



INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS

BIG BOX FIRE GROUND OPERATIONS

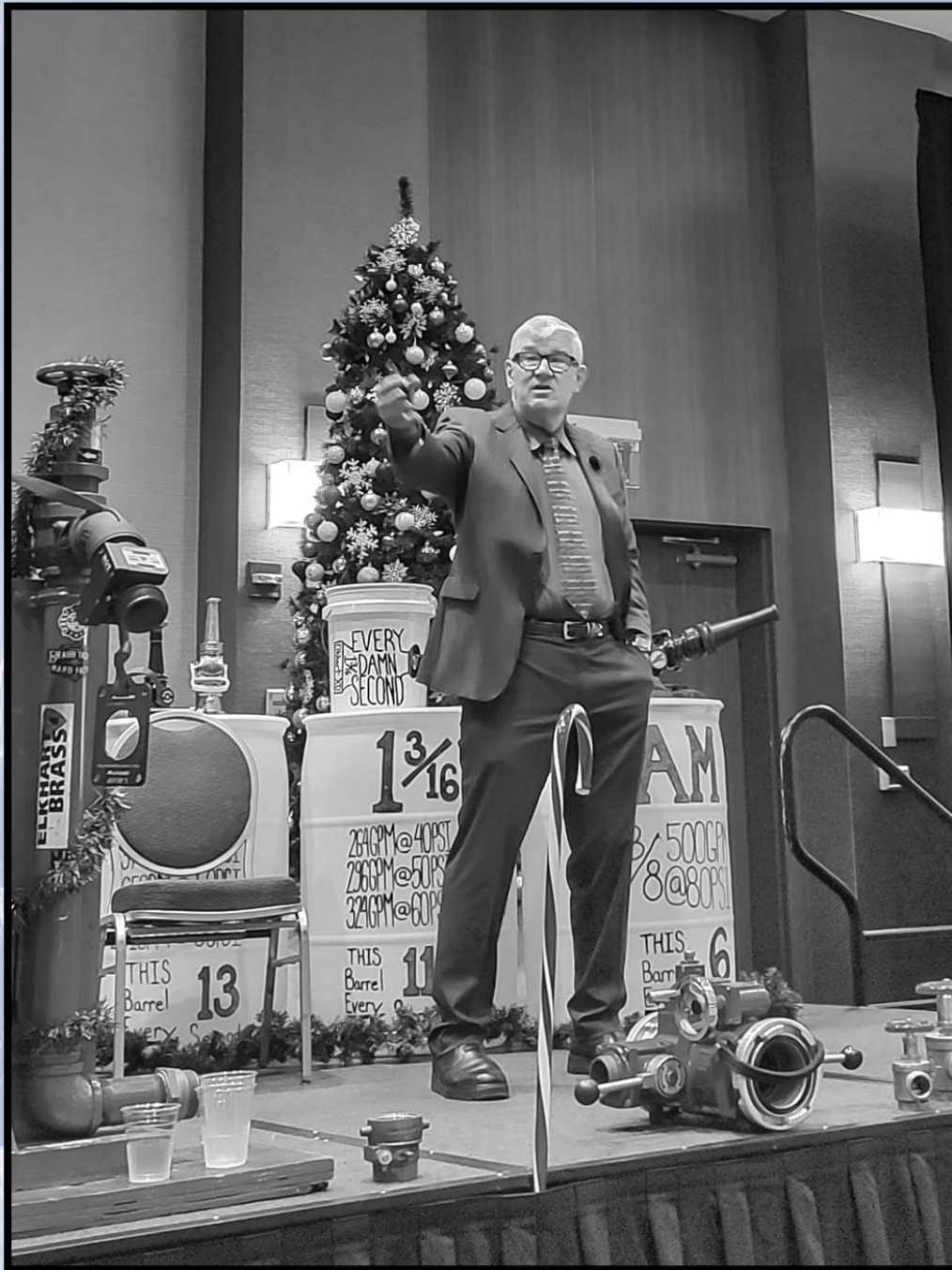
March 31, 2026



BIG BOX.....BIG PROBLEM

Yo Walmart is on fire bro...

Clark Lamping



“I am a very regular person. Every single morning, I have a very healthy bowel movement, right at 7:00. The only problem is, I don’t get out of bed until 7:30.”

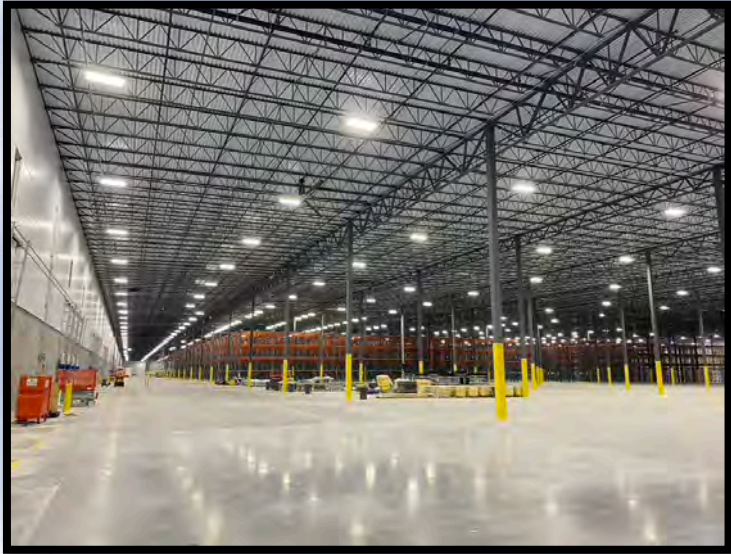
**The Bill Gustin
1954-2025**



Clark Lamping

- 28 years Clark County NV Fire Department
- Captain 17 years
- Tech Rescue Captain 2 years
- Captain of Training 1 year
- Rescue Squad Officer NVTF 01
- Masters Degree UNLV Crisis and Emergency Management
- Humpday Hangout

The New Normal Unlimited Area Buildings

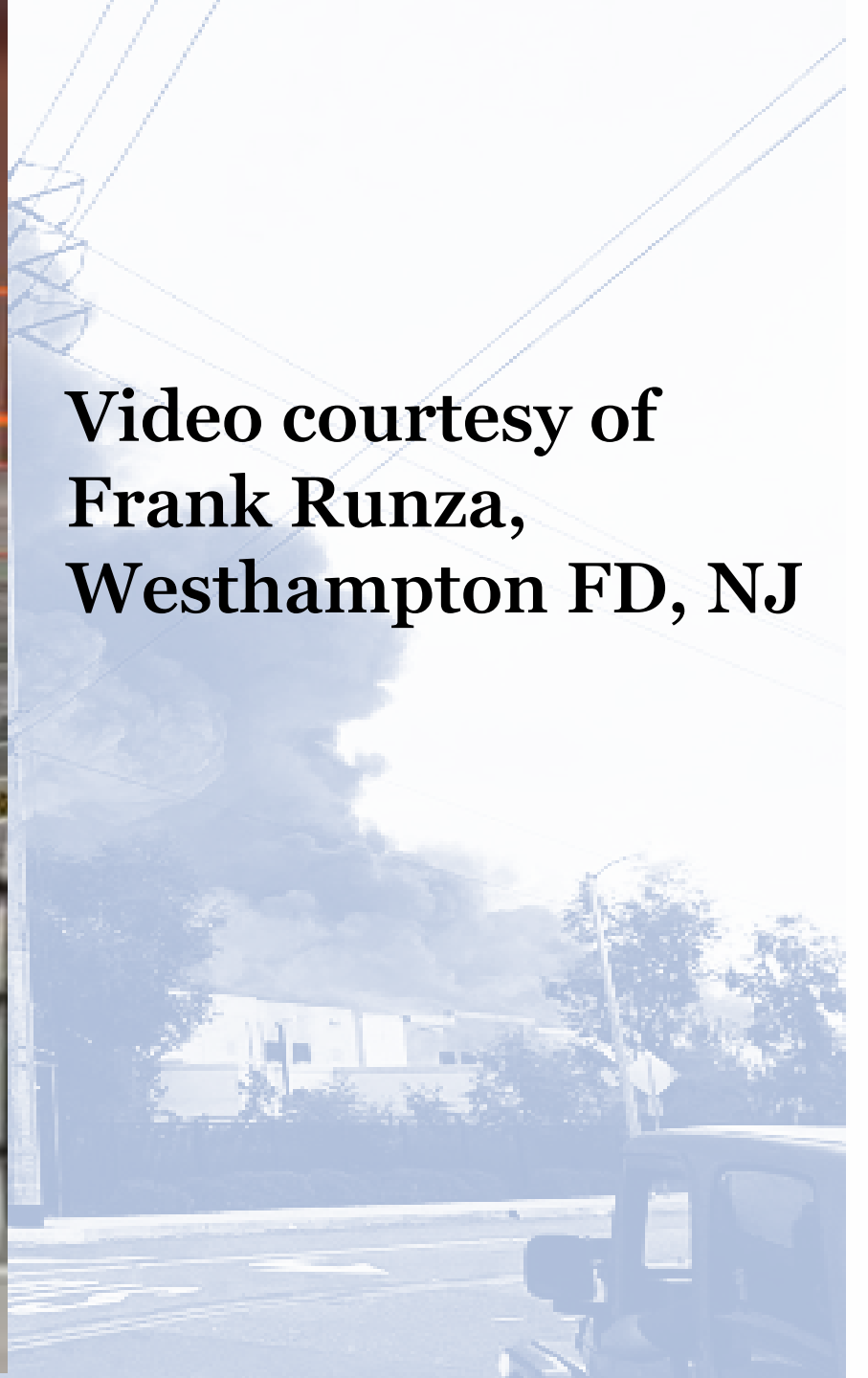


Pictures Courtesy of Justin Reddig, Story County FD



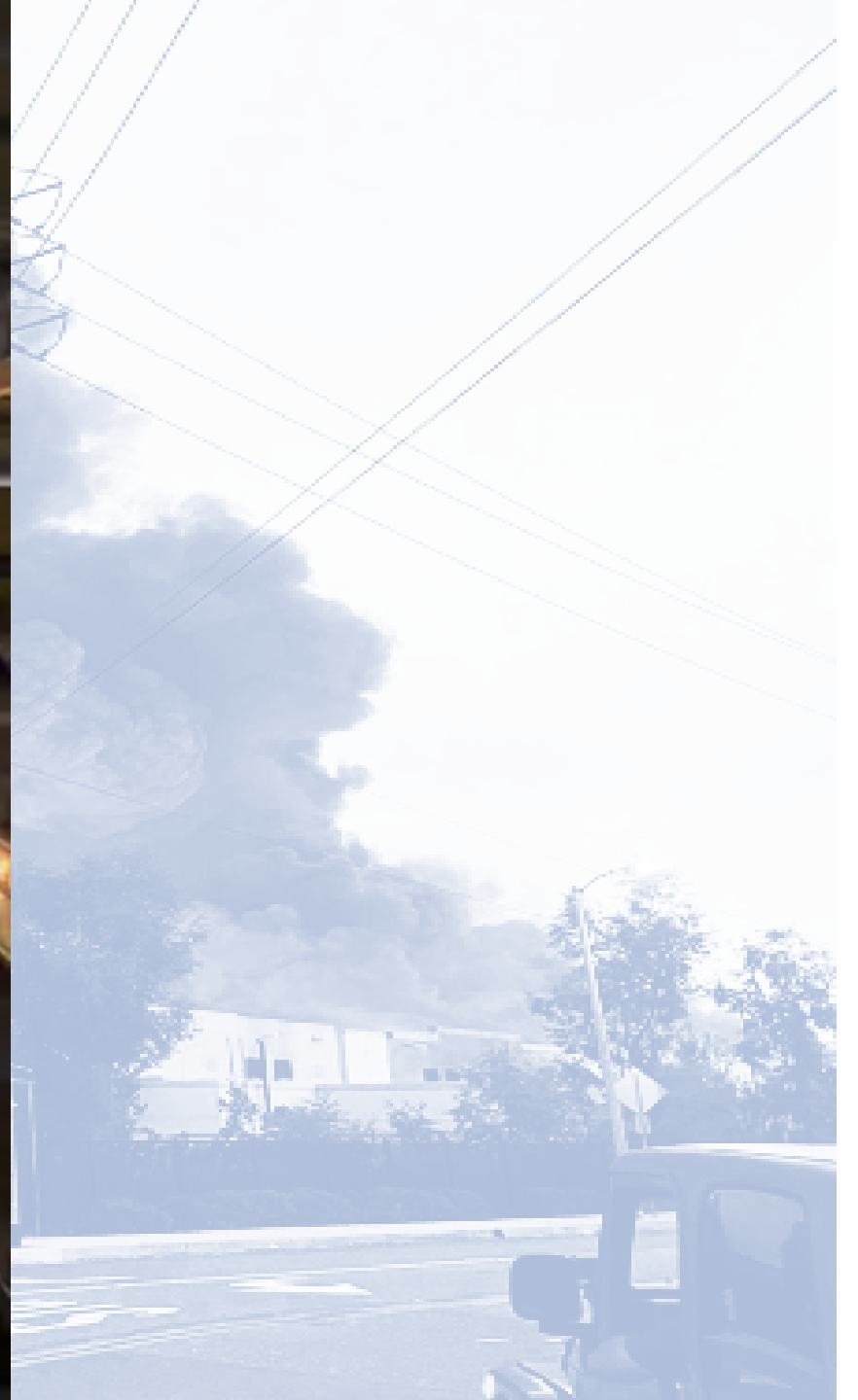






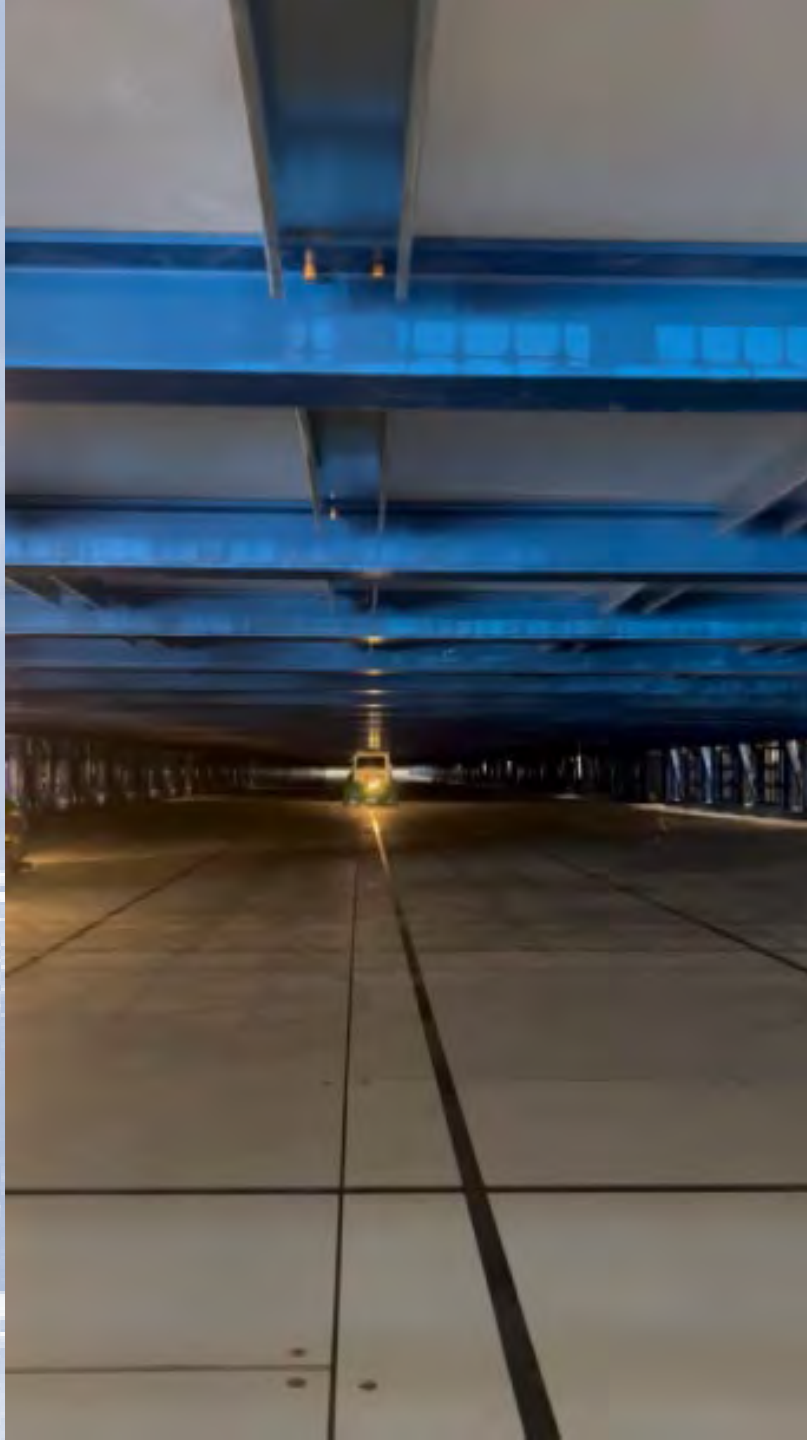
**Video courtesy of
Frank Runza,
Westhampton FD, NJ**















Large Commercial Fires SOP's?

“NIOSH 5”

C.A.I.R.S

1. Communication
2. Accountability
3. Incident Command
4. Risk Assessment
5. SOP-lack of or failure to follow

“There is a tendency to believe that since a certain practice has thus far not killed us, that it is an acceptable practice”

-Don Abbot, Project Mayday



Arthur Ashley-Lexington KY
Chip Ashford-St. Louis
Jay Bonnifield-Evert WA
Brian Brush-Midwest, OK
Ben Buttons, AK
Ed Collett
Glen Corbet-John Jay College
Chad Dailey-KC, MO
Jimmy Davis-Chicago
Mike Dugan-FDNY
Nels Eastguard-Clark County
Rob Fisher-Snohomish WA
Mike Galliano-Seattle
Richard Gassaway
Phillip Grandon-Lubbock
Bill Gustin Miami Dade
Ed Hadfield-Firetown
James Johnson-Vancouver
Jason Jones-Cobb County
Ron Kanterman
Andoni Kastros Sacramento City

Dennis LeGear-Oakland
Steve Leyton-Phoenix Fire
Frank Leeb-FDNY
Darryl Liggins-Oakland
Nick Martin-Salisbery, N Carolina
Brian Matson-Seattle
Justin McWilliams-Clakamus, OR
John Norman-FDNY
Chris Naum-Buildings on Fire
Steve Reno-Bellview WA
Paul Shipero-Las Vegas
Andy Soccodato-Tennessee
Kyle Smith-Cobb County
Keith Stakes-UL
Andrew Tom-LA City
Eric Tollund-Denver
Craig Weinschenk-UL

30 Fires You Must Know-Goldfeder, Leeb

9000 Degrees-Sean Flynn

The Recovery-Brett Tarver Incident-Phoenix

Baltimore County After Action Review of a Commercial Building with a Mayday-July 18, 2023

Lessons Learned from a Large-Loss Fire Involving an ESFR Sprinkler System-HARWELL Fire Engineering Jan 2020

Career Fire Fighter Dies and Another is Seriously Burned Fighting an Arson Fire at a Commercial Strip Mall – Texas Report # F2017-14

LAFD Internal investigation of the Boyd St. Fire

Situational Awareness for Emergency Responders-Gassaway

Fire Officers Handbook of Tactics 4th Edition-Norman

Study of the Sofa Super Store Fire 2007-Bryner, Fuss, Klein, Putorti

Buildings on Fire-Chris Naum

Coordinating Ventilation- Papa

Project Mayday-Abbot

FF Disorientation Study-Mora

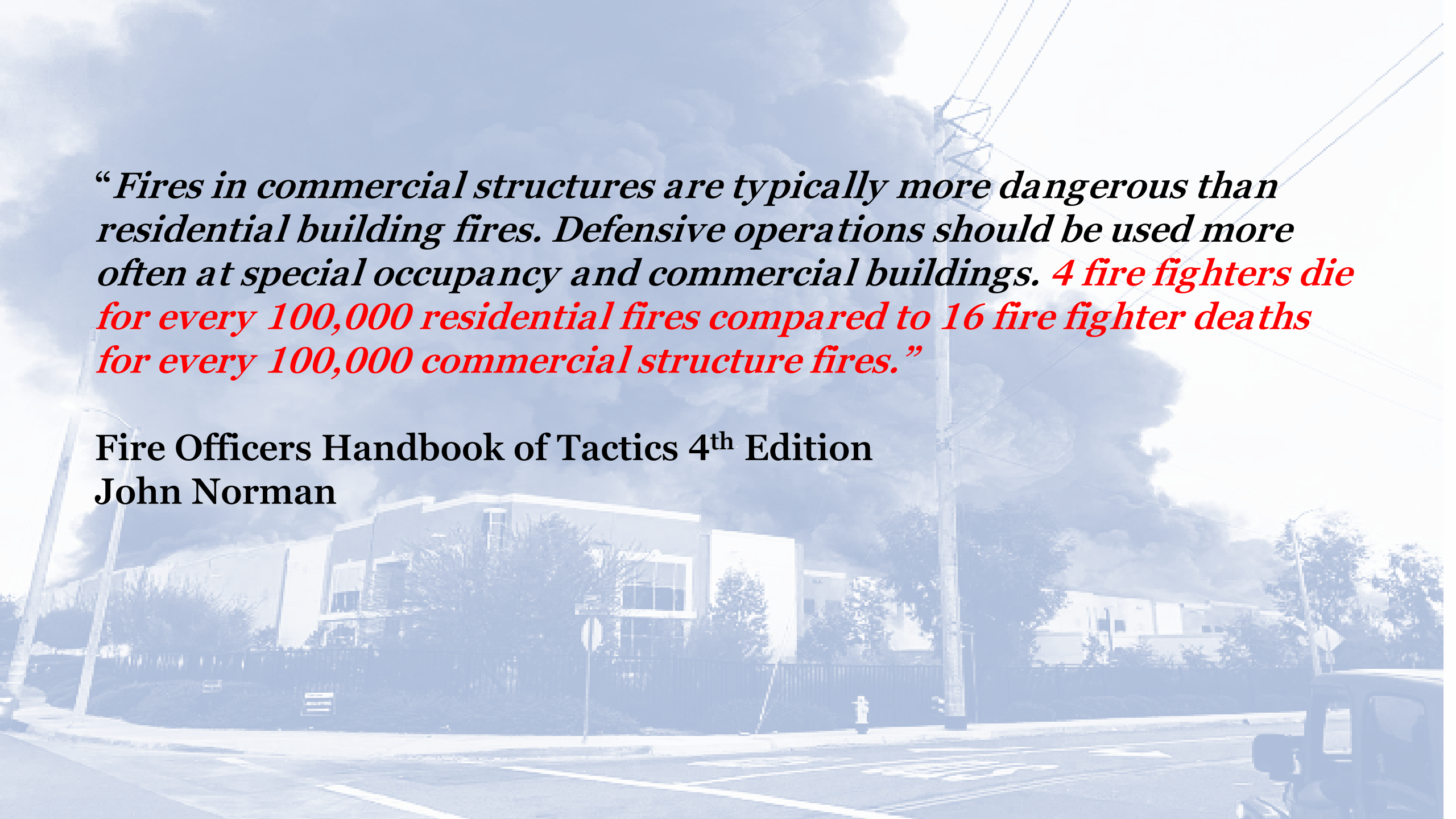
High Rise Buildings-Understanding Vertical Challenges-Tracy- Murphy

Building Codes Illustrated-Winkel

Fires in Storage Unit Facilities Pose Risk of Victims-Thompson, Fire Engineering 3/18/24

Water Thievery- Soccodato

Large Volume Water Delivery-Shipero

A blue-tinted photograph of a street scene. In the background, there is a two-story building with a dark fence in front of it. A utility pole with power lines is visible on the right side. A fire truck is partially visible in the bottom right corner. The sky is filled with large, dark clouds.

“Fires in commercial structures are typically more dangerous than residential building fires. Defensive operations should be used more often at special occupancy and commercial buildings. 4 fire fighters die for every 100,000 residential fires compared to 16 fire fighter deaths for every 100,000 commercial structure fires.”

**Fire Officers Handbook of Tactics 4th Edition
John Norman**

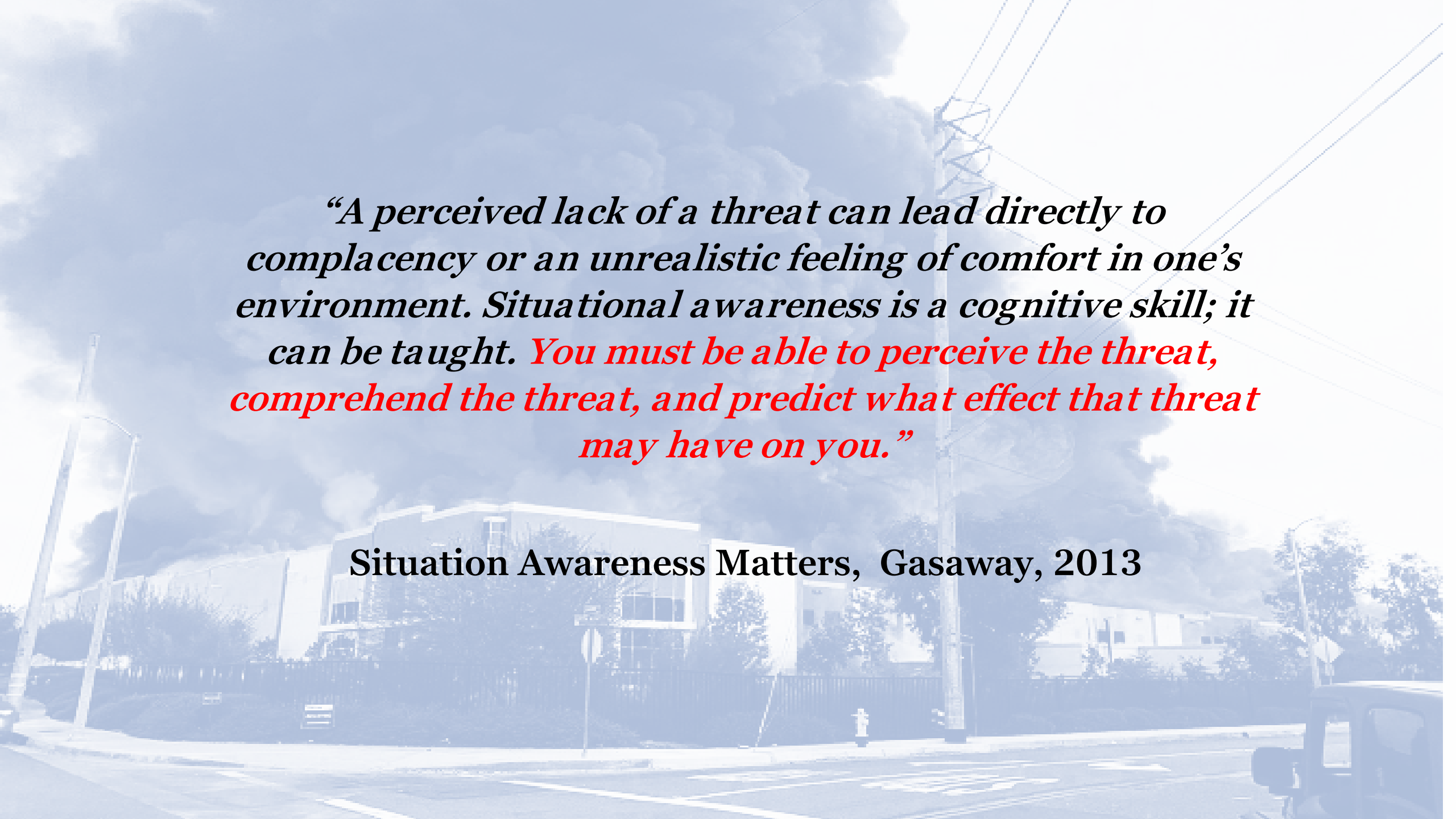
Don't take residential tactics and strategies into a commercial building.



Don't take residential **mentality**, tactics, and strategies into a commercial building.

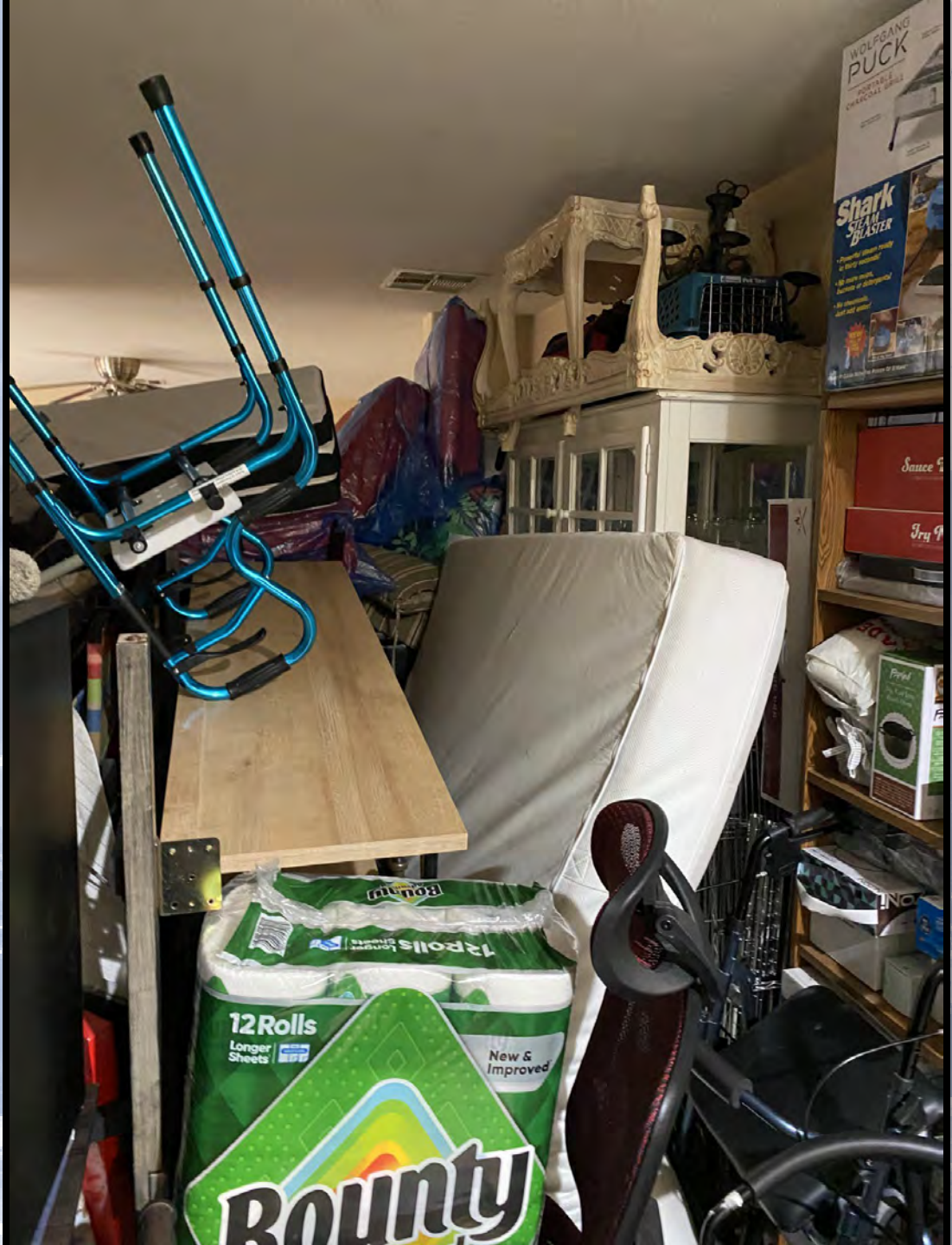






*“A perceived lack of a threat can lead directly to complacency or an unrealistic feeling of comfort in one’s environment. Situational awareness is a cognitive skill; it can be taught. **You must be able to perceive the threat, comprehend the threat, and predict what effect that threat may have on you.**”*

Situation Awareness Matters, Gasaway, 2013





SITUATIONAL AWARENESS

FOR EMERGENCY RESPONSE

PHYSICAL AND
MENTAL STRESS

TEAMWORK

COMMAND
SUPPORT

MISSION
AND GOALS

STAFFING

COMMUNICATIONS

RICHARD B. GASAWAY

Fire Engineering

Suppression

(All Suppression Personnel)

The CCFD allows



3 Levels of Situational Awareness For Commercial Building Fires

- 1. Capture**
- 2. Comprehension**
- 3. Prediction**

3 Levels of Situational Awareness For Commercial Building Fires

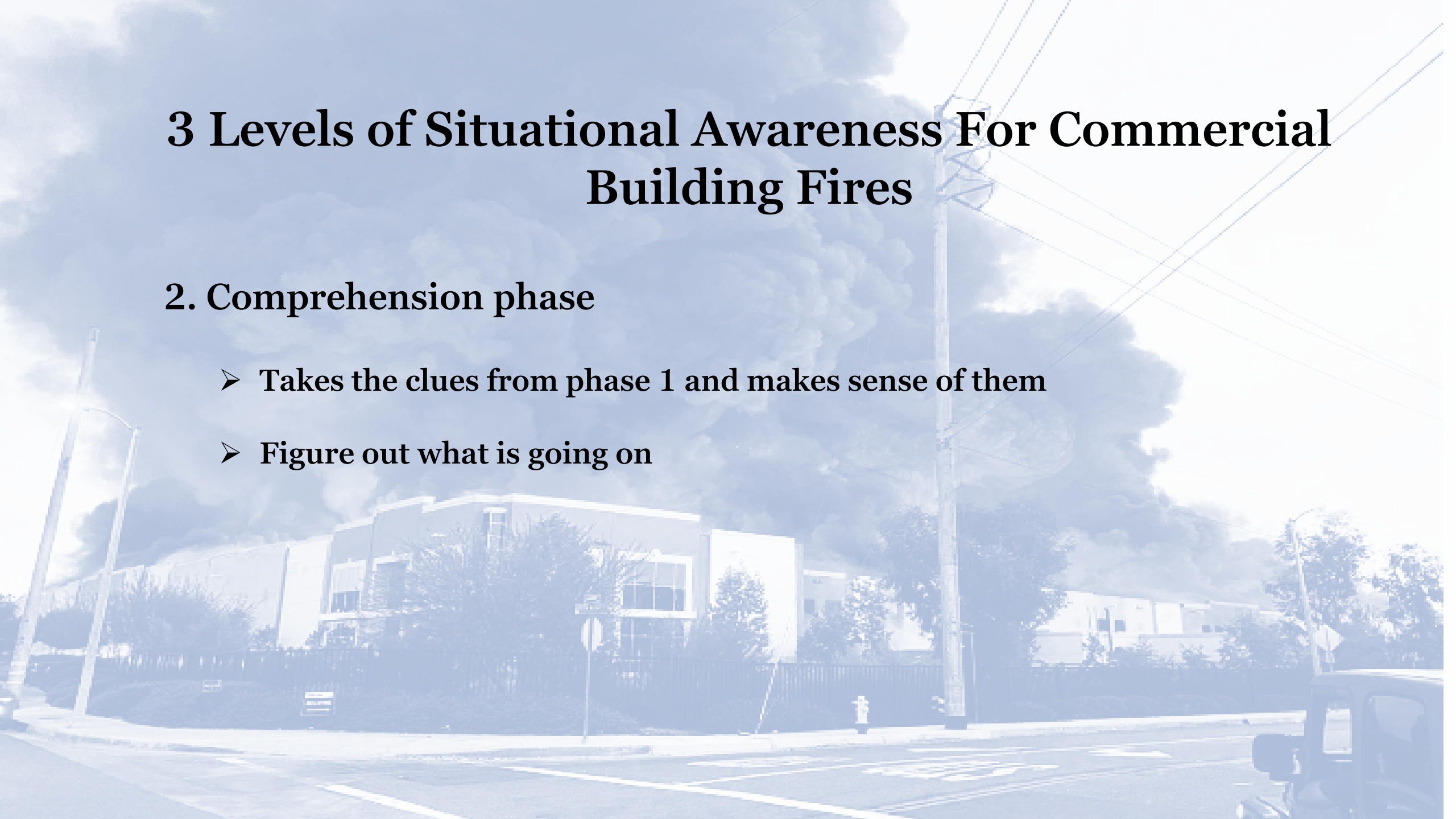
1. When the decision maker captures the cues of the current situation.

- Effective size up
- Perception-paying attention
- Must develop strong level 1 SA to comprehend #2 and #3

3 Levels of Situational Awareness For Commercial Building Fires

2. Comprehension phase

- Takes the clues from phase 1 and makes sense of them
- Figure out what is going on



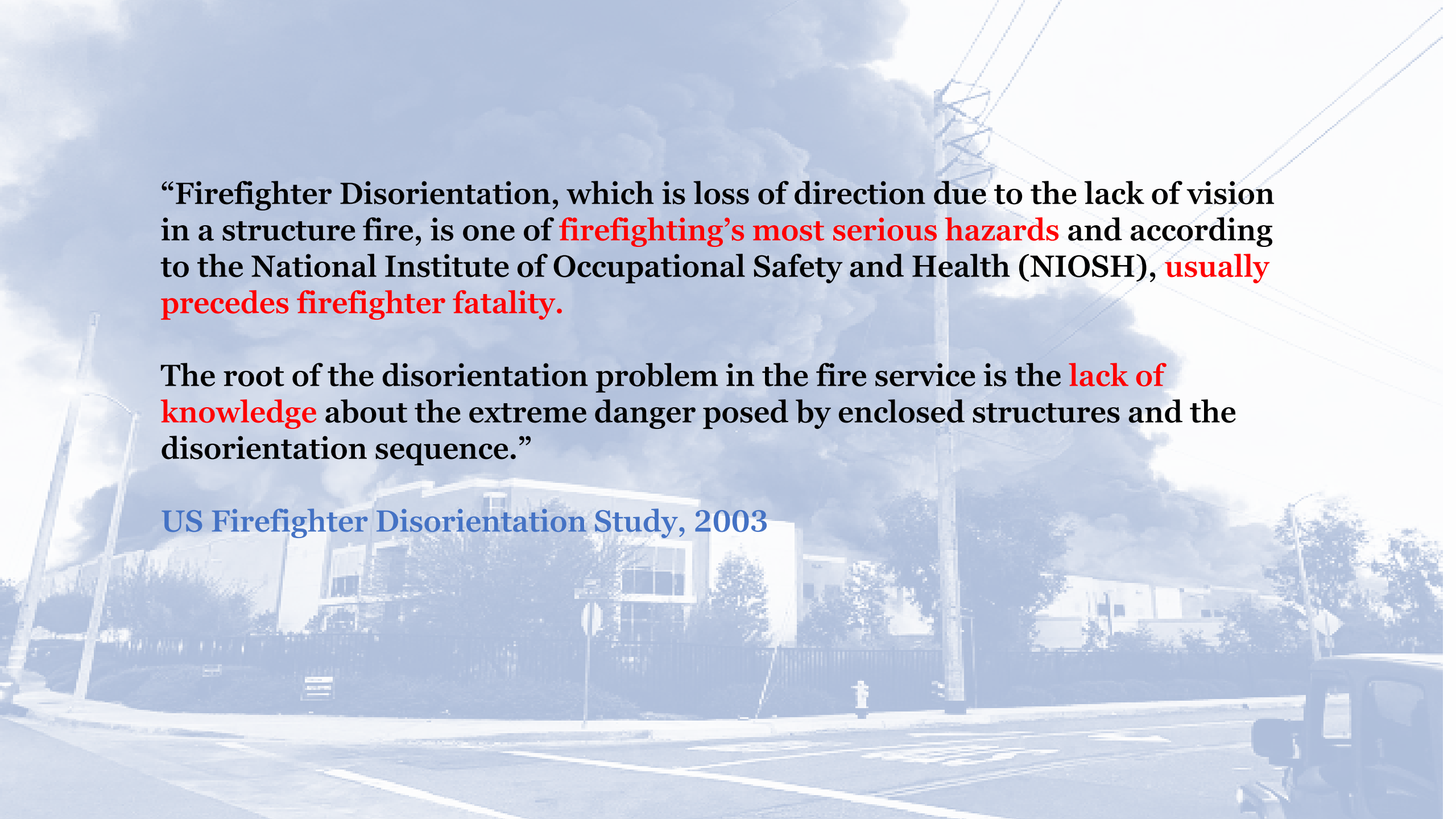
3 Levels of Situational Awareness For Commercial Building Fires

3. Prediction

- Decision maker has assumptions and predictions about future events
- Where is the incident headed?
- How long is it going to take to get there?
- Can the resources I have at this moment change the course of the incident in a favorable way without jeopardizing any lives?



- **Visibility?**
- **Egress?**
- **No dedicated aisles**
- **Product is not shrink wrapped or bound**
- **Product is stored directly on the floor and not on pallets**

A blue-tinted photograph of a residential street. In the background, there is a two-story house with a dark roof and a utility pole with power lines. A fire truck is partially visible in the bottom right corner. The sky is overcast with grey clouds.

“Firefighter Disorientation, which is loss of direction due to the lack of vision in a structure fire, is one of **firefighting’s most serious hazards** and according to the National Institute of Occupational Safety and Health (NIOSH), **usually precedes firefighter fatality.**”

The root of the disorientation problem in the fire service is the **lack of knowledge** about the extreme danger posed by enclosed structures and the disorientation sequence.”

US Firefighter Disorientation Study, 2003

6 Shirley Ave, Kitchener, Ontario, Canada

December 2010



- 400'x400' BBQ manufacturing facility
- A forklift was burning about 100-150' inside the building from the delta side
- The relief valve on the forklift propane tank activated and began torching boxes of BBQ's spreading the fire.
- Crews had a tough time locating it due to the cold smoke-TIC's not working
- David Bowman

Information courtesy of David Bowman



- The sprinkler system was originally designed for light commercial use—had not been updated
- The sprinklers were not able to contain the fire
- Crews had stretched a 2 (1.75”) lines flowing 150gpm off a gated wye fed by a (2.5”) line, zero visibility.



- BBQs were stored in 250lb boxes on the floor, not in racking.
- Boxes of BBQs were starting to fall around them due to being soaked with water by the sprinklers.
- They boxes covering the hose line- they were trapped on the wrong side
- Started climbing over the boxes



- They radioed command their actions and IC directed crews to put all the scene lighting at the roll up door they had open
- Firefighter had counted 124 steps out of the building
- Roof paced that off and cut their hole in that exact spot which ended up being right on top of the fire.
- Applied water in the hole from the roof







1. Capture

2. Comprehend

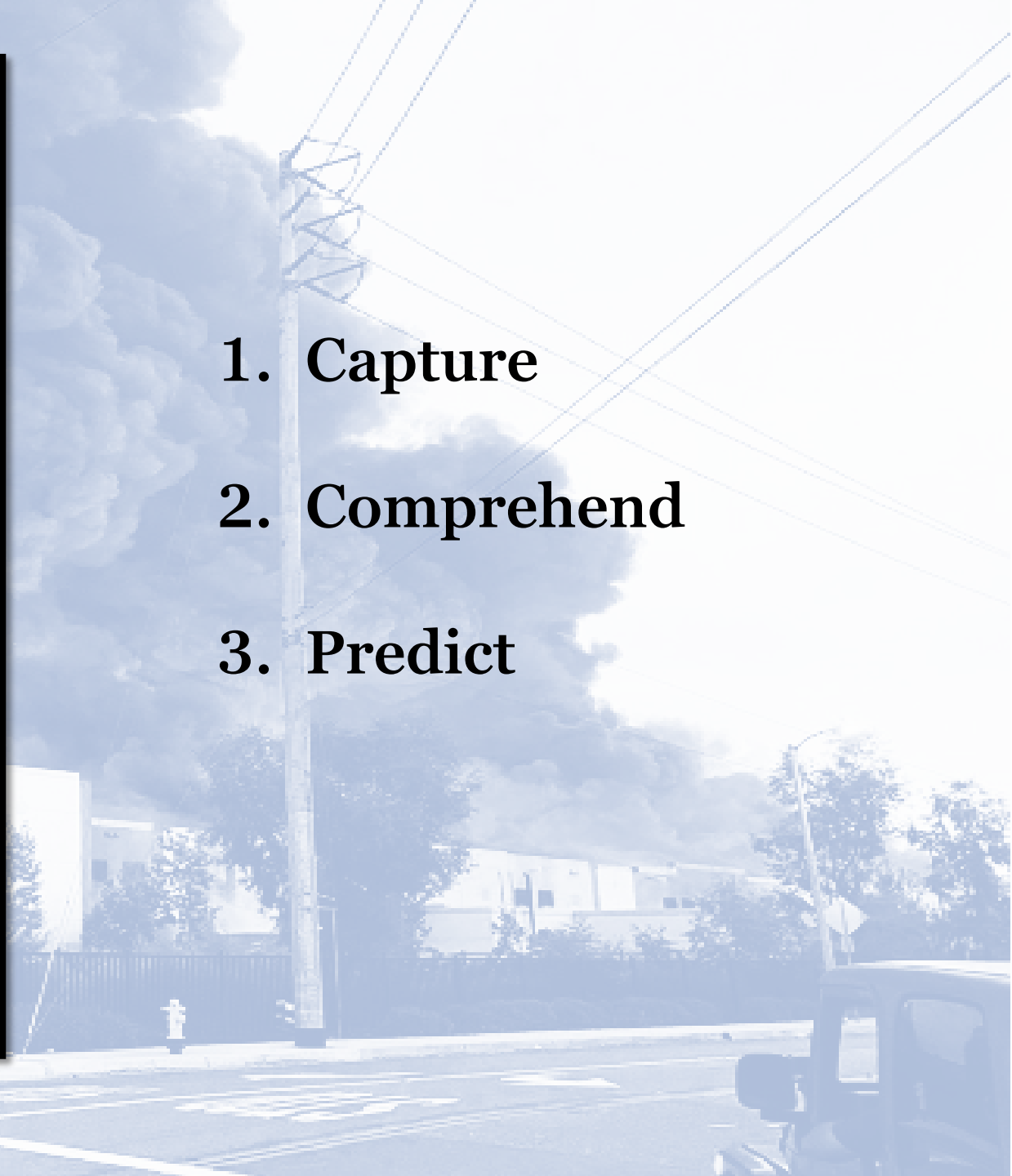
3. Predict



Photos courtesy of Phil Montgomery and Amanda Leigh



1. Capture
2. Comprehend
3. Predict





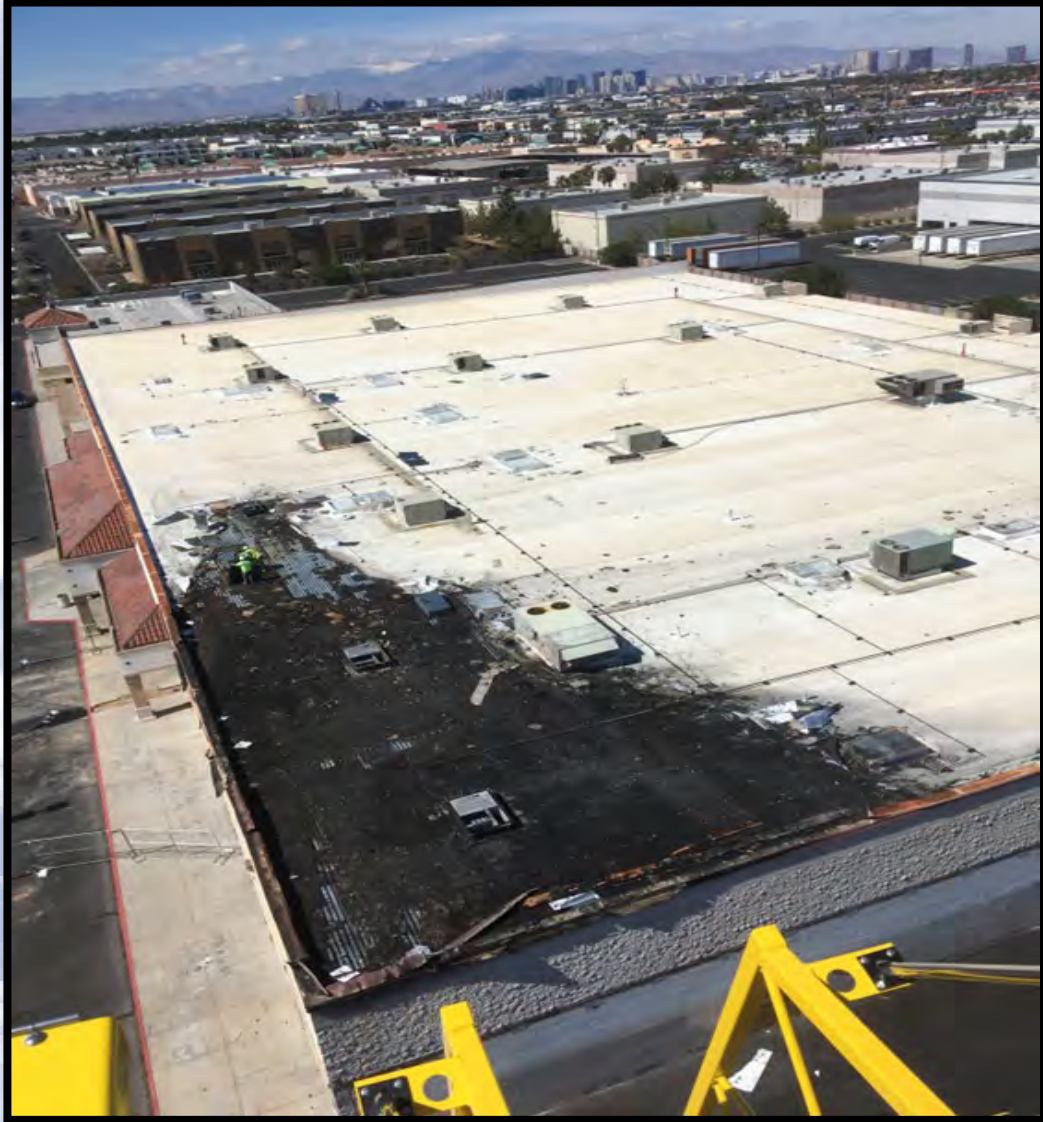
Photos courtesy of Jimmy Davis, Chicago FD



1. Capture
2. Comprehend
3. Predict

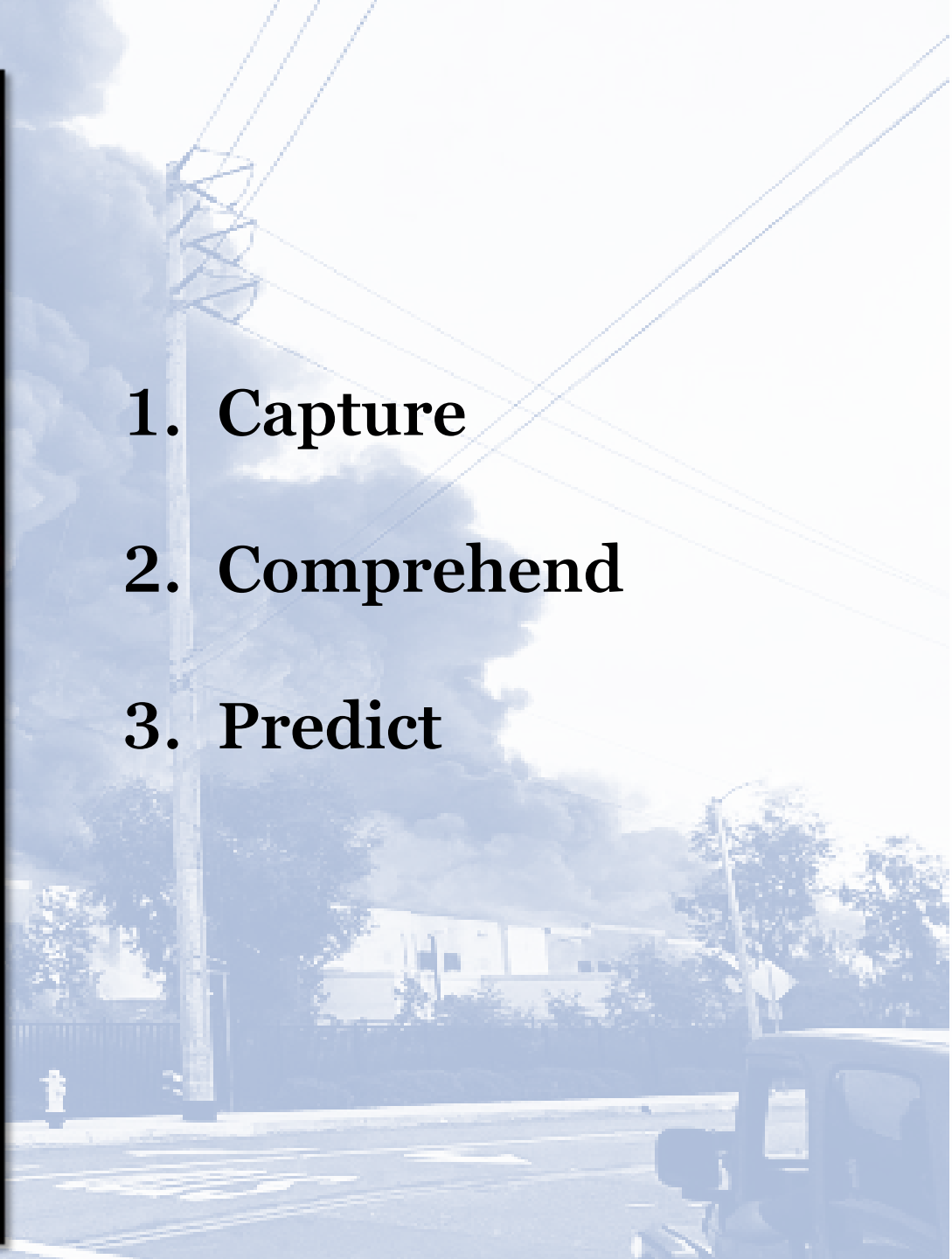








1. Capture
2. Comprehend
3. Predict











Information courtesy of Andrew Tom, LAFD



1. Capture
2. Comprehend
3. Predict

Due to the inherent dynamic nature of firefighting, a continually evaluated and communicated plan for rapid egress (evacuation) is essential when working at an incident.

Recognize, communicate, and mitigate potential dangers of narrow or blocked aiseways, stacked contents, or excessive storage.

Limiting entry and assigning companies to clear the egress route should be considered.


Develop company SOG's for emergency evacuation from the interior as well as the exterior or roof.

LA City FD internal review of the Boyd St fire



Photos courtesy of Jimmy Davis, Chicago FD



- 
- What building is this?
 - What is on fire?
 - Who is coming?
 - Are they physically and mentally prepared for a **commercial firefight?**



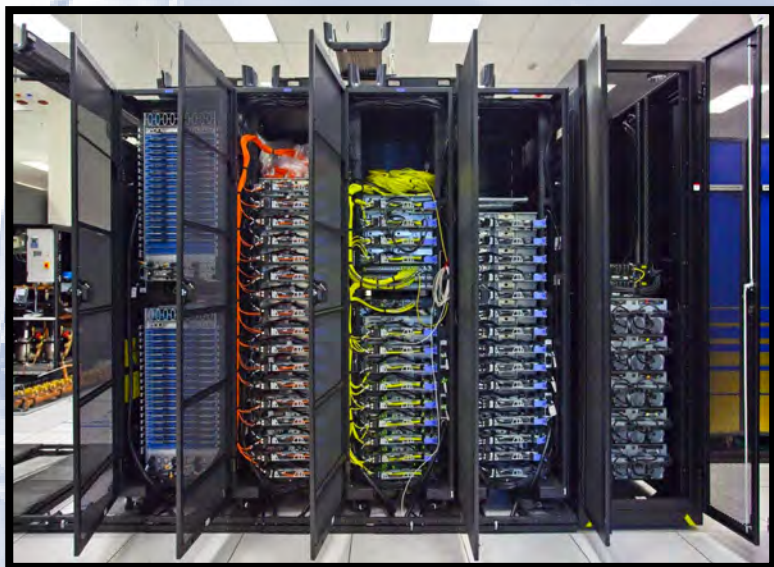
“If this does not make you nervous, you are not paying attention”

**Dan Shaw, Operations Chief (ret),
Fairfax, VA**

Occupancy



Occupancy



What needs to be saved?

- Building?
- Contents?
- Jobs?
- Community impact?
- Lives?



Occupancy

*“Occupants are awake and will successfully escape these structures, so the chance of people trapped is **extremely low**.”*

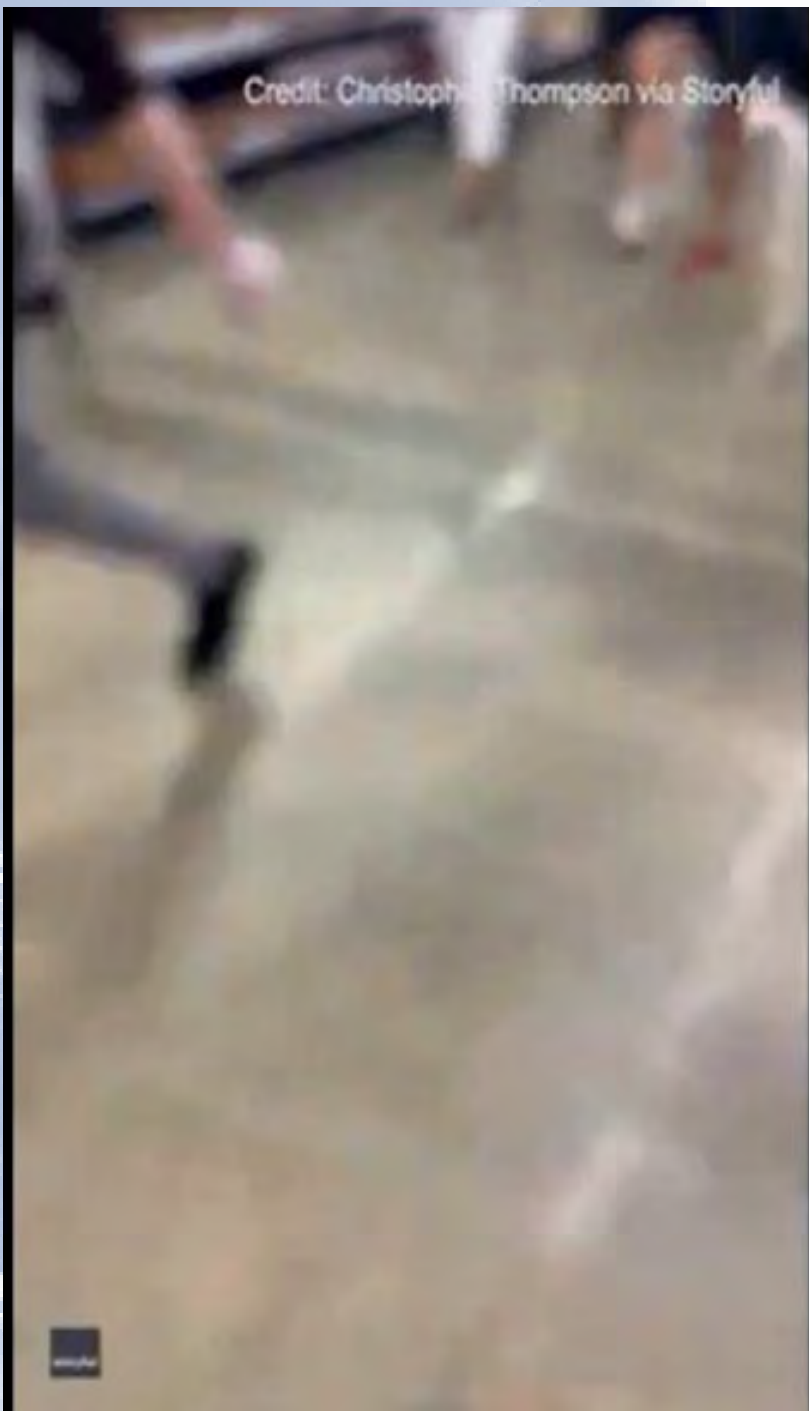
*Searches in commercial structures **should not be conducted** with the same aggressiveness required for residential occupancies since the civilian hazard is low.*

“Firefighters must recognize the risk to themselves compared to the benefit of the civilians and change the way they do business in store fires”

Fire Officers Handbook of Tactics 4th Edition
John Norman











1. Capture

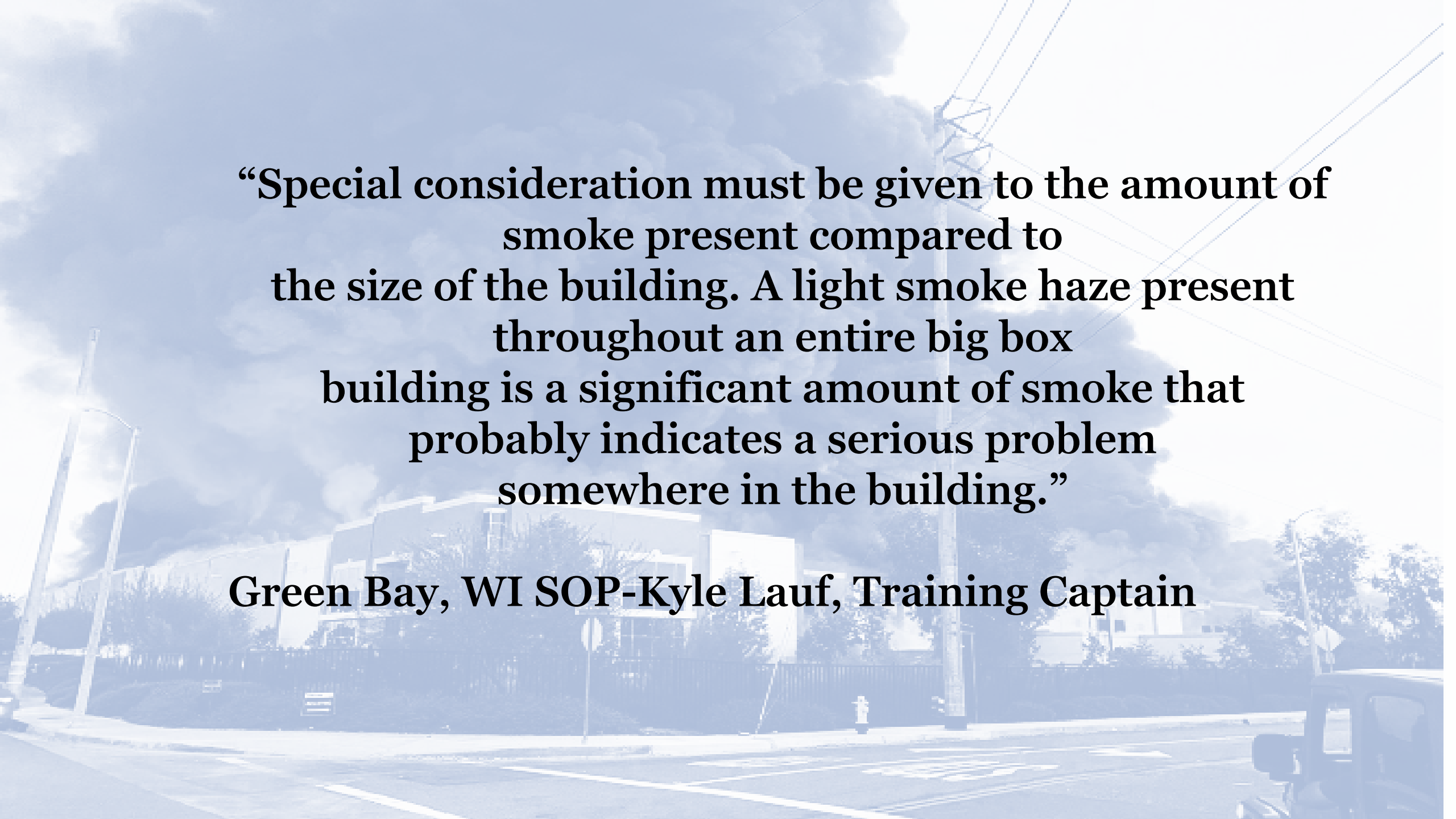
2. Comprehend

3. Predict



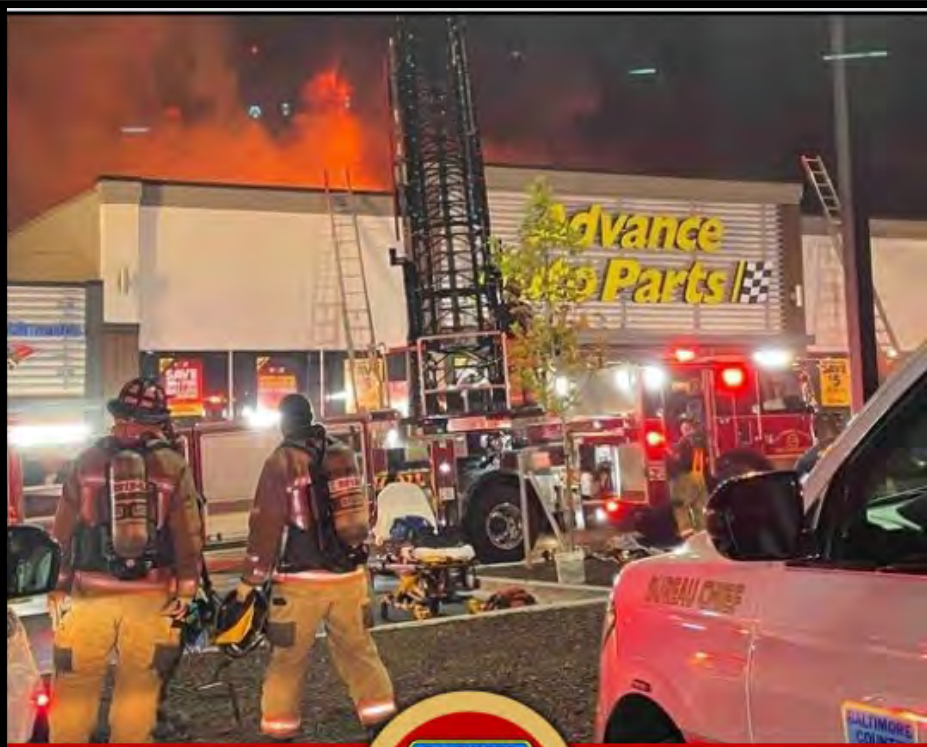
If, upon arrival, you have smoke showing from a door of a large commercial building, you either have:

1. A fire close to the entrance or
2. A very big fire



“Special consideration must be given to the amount of smoke present compared to the size of the building. A light smoke haze present throughout an entire big box building is a significant amount of smoke that probably indicates a serious problem somewhere in the building.”

Green Bay, WI SOP-Kyle Lauf, Training Captain



BALTIMORE COUNTY

FIRE DEPARTMENT

AFTER ACTION REVIEW REPORT

COMMERCIAL BUILDING FIRE WITH MAYDAY

ADVANCE AUTO PARTS
11909 REISTERSTOWN ROAD
REISTERSTOWN, MARYLAND 21136

JULY 18, 2023

FIRE CONDITIONS ON ARRIVAL



(still image from helmet camera footage)



BALTIMORE COUNTY FIRE DEPARTMENT

Mayday Monday-Fire Engineering-Tony Carroll
July 2025
LT Michael Dennis, T18

FIRE CONDITIONS ON ARRIVAL



(still image from helmet camera footage)



BALTIMORE COUNTY FIRE DEPARTMENT

- Large building
- High rack storage
- Fuel load
- Complicated layout
- Haz Mat



FIRE CONDITIONS ON ARRIVAL



(still image from helmet camera footage)



BALTIMORE COUNTY FIRE DEPARTMENT

- Large building
- High rack storage
- Fuel load
- Complicated layout
- Haz Mat
- Time of day

Arson Fires

FIRE CONDITIONS ON ARRIVAL



BALTIMORE COUNTY FIRE DEPARTMENT



- Use of accelerants
- Location of ignition
- Multiple points of ignition
- Disabled alarm system
- Fire protection system disabled
- Delayed notification
- Expect advanced fire conditions
- Water supply sabotaged
- Advanced force entry
- Potential booby traps

FIRE CONDITIONS ON ARRIVAL



1. Capture

2. Comprehend

3. Predict



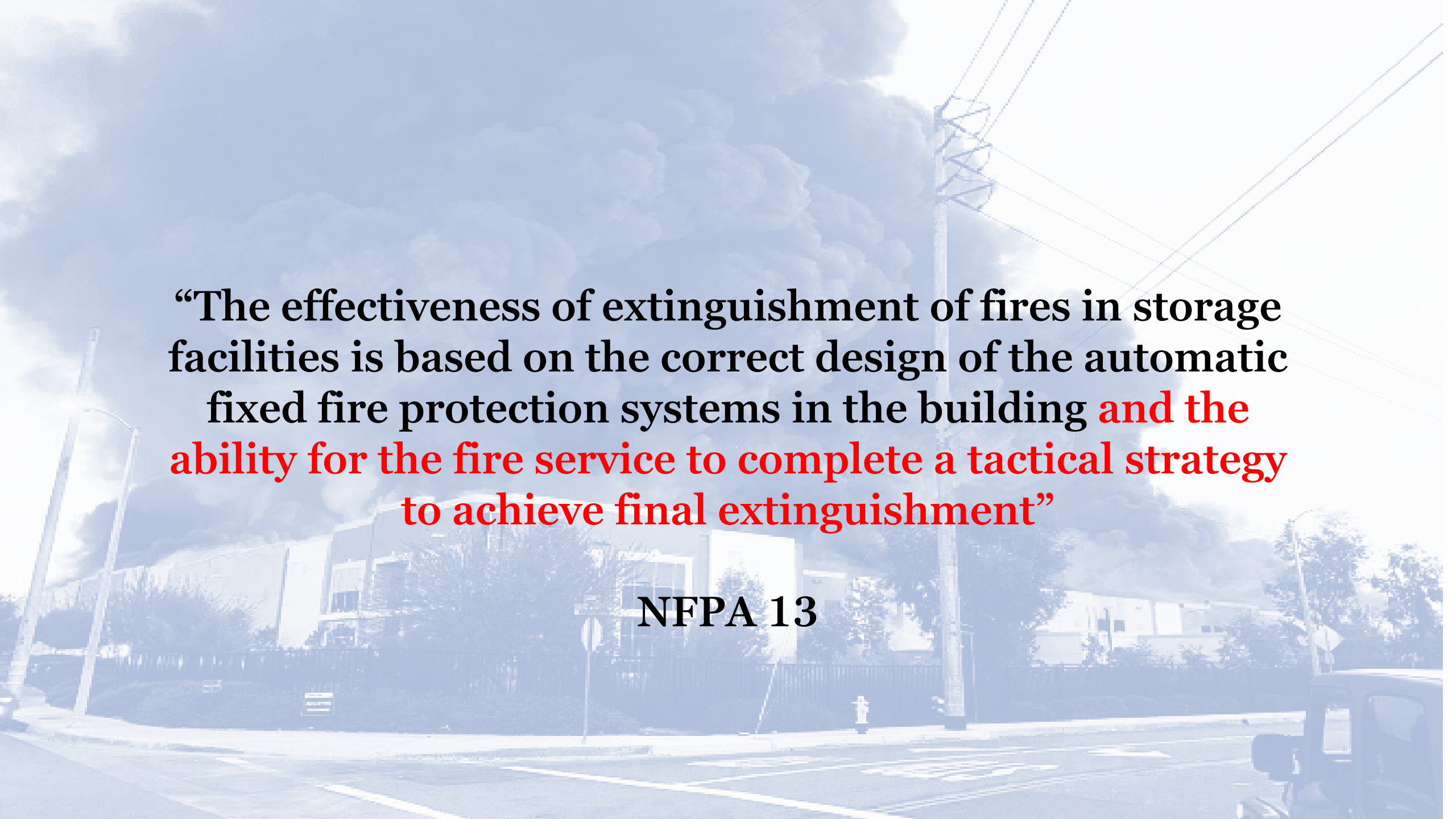
BALTIMORE COUNTY FIRE DEPARTMENT

Fire Protection Systems

A blue-tinted photograph of a modern building with a large fire plume rising from the roof, used as a background for the title 'Fire Protection Systems'. The scene includes a street with a utility pole, a fire hydrant, and a vehicle in the foreground.



**“I’m not worried about that building...It is
sprinklered”**



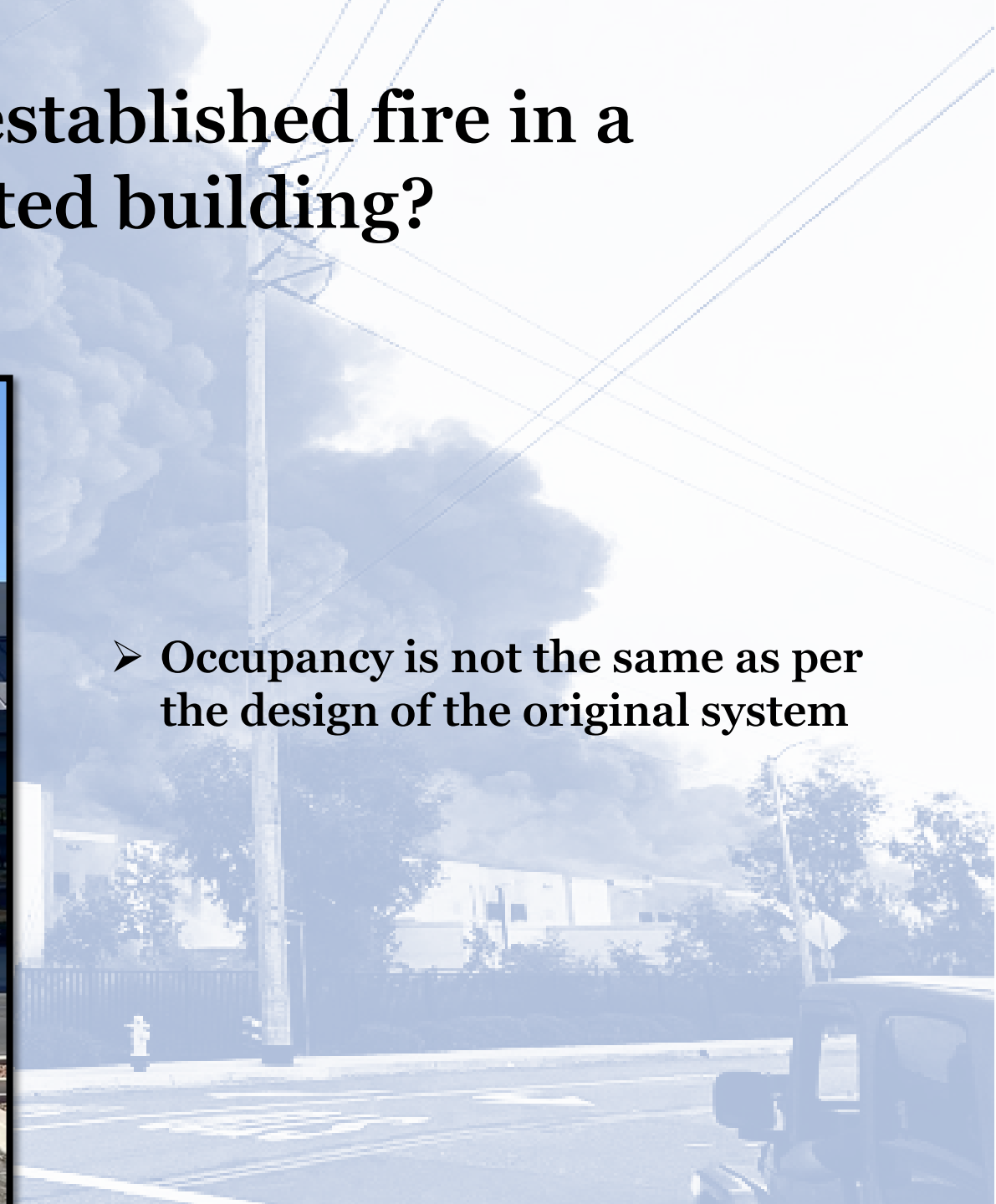
“The effectiveness of extinguishment of fires in storage facilities is based on the correct design of the automatic fixed fire protection systems in the building **and the ability for the fire service to complete a tactical strategy to achieve final extinguishment”**

NFPA 13

Why do I have a well-established fire in a sprinkler protected building?



- Occupancy is not the same as per the design of the original system



Why do I have a well-established fire in a sprinkler protected building?



- Poor maintenance
- Water supply capabilities
- Uncontrolled Ventilation

Why do I have a well-established fire in a sprinkler protected building?



- **Obstructions to discharge**

Why do I have a well-established fire in a sprinkler protected building?



- Maliciously set fires and fires set in multiple locations can overwhelm the capacity of the fire protection system.
- Sprinkler systems are designed to **contain** the fire by activating 1 or 2 sprinklers (25-30 GPM).
- The more sprinklers activated, the less GPM each sprinkler will discharge

Why do I have a well-established fire in a sprinkler protected building?



- Product is overwhelming
- System overrun
- Storage arrangements

Photos courtesy of Matt Poppe, Blue Ash, Ohio

Fire Protection Systems



Peach Tree GA Walmart August 24, 2022

- 14-year-old girl used a cigarette lighter by itself to start the multi-million-dollar blaze, with no flammable liquid or any other chemical accelerant.



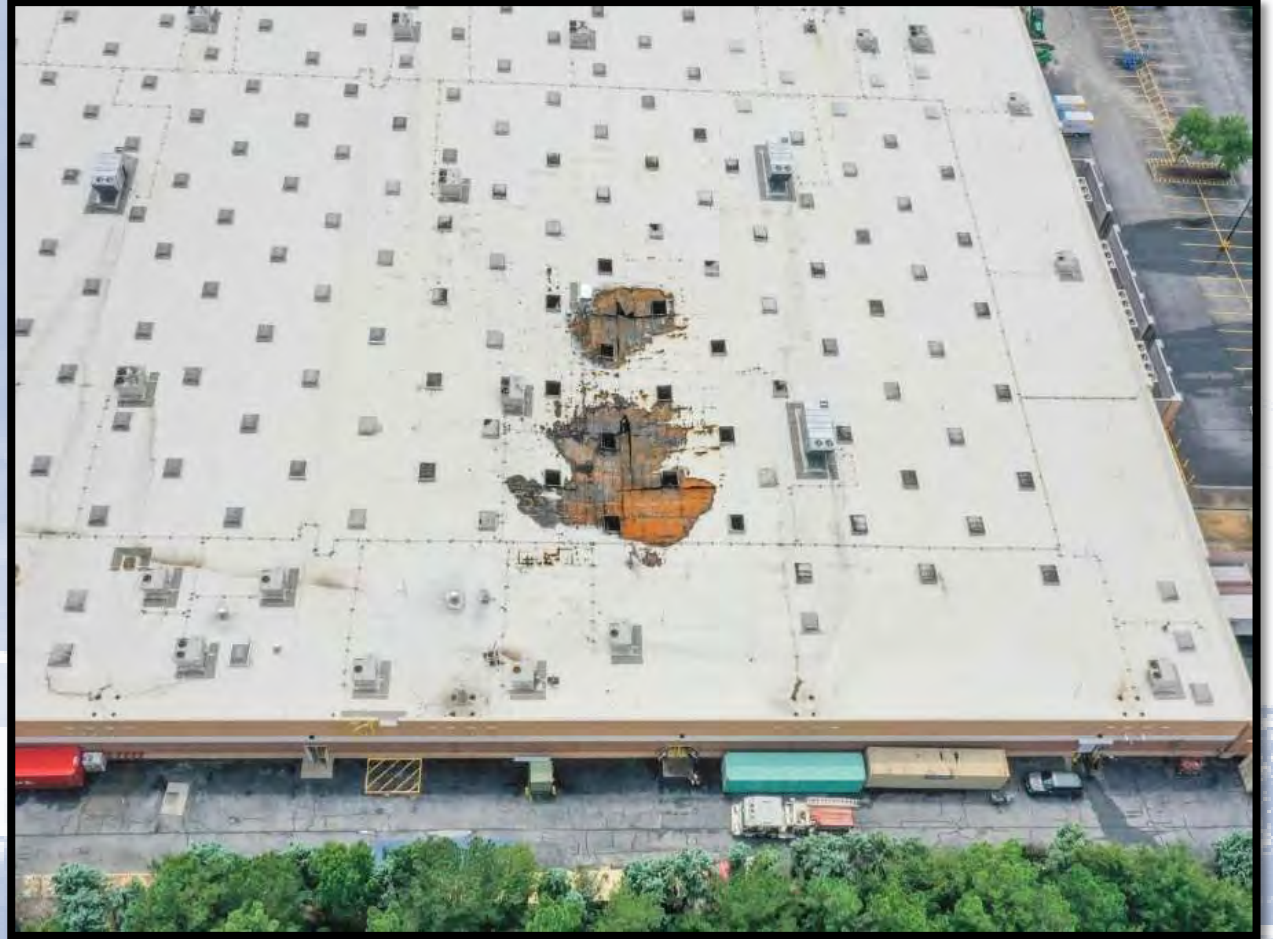
paper plates
PLATES DE PAPIER

foils & bags



SOLO
EXCLUSIVE DESIGN
3.59





Home Depot Spokane Washington May 20, 2022



- A woman used a container of TruFuel to start fire as a distraction so she could steal a six-pack of paper towels, a bag of Miracle-Gro, a roll of black wire and a potted plant
- The fire erupted into 25-foot flames that would have destroyed the building if not for the sprinkler system
- Home Depot officials estimated the cost of the destruction to be \$6 million to \$7 million



- One FF injured when he was struck by falling debris
- Plastic shrink wrap and nylon binding material burned off sending BBQs, pressure washers, and lawn mowers down on the companies
- Avoid operating in the aisle. Do not climb on shelving*
- Choose the appropriate hose and nozzle that allows you to operate outside of the hazard zone



- **Pool chemicals**
- **Batteries**
- **Fuel**
- **Pesticides**
- **Herbicides**

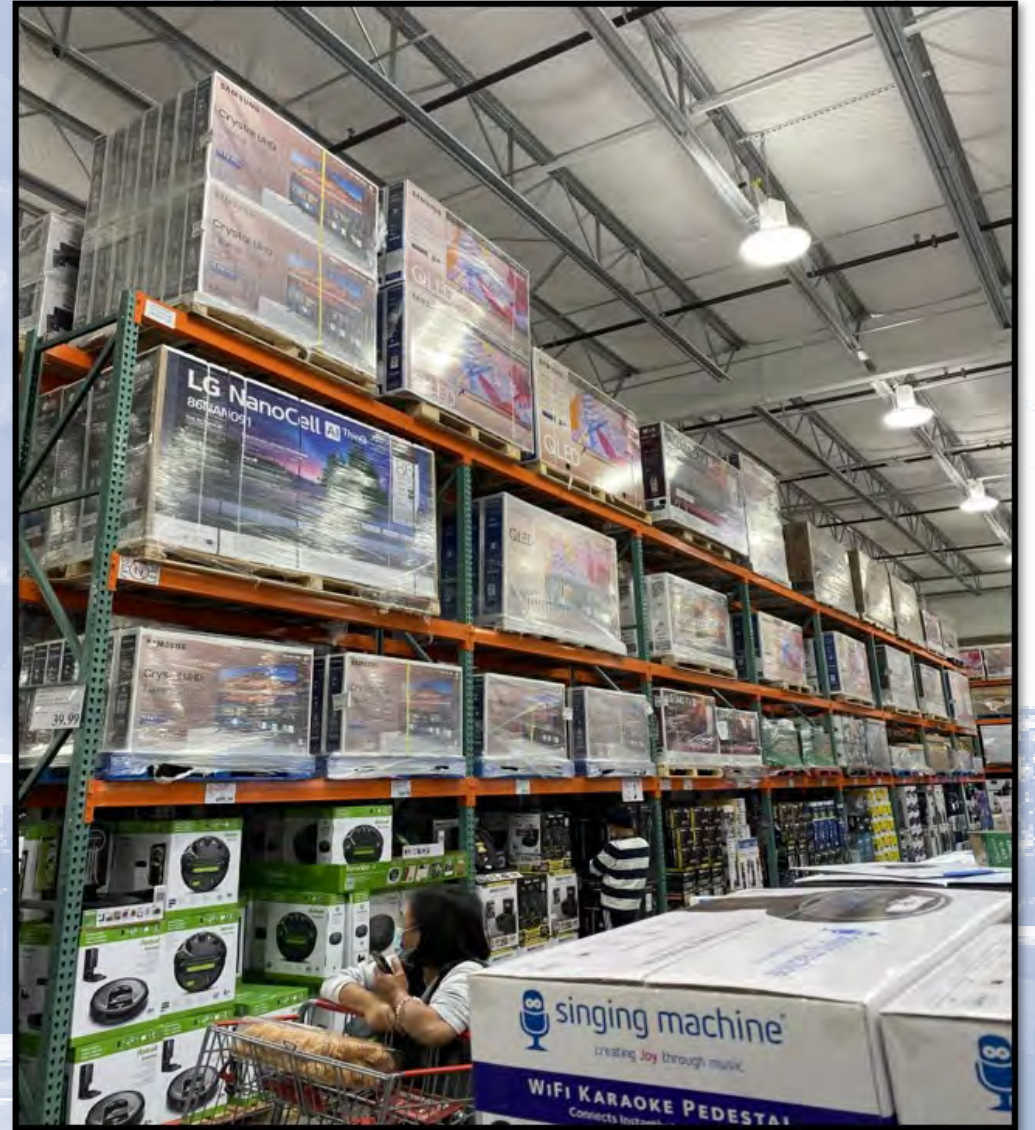


charcoal
CARBÓN

Please ask for assistance for items on this shelf - Do not exceed weight limit of 150 lbs

WESTERN MESQUITE BIG COOKING CHUNKS
WESTERN APPLE BIG COOKING CHUNKS
WESTERN HICKORY BIG COOKING CHUNKS
ALPINE FOREST
BIC Multi Purpose
Scripto Torch Flame Max
Scripto Torch Flame Max

WESTERN MESQUITE BIG COOKING CHUNKS
WESTERN APPLE BIG COOKING CHUNKS
WESTERN HICKORY BIG COOKING CHUNKS
TUMBLEWEEDS NATURAL FIRE STARTERS
PINE MOUNTAIN ROASTING LOGS
FATWOOD
PINE MOUNTAIN ROASTING LOGS



**Home Depot
San Jose, CA
April 9, 2022**

- 5-alarm
- \$17 million in damage
- Could be seen from space
- 27 YO man set the fire to distract workers while he shoplifted







Fire Protection Systems



- Cold smoke
- Increased CO due to-incomplete combustion
- Sinking fire gasses to the floor
- TIC might not work

Fire Protection Systems



- **Product collapse, building collapse**

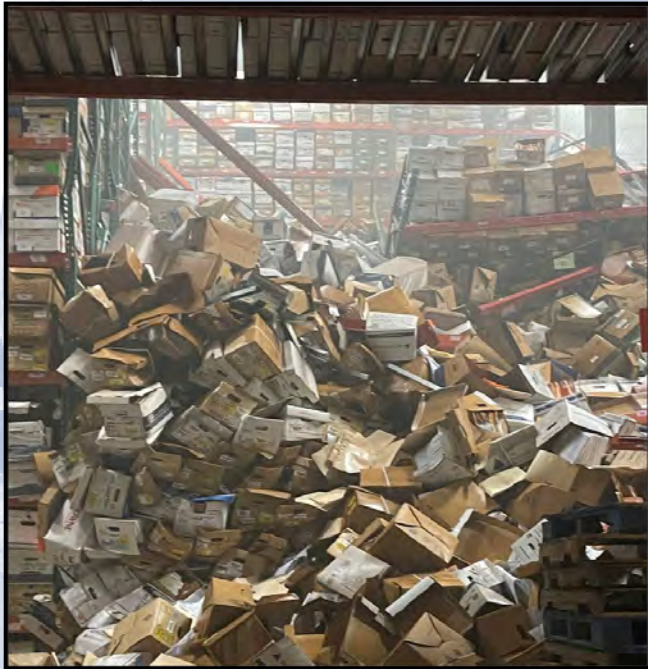
Access Warehouse Fire

Bartlett, IL

Feb. 3, 2022

- 90,537 Square Feet
- Document storage warehouse, 40' high
- Early Suppression Fast Response (ESFR) sprinkler heads – 100-160 GPM, 50-75psi
- System flowed 170,000 gallons onto boxes of paper stored on racks, more than doubling the weight of the product





- **Falling racks struck exterior walls, causing them to collapse**
- **Collapse pulled the roof down, shearing the sprinkler lines rendering the system ineffective and unusable**



JLT
photography



An important concern for fire fighters is knowing the design objectives of the system, since they may have been designed for extinguishment or for control.



➤ **Capture**

➤ **Comprehend**

➤ **Predict**



➤ **Capture**

➤ **Comprehend**

➤ **Predict**

Operations



SLOW DOWN!!!

High Risk-Low Frequency



What is the required fire flow for this building?

Do we have the appropriate:

- 1. Water supply $L \times W / 3$**
- 2. Resources**
- 3. Ability to support interior operations to meet the needs of this fire?**

If Not.....

We Are Going To Lose.....



A blue-tinted photograph of a street intersection. In the background, there is a two-story building with a brick facade and a large window. A utility pole with multiple power lines is visible on the right side of the frame. The sky is filled with large, dark clouds. The overall scene is captured from a low angle, looking across the street.

What are our goals?

What are we saving?

Offensive or defensive?

Defensive strategy

- Building size
- Building height
- Storage height, commodity
- Obvious signs of building or rack collapse
- Inadequate water supply
- Insufficient resources on scene yet
- Conditions indicating advanced fire and smoke conditions
- Lack of suppression system or system impairments
- Presence/involvement of lithium batteries
- Hazardous materials
- Specialized equipment

Assignments

Residential

- Fire Attack
- Search
- Roof/Vent
- RIT
- Utilities
- Water Supply

Assignments

Commercial

- Force/Ingress/Egress
 - Water Supply
 - FDC's
 - Fire Attack
 - RIT
 - Roof/Vent
 - A, B, C, D Divisions
 - Search

Force, Ingress, Egress



Force, Ingress, Egress



- First arriving company should recon to locate the fire prior to the stretch
- Cautious interior assessment*
- If the building has an office area in front, making the stretch from this point could hinder the fire attack making it cumbersome and slow
- Side “A” Syndrome

Force, Ingress, Egress



- Only 2 attack lines through 1 roll up door maximum to avoid spaghetti and confuse rapidly egressing companies*
- Man doors or roll ups?



Force, Ingress, Egress

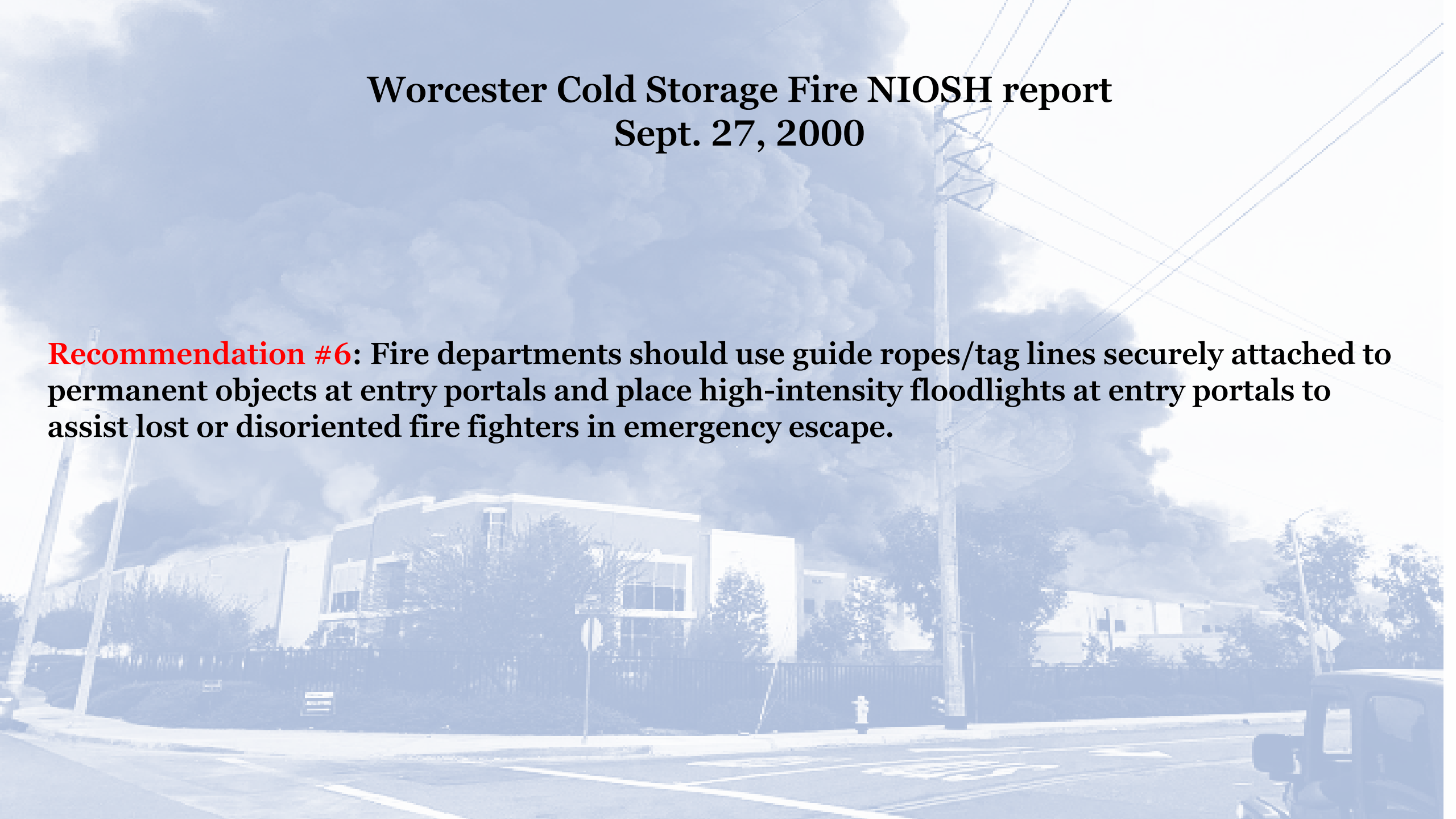


- Place flood lights at egress doors for lost or disoriented fire fighters

Worcester Cold Storage Fire NIOSH report

Sept. 27, 2000

Recommendation #6: Fire departments should use guide ropes/tag lines securely attached to permanent objects at entry portals and place high-intensity floodlights at entry portals to assist lost or disoriented fire fighters in emergency escape.



Force, Ingress, Egress



- We should keep these buildings closed up until fire control is achieved.
- The sprinkler system is designed to work in a vent-limited environment.
- If the building has a smoke evacuation system, ensure it is shut down

Photo courtesy of The Bill Gustin

Force, Ingress, Egress



- Do not indiscriminately open doors without a plan.
- Control ventilation

Force, Ingress, Egress



Amazon

Redlands, CA

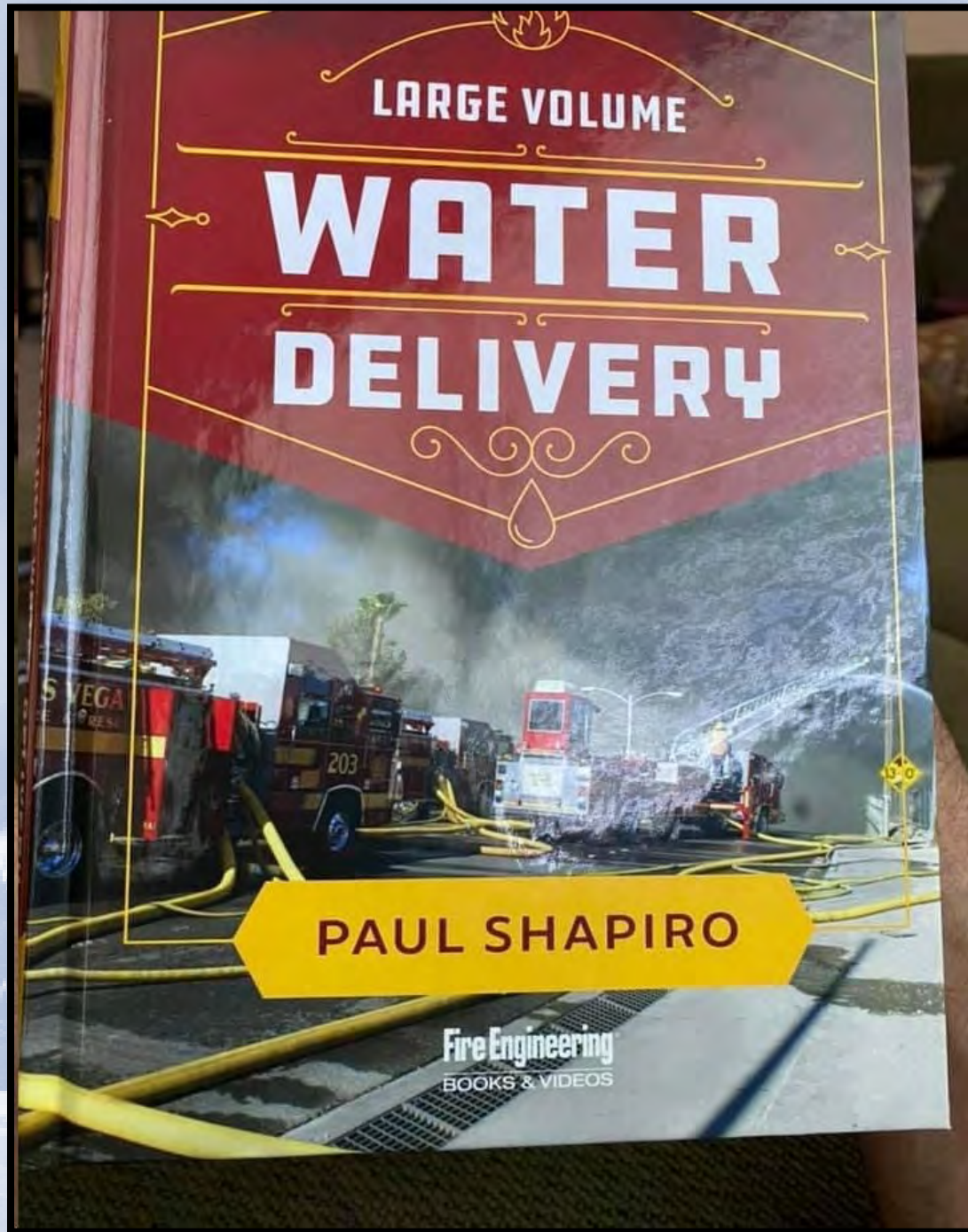
June 6, 2020

600,000 sqft warehouse

- Fifteen roof-mounted exhaust fans were part of a nonrequired smoke exhaust system.
- Fans remained operating in exhaust for environmental air supplying 399,000 cubic feet per minute air flow
- The report points out that with all the fans operating, it created a 100% ventilation contribution, which is consistent with major large-loss fires in the past.

Water Supply





Chapter 2
Pumping From the Hydrant
Pgs 21-57

Water Supply



- The water supply decisions of the first, second, and third due engines will set the stage for a successful fire attack operation



**(2) 3" outlets
1,300 GPM**

**(1) 5" outlet
2,165 GPM
+66%**

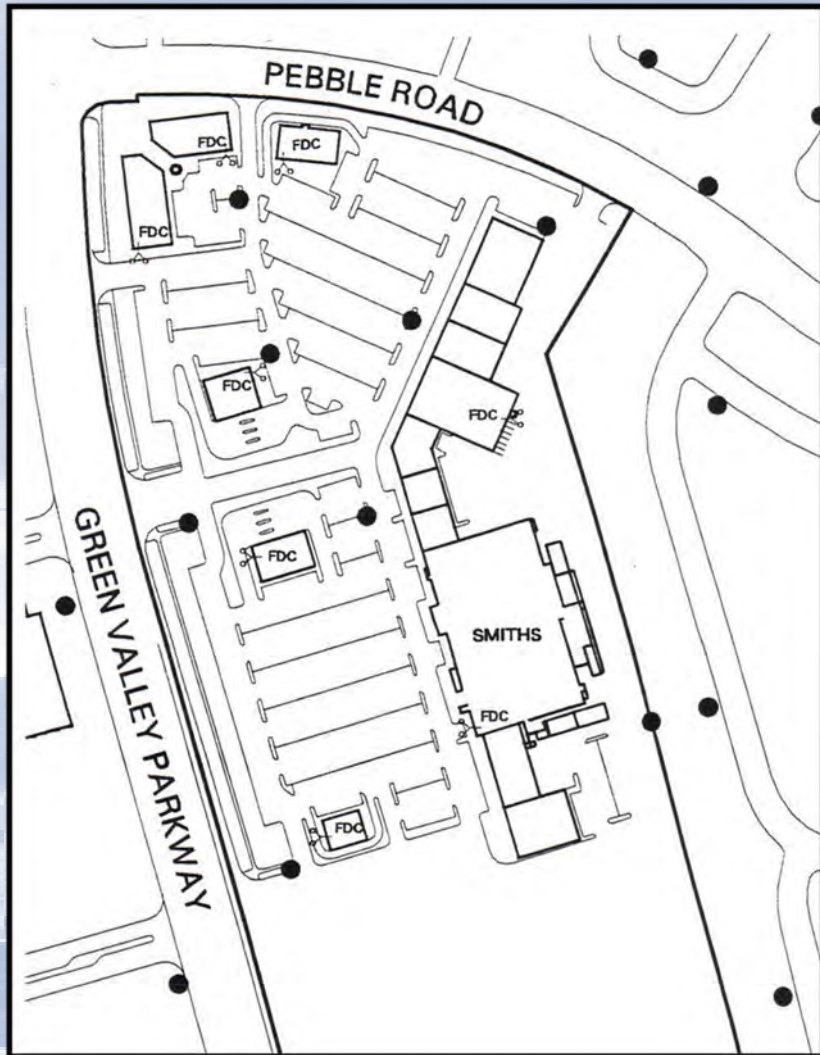
**(1) 5" + (2) 3" outlets
2,500 GPM
+16%**

Water Supply



- Recognize the need to supply multiple handlines, tower/ladder monitors, and ground level master stream monitors

Water Supply



- 1st company does not immediately stretch, they recon and determine the best location for access
- Second company reverse lays from the first company to the hydrant and source pumps to boost the pressure
- Communication
- Do not enter a big box using tank water with no backup

Water Supply



- Utilize the public hydrants in the street, not private hydrants in the complex
- Private hydrants are on the same supply as the sprinkler system and the fire pump

Water Supply



Amazon

Redlands, CA

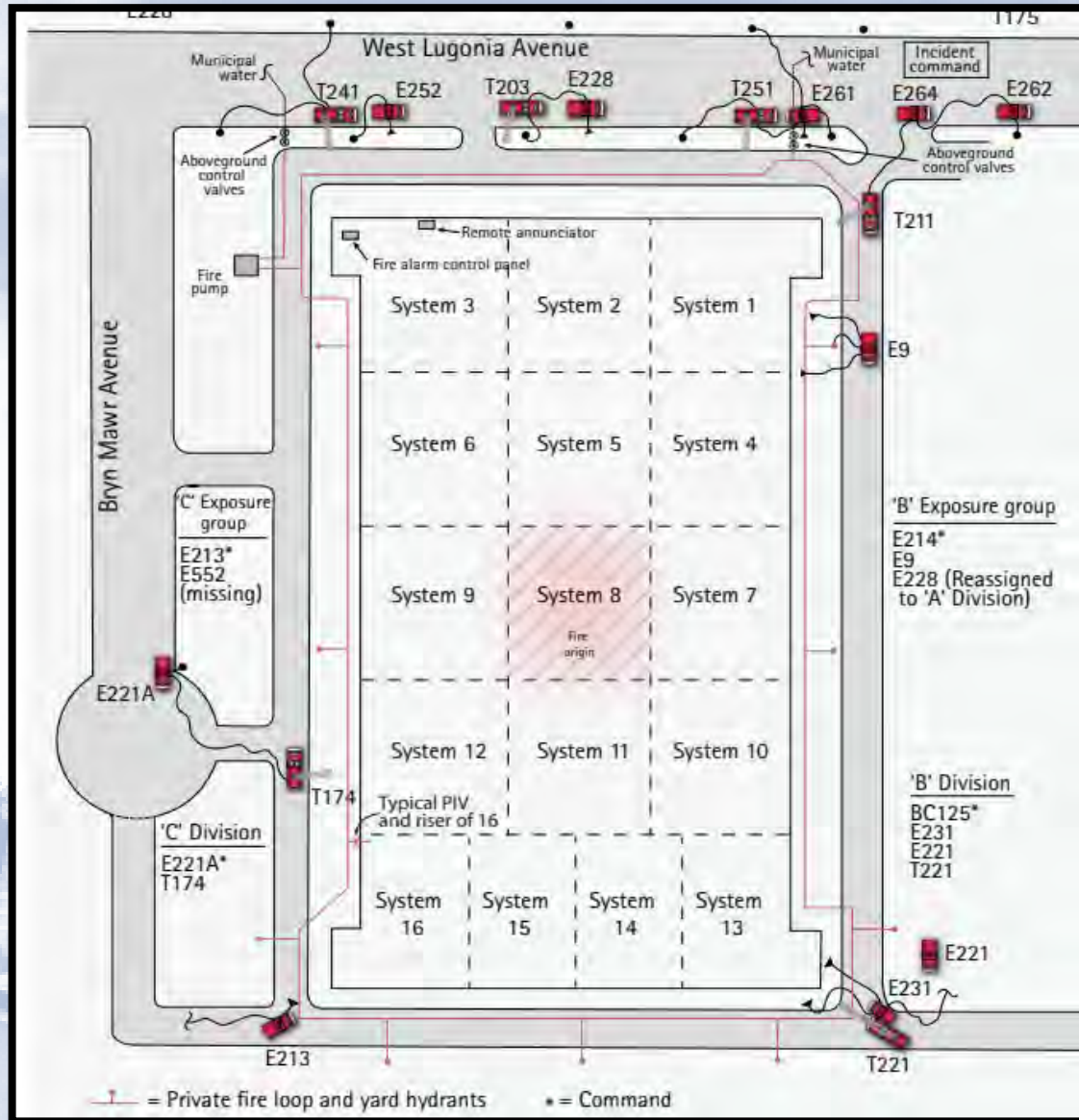
June 6, 2020

600,000 sqft warehouse

Early Suppression Fast
Response (ESFR) system
(reduces the need for in rack
sprinklers)

16 separate zones

Water Supply



- 10" private main
- 2,500 GPM pump
- 9 hydrants
- Sprinklers in all 16 zones were operating
- Companies hooking up to yard hydrants reported only 30 psi.

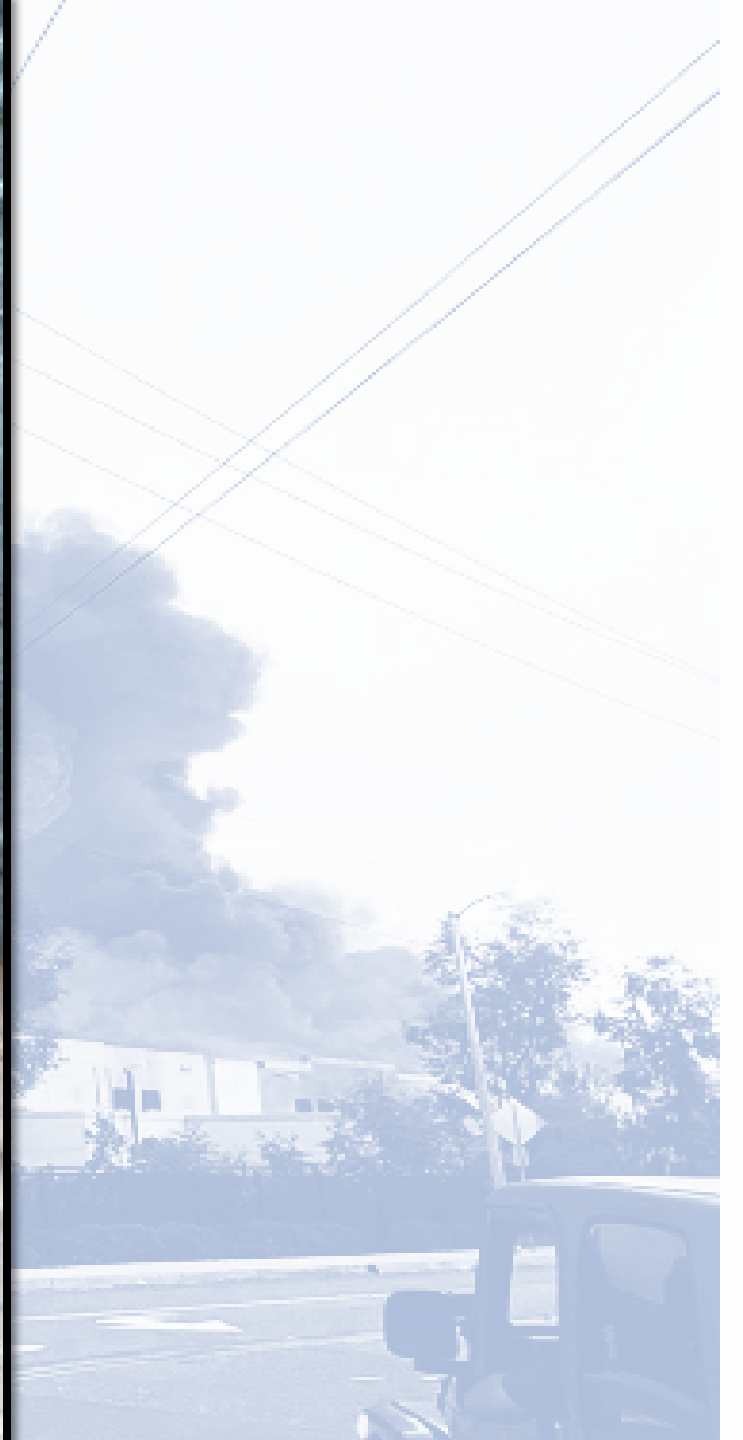


FDC's

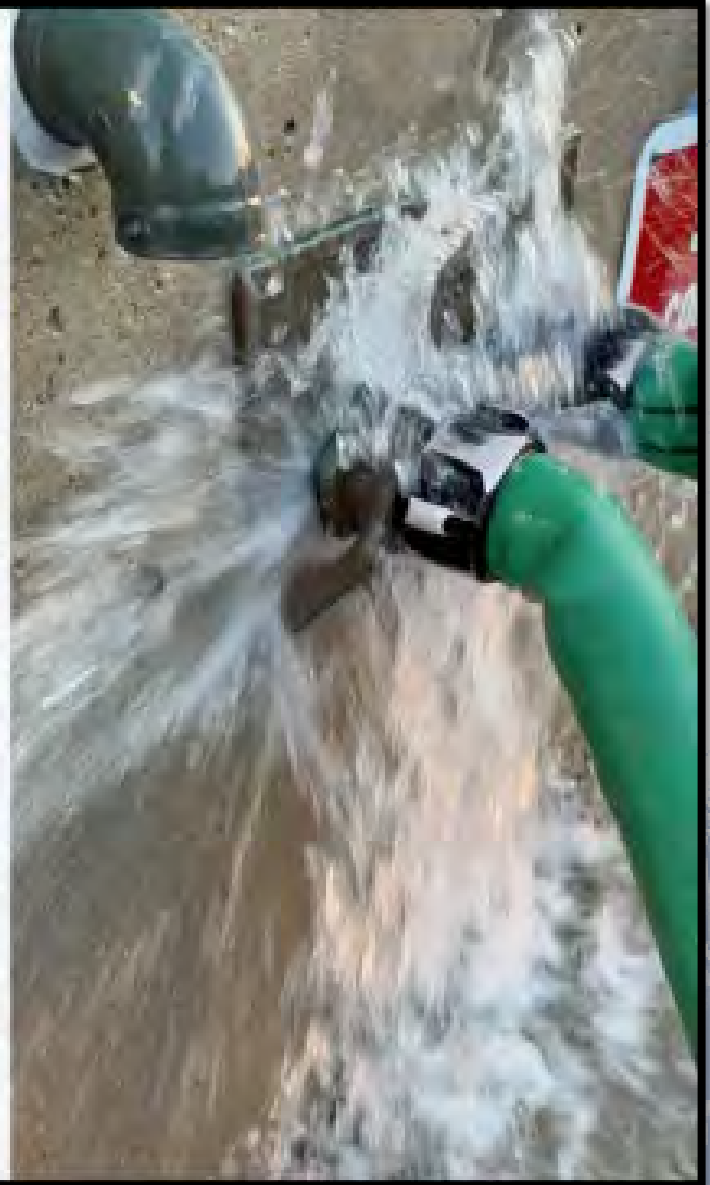
FDC's



- These systems are designed to be supplemented by fire department
- 150-170psi
- Assign personnel to the riser room to check the functionality of the system











SpeedSwivel FDC Adapter. Redheadbrass.com

FDC's



- Automatic sprinklers and/or fire pump should not be shut off until the fire has been extinguished

“Remove fire damaged goods and unburned commodities prior to shutting off water supplies (valves and pumps) for sprinkler systems. Do not shut the system down until you’re basically ready to leave”



**Walmart
Plainfield, IN
March 16, 2022
1.2M sqft**

- **Poor visibility due to cold smoke**
- **Correctly assumed the fire was being contained**



**Walmart
Plainfield, IN
March 16, 2022
1.2M sqft**

- Requested the sprinklers be shut off
- Fire pump was shut off



- Fire was being contained by the sprinklers
- When pump was shut off, containment was lost

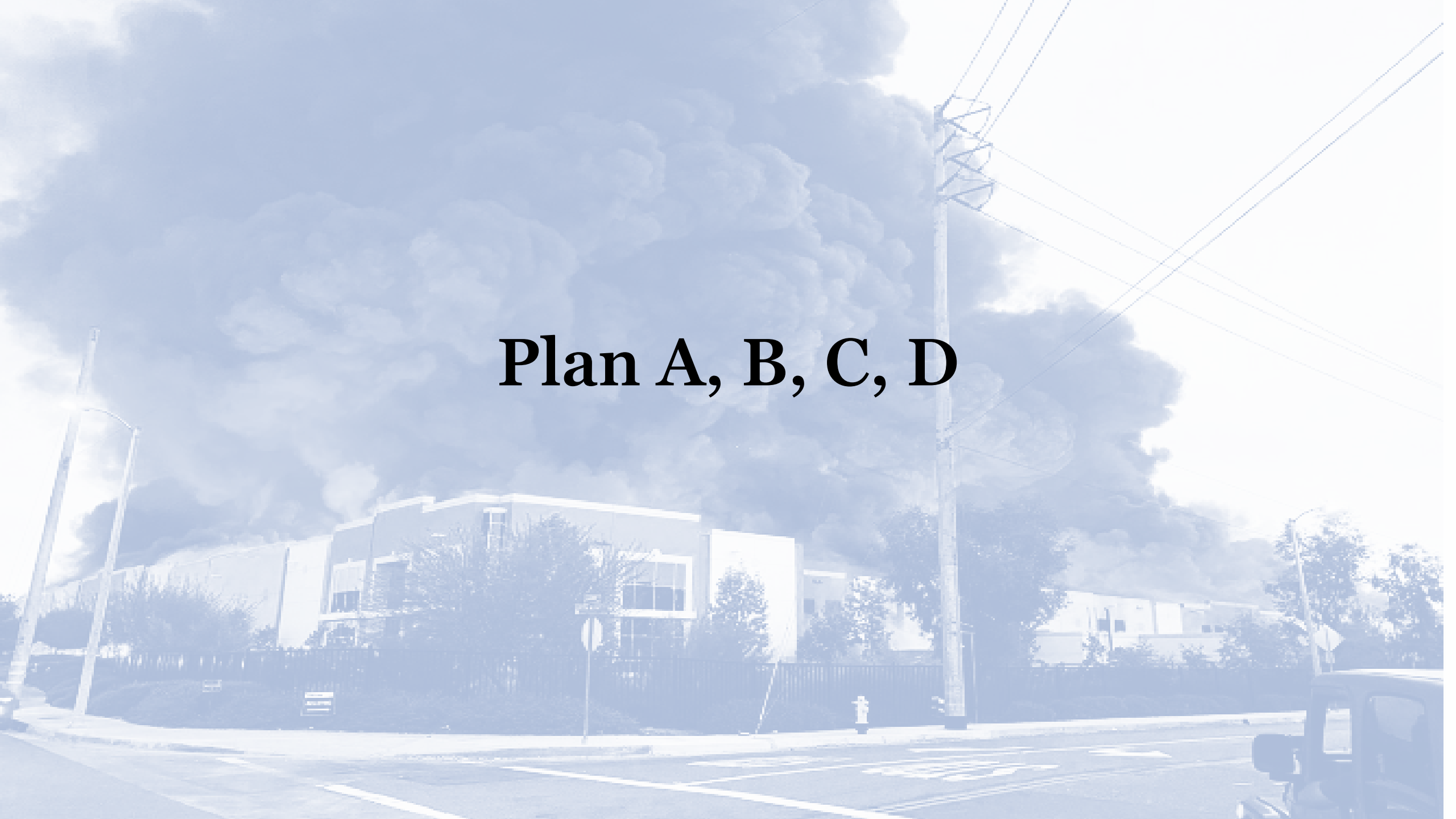


- Fire grew uncontrollably resulting in a total loss of the building

Fire Attack



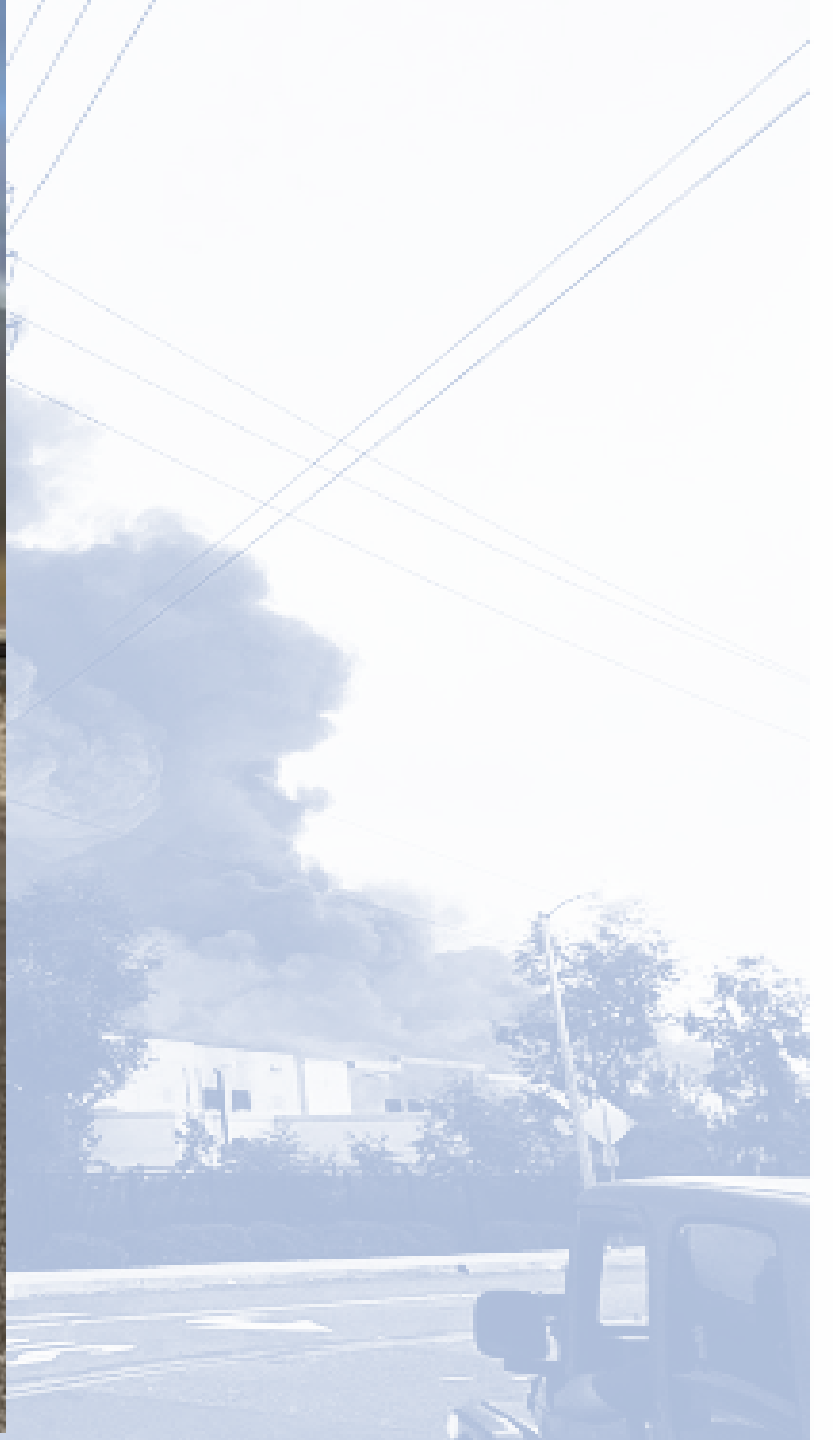
Plan A, B, C, D



Fire Attack



- **Commercial tactics in commercial buildings**
- **Minimize oxygen introduction**
- **Consider wind direction**



Fire Attack

NOT FOR THE KIDS...

FOR THE A.D.U.L.T.S.

WHEN DO YOU PULL THE TWO AND A HALF?

- A** Advanced Fire Conditions
- D** Defensive Fire
- U** Undetermined location/Extent
- L** Large/Uncompartmented areas
- T** Tons of Water Needed
- S** Standpipe Operations



FF BRET TARVER
PHOENIX FD
LODD 3/14/2001



- Choose the appropriate attack line for the building and fire conditions

Fire Attack



- **Strategic water application concentrated on base level extinguishment**
- **1st Line directed directly on the fuel**
- **Wet exposures**
- **2nd Line directed at the ceiling to cool the structural members**



Home Depot Fire, Nov 2013, Miami Dade





➤ **Capture**

➤ **Comprehend**

➤ **Predict**

***How long will it take to
get there**



Fire Attack



- 250' max hose line length
- 200' inside, 50' outside
- Must stay on the hose line
- Hose lay will not be in a straight line

Fire Attack



- **Hose connections**
- **1 1/2-inch hose or 2 1/2-inch hose connections**
- **In accordance with NFPA 13 and not standpipe systems in accordance with NFPA 14**

Fire Attack



- Intended to supplement and extend the fire service operational capabilities, not replace attack lines
- Should be placed at FF access doors and in main aisles near the center of the building and should have the capability to cover all areas within 200 feet of travel distance

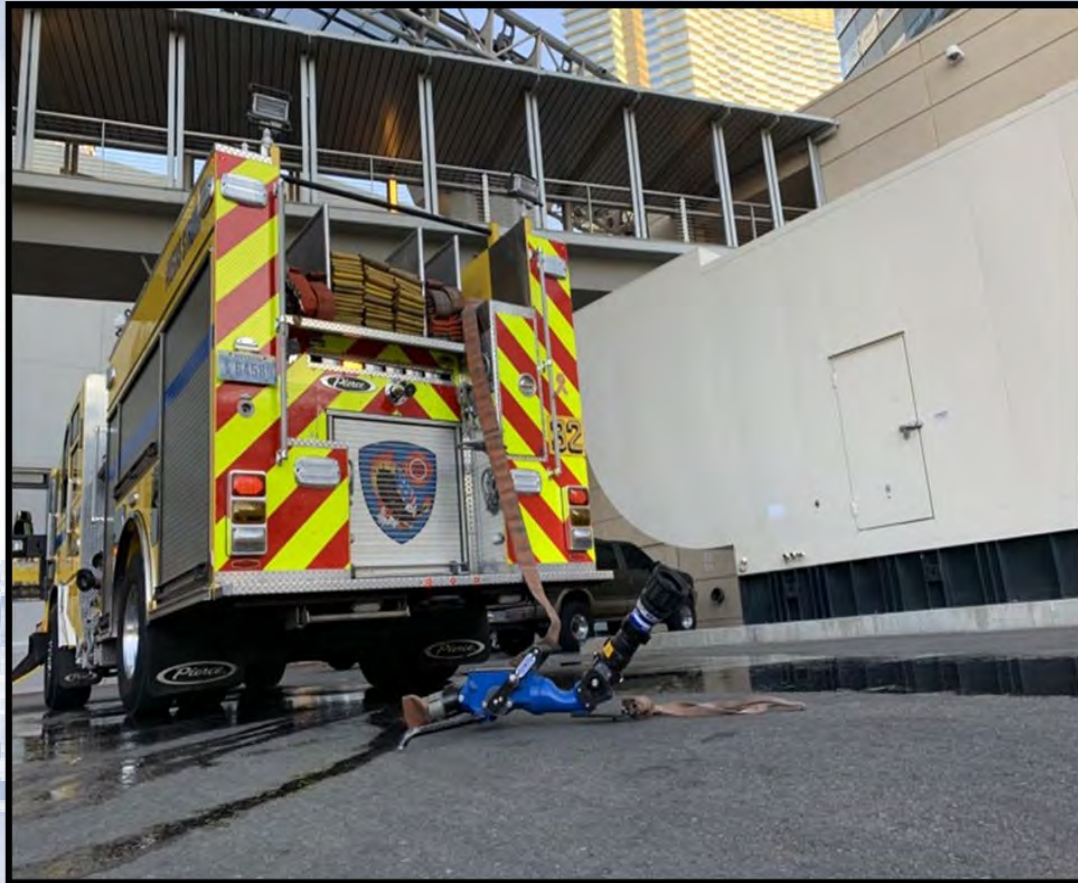
Fire Attack



- Travel distances for interior fire department operations in **unlimited area buildings** should be considered where limitations for exterior hose lines will not allow for adequate attack of fires in the center of large area buildings
- These systems are designed and installed in accordance with NFPA 14 as horizontal standpipes

Fire Attack

The Equalizer















Fire Attack



1" Tip

190' Reach



1 1/4" Tip

170' Reach



1 1/2" Tip

140' Reach

Fire Attack



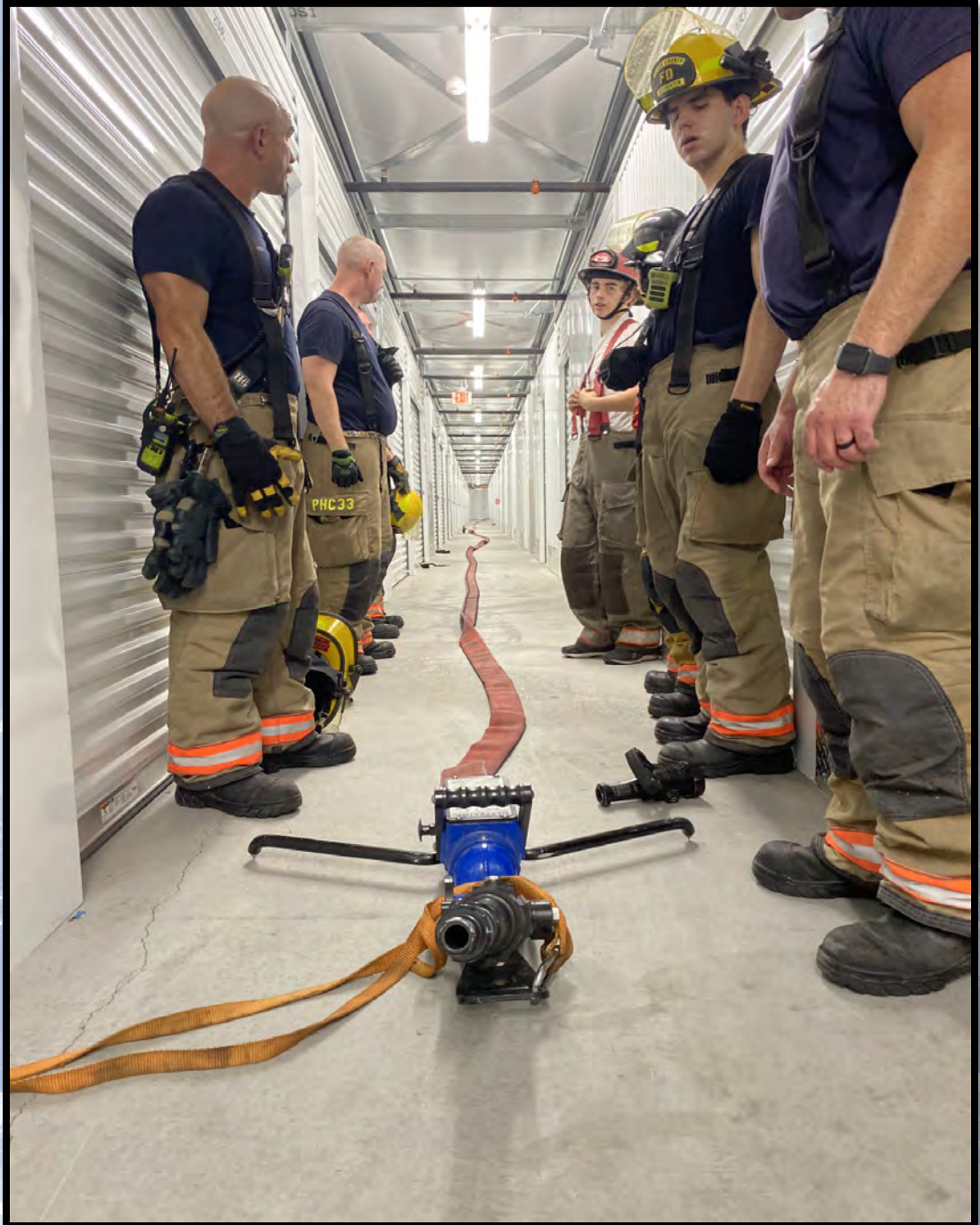




Photo courtesy of Justin McWilliams-Clackamas OR

Fire Attack



Photo courtesy of Bill Gustin, Miami Dade FD

Fire Attack







Video courtesy of Brian Mattson, Seattle

A blue-tinted photograph of a street scene. In the center, a two-story building with a flat roof and several windows is visible. To the right, a tall utility pole with multiple cross-arms and power lines stands prominently. The sky is filled with large, dark, dramatic clouds. In the foreground, a paved road with white lane markings is visible, and the rear corner of a dark-colored vehicle is seen on the right side. The overall mood is somewhat somber due to the monochromatic color scheme and the heavy sky.

RIT

RIT

41% of all Maydays are in commercial structures

57% Maydays called by the 1st unit

26% Maydays called by the 2nd unit

Majority of Maydays called within the first **5 minutes** of the incident

It takes **21 minutes** to locate and remove a downed fire fighter

Project Mayday-Don Abbot

RIT

L=lookouts-regional safety officers-at
each point of entry

A=awareness

C=communication

E=escape routes-at every point of ingress
where companies are working

S=safety zones-out of the buildings

Roof



Roof

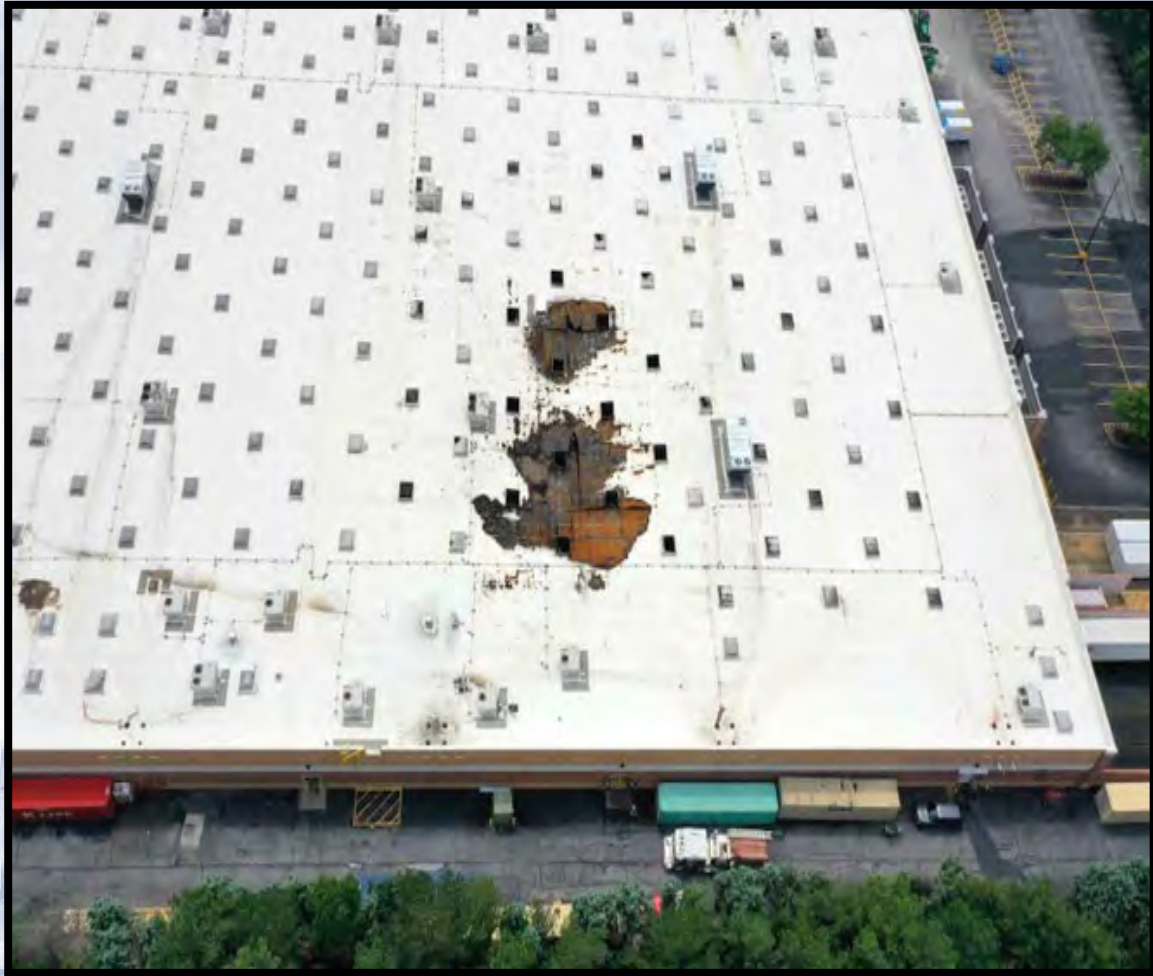


- The eyes and the ears for interior companies-do interior companies understand what they are seeing?
- If it is too dangerous to be on, it is too dangerous to be in

Roof

Identify:

- Location of fire
- Depth of entry
- Point of access



Roof



Identify:

- Loads
- Footprint
- Exposures
- Fire wall location
- Skylights-size and number
- Solar

Roof

Before choosing vertical ventilation as a tactic, consider:

- **Size of the building**
- **Size of the opening**
- **Number of companies**
- **Number of FF's**

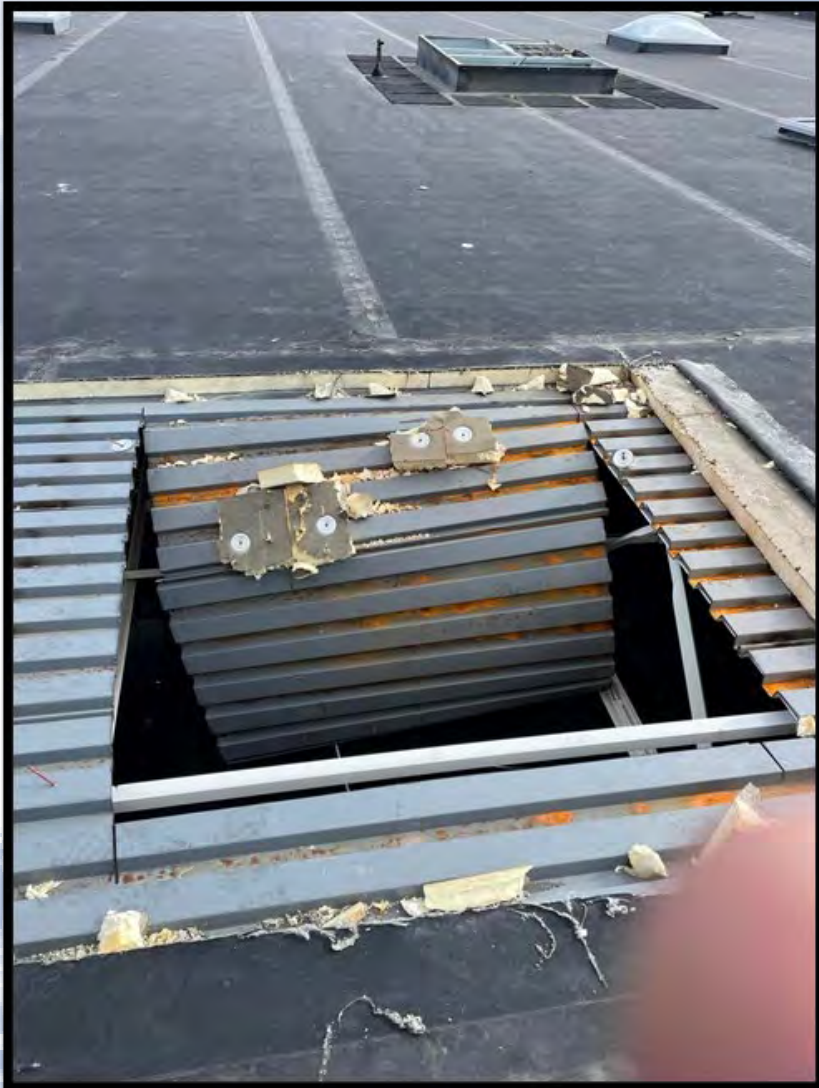


Roof

- Type of decking material
- Type of roof



Roof



- Strategy for opening the hole
- How much time
- Proficiency

Roof/Vent



Skylight and natural ventilation openings should be plan "A"



“If you have a vent limited fire and no effective water on the fire, this is not the time to add ventilation.

An addition of oxygen brought into the space will make the heat release rate and hazard of the fire increase.

Continue to flow water to cool it off to change from vent limited fire to a fuel-controlled fire, then ventilate.

If you do not control the heat release rate of the fire, additional ventilation will make it worse.”

Dan Madrzykowski UL FSRI

After Action Review of the Advanced Autoparts Fire Baltimore Co, July 18, 2023



Interior companies made several requests to break out the front windows during the fire

These requests were denied by command

Sofa Super Store?

Search

A blue-tinted photograph of a street scene. In the center, the word "Search" is written in a bold, black, serif font. The background shows a street with a building, utility poles, and a cloudy sky. The image has a monochromatic blue color scheme.

Search

*“Occupants are awake and will successfully escape these structures, so the chance of people trapped is **extremely low**.”*

*Searches in commercial structures **should not be conducted** with the same aggressiveness required for residential occupancies since the civilian hazard is low.*

“Fire fighters must recognize the risk to themselves compared to the benefit of the civilians and change the way they do business in store fires”

Fire Officers Handbook of Tactics 4th Edition
John Norman

Search



SEARCH SAFER.

Makes large difficult area searches more manageable and safer for all firefighters.

SAFER Search

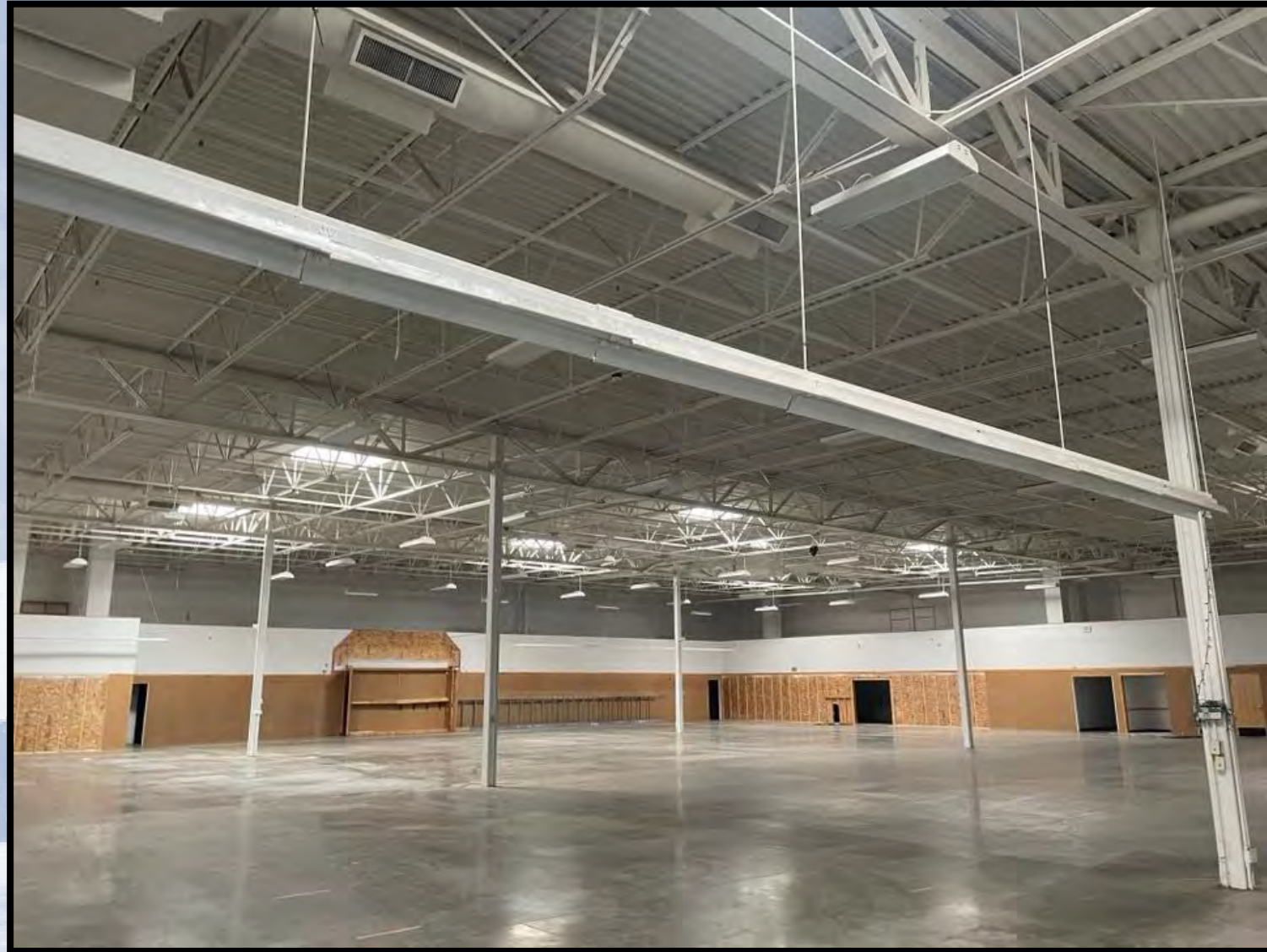
- single to deploy
- improves search accountability for team members
- know how far you've advanced, which direction to go, and how far it is to get out
- sweep the area systematically
- compact - fits in heat resistant wye/s carry bag

1.800.643.2074 **FRC**
www.firesearch.com FIRE RESEARCH CORP.

“Search ropes are used in buildings with large or confusing plans and limited egress. They are often used in tough fire conditions. Anytime you are relying on a little piece of rope to find your way out, things can get dicey fast”.

Nick Martin

Search



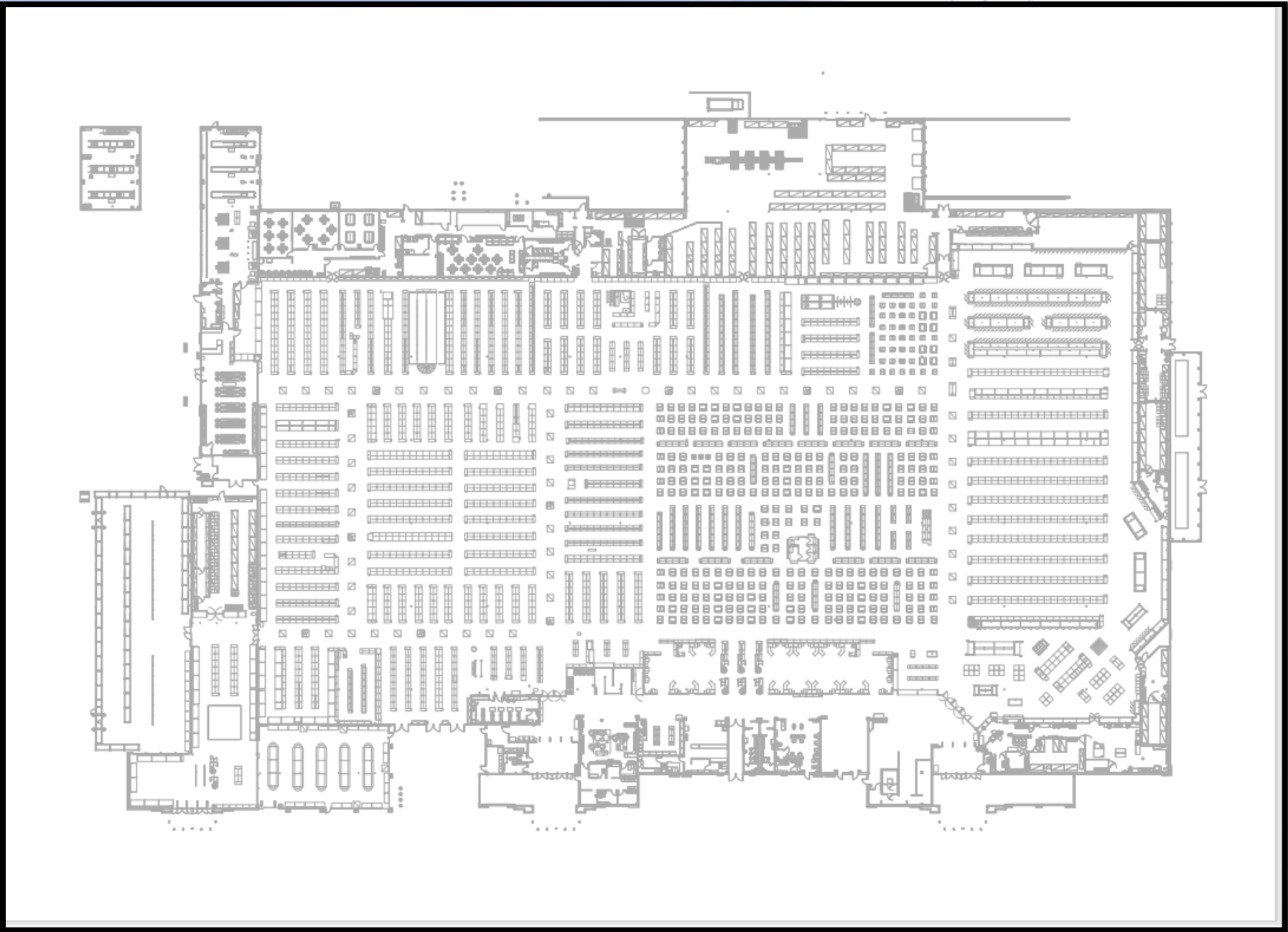
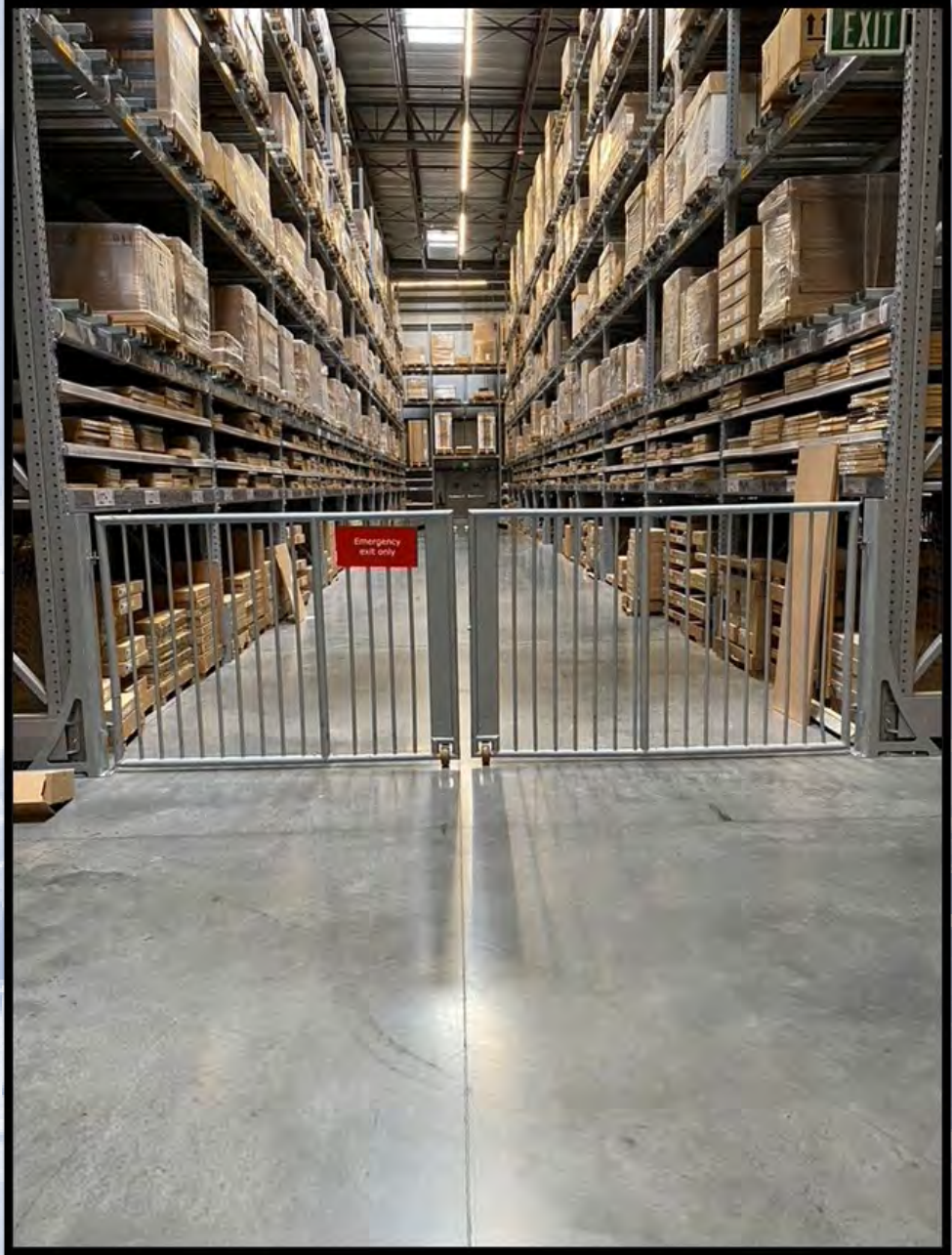
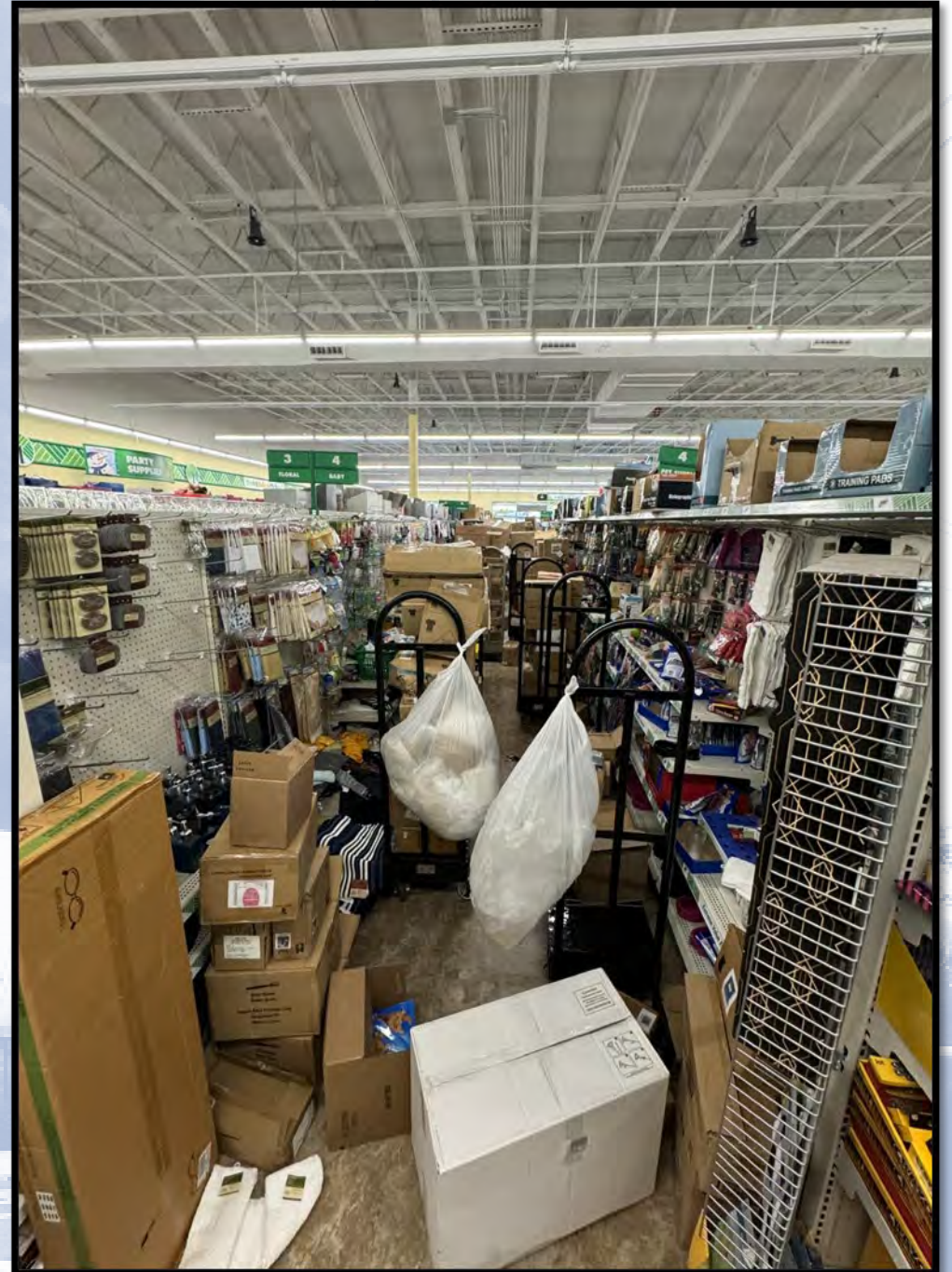


Photo courtesy of Jason Jones, Cobb County GA









Search

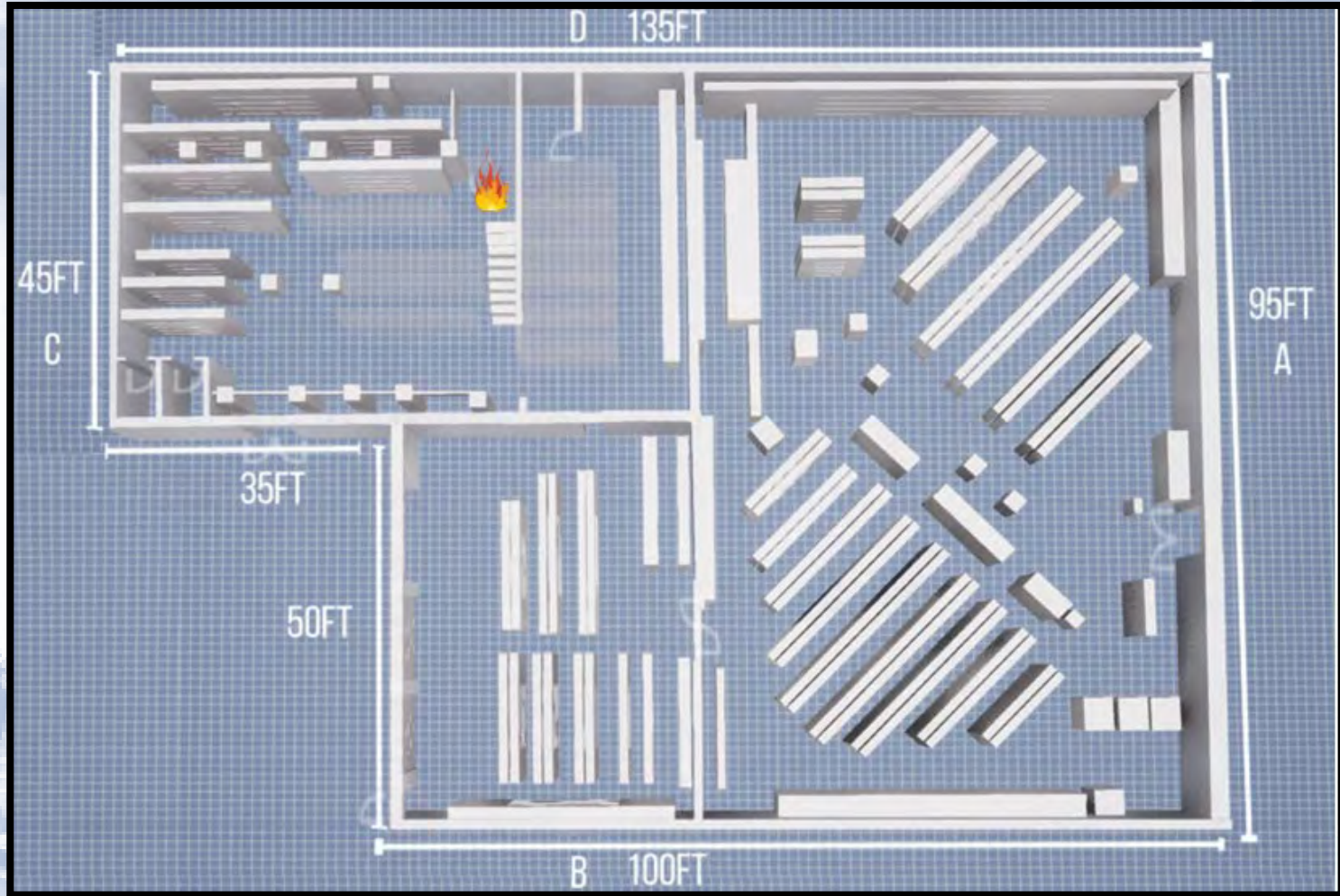


- Bathrooms and offices is where we will find victims in these buildings
- Life hazard will be the fire fighters
- In all the LODD on search, 0 civilians were in the building

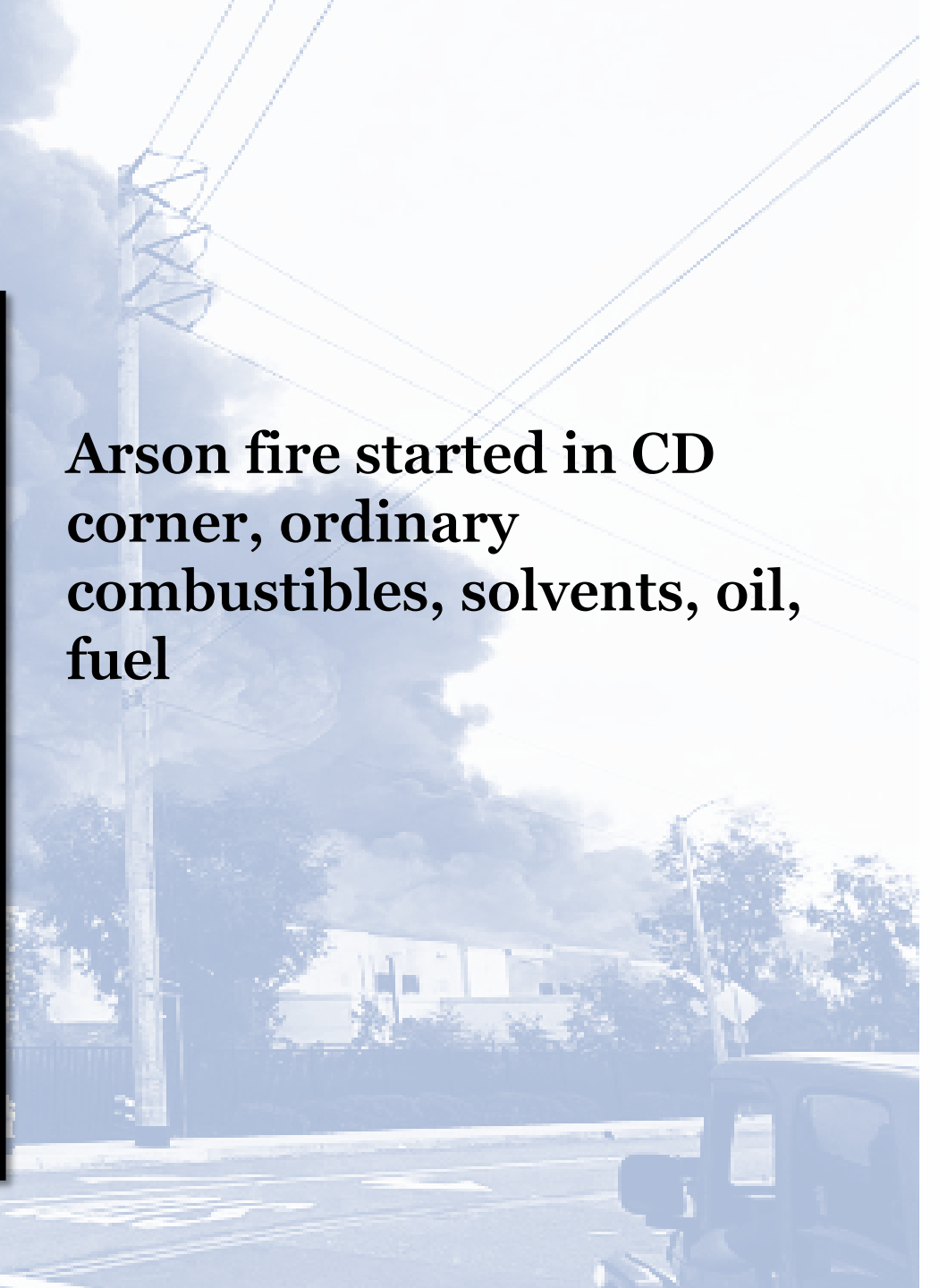
Search



- **No searching ahead of the hoseline/ tagline**
- **Locating victims in isles is highly unlikely and searching these areas should be avoided.**



Arson fire started in CD corner, ordinary combustibles, solvents, oil, fuel

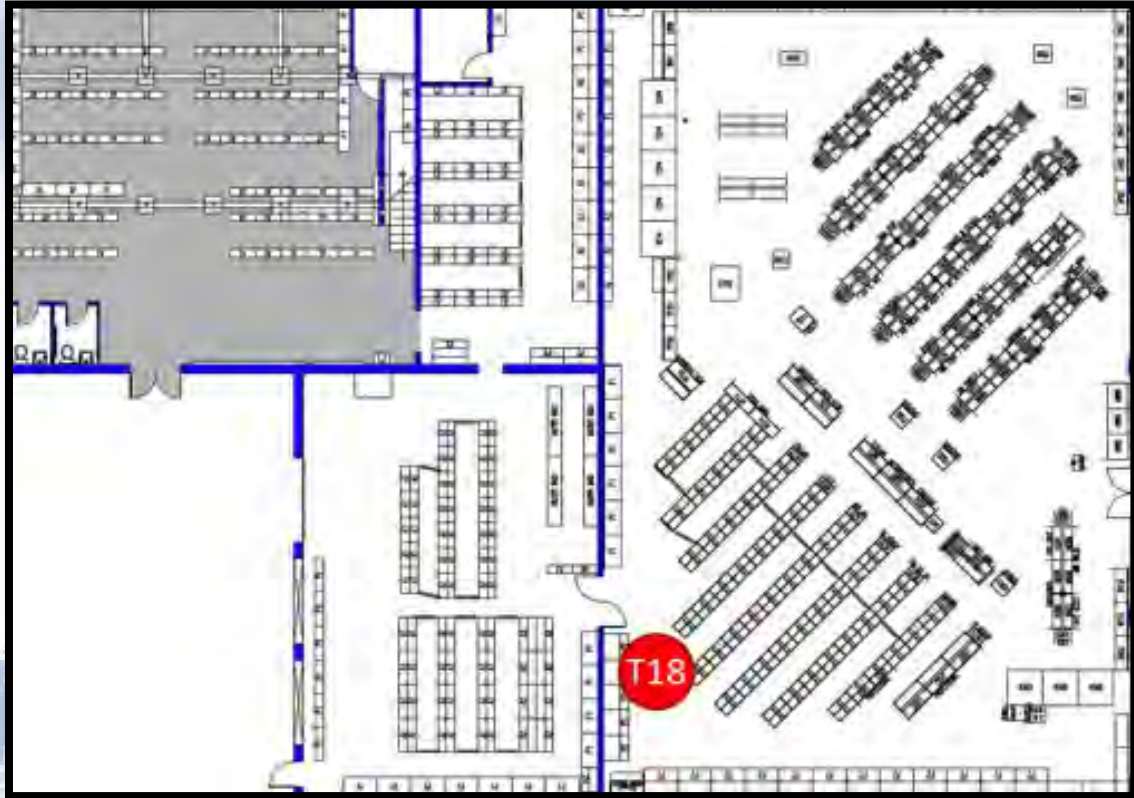




**21:40 E56 arrived-
encountered heavy smoke
conditions coming from front
door**

Enter Alpha

2½” hose line and a 1¾”



T18 (2) enter Alpha and begin searching for fire and life, pulling ceiling.

At 22:00, the OIC of T18 realized that he became separated from his crew, was disoriented

Declared a MAYDAY at 22:02, 12 minutes after making entry



The captain from E19, entered as RIT into the structure around 22:04, believing that the balance of his crew was with him

Zero visibility, smoke was not hot.

No TIC, no rope

The E19 OIC had been in the store several times and knew location of T18

Proceeded directly into the middle of the store, heard the PASS, located. 3 minutes and 22 seconds. 22:05

The E19 heard T18 low air alarm vibrating, so a buddy breathing operation commenced

E19 and T18 attempted to exit the structure, became disoriented again at 22:09.

Two additional members entered the building and located the pair at 22:13

All four members exited at 22:17.

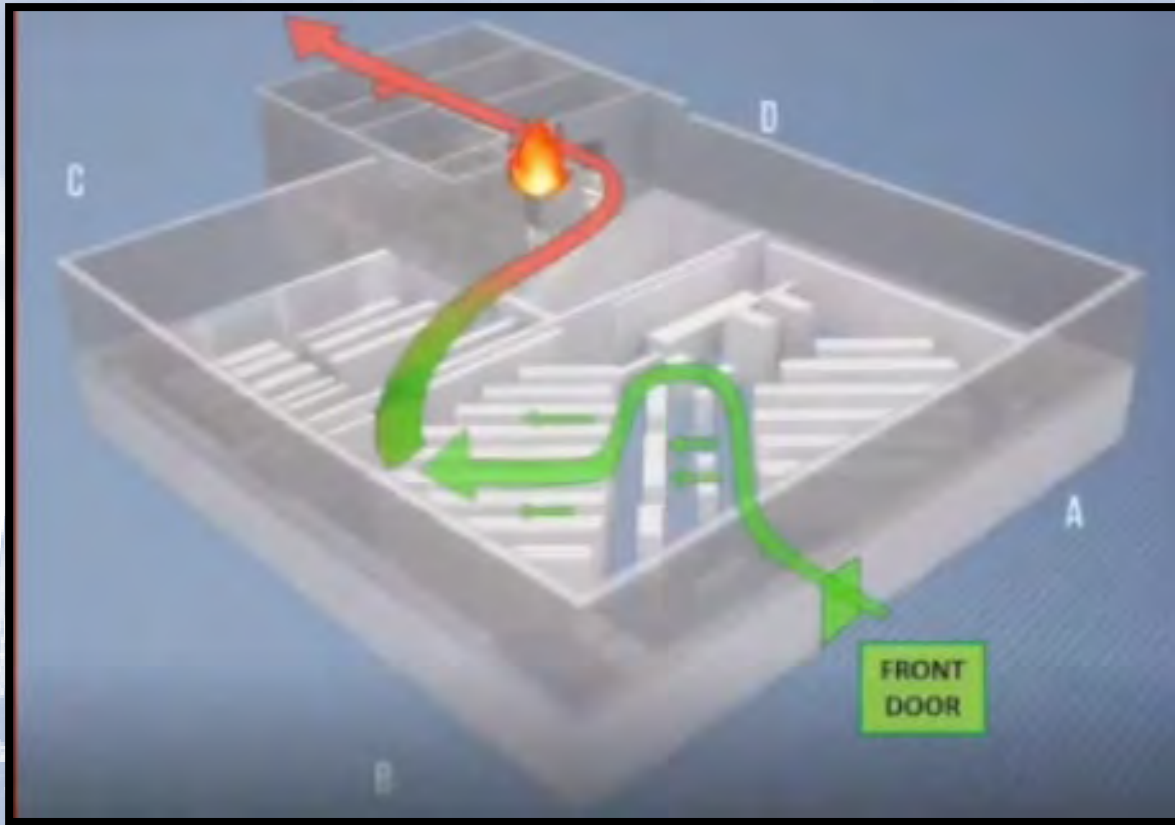
MAYDAY event was 15 minutes and 34 seconds.



Vent limited fire

Requested to break the front windows-request denied sofa super store?

“Fortunately, that additional ventilation did not occur- without effective water on fire, ventilation will make the fire worse”-Dan Madrzykowski





Clark Lamping

Clarklamping@hotmail.com

702-521-4584



THANK YOU!
ANY QUESTIONS?

EVALUATION AND WIN AN IPAD!

- **Submit your workshop and overall evaluations to be automatically entered in two drawings for a new iPad!**
- **Complete your evaluations using the IAFF app:**
 1. Download the IAFF app and sign in with your iaff.org username
 2. Tap the 2026 Strive for Excellence Summit event image to enter the event's dashboard
 3. Tap "Sessions" and tap on the workshops you attended
 4. Tap "Evaluation" and complete the evaluation
 5. Tap "Submit"

For the event's overall evaluation, follow steps 1 and 2, then tap "Event Evaluation" located in the event's Dashboard.

