

# NFPA® 1022

## Standard for Fire and Emergency Services Analyst Professional Qualifications

2025 Edition



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## NFPA® 1022

### Standard for

## Fire and Emergency Services Analyst Professional Qualifications

### 2025 Edition

This edition of NFPA 1022, *Standard for Fire and Emergency Services Analyst Professional Qualifications*, was prepared by the Technical Committee on Fire Service Analysts and Informational Technical Specialists Professional Qualifications and released by the Correlating Committee on Professional Qualifications. It was issued by the Standards Council on April 22, 2024, with an effective date of May 12, 2024.

This edition of NFPA 1022 was approved as an American National Standard on May 12, 2024.

### Origin and Development of NFPA 1022

In 2018, the Center for Public Safety Excellence (CPSE) and National Fire Protection Association (NFPA) co-hosted a one-day Analyst Incubator. Twenty analysts and professionals who supervise analysts from departments across North America met and created a roadmap to grow the count, role, and profile of fire and emergency service analysts. This roadmap in part became NFPA 1022, *Standard for Fire and Emergency Services Analyst Professional Qualifications*.

One of the key realizations that resulted from the Analyst Incubator was that there was no unified linear path for analysts and fire departments to follow. During the session, participants shared their diverse range of skill sets, backgrounds, and career trajectories. Participants developed an interactive subway map to illustrate the diversity in career progression, professional recognition, culture changes, and retention issues for fire and emergency service analysts. As with any subway map, there were spots where two or more lines converge, and, in this map, a data-driven paradigm shift, continuous professional development, and certifications were the converging themes.

CPSE submitted a request to NFPA to develop a fire and emergency services analyst professional qualifications standard. Given the complexity of gathering and analyzing data, and the growing sophistication of technology systems available to fire and emergency service organizations, CPSE believed a professional qualifications standard for the aforementioned analysts would be an important next step in the progression of fire and emergency service organizations. NFPA collected comments in 2019 and determined the standard was needed. CPSE Chief Executive Officer Preet Bassi was selected as the Committee Chairperson for the Technical Committee on Fire Service Analysts and Informational Technical Specialists Professional Qualifications.

The committee was assembled and met in December 2019 to form the foundation for the professional qualification standard. The committee discussed the concept of job creep in which analysts are regularly pulled into administrative and IT functions. They voted to narrow the scope to identify the minimum job performance requirements (JPRs) for personnel who use, manage, review, analyze, support, or evaluate public safety data and related technical systems. The committee also discussed if the standard would develop the standard sequential levels (i.e., Analyst 1, Analyst 2, Analyst 3). Drawing from the feedback provided during the public comment period, it became evident there was a clear distinction between the roles of these analysts. The roles were fleshed out into three clear core job functions: data analyst, geographic information system (GIS) analyst, and business analyst.

The committee worked closely with the Technical Committee on Fire Officer Professional Qualifications (the Technical Committee for NFPA 1020, *Standard for Fire Officer and Emergency Services Instructor Professional Qualifications*, which consolidated NFPA 1021, *Standard for Fire Officer Professional Qualifications*) to develop a chapter focusing on the role of a data and analytics manager. It is important to note that the stance of the Technical Committee on Fire Service Analysts and Informational Technical Specialists Professional Qualification is that this role could be filled with a civilian staff member or a uniformed fire officer.

The Technical Committee on Fire Officer Professional Qualifications plans to incorporate a number of components from Chapter 7 and other elements of NFPA 1022, *Standard for Fire and Emergency Services Analyst Professional Qualifications*, into future editions of NFPA 1020, *Standard for Fire Officer and Emergency Services Instructor Professional Qualifications*. An additional chapter, Chapter 4, Industry Specific Knowledge, was developed to outline the concept initially coined as “fire service 101.” Chapter 4 outlines a baseline fire and emergency service orientation for civilian staff that might not have prior experience or exposure to the occupation.

The 2025 edition of NFPA 1022, *Standard for Fire and Emergency Services Analyst Professional Qualifications*, is dedicated to the memory of Marion Long. He passed away on March 30, 2023. The entire fire service lost a champion. Marion was a charter committee member and an active participant during the preliminary development of the standard.

After serving as the National Fire Incident Reporting System (NFIRS) State Program Manager for the Commonwealth of Virginia for many years, Marion started with the National Fire Data Center on August 30, 2009. He was the “numbers guy” and the go-to for all data at the US Fire Administration (USFA). Marion’s ability to speak on complex topics in understandable ways was unmatched. He made listeners want to know more about everything. “All data will eventually show a pattern,” was Marion’s mantra. He helped people learn how to collect data and identify patterns. He spoke passionately about collecting everyday bits of information and turning them into something meaningful on a larger scale. Marion was a teacher, colleague, and friend. Few provided the passion and devotion to data as he did.

The committee would also like to thank Chair Preet Bassi and NFPA Staff Liaison Chelsea Rubadou for their leadership and guidance throughout the standards development process.

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**Committee Scope:** This Committee shall have primary responsibility for documents on the professional qualifications for personnel who use, manage, review, analyze, support, or evaluate data and related technical systems in public safety agencies.

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## NFPA 1022

## Standard for

# Fire and Emergency Services Analyst Professional Qualifications

2025 Edition

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Information on referenced and extracted publications can be found in Chapter 2 and Annex E.

## Chapter 1 Administration

**1.1 Scope.** This standard identifies the minimum job performance requirements (JPRs) for personnel who use, manage, review, analyze, support, or evaluate public safety data and related technical systems.

**1.2 Purpose.** The purpose of this standard is to specify the minimum JPRs for serving as a fire and emergency services analyst.

**1.2.1** The intent of the standard is to define levels of performance required for various roles related to data and information analysis. The authority having jurisdiction has the option to combine or group the functional areas to meet its local needs and to use them in the development of job descriptions and specifying promotional standards.

**1.2.2** It is not the intent of this standard to restrict any jurisdiction from exceeding or combining these minimum requirements.

**1.2.3** This standard shall cover the requirements for four functional areas: data analyst, geographic information system (GIS) analyst, business analyst, and data and analytics manager.

### 1.3 General.

**1.3.1** All of the standards for any functional area shall be performed in accordance with recognized practices and procedures or as defined by an accepted authority.

**1.3.2** It is not required for the objectives to be mastered in the order in which they appear. The local or state/provincial training program shall establish both the instructional priority and program content to prepare individuals to meet the performance objectives of this standard.

**1.3.3** The fire and emergency service analyst shall remain current with the general knowledge and skills and job performance requirements addressed in the functional area qualification.

**1.3.4** Prior to employment in line with the requirements of this standard, personnel shall meet the following requirements:

- (1) Educational requirements established by the authority having jurisdiction (AHJ)
- (2) Security clearance (if applicable) as established by the AHJ

**1.3.5** Personnel hired for positions identified in this standard shall meet or be trained to meet the general knowledge requirements outlined in Chapter 4. (See Annex C.)

**1.3.6** Wherever in this standard the terms *rules, regulations, policies, procedures, supplies, apparatus, or equipment* are referred to, it is implied that they are those of the AHJ.

## 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.

NFPA 1300, *Standard on Community Risk Assessment and Community Risk Reduction Plan Development*, 2020 edition.

### 2.3 Other Publications.

*Merriam-Webster's Collegiate Dictionary*, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2020.

### 2.4 References for Extracts in Mandatory Sections.

NFPA 1000, *Standard for Fire Service Professional Qualifications Accreditation and Certification Systems*, 2022 edition.

NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications*, 2017 edition.

NFPA 1030, *Standard for Professional Qualifications for Fire Prevention Program Positions*, 2024 edition.

## Chapter 3 Definitions

### 3.1 General.

**3.1.1** The definitions contained in this chapter shall apply to the terms used in this standard.

**3.1.2** Where terms are not defined in this chapter or within another chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used.

**3.1.3** Merriam-Webster's Collegiate Dictionary, 11th edition, shall be the source for the ordinarily accepted meaning.

### 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 Labeled.** Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

**3.2.4\* Listed.** Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

**3.2.5 Shall.** Indicates a mandatory requirement.

**3.2.6 Standard.** An NFPA standard, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and that is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the NFPA manuals of style. When used in a generic sense, such as in the phrases "standards development process" or "standards development activities," the term "standards" includes all NFPA standards, including codes, standards, recommended practices, and guides.

### 3.3 General Definitions.

**3.3.1 Address.** To resolve or mitigate poor data quality in a way that lessens real or potential negative impacts to the data-set(s) or resulting analysis.

**3.3.2 Artifacts.** Automated behaviors, actions, or control sequences, such as database requests, calculations, grammar rules, or user-generated content.

**3.3.3 Business Analyst.** An individual who uses technical, administrative, and communication skills as well as organizational analytical tools to link information systems with policy, financial, and operational feedback in public safety organizations and uses analysis and assessment to evaluate processes, determine requirements, and provide data-informed recommendations and end products to executives and stakeholders.

**3.3.4 Data.** The lowest fractional element from which information and then knowledge can be derived; as electronically acquired, captured, stored, queried, analyzed, or transmitted; electronic or computerized in nature.

**3.3.5 Data Analyst.** An individual who organizes, analyzes, and presents data as an informative and reproducible product with the purpose of providing insight for use in making strategic decisions within an organization.

**3.3.6 Data and Analytics Manager.** An individual who is responsible for the management and vitality of human capital, relevant processes, and analysis that support and inform the fire and emergency services organization.

**3.3.7 Data Domain.** A logical grouping of data, referring to interrelated data pertaining to a common purpose, object, or concept.

**3.3.8 Data Reliability.** The degree to which data, and the insights gleaned from it, can be trusted and used for effective decision-making.

**3.3.9\* Data Visualization.** The graphical representation of information or data.

**3.3.10 Data Warehouse.** A large store of data accumulated from a wide range of sources within a department and used to guide management decisions.

**3.3.11 Data Wrangling.** The process of cleaning, normalizing, and transforming data into new or modified formats for the purpose of improving data quality.

**3.3.12 Database Change Management (DCM).** A critical part of maintaining and managing a database that involves tracking and controlling changes to the database, including both the structure of the database (such as the tables, columns, and relationships between data) and the data itself.

**3.3.13 Density.** A measure of quantity of data and spatial relationship based on location.

**3.3.14\* Dynamic Content.** Content that allows users to select data elements to present findings and compare data elements against each other.

**3.3.15 Ecosystem.** A complex network or interconnected system.

**3.3.16 Extract, Transform, Load (ETL).** The process of combining data from multiple sources into a large, central repository called a "data warehouse," which is optimized for transactional and analytical processes.

**3.3.17 Generally Accepted Accounting Principles (GAAP).** Standards that encompass the details, complexities, and legalities of business and corporate accounting.

**3.3.18 Geocode.** The process of transforming a description of a location, such as a pair of coordinates, an address, or a place name, to a location on the earth's surface.

**3.3.19 Geographic Information System (GIS).** A system that enables the creation, management, analysis, and mapping of various types of data by an analyst.

**3.3.20 Geographic Information System (GIS) Analyst.** An individual who designs, develops, and implements spatial databases and analyzes spatial and related nonspatial data.

**3.3.21 Job Performance Requirement (JPR).** A written statement that describes a specific job task, lists the items necessary to complete the task, and defines measurable or observable outcomes and evaluation areas for the specific task. [1000, 2022]

**3.3.22 Key Performance Indicator (KPI).** A set of quantifiable measurements used to gauge a department's overall long-term performance.

**3.3.23\* Metadata.** Information associated with data that provides contextual details.

**3.3.24 Models.** A set of rules and procedures for representing a phenomenon or predicting an outcome.

**3.3.25 Open File Format.** A published specification for storing digital data, usually maintained by a standards organization.

**3.3.26\* Outlier.** An observation that lies an abnormal distance from other values in a random sample from a population.

**3.3.27 Policy.** A course or principle of action adopted or proposed by a government, party, business, or individual.

**3.3.28 Procedure.** A series of actions conducted in a certain order or manner.

**3.3.29 Process.** In geoprocessing, a tool and its parameter values.

**3.3.30\* Process Map.** A planning and management tool that visually describes the flow of work.

**3.3.31\* Program.** A set of related measures or activities with a particular long-term aim.

**3.3.32\* Project.** A series of tasks that need to be completed to reach specific objectives.

**3.3.33 Project Plan.** A series of formal documents that define the execution and control stages of a project.

**3.3.34 Projection.** Converting the coordinate system of a curved surface to a flat surface using mathematical calculations.

**3.3.35 Public.** Of, relating to, or affecting a population or a community as a whole

**3.3.36 Quality Assurance (QA).** A process by which all the planned and systematic activities implemented can be demonstrated to provide confidence that an activity will fulfill requirements for quality.

**3.3.37 Query.** A request to select features or records from a database that is often written as a statement or logical expression.

**3.3.38 Requisite Knowledge.** Fundamental knowledge one must have in order to perform a specific task. [1030, 2024]

**3.3.39 Requisite Skills.** The essential skills one must have in order to perform a specific task. [1030, 2024]

**3.3.40 Root Cause Analysis (RCA).** The process of discovering the root causes of problems in order to identify appropriate solutions.

**3.3.41\* Schema.** The structure or design of a database or database object, such as a table, view, index, stored procedure, or trigger.

**3.3.42 Spatial Data.** Data that references a geographical location.

**3.3.43 Stakeholder.** One who is involved in or affected by a course of action.

**3.3.44 Standard Operating Guideline (SOG).** See 3.3.45, Standard Operating Procedure (SOP).

**3.3.45 Standard Operating Procedure (SOP).** Established or prescribed methods to be followed routinely for the performance of designated operations or in designated situations.

**3.3.46\* Static Content.** Content that displays data that typically focuses on only a single relationship.

**3.3.47 Statistical Analysis.** The process of collecting and analyzing large volumes of data to identify trends and develop valuable insights.

**3.3.48\* Tabular Data.** Descriptive information, usually alphanumeric, that is stored in rows and columns in a database and can be linked to spatial data.

**3.3.49 Task.** A specific job behavior or activity. [1002, 2017]

## Chapter 4 Industry Specific Knowledge

**4.1\* General.** For qualification at any of the applicable fire and emergency service analyst positions defined in Chapters 5 through 8, the candidate shall meet the requirements in Sections 4.2 through 4.9 following the point of hire.

### 4.2 Fire and Emergency Services Administration.

**4.2.1** The member shall be able to explain the history of the fire and emergency service organization and the fire service and emergency medical service (EMS) industry in general.

**4.2.2** The member shall be able to explain the fire and emergency service organization's organizational chart and the role and responsibilities of different ranks and job classifications.

**4.2.3** The member shall be able to explain the department's incident command system (ICS) from a single unit to a multi-jurisdictional response.

**4.2.4** The member shall be able to explain the shift schedule used by the fire and emergency service organization.

**4.2.5** The member shall be able to explain the role of the AHJ in the fire and emergency service organization's administration and operations.

**4.2.6** Where applicable, the member shall be able to explain the role of the labor union(s) that represents the fire and emergency service organization's members with respect to negotiating for wages, benefits, health and safety, staffing, and other subjects of bargaining as dictated by federal, tribal, territorial, state, provincial, or local laws.

**4.2.7** Where applicable, the member shall be able to explain the role of any member associations, which might be distinct from any labor unions, that the fire and emergency service organization members might join that provide support, education, mentorship, networking opportunities, and cultural awareness for specific populations.

**4.2.8** The member shall be familiar with the department's standard operating procedures/standard operating guidelines (SOPs/SOGs) and federal, tribal, territorial, state, provincial, and local laws.

**4.2.9** The member shall be able to explain the difference between a jurisdictional boundary and an operational boundary.

### **4.3 Apparatus, Ambulance, Specialty Vehicles, and Command Units.**

**4.3.1** The member shall be able to identify and discuss the staffing, purpose, and tactical uses of the various apparatus, ambulances, and vehicles supported by the department.

**4.3.2** The member shall be able to discuss the staffing, purpose, and tactical uses of the engine company.

**4.3.3\*** The member shall be familiar with the equipment on the engine company.

**4.3.4** The member shall be able to discuss the staffing, purpose, and tactical uses of the ladder company.

**4.3.5\*** The member shall be familiar with the equipment on the ladder company.

**4.3.6** The member shall be able to discuss the staffing, purpose, and tactical uses of the ambulances.

**4.3.7\*** The member shall be familiar with the equipment on the ambulance(s).

**4.3.8** The member shall be able to discuss the staffing, purpose, and tactical uses of the command units.

**4.3.9** The member shall be familiar with the equipment on the command unit(s).

**4.3.10\*** The member shall be able to discuss the staffing, purpose, and tactical uses of the fire and emergency service organization's specialty apparatus and vehicles.

**4.3.11** The member shall be familiar with the equipment carried by these units.

### **4.4\* Firefighter Safety and Health.**

**4.4.1** The member shall be able to explain the tactical priorities of life safety of community members and firefighters, incident stabilization, and property conservation.

**4.4.2** The member shall be able to explain the conditions under which firefighter injuries and fatalities commonly occur.

**4.4.3\*** The member shall be able to explain aspects and limitations of firefighter personal protective equipment (PPE).

**4.4.4** The member shall be able to explain how to access member assistance and wellness programs.

**4.4.5** The member shall be familiar with pertinent health and safety regulations as mandated by federal, tribal, territorial, state, provincial, and local AHJs.

**4.4.6** The member shall be able to explain incident control zones.

**4.4.7** The member shall be able to explain the personnel accountability system used by the department.

**4.4.8** The member shall be able to explain the benefits of being physically and medically capable of performing assigned duties during emergency and nonemergency operations and effectively functioning during peak physical demand activities, given current fire service trends and organizational policies.

**4.4.9** The member shall be able to explain the negative consequences of exposure to dangerous, toxic, hazardous, and/or biohazardous materials during emergency and nonemergency operations that are produced as a product of combustion, the routes of exposure and absorption, and the potential long-term effects of exposure.

**4.4.10** The member shall be able to explain the negative consequences of repetitive motion injuries and the potential long-term effects of such injuries, both on and off station and during emergency and nonemergency operations.

**4.4.11** The member shall be able to explain the modes of disease transmission and the potential diseases that responders could be exposed to during patient care and management, both on and off station and during emergency and nonemergency operations.

**4.4.12** The member shall be able to explain the common behavioral health problems in the fire service and the consequences of exposure to potentially traumatic events.

### **4.5 Fire Growth and Development.**

**4.5.1\*** The member shall be able to explain the dynamics of fire growth and development.

**4.5.2** The member shall be able to explain the classification of fires.

**4.5.3\*** The member shall be able to explain the development of fire in a compartment.

**4.5.4\*** The member shall be able to explain fire control.

**4.5.5** The member shall be able to explain and discuss the timeline of fire development.

### **4.6 Building Construction.**

**4.6.1\*** The member shall be familiar with building construction.

**4.6.2** The member shall be able to explain the hazards firefighters might face in relation to building construction.

### **4.7 Fire Control and Suppression.**

**4.7.1** The member shall be able to explain the various types of fire extinguishers used by the department and the appropriate fires for which they should be used.

**4.7.2** The member shall be able to explain the purpose and function of sprinkler systems.

**4.7.3** The member shall be able to explain the different types of hose used by the fire and emergency services organization and the criteria for selected hose for fireground task completion.