# Why Philosophize and Conceptualize?
# Why Not Just Analyze?

*On the Role of Rigorous Analysis in the Fire Service*

CITY OF VIRGINIA BEACH
Fire Department

Dr. Evgeniy Ivanov

Research and Analysis Manager, Virginia Beach Fire Department

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# Intro – I Had a Thought…

## That One Day a Narrative May Start Like This:

SLIDE 2


## Once Upon a Time…

## There were (Fire) Analysts…circa 2025

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# Thinking…Conceptual and Analytical

SLIDE 3

## What is a thought?

- Let me reflect on DATA, DATA, DATA…
  - Data is not the key factor in human decision making.
  - Any Problem Solving requires a lot of thinking…(Th-An-Pl-Str-Conc-Phil)

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# Intent

SLIDE 4

**Philosophize on analysis in general and on the role of rigorous analysis in the Fire service, in particular.**

Reflect on:

- some key concepts in analysis
- share ideas, Lessons Identified, and best practices.

*By reflecting on those things, we can share a common understanding of what is our added value, as analysts.*

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# An Analyst's Bio…

(**Analyst** is one of my strongest identities amongst multiple others)

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1) Reconnaissance Platoon Leader
2) S2 Intelligence Section Head
3) Deputy G5 Branch Head Planning and NATO Interoperability
4) Civil-Military Cooperation Section Head
5) NATO Strategic Lead Concept Developer and Project Manager, NATO Allied Command Transformation, Norfolk, USA
6) Deputy Branch Head Transformation, NATO Crisis Management and Disaster Response Center of Excellence
7) Senior Public Safety Analyst, Virginia Beach EMS, VA
8) IT Systems Analyst – Public Safety Solutions Team, Virginia Beach, VA
9) Research and Analysis Manager, Virginia Beach FD, VA

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# Who is in the Room?

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1. How many of you are uniform personnel?
2. How many of you are civilians?
3. How many of you are analysts?
4. How many of you perform some sort of analysis?

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# What is a Concept?




*Definition Game: Define Concept…*

1. **Concepts** are the building blocks of our understanding of the world around us. We think in concepts. We analyze utilizing concepts.
2. **Concept and Construct** are often used interchangeably; both are conceived in our minds.

**Ayn Rand**: "A concept is a mental integration of two or more units possessing the same distinguishing characteristic(s), with their particular measurements omitted." (Introduction to Objectivist Epistemology, 1967)

**3.** "Something conceived in the mind; an abstract or generic idea generalized from particular instances" (Meriam-Webster, 2011).

**Concept = a generalized idea.**

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# Conceptualization in Practice: Hierarchy of Concepts

SLIDE 8

| | Level 3 | Level 2 | Level 1 |
|---|---|---|---|
| Analysis/ Analyst | | Data Analysis<br>Fire Analysis | Analysis |
| Data | | | Data |
| Fire | Confined Structure Fire<br>Non-confined Structure Fire | Structure Fire | Fire |

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# Guiding and Upmost Idea

SLIDE 9

**You are an Analyst First and Upmost (Level 1 Concept)!!!**
**That is your Primary Qualification!**
Your specialization: Fire, Data, GIS, etc. (level 2, 3, or 4 concepts) comes second!

**Analyst**

Public Safety Analyst
Public Safety Systems Analyst
…Any Type of Analyst

GIS Analyst
GIS Data Analyst
Crime Analyst
Fire Analyst
EMS Analyst…or else

Business Analyst
Intelligence Analyst
Strategic Analyst
Administrative Analyst
Data Analyst…or else

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# Key Concepts in (Fire) Analysis

SLIDE 10

## Analysis

***Definition Game: Define Analysis:...***

([Collins Online Dictionary])

Collins

analysis

English | French | German | Italian | Spanish | Portuguese | Hindi | Chinese | K

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Definitions | Summary | Synonyms | Sentences | Pronunciation | Collocations | Conjug

### Definition of 'analysis'

**analysis**

(ənælɪsɪs )

**Word forms: analyses** (ənælɪsiːz )

1. **variable noun** B2

Analysis is the process of considering something carefully or using statistical methods in order to understand it or explain it.

*Her criteria defy analysis.*

*We did an analysis of the way that government money has been spent in the past.* [+ of]

**Synonyms:** study, reasoning, opinion, judgment More Synonyms of **analysis**

2. **variable noun** B2

Analysis is the scientific process of examining something in order to find out what it consists of.

*They collect blood samples for analysis at a national laboratory.*

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# Key Concepts in (Fire) Analysis

SLIDE 11

## Analysis…

***Definition Game: Define Analysis:...***

**analysis** noun

(Meriam-Webster Dictionary)

anal·y·sis ə-ˈna-lə-səs

plural **analyses** ə-ˈna-lə-ˌsēz

Synonyms of *analysis* ›

1 **a** : a detailed examination of anything complex in order to understand its nature or to determine its essential features : a thorough study

> doing a careful *analysis* of the problem

**b** : a statement of such an examination

2 : separation of a whole into its component parts

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# Key Concepts in (Fire) Analysis…

SLIDE 12

## Method

***Definition Game: Define Method with a Synonym…***

**method** noun

(Meriam-Webster Dictionary)

meth·od ˈme-thəd

Synonyms of *method* >

**1** : a procedure or process for attaining an object: such as

**a** (1) : a systematic procedure, technique, or mode of inquiry employed by or proper to a particular discipline or art

(2) : a systematic plan followed in presenting material for instruction

> the lecture *method*

**b** (1) : a way, technique, or process of or for doing something

**Method = a way, a path, the means, a sequence of process steps. Method is about the "How".**

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# Key Concepts in (Fire) Analysis…

SLIDE 13

## Method…

**Method 1 + Method 2 + …+ Method N = Methods / Methodology**

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# Key Concepts in (Fire) Analysis…



## Method…

Let's watch a short video about one key method, the most fundamental one, actually.

(start at 1:54)

https://youtu.be/kGAWgItUboE

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# Key Concepts in (Fire) Analysis…

SLIDE 15

## Approach

1. Bigger than Method. Still, often used interchangeably with Method.
2. Quantitative (using quantitative methods)
3. Qualitative (using qualitative methods)
4. Mixed methods
5. All-hazards approach, comprehensive approach, multiagency approach, holistic approach, etc.

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# Key Concepts in (Fire) Analysis…

SLIDE 16

## Technique

1. **Equal to or smaller than Method the same way Method is to Approach.**
   (What is that technique called?)
2. Still, often used interchangeably with Method; no strict delineation.
3. Heavily used in all the steps of problem-solving.
4. Type of Techniques:
   - root cause identification/ diagnostic techniques (5 WHYs)
     (Why do we need more analysts?)
   - problem-structuring techniques/conceptual frameworks
     (Rich Picture, Fishbone, Process Mapping, SWOT, PESTLE, DOTMLPFI)
   - creative (Brainstorming, Six Thinking Hats)
   - prioritization techniques (Pros&Cons, MOSCOW)
   - challenging (Devil's Advocate, What If, Red Team)

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# Role of Concepts and Conceptual Thinking (in the Fire Service)

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1. Design Better Terms, Definitions, Frameworks, Structures:
   a. In Analysis Papers
   b. In Departmental Strategic Plan
   c. In your City's Strategic Plan
   d. In your Industry Documents (e.g. Emergency Response System) – White Papers, Standards, Roadmaps, etc.
   e. In Job Descriptions: qualifications
   f. Research papers/ Articles.

*Conceptual Thinking is Thinking in a Logical and Structured Way.*

# Role of Concepts and Conceptual Thinking: an example…

SLIDE 18

Business Intelligence (BI) = *cross-cutting* **capability** with 3 core elements*

- **Tools**
- BI Training
- BI (Public Safety) Analyst

**Is Your Department Business Intelligent? Firefighternation, 02 December 2020*

**NB! This Conceptualization is applicable to any other Analysis Capability!**

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# Lessons Identified and Best Practices

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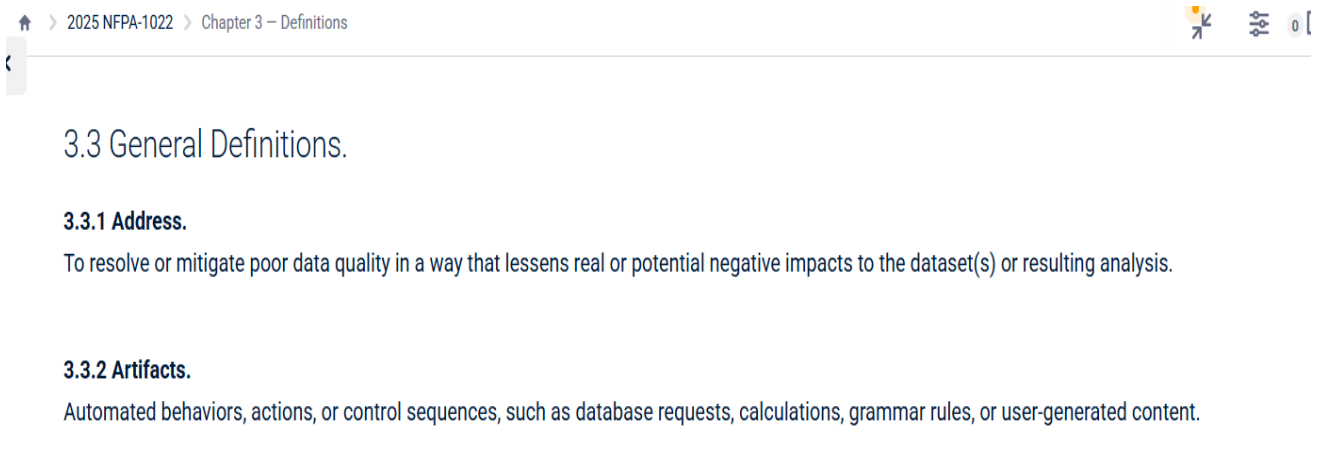
**Lesson Identified 01**

NFPA 1022 definitions
(Standard for Fire and Emergency Services Analyst Professional Qualifications)



2025 NFPA-1022 › Chapter 3 – Definitions

## 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 dataset(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 reproduceable product with the purpose of providing insight for use in making strategic decisions within an organization.

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# Lessons Identified and Best Practices…

SLIDE 20

**Lesson Identified #01**

NFPA 1022 definitions
(Standard for Fire and Emergency Services Analyst Professional Qualifications)

**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.

# Lessons Identified and Best Practices…



**Lesson Identified #02**

NFPA 1022 Analyst Job Classifications

- Chapter 5 – Data Analyst
- Chapter 6 – GIS Analyst
- Chapter 7 – Business Analyst
- Chapter 8 – Data and Analytics Manager

> Chapter 9 – Data Scientist

# Lessons Identified and Lessons Learned/Best Practices…

SLIDE 22

**Lesson Identified # 03**

What is the lifespan of a **Call for Service**?
When does a Call for Service start?


**Call For Analysis/ Analytical Support**


The **Call for Analysis/ Analytical Support** to the Analyst
is like the Call for Service to the FireFighter

*Public-safety answering point (PSAP)

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# Lessons Identified and Lessons Learned/Best Practices…

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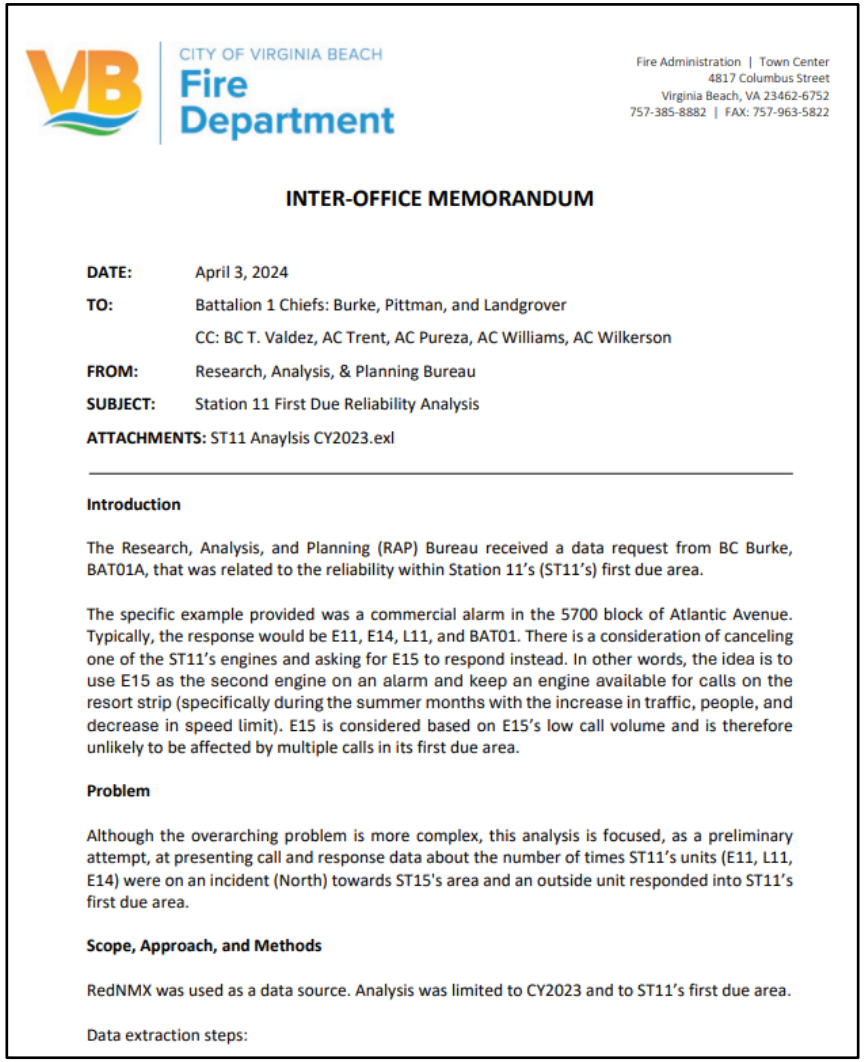
**Best Practice:**

**Documentation of Analysis**



CITY OF VIRGINIA BEACH
Fire Department

Fire Administration | Town Center
4817 Columbus Street
Virginia Beach, VA 23462-6752
757-385-8882 | FAX: 757-963-5822

**INTER-OFFICE MEMORANDUM**

**DATE:** April 3, 2024

**TO:** Battalion 1 Chiefs: Burke, Pittman, and Landgrover

CC: BC T. Valdez, AC Trent, AC Pureza, AC Williams, AC Wilkerson

**FROM:** Research, Analysis, & Planning Bureau

**SUBJECT:** Station 11 First Due Reliability Analysis

**ATTACHMENTS:** ST11 Anaylsis CY2023.exl

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**Introduction**

The Research, Analysis, and Planning (RAP) Bureau received a data request from BC Burke, BAT01A, that was related to the reliability within Station 11's (ST11's) first due area.

The specific example provided was a commercial alarm in the 5700 block of Atlantic Avenue. Typically, the response would be E11, E14, L11, and BAT01. There is a consideration of canceling one of the ST11's engines and asking for E15 to respond instead. In other words, the idea is to use E15 as the second engine on an alarm and keep an engine available for calls on the resort strip (specifically during the summer months with the increase in traffic, people, and decrease in speed limit). E15 is considered based on E15's low call volume and is therefore unlikely to be affected by multiple calls in its first due area.

**Problem**

Although the overarching problem is more complex, this analysis is focused, as a preliminary attempt, at presenting call and response data about the number of times ST11's units (E11, L11, E14) were on an incident (North) towards ST15's area and an outside unit responded into ST11's first due area.

**Scope, Approach, and Methods**

RedNMX was used as a data source. Analysis was limited to CY2023 and to ST11's first due area.

Data extraction steps:

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# Takeaways

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1. **Fire and Emergency services Analysts are Analysts First.** No matter if they a GIS, Data, Business, Administrative Analysts, тhey are Analysts First, and their specialization is Second. That second specialization only shows what are the methods and tools they predominantly use.
2. **Analysts are facilitators.** They can help facilitate the strategic planning of your department by choosing the right methods and techniques along the way.
3. **Analysts are methodologists by design. The Methodological Rigorousness of your Analysis** comes from your awareness of and your preparation for what you are doing, and above all - how you are doing it. Whenever we say **HOW** – it is always about approaches/methods/techniques.
4. **Reflect** on the things you are working on. **Practice Conceptual thinking** – try to think in a structured way. Best way is to write an article, or document your analysis as a small research paper with distinct sections – intro, methods, results. **Practice methodological rigorousness** – ask yourself “What is my Method?” and try to define it.

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# Thank You!



Work:

**Dr. Evgeniy Ivanov**
Research and Analysis Manager
Fire Department
Research, Analysis, and Planning Bureau
757-385-8586 | eivanov@vbgov.com
https://fire.virginiabeach.gov/
Fire Administration
4817 Columbus Street | Virginia Beach, VA 23462

VB | CITY OF VIRGINIA BEACH

LinkedIn: