Austin, TX 78754  National League of Cities  Alternate: Catherine L. Spain

James G. Munger  SE  3/1/2011  Principal  James G. Munger & Associates, Inc.  PO Box 1773  Cullman, AL 35056


Kellie J. Sawyers  U  3/1/2011  Principal  Oklahoma City Fire Department  2300 General Pershing Blvd.  Oklahoma City, OK 73089

A. Lynn Schofield  U  8/9/2011  Principal  Provo Fire & Rescue  80 South 300 West  PO Box 1849  Provo, UT 84601-1849  NFPA Education Section

Arthur Shaw  L  8/9/2011  Principal  A. Shaw & Associates, LLC  6336 Greenwood Road  Petoskey, MI 49770-9537  National Association of Towns and Townships


Gary L. Styers, II  L  3/1/2011  Principal  Mooresville Fire Department  457 North Main Street  Mooresville, NC 28115  International Association of Fire Chiefs  Alternate: Connie Forster

Larry T. Willhite  U  3/1/2011  Principal  Palm Beach County Fire Rescue  405 Pike Road  West Palm Beach, FL 33411
<table>
<thead>
<tr>
<th>Address</th>
<th>Date</th>
<th>Organization</th>
<th>Position</th>
<th>Contact Information</th>
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<tbody>
<tr>
<td>Morgana Yahnke</td>
<td>3/1/2011</td>
<td>University of California at Davis</td>
<td>Principal</td>
<td>Davis, CA 95616</td>
</tr>
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<tr>
<td>Steven F. Sawyer</td>
<td>04/11/2012</td>
<td>National Fire Protection Association</td>
<td>Staff Liaison</td>
<td>Quincy, MA 02169-7471</td>
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<tr>
<td>Connie Forster</td>
<td>3/1/2011</td>
<td>Spring Lake Park Fire Department</td>
<td>Alternate</td>
<td>Blaine, MN 55434</td>
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<tr>
<td>Hugh H. Gibson, IV</td>
<td>3/1/2011</td>
<td>Insurance Services Office, Inc.</td>
<td>Alternate</td>
<td>Marlton, NJ 08053</td>
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<td>International City/County Management Assn.</td>
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<tr>
<td>Jim Jessop</td>
<td>3/1/2011</td>
<td>City of Niagara Falls</td>
<td>Alternate</td>
<td>Niagara Falls, ON L2E 2E8 Canada</td>
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<td></td>
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<tr>
<td>Timothy N. Kerbrat</td>
<td>3/1/2011</td>
<td>Los Angeles City Fire Department</td>
<td>Alternate</td>
<td>Los Angeles, CA 90012</td>
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<td>Fire Equipment Manufacturers’ Association</td>
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<td>Catherine L. Spain</td>
<td>3/1/2011</td>
<td>National League of Cities</td>
<td>Alternate</td>
<td>Columbia, MD 21045</td>
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</table>

Note: The table includes names, dates, organizations, positions, and contact information for various individuals involved in fire prevention and related organizations.
The meeting was called to order by Acting Chair Farr on January 23, 2012 at 8:00 am.

Introduction of Attendees

*Members Present:*
Steven Sawyer, NFPA Staff Liaison
Michael Bodnar, Sereca Fire Consulting LTD, Alberta
William Bowman, Louisville Fire & Rescue, KY
Lisa Cockerill, City of Burlington FD, Canada
James Dawson, Chesterfield County Fire & EMS, VA
Bruce Faust, Washington DC Fire & EMS, DC
Robert James, UL, FL
Brett Lacey, IFSTA, CO
Frank Lamie, Canadian Association of Fire Chiefs, ON
Michael Larabel, Amway Inc., MI
Brian McQueen, NVFC, NY
Eugene Pietzak, IAAI, N
Derrick Sawyer, NFPA’s Urban Fire Safety Task Force, PA
Lynn Schofield, NFPA Ed Section, UT
Art Shaw, NAT&T, MI
Woodrow Stratton, US Department of Homeland Security, MD
Larry Willhite, Palm Beach County Fire Rescue, FL
Connie Forster, Alternate, IAFC, MN
Hugh Gibson, Alternate, ISO, NJ
Jim Jessop, Alternate, Canadian AFC, Ontario, Canada
Timothy Kerbrat, Alternate, IAFC, CA
Thomas Rossi, Alternate, FEMA, NY
Catherine Spain, Alternate, National League of Cities, DC

*Guests Present:*
Tony Apfelbeck, Altamonte Springs, FL
Ron Farr, Acting Chair, UL, MI
Morgana Yahnke, CA Fire Chiefs Association, CA

*Members not present:*
Motion made, seconded and accepted to approve the minutes of October 3-4, 2011 Jackson Hole, WY meeting.

Acting Chair Farr and Staff Liaison Sawyer make opening remarks and reviewed the purpose of meeting.

Task groups worked on drafting language and reported their activities to the committee. The committee at the next meeting will start reviewing the draft for approval to send to the Standards Council to release draft for public input.

Old business.
   None.

New business.
   None.

The next meeting will be held on May 16-17, 2012 in Niagara Falls, Canada.

The meeting adjourned on January 24, 2012 at 2:45 pm.

Respectfully Submitted,

Steven F. Sawyer
Staff Liaison
ATTACHMENT C
Chapter 1 Administration

1.1* Scope.
1.1.1 This standard contains minimum requirements relating to the organization and deployment of code enforcement, plan review, fire investigation, and public education operations to the public.
1.1.2 The requirements address functions and objectives of fire prevention organizations (FPO) service delivery, capability and resources.
1.1.3 This standard contains minimum requirements of a community risk assessment, adequate program selection, managing resources, records management, training, communications, and health and safety.
1.1.4 This standard addresses the strategic and policy issues involving the organization and deployment of a fire prevention programs and does not address methods for carrying out specific fire prevention services, activities and programs.
1.1.5 This standard also contains minimum requirements for managing resources and systems, such as health and safety, training, communications, and pre-incident planning.
1.1.4 This standard addresses the strategic and system issues involving the FPO operation and deployment of fire prevention activities and does not address tactical operations at a specific emergency incident.

1.2 Purpose.
1.2.1* The purpose of this standard is to specify the minimum criteria addressing the effectiveness and efficiency of the public FPO of code enforcement, plan review, fire investigation, and public education operations to the public by career fire departments delivery in protecting the citizens of the jurisdiction.
1.2.2 Nothing herein is intended to restrict any jurisdiction from exceeding these minimum requirements.

1.3 Conflicts. The provisions of this standard shall not be deemed to nullify any provisions of local, state or federal law.

1.4* Equivalency. Nothing in this standard is intended to prohibit the use of systems, methods, or approaches of equivalent or superior performance to those prescribed by this standard. Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency.

Chapter 2 Referenced Publications

2.1 General. The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.
2.2 NFPA Publications.
Chapter 3 Definitions

3.1 General. The definitions contained in this chapter shall apply to the terms used in this standard. Where terms are not included, common usage of the terms shall apply.

3.2 NFPA Official Definitions.
3.2.1* Approved. Acceptable to the authority having jurisdiction.
3.2.2* Authority Having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.
3.2.3 Shall. Indicates a mandatory requirement.
3.2.4 Should. Indicates a recommendation or that which is advised but not required.
3.2.5 Standard. A document, the main text of which contains only mandatory provisions using the word “shall” to indicate requirements and which is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions shall be located in an appendix or annex, footnote, or fine-print note and are not to be considered a part of the requirements of a standard.

3.3 General Definitions.

Chapter 4 Organization

4.1 Fire Prevention Organization Organizational Statement.
4.1.1* The authority having jurisdiction (AHJ) shall maintain a written statement or policy that establishes the following:
(1) Existence of the FPO
(2) Services that the FPO is required to provide
(3) Basic organizational structure
(4) Expected number of FPO members
(5) Functions that FPO members are expected to perform.

4.1.2* The FPO organizational statement shall provide service delivery objectives, including specific objectives for each major service component (i.e., code enforcement, plan review, fire investigation and public education).

4.5 Organizational Structure.
4.5.1 The FPO shall have a leader and an organizational structure that facilitates efficient and effective management of its resources to carry out its mandate.
4.5.2 The FPO shall have an organizational structure of the size and complexity required to accomplish its mission.

4.13.1 The FPO shall develop a management information system for the FPO.
4.13.2* A management information system shall be maintained to support the management of the FPO by providing the leaders with data that indicate the effectiveness of the organization in its programs and procedures.
4.13.3* The MIS shall maintain a history of services delivered and performance outcomes as measured against goals established through the master plan.

4.7 Finance.
4.7.1* Responsibility for the functions of budget control shall fall under the direction of the FESO leader.
4.7.2 The FPO budgetary system shall reflect and support the organization’s goals, objectives, and expected outcomes.
4.7.3 The FPO shall have a system of accounts for financial administration that includes a record of funds received and expended.
4.7.4 The FPO shall follow generally accepted accounting practices (GAAP) or similar financial operating practices required by the governing authority.

4.7.6 Records.
4.7.6.1 An FPO’s records on purchases shall be sufficiently detailed to permit the FPO leader to have data available for the actual cost estimates needed for planning and budgeting purposes.
4.7.6.2 Records shall be maintained on requisitions, quotations from bidders, purchase orders, and general correspondence.
4.7.6.3 Applicable record-keeping practices shall be developed, instituted, and maintained in accordance with nationally recognized standards, as well as federal, state or provincial, and local requirements.
4.7.7 Specifications for purchases shall be based on applicable standards.

4.1.2.1 The FPO shall conduct a community risk assessment (see Chapter 5).
4.1.2.1 The community risk assessment shall be reviewed at a minimum of once every 5 years or more frequently when changes take place that affect the original plan.
4.5.2* The risk management plan should be distributed to agencies, departments, and employees having responsibilities designated in the plan.
4.5.3 A record should be kept of all holders of the risk management plan.
4.5.4 A system should be implemented for issuing all changes or revisions of the risk management plan to all holders.

Training

Chapter 5 Community Risk Reduction
Chapter 65
Fire Prevention Inspection and Code Enforcement Activities in Existing Occupancies

65.1 Scope. This chapter shall establish the organization and deployment of fire prevention resources for code enforcement and fire inspection activities in existing occupancies.

6.1.1 Code enforcement and fire inspection services, including department personnel, equipment, and all support and resources, shall be structured to meet the organizational objectives required by Chapter 4.

6.1.2 Standards for deployment of resources for new construction inspections is contained in Chapter 7.

65.1.1 Purpose. The purpose of this chapter is to specify the minimum frequencies for fire prevention and code enforcement inspections and the minimum staff necessary to perform these inspections in existing occupancies.

65.1.2 Responsibility. The Authority Having Jurisdiction shall develop, establish and implement policies and procedures to ensure compliance with this chapter.

65.1.3 Risk assessment. The Community Risk Assessment shall be the basis for the development of the fire prevention existing occupancy inspection program.

65.1.4 Minimum inspection frequencies. In the absence of a Community Risk Assessment, the existing occupancy inspection frequencies shall be not less than the that in Table 6.1.4.

<table>
<thead>
<tr>
<th>Property or Structure Risk</th>
<th>Occupancies</th>
<th>Frequency</th>
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<tr>
<td>High</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>Bi-annual</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>Bi-annual or self inspection</td>
<td></td>
</tr>
<tr>
<td>Critical infrastructure</td>
<td>Per AHJ</td>
<td></td>
</tr>
</tbody>
</table>

Annex material
Low-risk occupancy – An occupancy that has a history of low frequency of fires and minimal life loss.

Moderate-risk occupancy – An occupancy that has a history of moderate frequency of fires and moderate life loss.
High-risk occupancy – An occupancy that has a history of high frequency of fires and high life loss.

Critical Infrastructure – As determined by the Authority Having Jurisdiction, an occupancy that has critical importance to the community although it may not be statistically a high-risk occupancy.

**Populate the matrix based upon Occupancy Type – least frequent to most frequent inspections**

<table>
<thead>
<tr>
<th>Frequency of Fires</th>
<th>Minimal Loss</th>
<th>Medium Loss</th>
<th>High Loss</th>
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<tr>
<td>Low Frequency</td>
<td>Low risk</td>
<td>Moderate risk</td>
<td>High risk</td>
</tr>
<tr>
<td>Medium Frequency</td>
<td>Moderate risk</td>
<td>Moderate risk</td>
<td>High risk</td>
</tr>
<tr>
<td>High Frequency</td>
<td>Moderate risk</td>
<td>High risk</td>
<td>High risk</td>
</tr>
</tbody>
</table>

1. Automatic sprinklers in any Occupancy may lower the Loss factor by one category.

2. High-rise occupancies may raise the Loss factor by one category

**65.2 Qualifications of Personnel.** All personnel conducting fire inspection or code enforcement activities shall be appropriately qualified.

65.2.1 Personnel whose primary responsibility is code enforcement activities shall meet the job performance requirements in NFPA 1031 level.

65.3 **Required Personnel Hours.** The Authority Having Jurisdiction shall utilize the following method to determine the minimum staffing levels necessary to meet the frequency of inspections identified by this standard.

**Move to annex or chapter 4? Delete from all chapters and reference?**

**Step 1. Scope of Services, Duties, and Desired Outcomes.** Identify the services and duties that are performed within the scope of the organization. Outcomes should be specific, measurable, reproducible, and time limited. Elements that may affect desired outcomes are:

1. Administrative support
2. Data collection and analysis
3. Enforcement authority and responsibility
4. Local variables
5. Impact of Community Risk Assessment

**Step 2. Calculate Total Time Per Task.** Based on the applicable elements in Step 1 and historical performance data, populate Table 5.3.1 to convert the demand for services to annual personnel hours required for each program.

1. Straight Task Time – Time spent on site performing an inspection
2. Task Administration Time – Research, scheduling, follow-up, and report.
3. Task Commute Time – Travel time to and from inspection site
(4) Other – Personnel functions, interruption time

Table 5.3.1

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Straight Task Time (Hours)</th>
<th>Task Administration Time (Hours)</th>
<th>Task commute Time (Hours)</th>
<th>Other (Hours)</th>
<th>Total Task Time (Hours)</th>
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</table>

Step 3. Calculate Total Personnel Hours Needed to Perform Fire Inspection Activities. Use the “Total Task Time” calculations from Table 5.3.1 to populate Table 5.3.1.1 which includes all of the fire inspection activities for the department. The cumulative times for each task may then be added to calculate the total number of personnel hours needed to perform all of the fire inspection services. In addition to calculating the total staffing needs for fire prevention inspections, Table 5.3.1.1 may also be used to calculate the total time for other inspection activities.

Table 5.3.1.1

<table>
<thead>
<tr>
<th>Occupancy Use Group</th>
<th>Quantity of Inspections by Occupancy Use Group</th>
<th>Total Task Time (Hrs)</th>
<th>Frequency (Times per Year)</th>
<th>Total inspection time required per Occupancy Type</th>
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<td>Apartment Building</td>
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<tr>
<td>Mercantile</td>
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</table>
Step 4. Calculate Total Personnel Required. Use the formula provided in Section __1.?_ to determine the number of unassigned personnel hours for appropriate staff members. Divide the “Total Number of Personnel Hours Needed Annually” (Total from Table 5.3.1.1) by the “Total Number of Unassigned Personnel Hours Available Annually”. Any fractional values can be rounded up or down to the next integer value. Rounding up provides potential reserve capacity; rounding down means potential overtime or assignment of additional services conducted by personnel. (Personnel can include staff from other agencies within the entity, community, private companies, or volunteer organizations.)

Total Personnel Hours Needed Annually/Total Personnel Hours Available Annually = Total Personnel Positions Needed

Chapter 7 Plan Review

7.1 Scope This chapter shall identify the professional levels required for the plans examiner and field inspections specifically identifying the job performance requirements necessary to complete initial plan reviews to certificate of occupancy.

7.2 Purpose The purpose of this chapter is to establish the organization and deployment for the AHJ as it relates to plan review and new construction inspections.

7.3 Responsibility, The Authority Having Jurisdiction shall develop, establish and implement policies and procedures to ensure compliance with this chapter.

7.4 Risk Assessment
7.5 Qualifications of Personnel General. All personnel conducting plan review activities shall be appropriately qualified.

6.2.1 Personnel whose primary responsibility is plan review activities shall meet the job performance requirements in NFPA 1031 ? level. The plans examiner and construction inspector shall provide evidence of knowledge of characteristics and behavior of fire, fire protection principles, written and oral communications, public relations and basic mathematics.

Referenced Publications

— NFPA 1
— NFPA 3
— NFPA 101
— NFPA 1031
— NFPA 1710
— NFPA 1720
— NFA 132 Fire & Life Safety Plan Review

Definitions

— (to be determined)

Organization The jurisdiction organizational statement shall set forth the requirements for plan review and field inspections as it pertains to fire and life safety which may include:

Initial Fire Protection Environmental Impact (Feasibility Study) – preliminary review between developer and authority having jurisdiction of a project to identify accessibility to existing fire stations, travel distances/response times for fire and EMS, first responder communication capabilities, hydrant and fire main specifications, alternative or equivalent fire protection.

Site Plan Review - to determine fire hydrant locations/water supply to meet jurisdiction requirements and to maintain emergency vehicle access during and after construction.

Architectural Structure Plans

- Occupancy classification
- Construction classification
- Fire resistance ratings
- Allowable area and height
• Occupant load
• Means of egress
• Building Compartmentalization
• Fire resistance of openings
• Interior finish
• Floor Finishes
• Portable Fire Extinguishers
• Special Atrium requirements
• Special high rise requirements

Mechanical Plans
• Vents, chimneys & flues
• Air ducts
• Heating systems
• Stair enclosure pressurization
• Commercial cooking operations
• Appliances
• Smoke control

Electrical Plans
• Main service disconnect
• Fire pumps
• Emergency generator
• Egress Illumination
• Exit Signs
• Emergency/standby power
• Fire alarm & detection systems
• First responder radio coverage
• Alternative power installations

Hazardous Materials and/or Processes - Review of plans for compliance and permitting with appropriate federal, state and local codes, standards, statutes or requirements with emphasis on hazardous materials storage, processes, compatibility, secondary containment, release reporting, emergency planning, and fire protection and life safety systems associated with the hazardous materials or hazardous process, including but not limited to:

• Underground storage tanks
• Aboveground storage tanks
• Compressed gas storage tanks
• Spray Booths
• Dust collection systems
• Methane mitigation systems
7.6 Required Personnel.

Chapter 8 Fire Investigation

8.1.* Scope. This chapter shall establish the organization and deployment for fire investigation activities.

8.1.1 Purpose.

8.1.2 Responsibility.

8.1.3 Risk Assessment.

8.2* Qualifications of Personnel.

8.2.1 All personnel conducting the investigation of the origin, cause, and circumstances of any fire, explosion, release of hazardous materials or other hazardous condition shall be trained and qualified commensurate with the duties they are expected to perform.

8.2.1.1 A training, education, and professional development program with a goal of preventing occupational deaths, injuries, and illnesses shall also be provided.

8.2.2* Personnel assigned to fire investigation activities shall comply with the job performance requirements of NFPA 1033.

8.2.2.1* All fire officers determining the preliminary cause of a fire or explosion, securing the incident scene, and protecting evidence or potential evidence from damage or destruction shall meet the qualifications of NFPA 1021.

87.2. Authority.* The AHJ shall investigate or shall cause to be investigated, the origin, cause, and circumstances of any fire, explosion, release of hazardous materials or other hazardous condition which occurs in its legal jurisdiction. NFPA 1.

87.2.1. The policies of the AHJ shall set forth the requirement for post-fire investigations.
2.2. Post-fire investigation activities shall be organized to ensure that the investigation capabilities include personnel, equipment, and resources to meet the activities required by Chapter 4.

2.3 Evidence. The AHJ shall have the authority to take custody or shall cause to be taken, all physical evidence related to the cause of the fire, explosion, release of hazardous materials, or other hazardous condition in accordance with local laws, policies, and procedures. NFPA 1.

2.3.1. The AHJ shall have a Standard Operating Guideline for the collection, examination, testing, preservation and storage of evidence in accordance with ASTM E 860 Standard Practice for Examining and Testing of Items That Are or May Become Involved in Litigation and ASTM E 1188 Standard Practice for Collection and Preservation of Information and Physical Evidence by a Technical Investigator.

2.4. Procedure *. The investigation shall follow a systematic approach in the investigation of the origin, cause, and circumstances of any fire, explosion, and release of hazardous materials or other hazardous condition.

2.4.1. * The fire investigation shall identify or shall cause to be identified any violations of fire or building legislation/codes or other conditions that caused or contributed to the cause of spread of fire or any injuries or fatalities including both civilian and fire personnel.

2.4.2. The AHJ shall have a Standard Operating Guideline for fire investigation scene safety, including the need for site-specific plans.

2.4.3. Complex Fire Investigations. * The AHJ shall have a Standard Operating Guideline for conducting and participating in a complex fire investigation.

2.5. Limiting Access. The AHJ shall have the authority to limit access to emergencies or other similar conditions. NFPA 1

3. Qualifications of Personnel. All personnel conducting the investigation of the origin, cause, and circumstances of any fire, explosion, release of hazardous materials or other hazardous condition shall be trained and qualified commensurate with the duties they are expected to perform. A training, education, and professional development program with a goal of preventing occupational deaths, injuries, and illnesses shall also be provided.

3.1. Personnel assigned to fire investigation activities shall comply with the job performance requirements in NFPA 1033.
7.3.2* All fire officers determining the preliminary cause of a fire or explosion, securing the incident scene, and protecting evidence or potential evidence from damage or destruction shall meet the qualifications of NFPA 1021.

8.3 Required Personnel.

87.3.14. Staffing Levels. * The resources and personnel required to provide the level of service, required by this chapter shall be determined by the AHJ in accordance with this standard. Resources and personnel also include items such as canines, juvenile fire setter services, fire protection engineering, and administrative support staff. The AHJ shall have a Standard Operating Guideline for the staffing levels for fire scene examination.

8.3.27.44. Staffing levels shall be determined by a time-task analysis which: 1) Identifies the services and duties that are performed within the scope of the organization. Outputs shall be specific, measurable, reproducible, and time limited; 2) Quantifies the time necessary to develop, deliver, and evaluate various services and duties identified, taking into account local nuances and resources that impact personnel needs; 3) Based on the time necessary to develop, deliver and evaluate various services and identified duties and historical performance data, converts the demand for services to annual personnel hours required for each program; 4) Determines the average personnel availability, taking into account: holidays, jury duty, military leave, annual leave/vacation, training, sick leave, fatigue, delays; 5) Calculates the total personnel required, determining reserve capacity and non-personnel resources impact on personnel including materials, equipment and vehicles.

87.5. Reporting. * The AHJ shall fully report or cause to be fully reported, all investigations of the origin, cause, and circumstances of any fire, explosion, release of hazardous materials or other hazardous condition as required by local law and for the purpose of determining community risk.

87.5.1. Fire investigation programs shall be adequately evaluated to determine whether they are appropriate, effective and efficient. Evaluation shall include formative, process, impact and outcome phases. Reference to chapter XX on Community Risk Reduction.

87.5.2. Trade Secret. Information that could be related to trade secrets or processes shall not be made part of the public record except as could be directed by a court of law. NFPA 1.

87.5.3. Juvenile Information. Information that could be related to the identification of juveniles shall not be made part of the public record except when
directed by a court of law. Juveniles determined to be involved in fires should be referred to the appropriate programs. (Reference to Chapter XX on Community Risk Reduction)

ANNEX A

A.7.1. Fire investigations identify factors useful in reducing the number of fires that may occur in the future. Fire investigations are a necessary practice to determine, develop and validate current fire prevention services. Information gained through investigations is a valuable tool in developing an effective fire prevention program, including needed code revisions, public education programs and planning for future fire protection needs.

A.7.2. There are various approaches that can be employed to undertake the investigation of fire and explosions, including but not limited to, full time investigators, part-time investigators, company officers, law enforcement agencies, state fire marshal offices, task forces and private contract. The individuals involved maybe strictly fire investigators, while others may have law enforcement powers. Local conditions and resources will dictate the most effective and appropriate approach. When multiple agencies are involved, the development and use of interagency agreements are recommended.

It is through efficient and accurate determination of the cause and responsibility that future fire incidents can be avoided. There are many sources of information that can assist in the investigative process. These can be found in NFPA 921 Chapter 13.

A.7.2.4. All fire and explosion investigation and analysis, in order to be effective, must be conducted in a systematic manner. The systematic approach recommended to be followed for fire investigation, as contained in NFPA 921, is that which is set forth in the scientific method as follows:

a) Recognize the Need. First, one should determine that a problem exists. In this case, a fire or explosion has occurred and the cause should be determined and listed so that future, similar incidents can be prevented.

b) Define the Problem. Having determined that a problem exists, the investigator or analyst should define the manner in which the problem can be solved. In this case, a proper origin and cause investigation should be conducted. This is done by an examination of the scene and by a combination of other data collection methods, such as the review of previously conducted investigations of the incident, the interviewing of witnesses or other knowledgeable persons, and the results of
scientific testing.
c) Collect Data. Facts about the fire incident are now collected by observation, experiment, or other direct data gathering means. The data collected is called empirical data because it is based on observation or experience and is capable of being verified or known to be true.
d) Analyze the Data (Inductive Reasoning). The scientific method requires that all data collected be analyzed. This is an essential step that must take place before the formation of the final hypothesis. The identification, gathering, and cataloging of data does not equate to data analysis. Analysis of the data is based on the knowledge, training, experience, and expertise of the individual doing the analysis. If the investigator lacks expertise to properly attribute meaning to a piece of data, then assistance should be sought. Understanding the meaning of the data will enable the investigator to form hypotheses based on the evidence, rather than on speculation.
e) Develop a Hypothesis. Based upon that data analysis, the investigator must now produce a hypothesis or group of hypotheses. This hypothesis must be based solely on the empirical data that the investigator has collected.
f) Test the Hypothesis (Deductive Reasoning). The investigator does not have a valid hypothesis unless it can stand the test of careful and serious challenge. Testing of the hypothesis is done by the principle of deductive reasoning, in which the investigator compares his or her hypothesis to all the known facts as well as the body of scientific knowledge associated with the phenomena relevant to the specific incident. A hypothesis can be tested either physically by conducting experiments or analytically by applying scientific principles in “thought experiments.” When relying on experiments or research of others, the investigator must ensure that the conditions and circumstances are sufficiently similar. When the investigator relies on previously conducted research, references to the research relied upon should be noted. If the hypothesis cannot be supported, it should be discarded and alternate hypotheses should be developed and tested. This may include the collection of new data or the reanalysis of existing data. The testing process needs to be continued until all feasible hypotheses have been tested and one is determined to be uniquely consistent with the facts, and with the principles of science. If no hypothesis can withstand an examination by deductive reasoning, the issue should be considered undetermined.

A.7.2.4.1. The investigative team may consist of fire investigators, law enforcement and code enforcement personnel in order to properly identify and address matters involving building and fire code issues pertinent to the incident.
A.7.2.4.2. Complex investigations generally include multiple simultaneous investigations and involve a significant number of interested parties. These types of investigations may arise from an incident that involves circumstances such as fatalities or injuries; fire in high-rise buildings, large complexes or multiple buildings, or fires and explosions in industrial or commercial properties.

Due to the complexity of this type of investigation and to ensure that all known interested parties are afforded an opportunity to investigate the incident and protect their respective interests, understandings or agreements should be developed as early as possible. Items on which the parties may wish to have a common understanding or agreement include: safety/environmental hazards, control and access to site, cost sharing, scheduling, communication, logistics, protocols, evidence processing and handling, evidence testing, interviewing and sharing of information.

Additional information can be found in NFPA 921 Chapter 27.

A.7.3. Will reference NFPA 1500, Chapter 12 of NFPA 921 and any other relevant health and safety documents.

A.7.3.1. The investigator shall have and maintain at a minimum an up-to-date basic knowledge of the following topics beyond the high school level at a post-secondary education level as set forth in NFPA 1033:
(1) Fire science
(2) Fire chemistry
(3) Thermodynamics
(4) Thermometry
(5) Fire dynamics
(6) Explosion dynamics
(7) Computer fire modeling
(8) Fire investigation
(9) Fire analysis
(10) Fire investigation methodology
(11) Fire investigation technology
(12) Hazardous materials
(13) Failure analysis and analytical tools

A.7.3.3. In many instances, the initial, and sometimes the only, investigation undertaken will be the responsibility of the Fire Officer as set forth in NFPA 1021. NFPA 1021 establishes job performance requirements specific to fire investigation. The Fire Officer is often among the first fire personnel on the scene and is in the best position to observe critical information. The Fire Officer is often also the person who decides when overhaul operations should be delayed. For Fire Officer I,
the individual should be able to perform a fire investigation to determine preliminary origin and cause, secure the incident scene, and protect evidence or potential evidence from damage or destruction. A Fire Officer II should be able to determine the point of origin and preliminary cause and be knowledgeable of the methods used by arsonists, common causes of fire, basic origin and cause determination, fire growth and development and the documentation of preliminary fire investigative procedures. A Standard Operating Guideline should be established to address the conditions or circumstances in which it may be necessary or required for the Fire Officer to refer the incident for additional analysis or investigation.

A.7.4. NFPA 1201 provides a step-by-step procedure, which can be utilized to determine the number of personnel necessary to achieve the requirements of Chapter 7.

Fire scene examinations should not be undertaken alone. A minimum of two individuals should be present to ensure that assistance is at hand if an investigator should become trapped or injured. If the fire scene is investigated by one investigator, a clear communications protocol needs to be established between the site investigator and an off-site contact person. An estimated completion time should be established, and periodic contacts between the scene investigator and off-site contact person should be made at regular intervals. If it is impossible for the investigator to be accompanied, he or she should at least notify a responsible person of where the investigator will be and of when he or she can reasonably be expected to return. Reference NFPA 921 Section 12.2.1.

**Step 1. Scope of Services, Duties, and Desired Outputs.** Identify the services and duties that are performed within the scope of the organization. Outputs should be specific, measurable, reproducible, and time limited. Among the elements can be the following:
(1) Administration
(2) Data collection, analysis
(3) Delivery
(4) Authority/responsibility
(5) Roles/responsibilities
(6) Local variables
(7) Budgetary considerations
(8) Impact of risk assessment

**Step 2. Time Demand.** Quantify the time necessary to develop, deliver, and evaluate various services and duties identified in Step 1, taking into account the following:
(1) Local nuances
(2) Resources that impact personnel needs

<table>
<thead>
<tr>
<th>Task</th>
<th>Time per task</th>
<th>Total time required</th>
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**Step 3. Required Personnel Hours.** Based on Step 2 and historical performance data, convert the demand for services to annual personnel hours required for each program. Add any necessary and identifiable time not already included in the total performance data, including the following:

(1) Development/preparation
(2) Service
(3) Evaluation
(4) Commute
(5) Prioritization

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<th>Task commute time</th>
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1 Includes preparation, site, research, follow-up, and report.
2 Includes personnel functions, administrative functions, interruption time, and prioritization.

**Step 4. Personnel Availability and Adjustment Factor.** Average personnel availability should be calculated, taking into account the following:

(1) Holiday
(2) Jury duty
(3) Military leave
(4) Annual leave/vacation
(5) Training
(6) Sick leave
(7) Fatigue/delays/other

Example. Average personnel availability is calculated for holiday, annual, and sick leave per personnel member:

| ___ Annual hours at 100% availability | (___ hours/week × 52 weeks/year) (hours per year per person) |
| ___ Less annual leave and holiday    | (___ days per year at ___ hours per day)                     |
| ___ Less estimated sick leave        | (average ___ days per year at ___ hours per day)             |
| ___ Less annual training             | (___ days per year at ___ hours per day)                     |
| Personnel hours subtotal             | (hours per year per person)                                  |
Step 5. Calculate Total Personnel Required. Division of the unassigned personnel hours by the adjustment factor will determine the amount of personnel (persons/year) required. Any fractional values can be rounded up or down to the next integer value. Rounding up provides potential reserve capacity; rounding down means potential overtime or assignment of additional services conducted by personnel. (Personnel can include personnel from other agencies within the entity, community, private companies, or volunteer organizations.)
Correct calculations based on the following:
(1) Budgetary validation
(2) Rounding up/down
(3) Determining reserve capacity
(4) Non-personnel resources impact on personnel (materials, equipment, vehicles)

Total demand hours/Adjustment factor = Personnel positions

A.7.5. It is critical that all incidents and investigations be fully and accurately documented and reported. Proper determination of fire origin and cause is also essential for meaningful compilation of fire statistics. Accurate fire incident data is necessary to correctly identify and address a community’s fire experience. Accurate statistics form part of the basis of fire prevention codes, standards and training. Fire loss data and investigation reports are necessary to document fire origins and causes, arrests and clearance rates, as well as providing input into the development and maintenance of building and fire codes and fire protection technology. Such data is also critical in assessing the fire protection and fire safety of the community and departmental operations. Accurate data is also necessary in applying for and utilizing many grant and other funding programs. Reporting systems such as the National Fire Incident Reporting System (NFIRS) and BATS, available through the Bureau of Alcohol, Tobacco and Firearms (ATF), can also be helpful in data collection and analysis.

ANNEX B
B.1.1
NFPA 921 Guide for Fire and Explosion Investigations
National Fire Academy – Demonstrating Your Fire Prevention Program’s Worth

Chapter 2 Reference Documents

NFPA 1033
NFPA 1021
NFPA 1201
Chapter 1 Administration

1.4 Conflicts. The provisions of this standard shall not be deemed to nullify any provisions of local, state or federal law.

Chapter 9 – Public Education Programs

9.1 Public Education Program Administration

9.1.1 Scope. This chapter shall establish the organization and deployment of the fire prevention organization (FPO) for public education activities.

9.1.2 Purpose. The FPO shall coordinate public education programs that reduce the community’s risks, demonstrate the value of public education prevention activities, and implement appropriate prevention and intervention activities.

9.1.3* Responsibility. The FPO shall have a system to accomplish the requirements of Section 8.1 that includes program development, delivery, evaluation, and revision.

A 9.1.3 Organizational staffing and resources will dictate the methods by which FPO's develop, deliver, evaluate and revise programs.

A9.1.3.1 The AHJ has the authority to establish position specific job responsibilities within the organization. The management of the FPO should be clearly defined in position specific job duties and responsibilities.

9.1.3 Risk Assessment.

9.2 Qualification of Personnel

9.1.4* Fire prevention personnel assigned to public education activities shall comply with the job performance requirements in NFPA 1035.

A 9.1.4 Fire service organizations, AHJ’s and FPO’s may utilize recognized Pro Board or IFSAC certification programs meeting the job performance requirements of specific standards.

A9.1.4.1 Fire prevention personnel who are certified through Pro Board certification, national certification organizations or state level certification organizations should maintain those certifications through the required re-training or re-certification standards established by the certifying agency.

9.1.5* The FPO may approve other individuals to deliver specific public education programs when those individuals demonstrate expertise in the programs to be delivered.

A9.1.5 Qualified individuals may be utilized to present specific public safety educational programs when they have specific expertise in the topic, but may not meet the job performance requirements of NFPA 1035. Examples may include certified trainers from other organizations, school teachers who present public safety educational materials and other public safety professionals.
9.1.5.1 Educators from organizations outside the FPO shall meet all additional criteria based on the audience or specific venue where the program is delivered.

9.3 Required Personnel

9.5 Public Education Organizational Staffing

9.5.1* Public education functions shall be organized to ensure that the fire departments public education capability includes personnel, equipment and resources to meet the activities required by chapter 4.

A9.5.1 A formal workload analysis will determine the staffing levels for each FPO. The total number of Full Time Equivalents (FTE’s) required to deliver each program must be determined to identify the total number of FTE’s required for the FPO to effectively deliver public education programs to the community.

A9.5.1.2 Sample FTE calculations for a FPO with three specific public education programs. This sample calculation does not include management staff time for program management. It only calculates program development and delivery. Additional staff time or staff positions are required for effective overall management of these programs.

Available Hours Calculation
(Annually)
Hours per FTE (40 hours/week*52 weeks/year) 2080
Less Expected Sick Hours 50
Less Expected Vacation Hours 80
Less Expected Training Hours 40
Available Hours/FTE 1910

Workload Hours Calculation

Hours/Program #1 (including travel and prep) 1.5
Number of Program #1 Presentations/Year 750
Total Hours for Program #1 Presentations 1125
Hours Dedicated to Program #1 Development/Year 40
Total Hours for Program #1/year 1165

Hours/Program #2 (including travel and prep) 1
Number of Program #2 Presentations/Year 150
Hours Dedicated to Program #2 Development/Year 20
Total Hours for Program #2 Presentations 150
Total Hours for Program #2/year 170

Hours/Program #3 (including travel 2
| and prep)  |
|-----------------|-----------------|
| **Number of Program #3** | **500** |
| **Presentations/Year** | **1000** |
| **Total Hours for Program #3 Presentations** | **1020** |
| **Hours Dedicated Program #3 Development/Year** | **20** |
| **Total Hours for Program #3/year** | **2615** |
| **Administrative Hours/Week** | **5** |
| **Administrative Hours/Year (Hours/Week *52)** | **260** |
| **Total Hours/Year (Sum of all program totals plus Administrative Hours)** | **2615** |
| **Full Time Equivalents Required (Available Hours per FTE/ Total Hours per Year)** | **1.37** |

A9.5.1.2.1 Available hours per FTE is calculated by deducting the hours not available for program development, presentation and administration from 2080 hours (total number of hours per year based on a 40 hour week and 52 weeks per year). These typically include vacation, sick, training and any other hours that are not dedicated to program delivery or management.

A9.5.1.2.2 The calculation of expected hours will vary by jurisdiction. Leave types and usage patterns must be evaluated by each organization in order to determine the actual hours available for use per Full Time Equivalent. Other factors such as training for other functions (e.g. EMT recertification, operations in-service training, and employee development) must be included within this calculation in order to determine the true number of hours available to perform work in the FPO specific position.

A9.5.1.2.3 Determining the required number of FTE’s to perform the defined workload must include all of the functions each position is expected to perform. This is not an exhaustive list but should serve as a guide for developing the FPO’s evaluation of required FTE’s within the organization.

1. Hours per program: This includes all of the time required to prepare for, commute to, deliver and administer each program by the person delivering the program. This time should include all of the administrative time to schedule and document these programs, but would not include program revision and development.

2. Number of programs per year: An estimation of the total number of programs presented. This combined with the hours per program will determine the workload in hours each program is expected to require each year.

3. Hours dedicated to program development per year: Ongoing program evaluation and revision are an integral part of the overall program development. Each year, there should be a defined estimation of workload.
that goes toward these functions. This is a combined number of hours expected to be put toward this function in each program area.

(4) Administrative hours per week: Each FTE or persons filling an FTE will be required to do administrative work such as time accounting, staff meetings, special assignments and other duties. These hours are estimated within this calculation based on the overall workload on the individual. Members of the organization who conduct many different programs and may have other responsibilities outside of the education function will have a greater number of “administrative” hours within each work week.

(5) The calculations noted above are determined by the following formulas:

(a) Available hours = (40 hours/week x 52 weeks/year) less all expected hours not dedicated to educational programs.
(b) Workload hours = (Hours/program x programs/year) + hours dedicated to program development/year.
(c) FTE’s = Sum of total hours for all programs divided by available hours

9.5.1.2.4 For volunteer or part time FPO’s, this same calculation can be used to determine the number of hours that should be committed to a specific program.

| Hours/Program (including travel and prep) | 1.5 |
| Number of Program Presentations/Year | 24 |
| Total Hours for Program Presentations | 36 |
| Hours for program administration | 10 |
| Hours Dedicated to Program Development/Year | 5 |
| Total Hours for Program #1/year | 51 |

NOTE: Numbers presented here are for illustrative purposes. Each FPO must establish their specific values for these measures to obtain accurate calculations for their programs.

9.2 Public Education Program Development/Revision

9.2.1 Educational programs shall be developed based on the community risk assessment conducted in accordance with section 8.xx of this standard.

9.2.1.1* Development of specific programs shall be based on measures demonstrating the risks associated with a specific population, demographic or geographic region.

A 9.2.1.1 In the evaluation of measures, outcome measures as outlined in 9.x.x should also be developed based upon the actual risks identified in the community risk assessment.

9.2.2 The FPO shall partner with other private, public or non-profit organizations as appropriate to develop new programs or revise existing programs based on the community risk assessment.
9.2.2.1* Programs developed by other organizations which have learning objectives that support the risk reduction strategy of the FPO shall be considered for delivery within the community.

A9.2.2.1 This section encourages FPO’s to utilize proven or previously developed programs that are made available from commercial, non profit or other FPO organizations to meet the needs of the community within the scope of legal and copyright privileges.

A9.2.2.1 FPO’s are also encouraged to share effective programs they develop with other FPO’s to enhance the delivery of fire safety programs in other jurisdictions or organizations.

A9.2.2.2 Resources where FPO’s can obtain effective prevention programs previously developed include but are not limited to:
1) National Fire Protection Association
2) Safe Kids Worldwide
3) Home Safety Council
4) Vision 20/20
5) National Fire Academy
6) Fire safety equipment manufacturer’s associations
7) Insurance companies
8) Campus Fire Safety

9.2.3* Programs developed under this standard shall be reviewed for appropriate program content based upon instructional methodology, age levels, and cultural or social differences of the target audience.

A 9.2.3 Program content and delivery shall be developed based on risks identified in the community risk assessment and the following:

(1) The age of the target audience
(2) Language differences within target audience
(3) Cultural demographics of the target audience
(4) Literacy levels within the target audience
(5) Physical capabilities or limitations of the target audience
(6) The cognitive abilities of the target audience

9.2.4* Educational programs developed under this standard shall have defined course objectives that address identified fire and injury causes as identified by the community risk assessment in section 8.1.x of this standard or an identified national risk trend for the target audience.

A 9.2.4 Local fire risks and losses may be unique to a specific community and national trends may not reflect the actual risks and losses in the community served by the FPO. The community risk assessment is critical in clearly defining what the risks are to the community. Local risks and losses can be compared to national trends for benchmarking, but national trends should be avoided as the basis for the development of local public education programs. The community risk assessment
should always be the priority method for identifying educational programs needed
in the local community.
9.2.5 The FPO shall identify process and impact measures which support the
outcome goals and measures of each educational program.

9.3 Public Education Program Delivery
9.3.1 The FPO shall partner with other private, public or non-profit organizations
as appropriate to deliver programs to reduce injury and fire loss in the community
identified in the community risk assessment.
9.3.2 The FPO shall select the delivery mechanisms most appropriate for the target
audience.
9.3.3 Educational programs shall be delivered to audiences identified in the
community risk assessment
9.3.4* Educational programs deliveries shall be evaluated to determine the most
effective frequency, mechanism, format and venue based on identified process
measures.
9.3.4.1 Data for the evaluation of process measures shall be collected with each
educational program delivery.

9.4 Public Education Program Evaluation
9.4.1 All programs shall be evaluated to verify the program is reaching the target
audience and achieving the desired impacts and outcomes identified in section 9.2 of
this standard.
9.4.2 Process and impact evaluation from educational program deliveries shall be
compiled by the FPO not less than annually.
9.4.3 Outcome measures shall be evaluated with the community risk assessment.
9.4.3.1 Outcome measures may be evaluated more frequently or prior to the next
scheduled community risk assessment based on the level of activity and desired
outcome timeline of the specific educational program.
9.4.4 Results of educational program evaluations shall be presented to the chief
executive responsible for fire prevention not less than annually.
9.4.5 Educational program evaluation shall include recommended changes to
programs in order to improve impact, process and outcome measures of the
program.
9.4.6 Educational program instructors shall be evaluated to ensure adherence to
program objectives and their individual effectiveness at achieving the learning
objectives of the programs delivered
9.4.7 The instructor’s delivery of the educational program shall be evaluated for
effectiveness and adherence to professional qualifications or within the scope of
their training, education and experience

9.5 Public Education Organizational Staffing
9.5.1* Public education functions shall be organized to ensure that the fire
departments public education capability includes personnel, equipment and
resources to meet the activities required by chapter 4
A9.5.1 A formal workload analysis will determine the staffing levels for each FPO.
The total number of Full Time Equivalents (FTE’s) required to deliver each
program must be determined to identify the total number of FTE's required for the FPO to effectively deliver public education programs to the community.

A9.5.1.2 Sample FTE calculations for a FPO with three specific public education programs. This sample calculation does not include management staff time for program management. It only calculates program development and delivery. Additional staff time or staff positions are required for effective overall management of these programs.

**Available Hours Calculation**

(Annually)

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Hours per FTE (40 hours/week*52 weeks/year)</td>
<td>2080</td>
</tr>
<tr>
<td>Less Expected Sick Hours</td>
<td>50</td>
</tr>
<tr>
<td>Less Expected Vacation Hours</td>
<td>80</td>
</tr>
<tr>
<td>Less Expected Training Hours</td>
<td>40</td>
</tr>
<tr>
<td><strong>Available Hours/FTE</strong></td>
<td>1910</td>
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**Workload Hours Calculation**

<table>
<thead>
<tr>
<th>Program #1 (including travel and prep)</th>
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</thead>
<tbody>
<tr>
<td>Hours/Program #1 (including travel and prep)</td>
<td>1.5</td>
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<tr>
<td>Number of Program #1 Presentations/Year</td>
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<tr>
<td>Total Hours for Program #1 Presentations</td>
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<tr>
<td>Hours Dedicated to Program #1 Development/Year</td>
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<tr>
<td><strong>Total Hours for Program #1/year</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Program #2 (including travel and prep)</th>
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</thead>
<tbody>
<tr>
<td>Hours/Program #2 (including travel and prep)</td>
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</tr>
<tr>
<td>Number of Program #2 Presentations/Year</td>
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</tr>
<tr>
<td>Hours Dedicated to Program #2 Development/Year</td>
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<tr>
<td><strong>Total Hours for Program #2 Presentations</strong></td>
<td>150</td>
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<tr>
<td><strong>Total Hours for Program #2/year</strong></td>
<td>170</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Program #3 (including travel and prep)</th>
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</thead>
<tbody>
<tr>
<td>Hours/Program #3 (including travel and prep)</td>
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<tr>
<td>Number of Program #3 Presentations/Year</td>
<td>500</td>
</tr>
<tr>
<td>Total Hours for Program #3 Presentations</td>
<td>1000</td>
</tr>
<tr>
<td>Hours Dedicated Program #3 Development/Year</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total Hours for Program #3/year</strong></td>
<td>1020</td>
</tr>
</tbody>
</table>

Administrative Hours/Week 5
### Administrative Hours/Year

(Hours/Week x 52) 260

Total Hours/Year (Sum of all program totals plus Administrative Hours) 2615

Full Time Equivalents Required (Available Hours per FTE / Total Hours per Year) 1.37

#### A9.5.1.2.1

Available hours per FTE is calculated by deducting the hours not available for program development, presentation and administration from 2080 hours (total number of hours per year based on a 40 hour week and 52 weeks per year). These typically include vacation, sick, training and any other hours that are not dedicated to program delivery or management.

#### A9.5.1.2.2

The calculation of expected hours will vary by jurisdiction. Leave types and usage patterns must be evaluated by each organization in order to determine the actual hours available for use per Full Time Equivalent. Other factors such as training for other functions (e.g. EMT recertification, operations in service training, and employee development) must be included within this calculation in order to determine the true number of hours available to perform work in the FPO specific position.

#### A9.5.1.2.3

Determining the required number of FTE’s to perform the defined workload must include all of the functions each position is expected to perform. This is not an exhaustive list but should serve as a guide for developing the FPO’s evaluation of required FTE’s within the organization.

1. **Hours per program:** This includes all of the time required to prepare for, commune to, deliver and administer each program by the person delivering the program. This time should include all of the administrative time to schedule and document these programs, but would not include program revision and development.

2. **Number of programs per year:** An estimation of the total number of programs presented. This combined with the hours per program will determine the workload in hours each program is expected to require each year.

3. **Hours dedicated to program development per year:** Ongoing program evaluation and revision are an integral part of the overall program development. Each year, there should be a defined estimation of workload that goes toward these functions. This is a combined number of hours expected to be put toward this function in each program area.

4. **Administrative hours per week:** Each FTE or persons filling an FTE will be required to do administrative work such as time accounting, staff meetings, special assignments and other duties. These hours are estimated within this calculation based on the overall workload on the individual. Members of the organization who conduct many different programs and may have other responsibilities outside of the education function will have a greater number of “administrative” hours within each work week.
(5) The calculations noted above are determined by the following formulas:
(a) Available hours = \((40 \text{ hours/week} \times 52 \text{ weeks/year})\) less all expected hours not dedicated to educational programs.
(b) Workload hours = \((\text{Hours/program} \times \text{programs/year}) + \text{hours dedicated to program development/year}\).
(c) FTE’s = Sum of total hours for all programs divided by available hours

A 9.5.1.2.4 For volunteer or part time FPO’s, this same calculation can be used to determine the number of hours that should be committed to a specific program.

| Hours/Program (including travel and prep) | 1.5 |
| Number of Programs | 24 |
| Presentations/Year | 36 |
| Total Hours for Program Presentations | 51 |

NOTE: Numbers presented here are for illustrative purposes. Each FPO must establish their specific values for these measures to obtain accurate calculations for their programs.

9.6 Daycare, Pre School and Pre-K through 12 School Fire and Life Safety Educational Programs

9.6.1 Educational programs for school age target audiences shall be developed based on the Community risk assessment conducted in accordance with section 8.xx of this standard.

9.6.2 Educational programs under this chapter shall be developed for students in daycares and education levels K - 12.

9.6.3* Educational programs shall be developed based on age appropriate content and delivery method for the targeted audience.

A9.6.3 Examples of programs that can be targeted at preschool/kindergarten age children may focus on the following:
(1) Response to smoke alarms
(2) “hot – not hot” programs
(3) Stop drop and roll
(4) Emergency Drills in the Home (EDITH)
(5) “Tools not toys” programs
(6) Firefighter – a community helper

A9.6.3.1 Examples of programs that can be targeted at school age children may focus on the following:
(1) Presence, location and maintenance of smoke alarms
(2) Presence, location and maintenance of carbon monoxide alarms
(3) Residential sprinkler benefits
(4) Emergency Drills in the Home (EDITH) planning
(6) Preventing common home fires  
(7) Prevention common home injuries  
(8) Fire extinguisher (depending on maturity of the students)  
(6) Poison prevention  
(9) Proper actions in an emergency, calling 911/staying safe  
(10) Disaster preparedness  
(11) Juvenile fire setter prevention

9.6.4 All educational programs shall comply with applicable regional or state educational requirements.  
9.6.5 Educational programs shall also include training or materials for adult caregivers of these students. These programs may be independent programs or integrated with the student education program.

**9.7 Higher Education Fire and Life Safety Education Programs**

9.7.1 Educational programs for students in higher education shall be developed based on the Community risk assessment conducted in accordance with section 8.xx of this standard.  
9.7.2 Programs shall be targeted at post secondary education students enrolled in college, university, community college, technical school or any post secondary formal educational programs.  
9.7.3 Educational programs shall be developed for the specific housing needs of the students as defined by their on campus dormitories, off campus housing facilities both private and learning institution sponsored or fraternity/sorority housing status.  
9.7.4* Educational programs shall be developed for any other defined risk in the higher education status.

A9.7.4 Examples of educational programs that can be targeted at special hazard locations or risks include:  
(1) Laboratories  
(2) Theater, sporting and festival facilities and events  
(3) High rise specific settings  
(4) High hazard equipment and activities

A9.7.4.1 Examples of educational programs that can be targeted at students in higher education include:  
(1) Presence, location and maintenance of smoke alarms  
(2) Presence, location and maintenance of carbon monoxide alarms  
(3) Residential sprinkler benefits  
(4) Common fire causes and prevention  
(5) Fire extinguisher  
(6) Disaster preparedness  
(7) Emergency drills and escape planning  
(8) Off campus housing risks

9.7.5 Educational programs may be an integral part of the student orientation or other institution sponsored educational effort.
9.7.6 Educational programs shall also include enhanced training for dormitory student managers and fraternity/sorority leadership.
9.7.7 Educational programs shall include enhance training for off campus housing organizations and landlords.
9.7.8 Educational programs for institutional staff shall be conducted in accordance with section 9.10 of this standard.

9.8 Independent Senior Adult Fire and Life Safety Educational Programs

9.8.1 Educational programs for independent senior adults shall be developed based on the community risk assessment conducted in accordance with section 8.xx of this standard.

9.8.1.1 Independent senior adult education programs shall be targeted at those community members over the age of 55 who live independently or as determined by the FPO.

9.8.2 Educational programs may be associated with other independent senior based outreach programs and organizations to maximize the delivery and outreach of the program.

9.8.3* Independent senior educational programs shall also include training or materials for adult caregivers of seniors. These programs may be independent programs or integrated with the senior education program.

A9.8.3 Examples of educational programs that can be targeted independent senior adults include:
(1) Presence, location and maintenance of smoke alarms (hearing impaired and traditional)
(2) Presence, location and maintenance of carbon monoxide alarms
(3) Residential sprinkler benefits
(4) Common fire causes and prevention
(5) Fire extinguishers (based on physical ability)
(6) Disaster preparedness
(7) Slip, trip and fall hazards and risk reduction
(8) Automobile/driving safety
(9) Medication safety
(10) Emergency evacuation plans and planning

9.9 Adult and Community Wide Public Educational Programs

9.9.1 Adult and community wide educational programs shall be developed based on the community risk assessment conducted in accordance with section 8.xx of this standard.

9.9.2* Adult and community wide education programs are targeted at adults and the communities in which they live.

A 9.9.2 Community based programs are those that are directed to the community at large rather than a specific targeted audience. Examples of community wide programs include:
(1) Fire station open houses
(2) County fairs and festivals
(3) Safety fairs at local businesses
A 9.9.2.1 Specific adult education programs include those programs with a specific defined audience. Examples of these programs include:
(1) Rotary and other community service club presentations
(2) Home owners associations
(3) Religious organizations
(4) Parent Teacher Associations
A9.9.2.2 Examples of educational programs that can be targeted adults and the community include:
(1) Presence, location and maintenance of smoke alarms
(2) Presence, location and maintenance of carbon monoxide alarm
(3) Residential sprinkler benefits
(4) Common fire causes and prevention
(5) Fire extinguishers
(6) Disaster preparedness
(7) Slip, trip and fall hazards and risk reduction
(8) Water/pool safety
(9) Hazardous materials handling
(10) Poisoning and poison prevention
(11) Emergency Drills in the Home (EDITH) planning

9.10 Workplace Fire and Life Safety Education
9.10.1 Workplace educational programs shall be developed based on the community risk assessment conducted in accordance with section 8.xx of this standard
9.10.2* Workplace education programs are targeted at employees, managers and owners of businesses, non-profit organizations and government organizations in the community with a focus on fire prevention and safety in the workplace.
A9.10.2 These educational programs deliver fire prevention and safety programs to employees, volunteers in the workplace, contractors of a specific business, government office, church, or other organizations or facilities within the community. This may include specific building types such as high rises or specific business types such as restaurants and healthcare facilities.
A9.10.2.1 Examples of workplace fire and life safety education includes:
(1) Common fire causes and prevention
(2) Fire extinguishers
(3) Disaster preparedness
(4) Customer safety
(5) Emergency planning and evacuation
(6) Elevator safety and use
(7) Importance and purpose of built in fire protection features
9.10.3 All programs shall be developed and delivered with consideration to specific workplace needs, processes and activities in the workplace.

9.11 Juvenile Fire Setter Educational Programs
9.11.1 Juvenile fire setter educational programs shall be developed based on the community risk assessment conducted in accordance with section 8.xx of this standard.

9.11.2 Juvenile fire setter (JFS) programs shall be targeted at juveniles who exhibit behaviors associated with setting fires.

9.11.3 Juveniles receiving this program may be identified though local law enforcement, fire service personnel, juvenile justice services, mental health professionals or the public.

9.11.4* Juvenile fire setter educational programs shall include the availability of mental and social counseling services. Juvenile fire setting behaviors can be caused by complex mental, emotional or social reactions that must be identified in order to correct the fire setting behaviors. The inclusion of mental health and social services counseling is an integral part of a comprehensive juvenile fire setter program.

9.11.5* Juvenile fire setter programs shall have defined course objectives that address specific fire setting behaviors exhibited by the participating student(s) or identified by local or nationally recognized objectives for the target audience. The specific delivery format of a JFS program shall be dictated by the nature of the fire setting event. Group settings for these programs may be appropriate in certain situations where one-on-one education is most appropriate for other behaviors. Evaluation of each individual referred to a JFS program will dictate the type and scope of program that should be delivered in each situation.

9.11.6* State and local requirements of record keeping, reporting and confidentiality associated with juveniles shall be followed. When state and local regulations permit, FPO’s are encouraged to develop regional or state level data collection and sharing. This provides other FPO’s the ability to identify repeat offenders from other jurisdictions.

9.12 Home Safety Education Programs

9.12.1 Home safety education programs shall be developed based on the community risk assessment conducted in accordance with section 8.xx of this standard.

9.12.2* Home safety education programs shall be targeted at homeowners, owners of condominium units, persons who rent single family dwellings and those rent multi-family housing units.

A9.12.2 Examples of some home safety program topics include:
(1) Presence, location and maintenance of smoke alarms
(2) Presence, location and maintenance of carbon monoxide alarms
(3) Residential sprinkler benefits
(4) Smoke alarm/CO alarm installation programs
(5) Home escape planning
(6) Fire extinguisher location and use
(7) Common fire causes and prevention
(8) Smoking habits and safety in and around the home
(9) Home heating appliances – safe use and maintenance
(10) Home pool and spa safety
9.12.3 Home safety program management shall address all state and local regulations concerning mandated reporting requirements of other crimes and violations of the law as well as applicable confidentiality requirements.

9.13 Alternative Educational Messaging

9.13.1* Alternative education materials and messages shall be developed based on the community risk assessment conducted in accordance with section 8.xx of this standard when possible.

A9.13.1 Emerging risks that may not be captured during the interim between formal community risk assessments may be addressed in a more timely and effective method using ad hoc or alternative strategies. These strategies may include:

(1) Focused media messages
(2) Social networking resources Facebook, Twitter, Foursquare, websites
(3) Door-to-door campaigns
(4) Community group education
(5) Local newsletters and publications

9.13.2 Fire Prevention Organizations shall develop media communications strategies which support educational programs consistent with NFPA 1037:5.4.3 and 5.4.4.

9.13.3 Fire Prevention Organizations shall develop social media communications strategies which support public education programs where appropriate.