RESCUE NORTH CAROLINA PRESENTS:

Technical Rescuer; General:

The Technical Rescuer History

OBJECTIVES

- Identify the NFPA 1006 & 1670 standards and how each applies to specialty certifications.
- Discuss elements of a site survey.
- List factors of a scene size-up.
- Discuss hazard assessments.
- Discuss elements of an Incident Action Plan (IAP).
- List the responsibilities of command and the primary functions of command associated with incidents involving various rescue incidents.

ABOUT TECHNICAL RESCUER CERTIFICATION & HISTORY

ABOUT TECHNICAL RESCUER CERTIFICATION & HISTORY

- N.C. Rescue training first started in 1970's with state rescue colleges.
  - No formal accredited certification program.
  - No accepted standard or consistency.
  - Very few instructors
  - Classes not available on a local offering.
  - Many rescue techniques and rigging were derived from military field manuals.
  - Safety standards were non-existent

ABOUT TECHNICAL RESCUER CERTIFICATION & HISTORY

- In 1980's, the N.C. Office of the State Fire Marshall (O.S.F.M.) developed the Basic & Advanced Rescue Technician certification program.
- B.R.T. & A.R.T. were aimed at offering responders a choice of basic or advanced level rescue certification.
  - Provided a certification but was not internationally accredited and not accepted by other states..
  - Inconsistent training because of different levels of training.

ABOUT TECHNICAL RESCUER CERTIFICATION & HISTORY

- In 1990's OSFM created the Emergency Rescue Technician program. (E.R.T)
  - Combined BRT & ART.
  - Accredited by the International Fire Service Accreditation Committee (IFSAC)
  - Accepted by 48 states and military

ABOUT TECHNICAL RESCUER CERTIFICATION & HISTORY

- In 1996, the N.F.P.A. created:
  - **NFPA 1670, STANDARD ON OPERATIONS AND TRAINING FOR TECHNICAL SEARCH AND RESCUE INCIDENTS**
    - Developed to define levels of preparation and operational capability that should be achieved by any authority having jurisdiction (AHJ) that has responsibility for technical rescue operations.
    - Establishes requirements for training, operational skills, management ability, and types and amounts of equipment
  - **NFPA1006, Standard for Technical Rescuer Professional Qualifications**
    - Addresses Individual rescue technician professional qualifications. (Job Performance Requirements; JPR's)

ABOUT TECHNICAL RESCUER CERTIFICATION & HISTORY

- The current ERT was not compliant with new NFPA 1006 & 1670 standards.
- So, In 2011, OSFM created the Technical Rescuer program in order to becoming the first NFPA compliant, internationally accredited rescue training program.

PREREQUISITE REQUIREMENTS FOR TR CERTIFICATION

- Medical requirements –
  - EMT
  - 1st Responder
  - Firefighter I / Emergency Medical Care
- Hazardous Materials –
  - Must complete Level I.
- Age and Education
  - Candidate must be 18 years of age (Before certificate can be issued) and must have a minimum of a high school diploma or GED equivalent
- Must complete one (1) Level II TR Technician Level course

LEVEL II TECHNICIAN CERTIFICATIONS (CHOOSE ONE)

- Chapter 5 – General
- Chapter 6 – Ropes
- Chapter 7 – Confined Space
- Chapter 8 – Trench Rescue
- Chapter 9 – Structural Collapse
- Chapter 10 – Vehicle and Machinery Rescue (VMR)
- Chapter 11 – Surface Water Rescue
- Chapter 12 – Swift Water Rescue
- Chapter 16 – Wilderness Rescue

CHAPTER 5 – GENERAL

- This program is designed to enhance the student's ability to perform basic skill sets to meet the intent of NFPA 1006 General Requirements in the field of technical rescue.
- Consists of technical rescue theories, techniques, and required for professional certification.
- Chapter 5 is designed to prepare the rescuer for professional certification testing (written & skills) in accordance with NFPA 1006 General Requirements

- TR General Chapter 5 Topics include:
  - Scene management
  - Mechanical advantage systems
  - Rope management
  - Anchor systems
  - Rescue knots
  - Technical rescue equipment identification
  - Size-up considerations
  - Hazard control
  - Landing zones for aero medical evacuations
  - Basic patient care and packaging,
  - Triage criteria and techniques
  - Basic ladders information
  - OSHA, NFPA, laws, and standards

CHAPTER 6 – ROPES

- This course complements basic skill sets attained from Chapter 5 TR-General.
  - **Rescue Operations for the Technical Rope Rescuer,**
  - **Scene Management, Rope Management,**
  - **Mechanical Advantages, Anchors, and Rope**
  - **Rescue Equipment. It also covers; Advanced**
  - **Lowers and Raises, Ascending and Descending**
  - **Fixed Lines, Patient Packaging, Victim**
  - **Management, High Lines and the applicable**
  - **OSHA regulations and other appropriate NFPA standards.**

CHAPTER 7 – CONFINED SPACE

- The topics include:
  - Rescue Operations for the Technical Rescuer at
  - Confined Space Incidents, Scene Management,
  - Mechanical Advantages,
  - Improvised Anchor Systems,
  - Air Management, SCBA, Supplied Air Systems
  - Atmospheric Monitoring,
  - Ventilation
  - Victim Management
  - OSHA regulations , NFPA standards.

CHAPTER 8 – TRENCH RESCUE

- The topics include:
  - **Rescue Operations for the Technical Rescuer at Trench Incidents**
  - **Scene Management**
  - **Mechanical Advantages**
  - **Improvised Anchor Systems**
  - **Protective Systems**
  - **Heavy Lifting**
  - **Atmospheric Monitoring**
  - **Ventilation**
  - **Victim Management**
  - **OSHA, NFPA regulations**

CHAPTER 9 – STRUCTURAL COLLAPSE

- **The topics include:**
  - **Rescue Operations for the Technical Rescuer at Structural Collapse Incidents,**
  - **Scene Management**
  - **Structural Engineering**
  - **Heavy Lifting**
  - **Shoring**
  - **Breaching and Breaking**
  - **Metal Cutting**
  - **Ventilation**
  - **Rescue Equipment**
  - **Atmospheric Monitoring, Victim Management**
  - **OSHA, NFPA standards.**

CHAPTER 11 – SURFACE WATER RESCUE

- The topics include:
  - **Rescue Operations for the Technical Rescuer at Surface Water Incidents**
  - **Scene Management**
  - **Proper PPE**
  - **Medical Concerns**
  - **Ice Rescue**
  - **Shore Based Rescue Techniques**
  - **Boat Operations in Still Water**
  - **Basic Hydrology**
  - **Victim Management**
  - **OSHA , NFPA**

CHAPTER 12 – SWIFT WATER RESCUE

- The topics include:
  - Rescue Operations for the Technical Rescuer at Swift Water Incidents
  - Scene Management
  - Search Management,
  - Basic Flood Management
  - Proper PPE
  - Medical Concerns
  - Survival in the Water,
  - Shore Based Rescue Techniques
  - Basic Paddle Skills, Paddle Boat Operations in Swift Water
  - Rope Techniques for Swift Water
  - Basic Hydrology
  - Victim Management and the applicable
  - OSHA ,NFPA standards

CHAPTER 16 – WILDERNESS RESCUE

- The topics include:
  - **Rescue Operations for the Technical Rescuer at Wilderness Rescue Incidents,**
  - **Scene Management,**
  - **PPE**
  - **Medical Concerns**
  - **Map Orienteering**
  - **Compass Reading**
  - **Survival Techniques**
  - **Survival Equipment**
  - **SearchTechniques**
  - **Resources**
  - **Victim Management the applicable OSHA regulations and other**

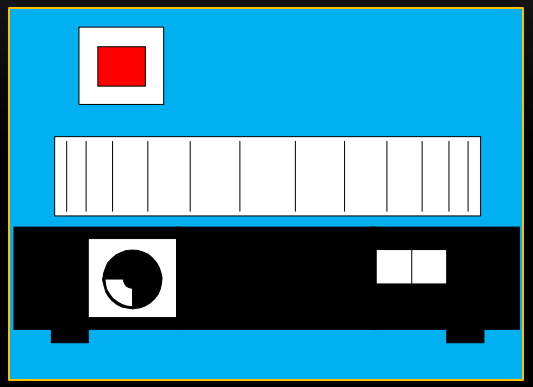

RESCUE
OPERATIONS

ELEMENTS OF PRE-INCIDENT PLANNING

CLASSICAL DECISION MAKING

- Decision Making Process without prior training or experience.

NATURALISTIC /RECOGNITION-PRIMED DECISION MAKING (RPD)

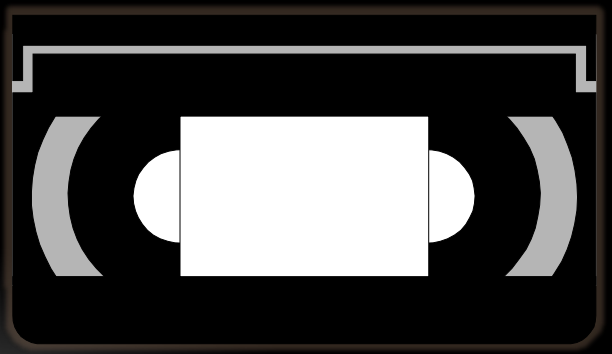


- Process:
  - *The Mind Stores Images.*
  - *Every New Experiences Creates New Images.*
  - *In An Emergency, The Mind Locates The Image Most Similar To The Current Situation.*
  - *Experience, Based On This Image, Is Now Utilized.*

INCREASING YOUR MENTAL RESOURCES

Can Be Achieved By:

- Participating In Hands-on Training.
- Utilizing Simulators.
- Reading Trade Journals.
- Watching Videos.
- Discussions / Training In Context
- Critiques/ Post Incident Analysis



INCREASING YOUR MENTAL RESOURCES

Can be achieved by:

- Pre-planning potential incidents.
- Learning from others positive & negative experiences.
- Reviewing (and maintaining) your knowledge and skill sets.

Pre-Incident Activities

PRE-INCIDENT PLANNING CONSISTS OF :

- Hazard Analysis/Planning
- Site Surveys
- Needs Assessment
- Resource Listings
- Standard Operating Guidelines
- Mutual Aid Agreements
- Financial Agreements
- Training
- Equipment Purchases
- Incident Management Considerations
- Legal Ramifications
  - Charter Limitations
  - By-Laws
  - AHJ Considerations

WHY DO WE NEED TO PREPLAN?

- Reveals potential flaws in response
- Identifies Hazards
- Accountability
- Resource Needs
- A plan is better than no plan!
- Lead Time
- Mutual Aid Response
- Identifies Training needs
- Required for federal grant funding
- EPA/ DOT/OSHA mandates
- Provides a plan to use during an incident

A Plan is Better Than No Plan!

“What is a Hazard Assessment / Analysis?”

CONDUCTING A HAZARD ANALYSIS

Identify the potential for all aspects of technical rescues in not only your own jurisdictions but surrounding mutual aid areas.

- Examines the possibilities of occurrence.
- Looks at historical information and other possibilities.
- High Frequency; Low Risk
- Low Frequency; High Risk

		A	B	C	D	E
		Negligible	Minor	Moderate	Significant	Severe
E	Very Likely	Low Med	Medium	Med Hi	High	High
D	Likely	Low	Low Med	Medium	Med Hi	High
C	Possible	Low	Low Med	Medium	Med Hi	Med Hi
B	Unlikely	Low	Low Med	Low Med	Medium	Med Hi
A	Very Unlikely	Low	Low	Low Med	Medium	Medium

Risk Assessment Matrix

VULNERABILITY

Refers to portions of a community that are likely to be affected by one or more effects of a hazard.

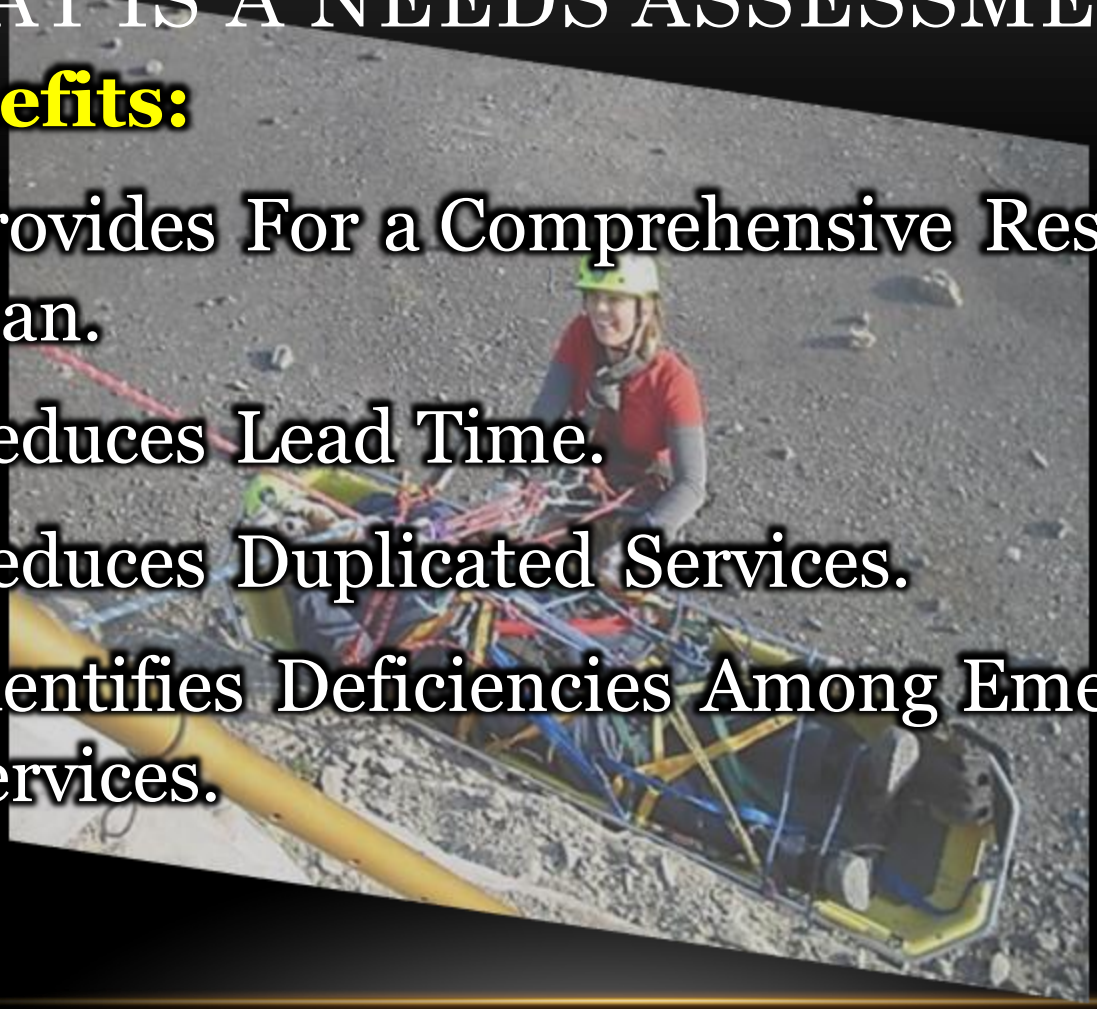
- Storms
- Flooding/ Water Accidents
- Confined Spaces, haz-mats
- Industrial sites
- Cell or Water Towers, multi-story structures…
- Highways, Thoroughfares, freeways
- Trench work
- Parks / Natural Spaces

WHAT IS A NEEDS ASSESSMENT?

- Based upon the hazard assessment of your surrounding jurisdiction…
- Evaluate the Specialized Response for Technical Rescue.
- Are there existing special rescue ops. assets we can call? What are there capabilities and response times?
- If not… What will we need to get the job done?
  - Technical Equipment Needs
  - Specialized Training
  - Mutual Aid Responses
  - Funding Considerations
  - Resource List

WHAT IS A NEEDS ASSESSMENT?

- **Benefits:**
  - Provides For a Comprehensive Response Plan.
  - Reduces Lead Time.
  - Reduces Duplicated Services.
  - Identifies Deficiencies Among Emergency Services.



WHAT IS A NEEDS ASSESSMENT?

- **Benefits:**
- Identifies
  - Training Needs
  - Equipment Needs
  - Resource Needs
  - Roadblocks To Effective Incident Management

WHAT IS A NEEDS ASSESSMENT?

- **Benefits:**
  - Helps to identify permanent hazards for the area.
  - Helps to show previous rescue locations and situations.
  - Helps with determining the frequency of and, potential for, incidents occurring at specific locations.
  - Helps to determine the proper PPE and equipment for the job.

- Determine the frequency of the types of rescue operations in your jurisdiction.
- What is the severity and complication of past and potential rescue operations?
- What are the estimated response times of resources to potential rope rescue locations?

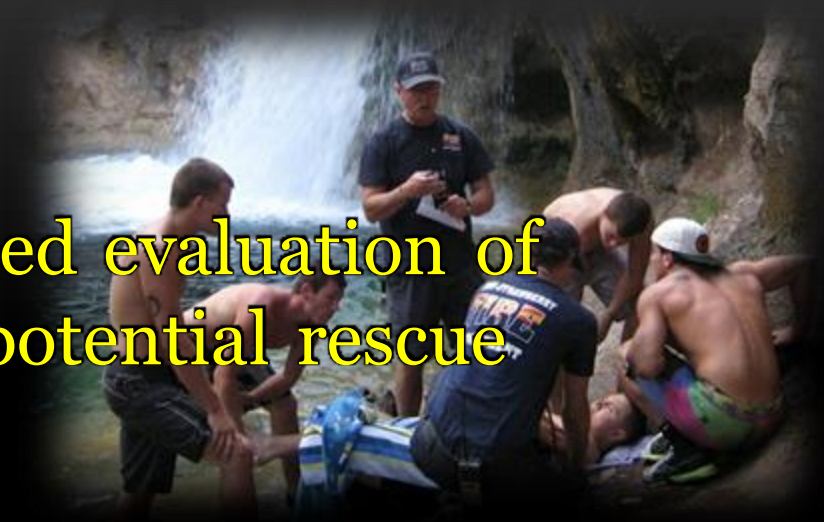
- Use area guidebooks, GIS technology, aerial photos to prepare hazard identification maps.
- Identify jurisdictional and operational capabilities for rescue in your area.
- What personnel and equipment requirements are necessary for such locations?

SITE-SURVEY

- Is a component of pre-planning that identifies existing or potential hazards that causes the initiation of a rescue response.
- The act of visiting locations that have a high potential for a rescue incident allows rescue personnel to develop a better needs assessment profile.

SITE SURVEYS

- Provides for a detailed evaluation of existing hazards at potential rescue locations.
- Examines previous locations where rescue operations were conducted and their situations.
- *Allows for needs assessment of specialized resources required for an incident in a geographical location and operation.*



LIST SITE SURVEY HAZARDS TO LOOK FOR:

- Agriculture Rescue
- Vehicle Rescues
- Aircraft Incidents
- Railroads Incidents
- Industrial Accidents
- Structural Collapse.
- Cave-Ins / Trench sites.
- *Rope Problems*
- Confined Spaces.
- Surface Water Rescue
- Swiftwater Rescue
- Elevator Rescue
- Cell Tower Rescues
- Water Tower Rescue

QUESTIONS TO ASK?

- Where have our previous rescue/ recovery operations occurred?
- What frequency & types of prior rescue / recovery operations have occurred?
- Have they been technically complex? Any obstacles needed to be overcome?
- How can we make our operations safer and more efficient?
- Is the department been sufficiently equipped and trained for such responses?
- Where are other specialized rope rescue teams available for response?

5 REQUIREMENTS INCLUDED IN PRE-PLAN ELEMENTS

1. Inventory Rescue equipment and evaluate personnel skill sets. (Yes… test them!!!)
2. Conduct inter-agency training to build inter-agency working relationships. (Yes… You gotta work with em')
3. Identifying sites with recurring incidents and train at those sites. (Train in the environment you are expected to perform)
4. Conduct quarterly con-ed training to evaluate your team's capabilities. (Keep training)
5. Expect the best…Prepare for worst case scenarios. (Never be caught off guard)

MAPPING TO BENEFIT PRE-PLANNING

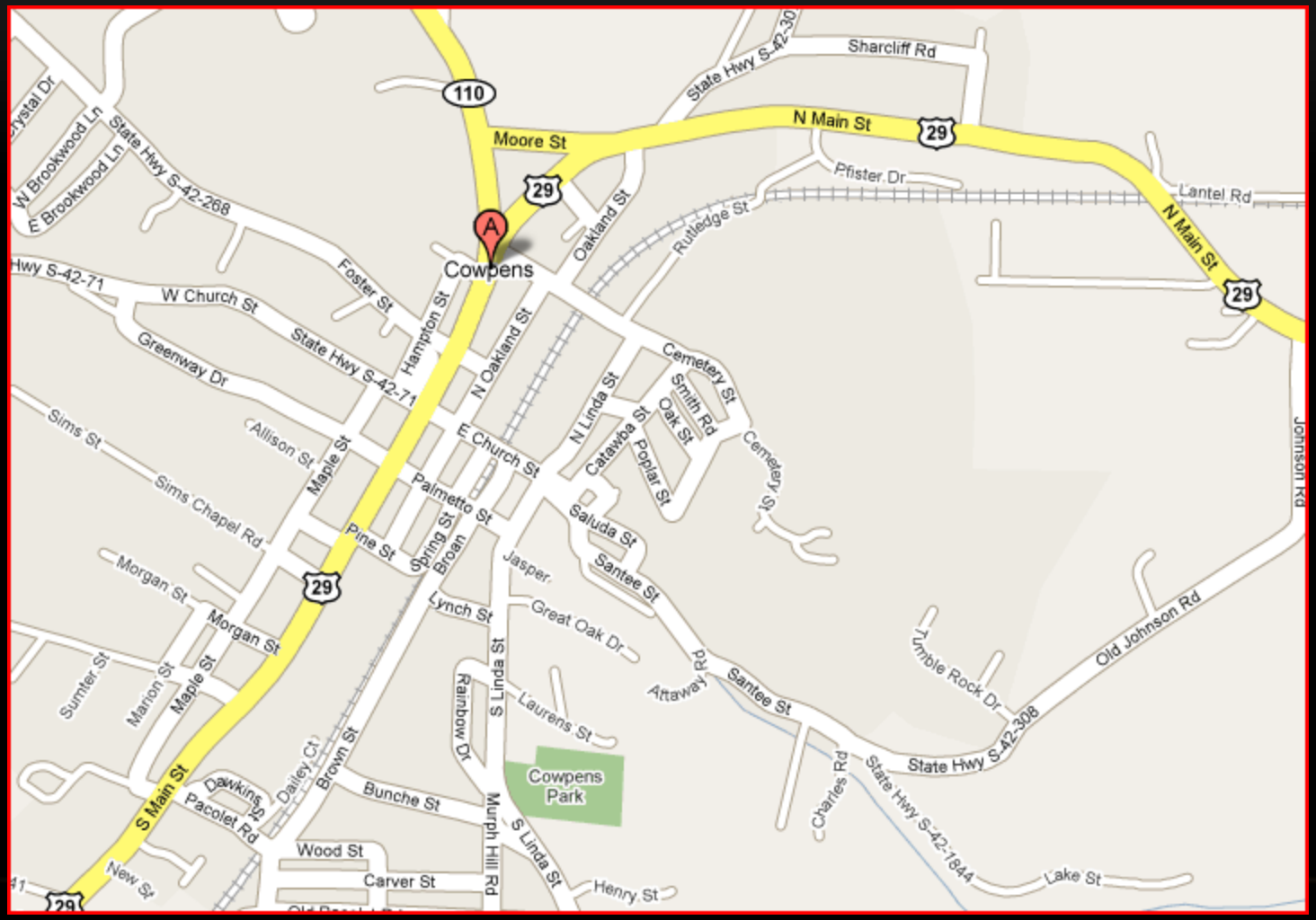
MAPPING BENEFITS IN PRE-PLANNING

- Permits the Incident Commander to visualize data in determining tactical objectives or strategy.
- Identifies specialized resources needed to overcome geographical obstacles.
- They may be used to show prior rescue and recovery operations.

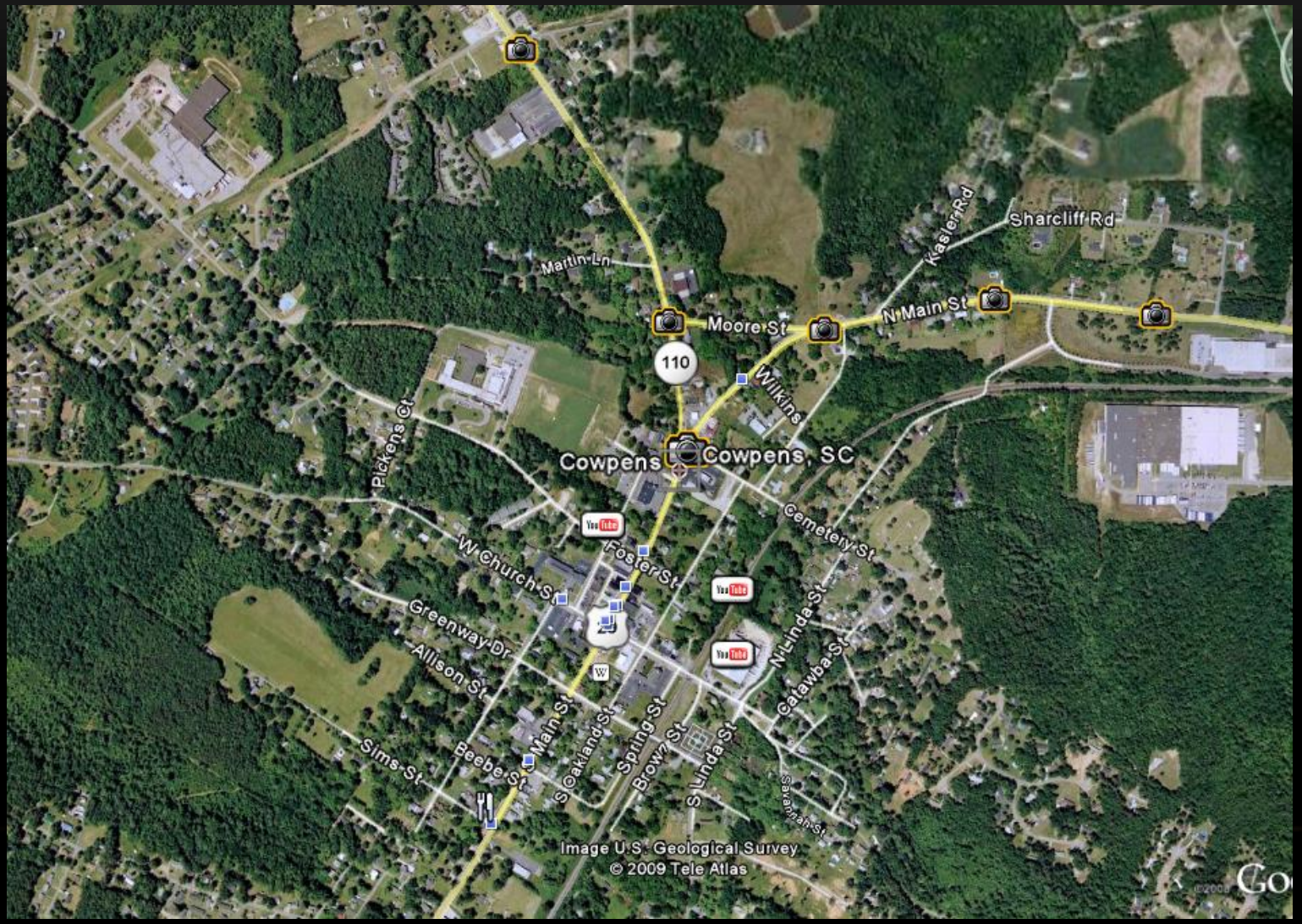
MAPS USED IN TECHNICAL RESCUE

- Hand Drawn
- Planimetric
- Orthophotographic
- Block Square Point
- Topographical
- GIS Technology
- Building Plans

PLANI METRIC

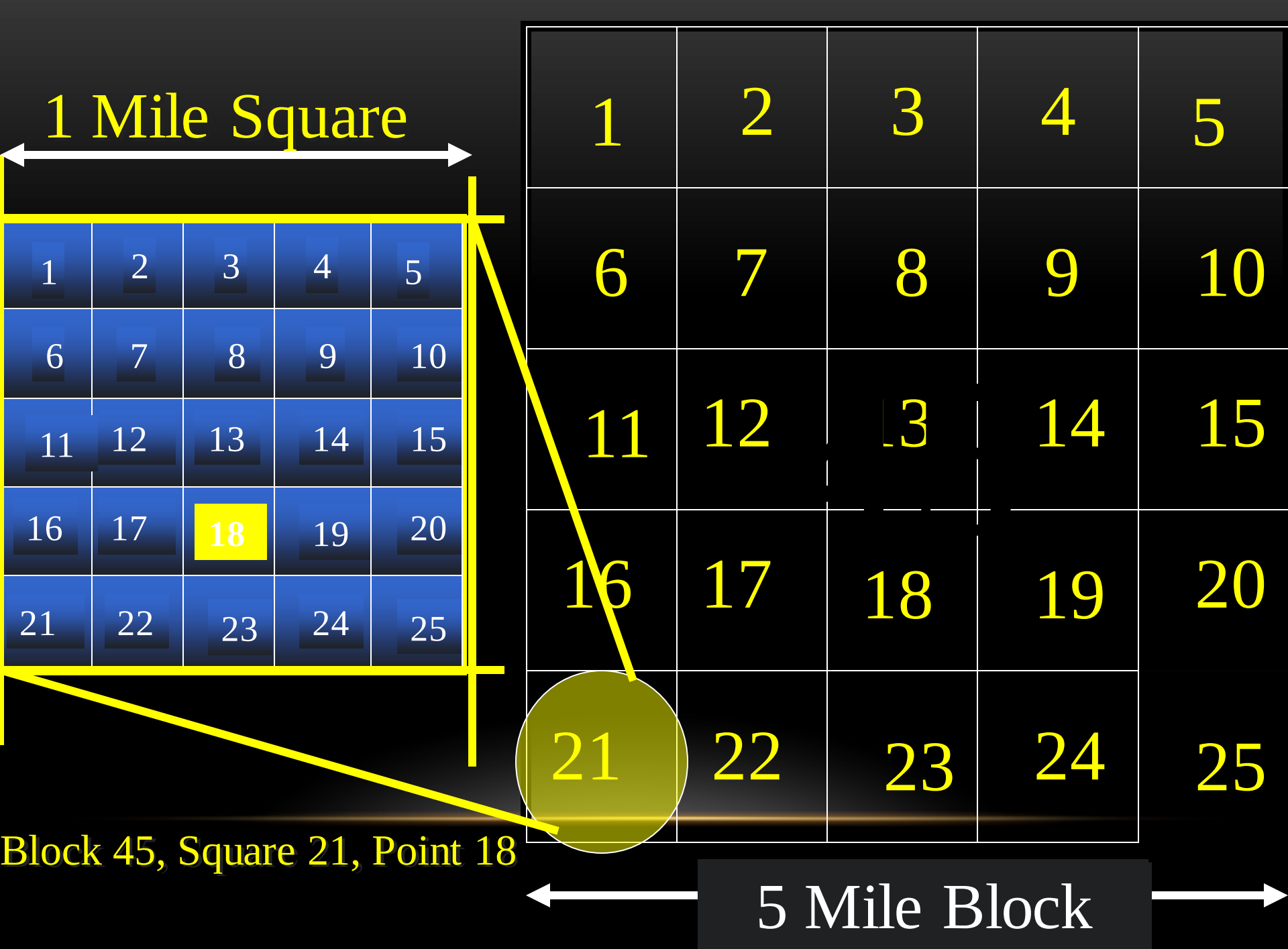
- 

ORTHO PHOTOGRAPHIC



BLOCK SQUARE POINT

- Utilized by the Forestry Service
- Somewhat accurate, by updating every 3-4 years.
- Some FD's still use these.


1 Mile Square
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
21 22 23 24 25
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
21 22 23 24 25
Block 45, Square 21, Point 18
5 Mile Block

TOPOGRAPHICAL

- Topographic maps of 1 –24,000 scale are the most prevalent for search.

TOPOGRAPHICAL

- *Shows a photographic image of an area in many colors*
- *Various symbols represent different features within the map.*
- *Updated every 10-15 years*

TOPO MAP SYMBOLS

- Roads- Solid, dotted, or dashed lines
- Railroad Tracks- Line w/ hash
- Bridges or dams
- Towers & Power Lines ROW's
- Benchmarks
- Buildings

TOPO MAP COLORS

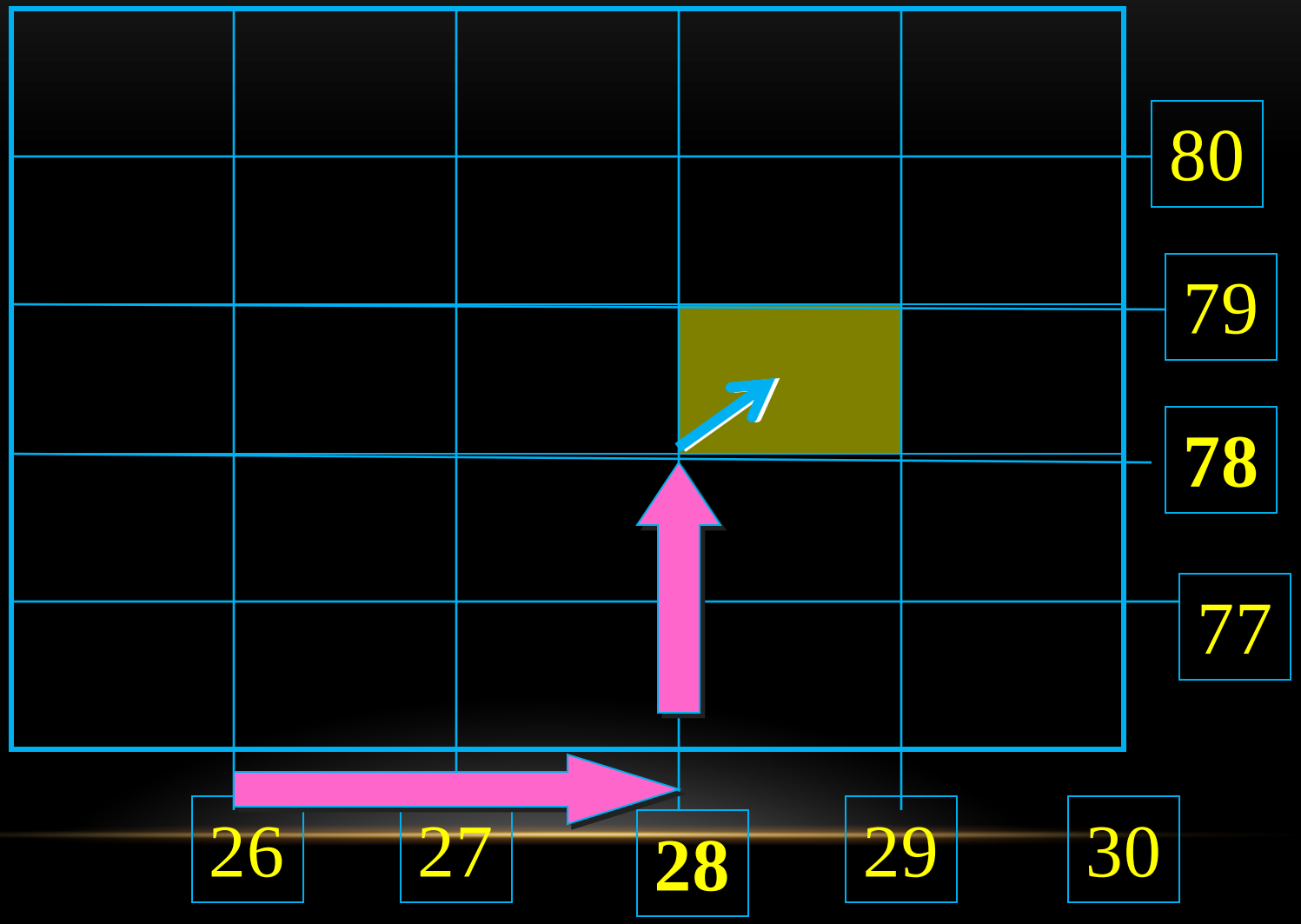
- **Brown**- Contour lines
- **Blue**- all water
- **Red**- Major routes, boundaries, fence lines, township boundaries
- **Black**- public lines
- **Green**- Vegetation
- **Purple**- Changes since last map
- **White**- Open areas

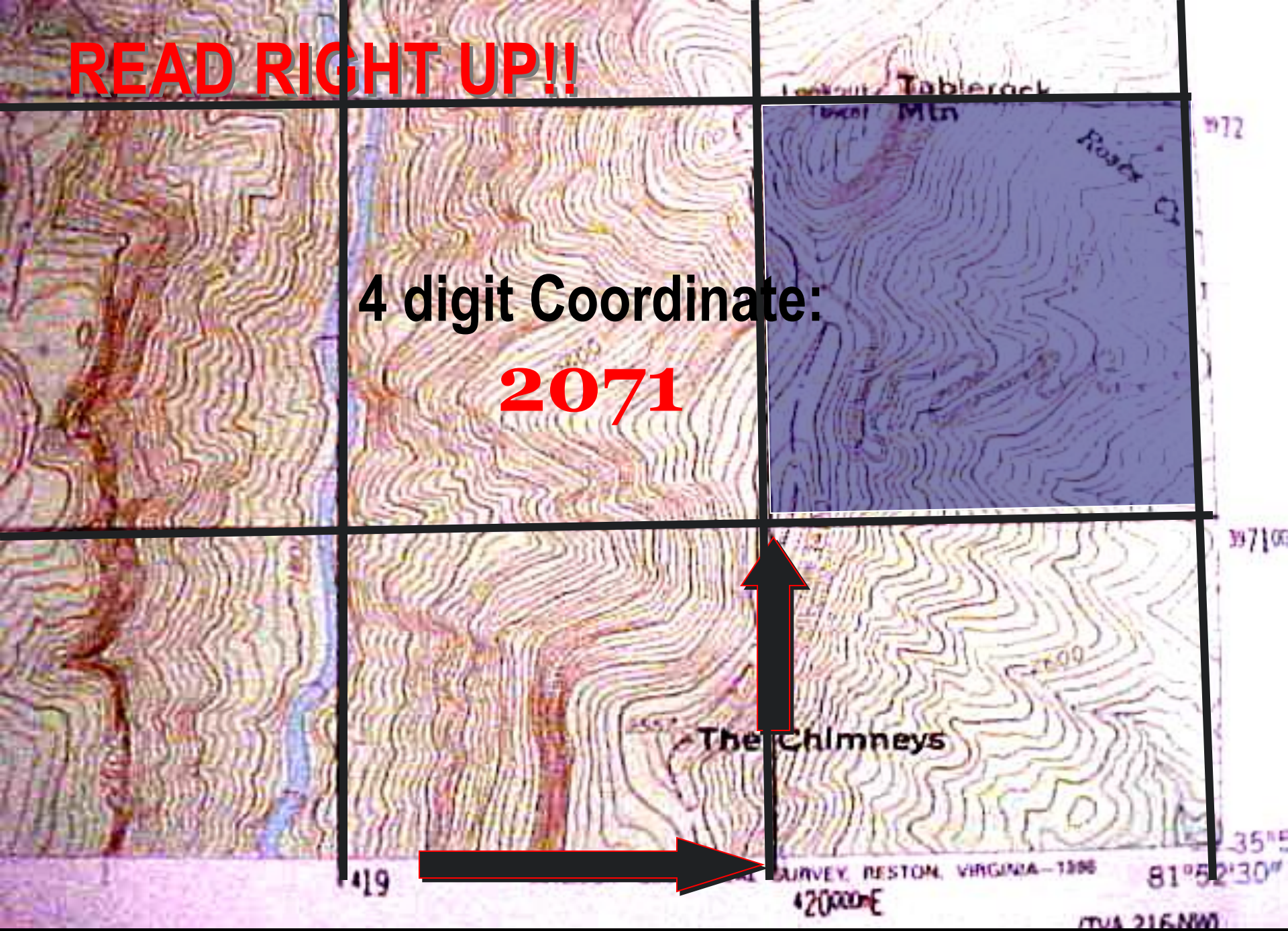
- Point out and demonstrate that the Universal Transverse Mercator (UTM) grid system is very helpful for location planning.

TOPO GRID SYSTEMS

- Universal Transverse Mercator System (UTM) is useful in planning and most common in search operations.
  - Provides for a standard unit of Measurement
  - 4 digit coordinates=1,000 meters
  - 6 digit coordinates= 100 meters
  - 8 digit coordinates = 10 meters
  - READ RIGHT UP!!

4 DIGIT COORDINATES “2878”

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4 digit Coordinate:
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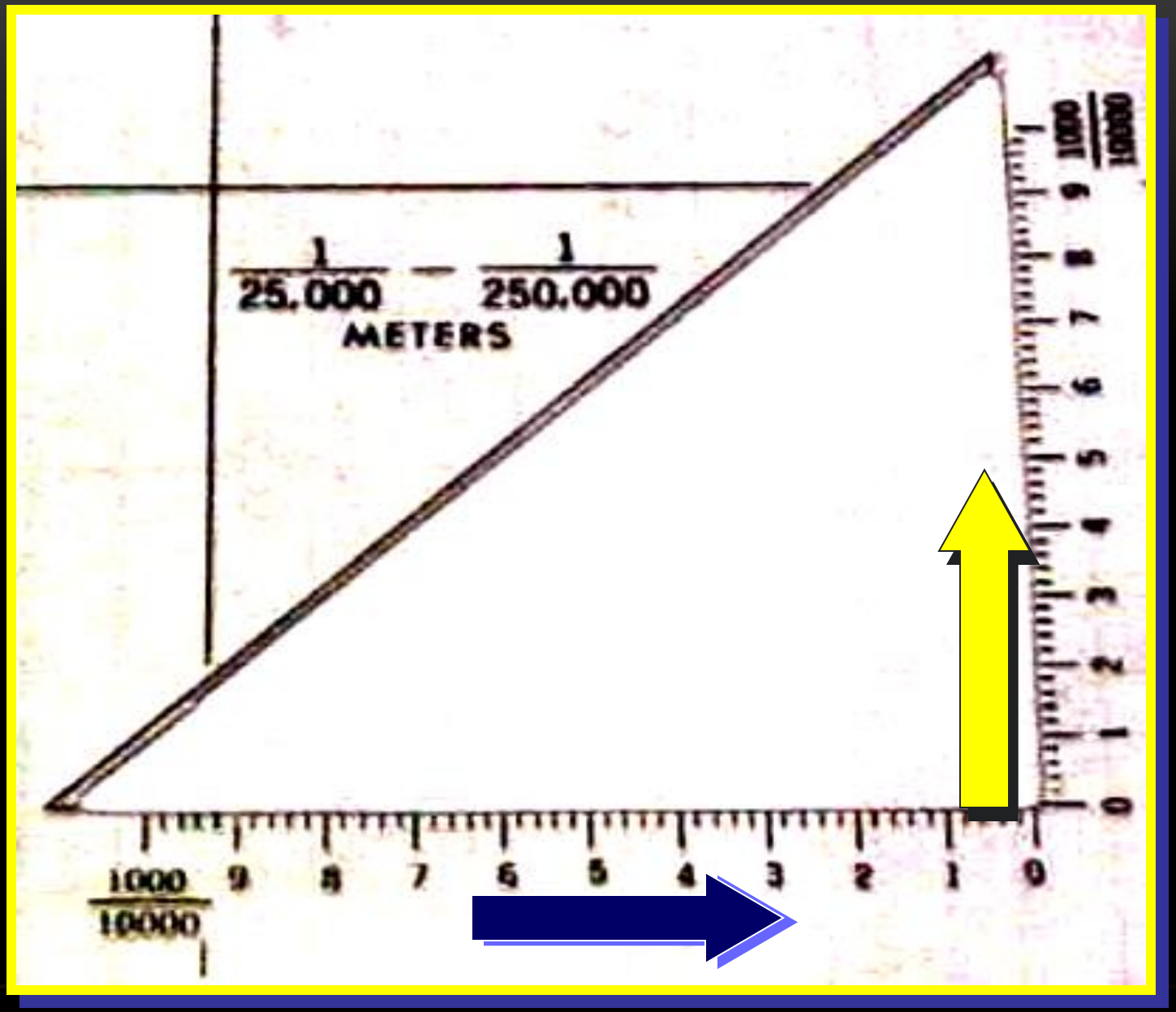
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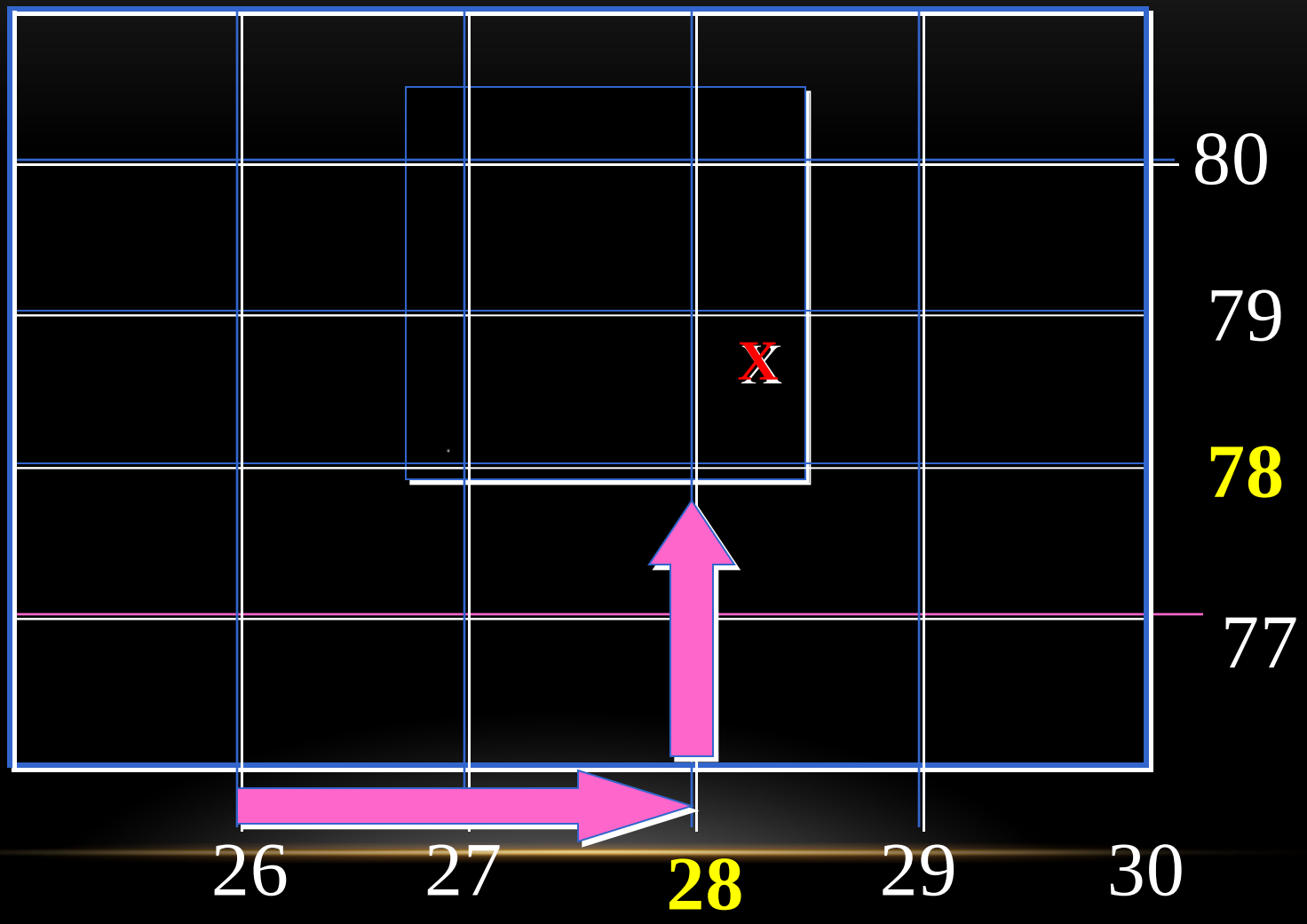
9 8 7 6 5 4 3 2 1 0

6 DIGITS 282783



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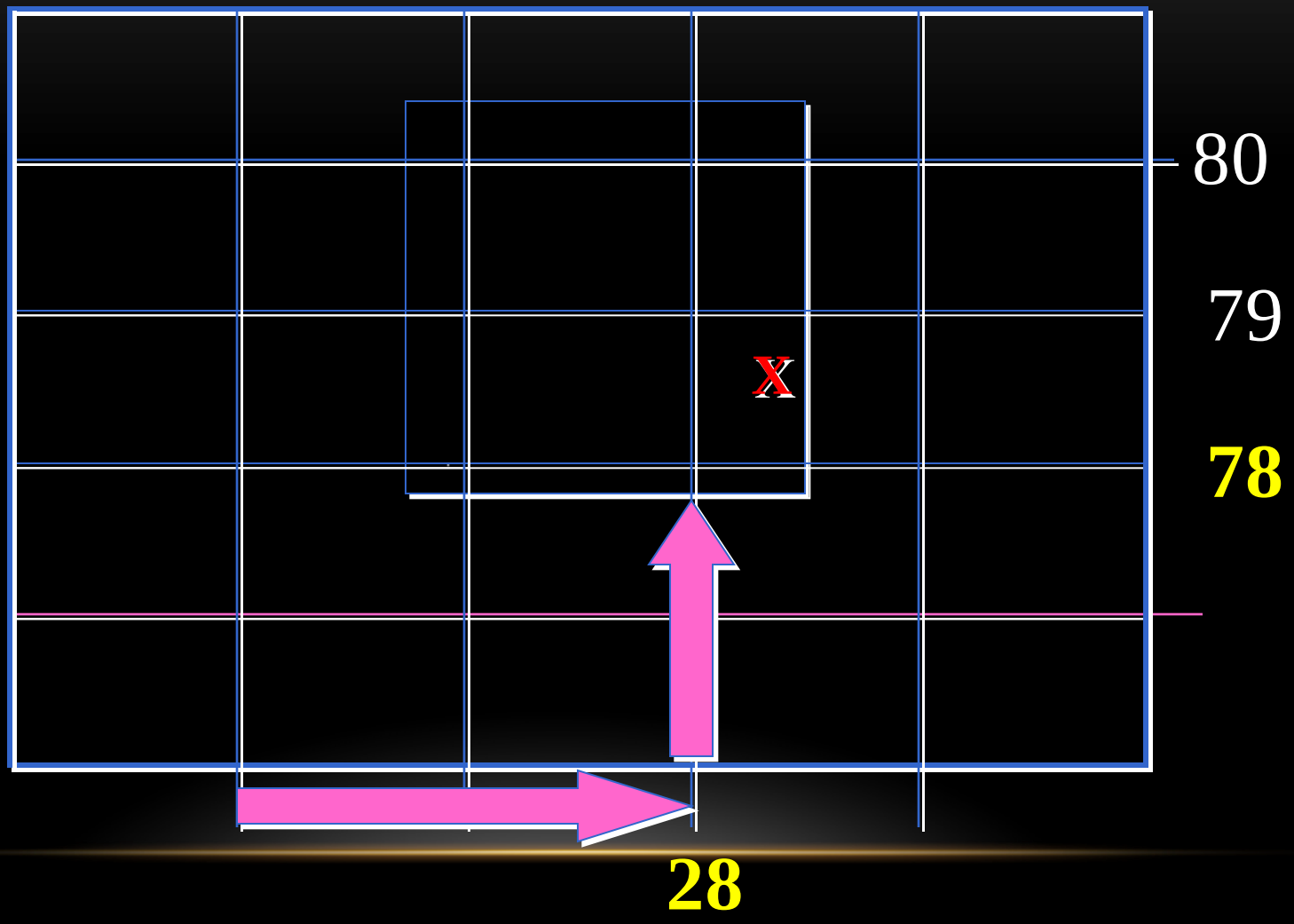


MAPS IN OTHER RESCUE DISCIPLINES BESIDES WILDERNESS SEARCH…

- Trench
  - Soil types
  - Utilities
- High Angle Rescue (Mountains)
  - Access
  - Evacuation Routes
  - Vehicle Access
- Confined Space
  - Utilities / Processing
  - Pipe routes
- Structural Rescue
  - Building Plans
    - Denote construction
    - Entry / Egress Points
    - Occupancy Type
    - Safety Aspects
- Water Rescue
  - Surface water
    - Dive Operations
    - Dragging Operations
  - Swiftwater
    - Maps of Charlotte

TELECOMMUNICATIONS IN RESCUE OPERATIONS

- Communication Centers; What is their function?
- Why is it important to have well trained telecommunicators for responses to rescue incidents?
  - Query callers for information
  - Determine what resources to dispatch.
  - Ability to locate specialized resources quickly
  - Ability to take information and relay it to the IC.
  - TC must be experienced, computer oriented, multi-tasker, good communicator, work under stress.

TYPES OF COMMUNICATION EQUIPMENT

- 911
- E911
  - Plots location, phone number, name of addressess
- E911 “Phase II” Cell Phone Plotting
- Hotlines /Ringdowns/ Phone lines
- Mobile Radios
- Mobile Data Terminals
- GPS / Automatic Vehicle Locating
- Portables
- Cellphones

RECORDING COMMUNICATIONS

- Most are digitally recorded.
- Provide legal aspects
- Public Record
- Training Tool
- Quality & Assurance

RECEIVING NON-EMERGENCY PHONE CALLS

- Answer Phone w/ name and station # or name
- Treat customers w/ respect and courtesy.
- Take contact name, address, call back number
- Take info and advise we will contact the customer they should not have to call back.

RECEIVING EMERGENCY PHONE

- Address first in case connection is lost
- Nature of the problem
- Call back number
- Name
- *Take adequate info from caller so the correct level of response is sent in the shortest amount of time.*

COMMUNICATIONS

- Procedures for alerting fire / rescue personnel.
- What is your AHJ's standard on radio communication practices?
- 10-codes or clear text?
- Radio chatter
- Non-essential information

HOW WOULD YOU CONTACT?...

- Coast Guard
- Wildlife Commission
- Department of Transportation
- Gas company, electric / telephone, cable, water / sewer departments
- Mutual aid,
- Law enforcement
- Local adventure clubs, local fishing and boating clubs, city and county planning departments and tax offices.

INTER-AGENCY INTER-OPERABILITY COMMUNICATIONS

- “Does your department have a procedure in place to communicate among other agencies ?
- Why is important that they should have these procedures in place.

FOUR PHASES TO RESCUE

PHASE I (ASSESSMENT)

- On Arrival:
  - IC initiates an *information gathering process* to include;
    - Is everyone accounted for?
    - Number of victims and location(s)
    - How much time has elapsed.
    - Risk vs. Benefit analysis
      - Dead is Dead

PHASE I (ASSESSMENT)

- On arrival: (cont'd)
  - Do any workers speak english?
  - Positioning apparatus considerations:
    - Safe location?
    - Accessibility for later arriving specialty vehicles

PHASE I (ASSESSMENT)

- Once initial info is gathered the IC can initiates the decision-making process…
- Can the on-scene or responding units handle the rescue?
- If not, begin immediately requesting appropriate resources.
- Establish & announce command location

PHASE I (ASSESSMENT)

- Establish Scene control;
  - Set up hazard/ exclusion control zones ASAP
    - Hot, Warm, Cold

PHASE I (ASSESSMENT)

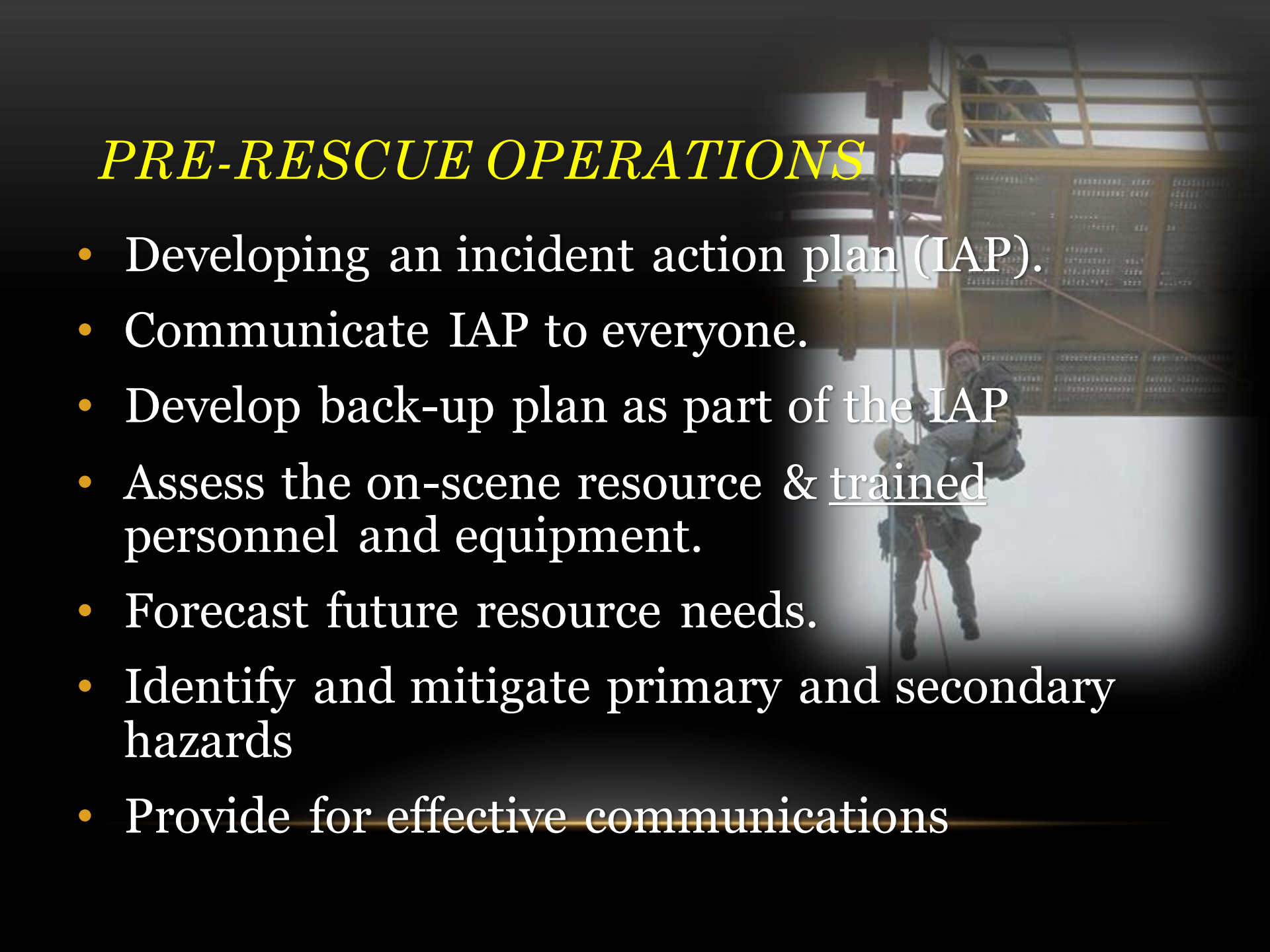
- *Secondary Assessment* involves a closer evaluation of the scene to gather specific information about the rescue problem.
  - Surrounding hazards
  - Isolate or mitigate hazards

PHASE I (ASSESSMENT)

- *Secondary Assessment:*
- Identify Mode of operation;
  - Rescue
  - Recovery
- The mode of operation will affect the development of the IAP.

PHASE II (PRE-RESCUE OPERATIONS)

- Begin developing and finalizing the IAP with technical specialists…
- Communicate the IAP to all personnel.
- Develop and implement a back-up plan.



PRE-RESCUE OPERATIONS

- Developing an incident action plan (IAP).
- Communicate IAP to everyone.
- Develop back-up plan as part of the IAP
- Assess the on-scene resource & trained personnel and equipment.
- Forecast future resource needs.
- Identify and mitigate primary and secondary hazards
- Provide for effective communications

PHASE II (PRE-RESCUE OPERATIONS)

- Conduct a SITSTAT & RESTAT
  - Situation status assessment
  - Resource status assessment.
  - Do the responding resources match the needs of my current and projected Incident Action Plan needs?
- Do we need to monitor atmosphere?
- Mitigate other hazards specific to rescue problem.

PHASE II (PRE-RESCUE OPERATIONS)

- Do we need to implement personnel accountability system.
  - PAR Tags
  - Entry & egress control measures
  - Ensure Scene is safe/ secure before rescue ops. begin.
  - Tailgate meetings?

PHASE III (RESCUE OPERATIONS)

- Conducting the rescue operation
- Enforcing safety measures
- Maintain accountability
- Forecast outcome of strategy & tactics
- Is the rescue a multi-phase problem?

PHASE III (RESCUE OPERATIONS)

- Establish a plan for reaching patient(s), assess priority of patient.(Hasty Concept)
- Determine the evacuation plan. How the patient will be packaged & which type of litter, harness, basket will be used.
- This is based upon Hasty Team's pt. assessment & priority.
- Evacuate

PHASE IV (TERMINATION)

- Investigations initiated
  - Photos/video
  - Documentation of IAP
- Maintain accountability for personnel and equipment until the end of operations.
- Enforce PPE throughout termination.
- Secure equipment if unsafe to operate.

PHASE IV (TERMINATION)

- All equipment utilized should be inspected and services according to manufacturer's recommendations.
- Conduct a critique and debrief the team on another date.

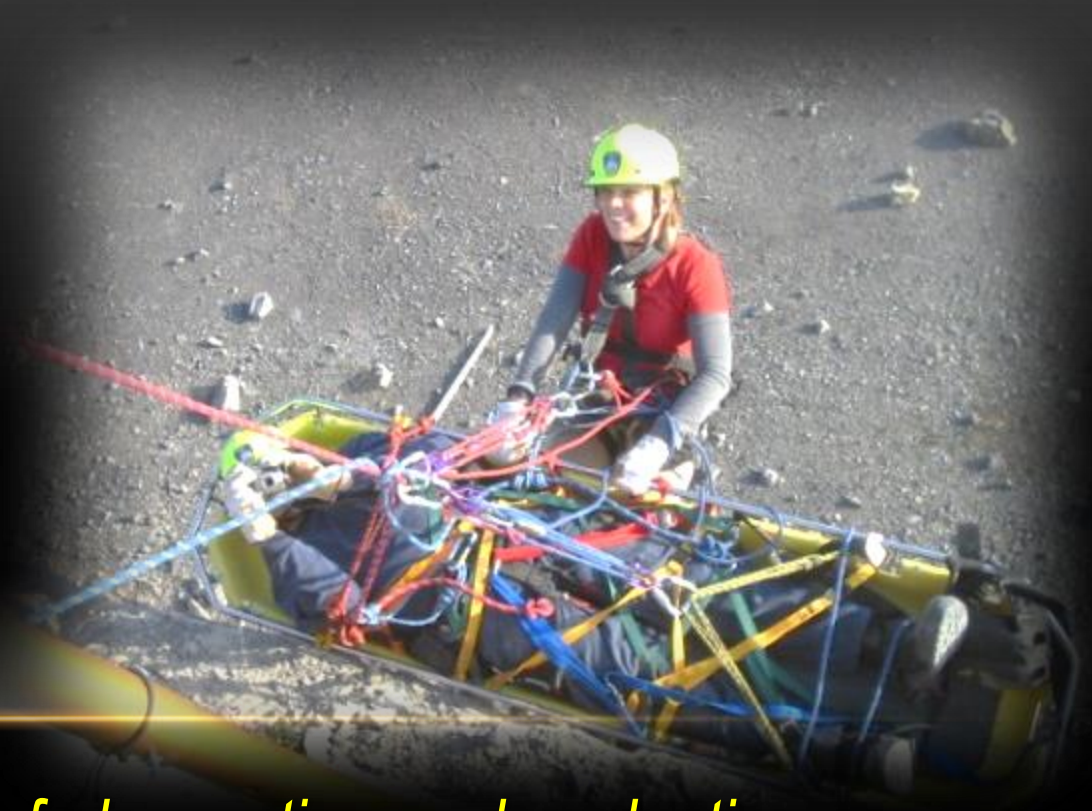
PHASE IV (TERMINATION)

- Dismantling of the shoring system.
  - This can be a very dangerous process if not done correctly.
  - Consider swapping out rescuers for fresh responders who are not fatigued.
  - Brief rescuers to avoid complacency.
  - Shoring system should be dismantled in reverse order of its construction.
  - Personnel should always work within the safe zone, just as they did during the construction phase.

PHASE IV (TERMINATION)

- Personnel Accountability
- Investigating the cause of the incident
- Releasing the scene back to those responsible
- Providing psychological support via setting up a critical incident stress debriefing or defusing session.

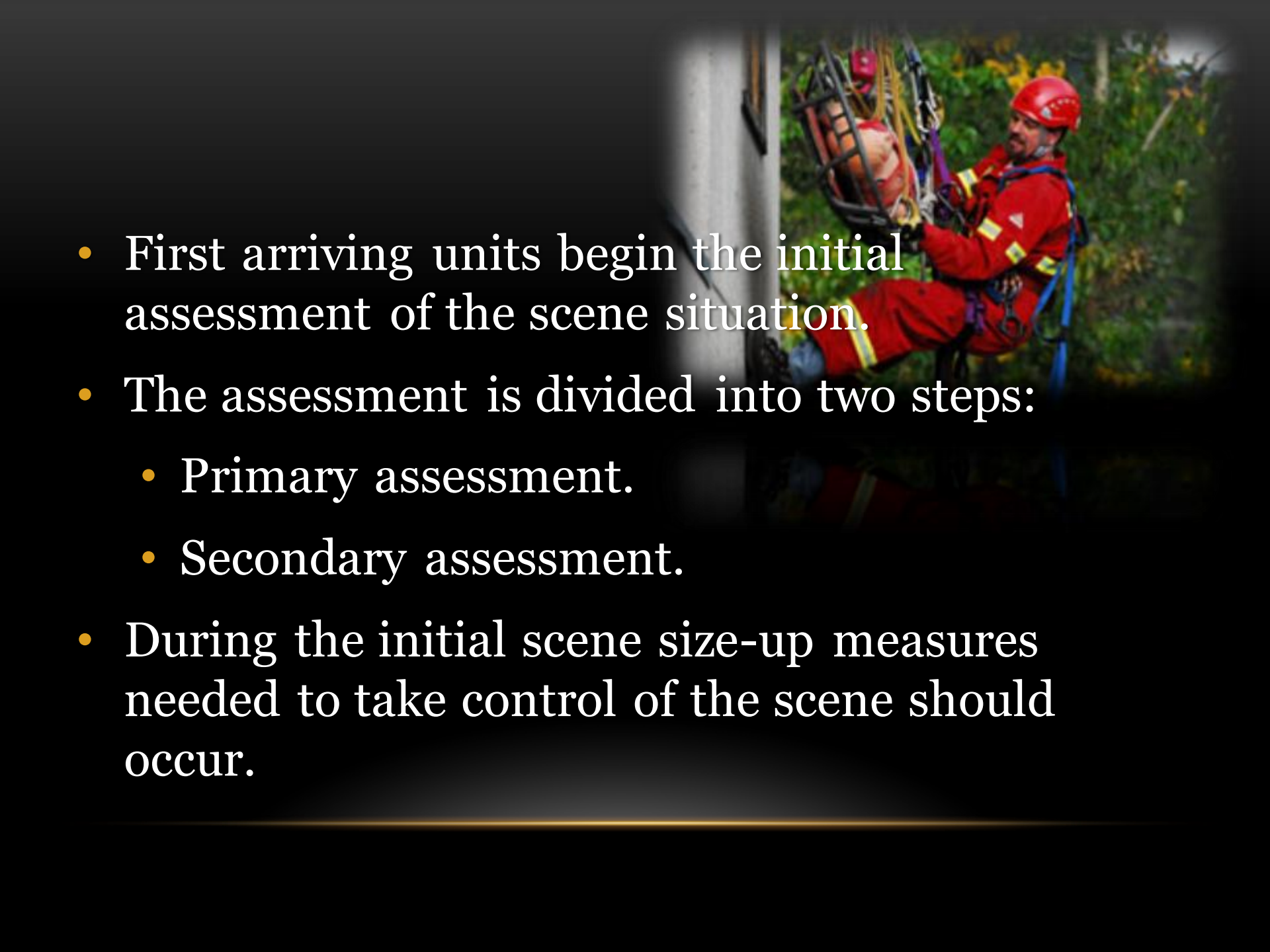
SIZE-UP



"An on-going process of observation and evaluation of the rescue scene for needed changes in strategic goals and tactical considerations for the incident"

SIZE-UP

- Attempts to identify:
  - The nature and severity of the rescue
  - Type of rescue
  - Number and location of victims
  - Existing and potential hazards
  - Rescue versus recovery
  - Helps to determine resource needs.



- First arriving units begin the initial assessment of the scene situation.
- The assessment is divided into two steps:
  - Primary assessment.
  - Secondary assessment.
- During the initial scene size-up measures needed to take control of the scene should occur.

SIZE-UP PHASE 1:
PRIMARY ASSESSMENT

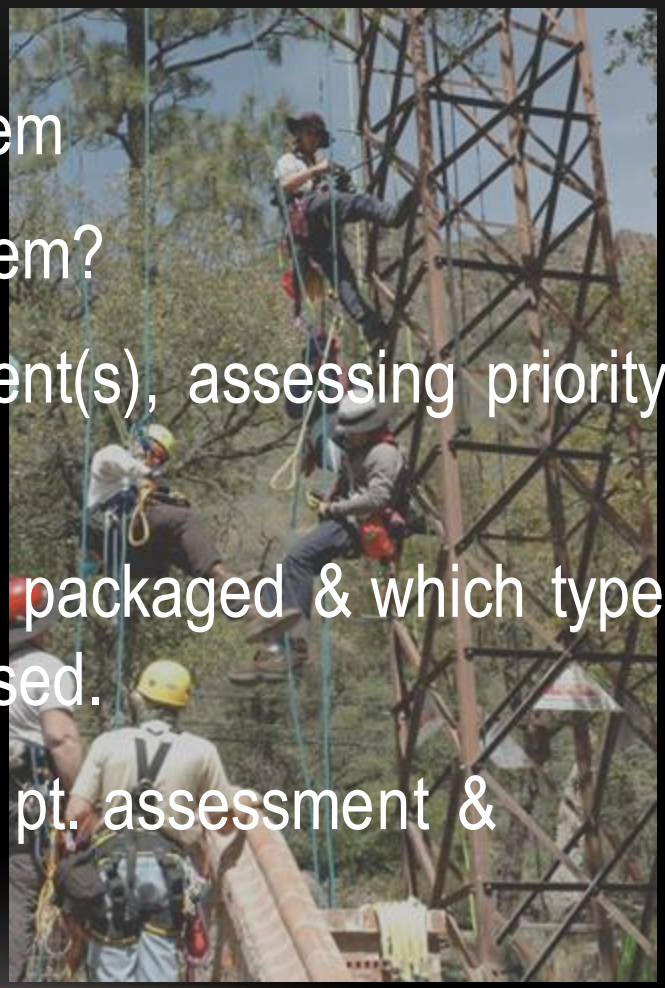
- Information gathering.
- Decision-making.
- Scene control (establishing hot, warm and cold zones).
- Identify hazards that need to be mitigated.
- Resource assessment needed and evaluate future resource needs.

SIZE-UP PHASE 1: *SECONDARY ASSESSMENT*

- Is there an elevation difference? How much?
- Conduct the hazard assessment?
- Identify the mode of operation, rescue or recovery..

SIZE-UP: PHASE 3: *RESCUE OPERATIONS*

- Implement an accountability system
- Is the rescue a multi-phase problem?
- Establish a plan for reaching patient(s), assessing priority of patient.(Hasty Concept)
- Determine how the patient will be packaged & which type of litter, harness, basket will be used.
- This is based upon Hasty Team's pt. assessment & priority

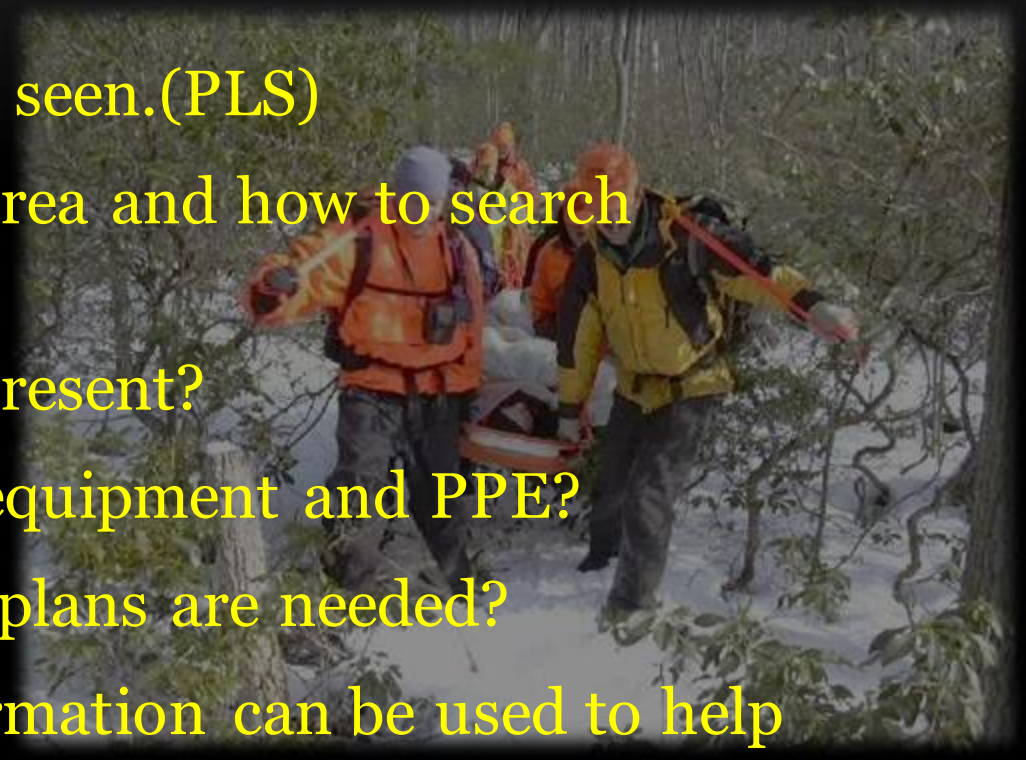


- Who and what can be useful in performing a scene size-up of a rescue scene.
- Various scene size-up considerations for each rescue discipline.
- What are some of the differences between the disciplines?

OTHER SIZE UP CONSIDERATIONS: WILDERNESS RESCUE (EXAMPLE)

- Why is interviewing witnesses so important?
  - 4 W's..
    - Where? Where was the person last seen?
    - Why? Reason the victim was in the situation that brought about the need for rescue.
    - Who? Description of the victim and clothing worn.
    - What? What time did the subject get hurt, entrapped, or disappear?
    - When? When was their last meal or medications consumed. Was alcohol involved?

OTHER SIZE UP CONSIDERATIONS: WILDERNESS RESCUE (EXAMPLE)



- Establish the point last seen.(PLS)
- Determine the search area and how to search effectively.
- What are the hazards present?
- What is the necessary equipment and PPE?
- What types of maps or plans are needed?
- What other useful information can be used to help determine resource needs for an efficient and safe rescue response?

FOUR COMPONENTS THAT A RESCUER MUST APPLY TO COMPLETE A SUCCESSFUL OPERATION.

1. Knowledge of the techniques available to successfully perform a rescue or recovery.
2. The rescuer must have the equipment & skills necessary to perform the techniques.
3. Physical fitness needed to apply the skill
4. Judgment in determining which techniques to apply and when.

HAZARDS AND THEIR CONSEQUENCES

- Each rescue discipline involves many specific hazards unique to that discipline.
- Various types of hazards involving various rescue environments must be included in a hazard assessment

ROPE RESCUE HAZARDS

- Elevated heights, loose debris, sharp edges, and abrasive surfaces.
- Secondary hazards include down power lines, unstable vehicle, hazardous material leakage, and fire /explosion

STRUCTURAL COLLAPSE HAZARDS

- Types Of Collapse Patterns,
- Damaged Utilities
- Atmospheric Contamination
- Hazardous Materials
- Dark Voids,
- Unstable Debris
- Temperature Extremes,
- Noise
- Adverse Weather,
- Physical Hazards
- Secondary Collapse
- Confined Spaces,
- Below-grade Spaces
- Elevation.

CONFINED SPACE HAZARDS

- Oxygen Deficiency
- Oxygen Enrichment,
- Flammability
- Toxicity
- Mechanical Hazards
- Engulfment
- Darkness
- Temperature
- Extreme, Noise, Moisture, And Dust.

WATER RESCUE HAZARDS

- Water currents
- Floating Loads
- Entrapments
- Low head dam,
- Contaminated water
- Cold water

TRENCH COLLAPSE HAZARDS

- Unstable Trench Walls
- Hazardous Objects Within The Trench
- Secondary Collapse
- Surcharge Vibration
- Unsupported Utilities
- Atmospheric Hazards
- Temperature Extremes
- Water Accumulation
- Dust

AGRICULTURAL HAZARDS
CAVING HAZARDS
TOWER RESCUE HAZARDS

HAZARDS MUST BE MINIMIZED FOR THE SAFETY OF THE RESCUERS AND PATIENTS.

- Scene Control.
- Isolation / Evacuation.
- Establishing Hazards Zones
  - Hot; Action Area
  - Warm; Organizing & Staging Of Equipment
  - Cold; Non-essential Personnel, Logistics,
- Why Is Personnel And Patient Accountability Important?
- Purpose Of Entry Permits And How They Ensure Rescuer Safety?

HAZARD ZONES

- Established at every incident.
- Officially announced on larger scale incidents.
- Hot Zone is the area where the rescue is taking
- place.
- The size is dependent upon the nature and extent of the problem.
- Only personnel who are dealing directly with treating or freeing victims should be permitted into this area.

HAZARD ZONES

- Warm Zones are located adjacent to the Hot Zone; this area is for support personnel assisting those in the Hot Zone and staged equipment.
- Cold Zones surround the Hot and Warm Zones.
  - ICP, PIO, staging of incoming personnel, and equipment waiting for assignment are located in this zone.
  - The outer boundary of this zone should be cordoned off to the public.

OSHA RULES

- Trench: 29 CFR 1926.650
- Confined Space: 29 CFR 1910.146
- Mine Rescue: 29 CFR 49.1-10.
- Haz-Mat 29 CFR 1910.120
- Fall Protection: 29 CFR 1926.501

ON-SCENE-ENVIRONMENTAL CONDITIONS

- What is the potential impact on the operation?
- How important is the current time and weather?
- 12 hour forecast.
- How is daylight vs. night-time operations different?

NATIONAL INCIDENT MANAGEMENT SYSTEM-NIMS

- Why should the AHJ comply with NIMS.
- Since 9-11-11 FEMA improved prevention, preparedness, response, recovery, and mitigation capabilities and coordination of disasters across the country.

NATIONAL INCIDENT MANAGEMENT SYSTEM-NIMS

- A national approach to incident management, applicable at all jurisdictional levels.
- Across various functional disciplines improve effectiveness of emergency response across a full spectrum of potential incidents and hazard scenarios.
- Also improves coordination and cooperation between public and private entities

- NIMS provides a consistent nationwide template to enable all government, private-sector, and nongovernmental organizations to work together during domestic incidents.
- NIMS provides a framework for interoperability and compatibility.

- NIMS provides a flexible framework between government and private entities at all levels.
- applies to all phases of incident management, regardless of cause, size, location, or complexity.
- NIMS provides a set of standardized organizational structures, as well as requirements for processes, procedures, and systems designed to improve interoperability.

COMPONENTS OF NIMS

- NIMS is comprised of several components components include:
- Command and Management.
- Preparedness.
- Resource Management.
- Communications and Information Management
- Supporting Technologies
- Ongoing Management and Maintenance.

IMPORTANCE OF PROPER INCIDENT ORGANIZATION.

- Maintain Scene Control For Safety.
- Develop A Primary Strategy And A Secondary Strategy To Ensure Efficiency.
- Discuss The Concept Of Establishing Command,
- Span Of Control,
- Divisions,
- Groups
- Ranches.

RESPONSIBILITIES OF COMMAND

- The IC must monitor the overall operation.
- Establish and maintain a secure communication link between the dispatch center and responding resources.
- Check to see if anything was missed during initial size-up.
- Reassess operations periodically.
- Evaluate if the situation has changed?
- Are additional resources needed?
- Reassess rescue personnel's mental and physical status periodically.

RESPONSIBILITIES OF COMMAND

- Discuss some of the command responsibilities
- necessary when *directing a rescue / recovery incident.*
- Assign tactical tasks to competent personnel.
- Establish and maintain communications.
- Ensure safety for all personnel involved.
- Understand procedures for transferring Command.
- Understand procedures for terminating command.

FUNCTIONS OF COMMAND.

- Establish Command and designate a command post location.
- Determine the incident priorities
- Project the magnitude and duration of the incident.
- If the operation is a recovery, it may continue for days.
- Point out that a combination of rescue and
- recovery operations may deplete resources.

- Discuss the command structure for small-scale rescue
- operations.
- a) Command may elect to control both strategy and
- tactics.
- b) Experience of the incident commander is the
- determining factor.
- c) Discuss the organizational chart for a small-scale
- event.

- Discuss the command structure for large-scale rescue operations.
- a) Command should be established and the necessary command and general staff positions should be assigned to maintain the continuity of the incident.
- b) The amount of subdivision is determined by a needs assessment during the initial size-up phase.
- This process in continuous throughout the incident.
- c) Discuss the organizational chart for a large-scale
- event.

- Discuss formal incident termination criteria.
- Equipment retrieval.
- Abandoning equipment.
- Scene security.
- Personnel accountability.
- Releasing scene and personnel.
- Providing Critical Incident Stress Management
- (CISD) for rescuers.
- Incident critique.
- Completion of documentation

PLACEMENT OF EMERGENCY VEHICLES

- Upstream of an incident is the end of an incident where traffic is approaching.
- Downstream of an incident is the end of an incident where traffic is moving away.
- The transition area is the area where traffic is moved out of its normal path and redirected around the scene.
- The term block left means the first responding vehicle should be angled left towards the median.
- The term block right means the first responding vehicle should be angled to the right towards the outside shoulder of the road.
- f) The term buffer space is the protected area where first responders can properly perform their duties.

- traffic is typically redirected with a taper, which is a line of orange cones placed to show traffic which way to move around the scene.
- A properly positioned response vehicle can also be used, such as a fire or rescue vehicle with flashing lights, or both. NCDOT recommends that this practice be followed when setting up a taper with traffic cones.
- Start by taking 5 traffic cones and walking upstream along the side of the road for five pavement skips.
- b) These skips are 10' long and spaced 30' apart.

- Use the cones to install a 200' taper. If more cones are used, continue adding one cone for each additional skip line.
- While keeping an eye on traffic at all times, place the first cone on the solid edge line in line with the fifth pavement skip.
- d) Walk back towards the edge of the vehicle that is blocking the incident scene, place the cones in a straight, diagonal line spaced at each skip line.
- e) The last cone should be at or near the edge of the blocking vehicle on the center of the skip line.
- f) Fire and rescue departments should use their vehicles to block on the upstream side of an incident, creating a 50' to 100' buffer space.

- Discuss in detail the goals of first arriving fire and rescue vehicles.
- a) Scene and personal safety.
- b) Patient extrication and treatment.
- c) Fire and spill control.
- d) Environmental impact containment.

- Discuss in detail the goals of first arriving EMS vehicles.
- a) Scene and personal safety.
- b) Rapid triage and treatment.
- c) Evaluation of transportation priority and method.
- d) Safe transportation.

- Stress that EMS transport agencies should park on the downstream side of an incident.
- This allows for easy patient access without interfering in fire and rescue operations.
- Discuss in detail the goals of first arriving law enforcement vehicles.
- a) Scene and personnel safety.
- b) Securing evidence and enforcing motor vehicle laws.
- c) Information gathering and managing tow response.
- d) Clearing the scene and resuming traffic flow.

- Point out that law enforcement agencies should park at a distance on the upstream side of the incident.
- This allows oncoming motorists an advanced notification of the incident scene.

- Discuss IMAP units or Incident Management Patrols that are available around the urban parts of the state.
- List their goals.
- a) Set up short-term traffic control for other
- responders upstream of the incident or reroute
- traffic.
- b) Clear debris, including vehicles, from the
- roadway.
- c) Assist emergency responders.
- d) Restore traffic flow.

- Point out that NCDOT Maintenance or Traffic Services units should be contacted to assist with long-term traffic impacts.
- These agencies are not required for every scene, but input from NCDOT can provide services.
- a) Assist other agencies with long-term traffic
- control, public information and roadway clearing.
- b) Help return traffic to normal flow.
- c) Protect the environment and public right of way.
- d) Assess and repair the roadway and other public
- property to its original condition.

- Discuss the role of the Towing and Recovery services
- as a key component to the restoration phase of the
- incident.
- a) Scene and personnel safety.
- b) Controlling and containing fluids.
- c) Removing debris.
- d) Clearing the scene.

- Point out that wreckers often arrive at a scene when other agencies are demobilizing, so the best place for them to park is in the downstream position.