

Special Operations Program Management

SOPM-Student Manual

1st Edition, 4th Printing-November 2016



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Special Operations Program Management



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ACKNOWLEDGEMENTS

The development of this course, *Special Operations Program Management*, was made possible through the contributions, cooperation, and assistance of many people. The National Fire Academy (NFA) wishes to thank the members of the course development team for their vision and dedication in the development of this course.

2010-2011 Course Development Team

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Special thanks are extended to all of the instructors and students who provided feedback throughout the development process. Their input has been invaluable in making this product the best that it can be.

Photo Credit: All photographs in the PowerPoint® slides of the following units are included with permission of Rob Schnepf, Alameda County Fire Department:

- Unit 2: Cultural Influences;
- Unit 3: Laws, Regulations, Standards, and Guidance;
- Unit 5: Financial Considerations.

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STUDENT EVALUATION

Students are evaluated on three course outcomes:

1. Final Presentation.
2. Final Presentation Backup Materials.
3. Final Exam.

The evaluation methodology is broken down as follows:

Evaluation Component	Percentage of Final Grade
Final Presentation (Group Evaluation)	40 points (40%)
Final Presentation Backup Materials (Group Evaluation)	40 points (40%)
Final Exam (Individual Evaluation)	20 points (20%)
Total	100 points (100%)

Outcomes 1 and 2 evaluate group performance. The groups are evaluated by two instructors, according to the criteria on the forms on the following pages, Evaluation Form for Group Presentation and Evaluation Form for Final Presentation Backup Materials. The total number of points assigned by each instructor will be averaged together in the grading sheet. Each individual in the group will be assigned the group's averaged score. Item 3, the Final Exam, is an individual grade.

Students may appreciate having feedback from their peers as well as the instructor. For this reason, students may peer evaluate one another's group presentations, using the Evaluation Form for Group Presentation, but the peer evaluation will not count toward a student's final score. The Evaluation Form for Group Presentation will be provided as Handout 4-2 to students for the peer evaluation.

At least a 70 percent must be earned to pass the course.

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EVALUATION FORM FOR GROUP PRESENTATION

Project or Group Name: _____ **Evaluator:** [] Peer [] Instructor

Please rate the criteria below on the following scale:

- 1- Strongly disagree
- 2- Disagree
- 3- Neutral
- 4- Agree
- 5- Strongly agree

Part 1: Presentation Components

Effectively used applicable regulations and standards to justify its program. _____

Clearly described how the proposed program will address a risk in Central City. _____

Clearly addressed the impact of the proposed program on financial processes. _____

Clearly addressed equipment issues related to its proposed program. _____

Clearly addressed staffing issues related to its proposed program. _____

Part 2: Presentation Format

The group delivered the presentation in a format appropriate for presentations to city government officials. _____

The group was able to effectively defend their justification for their program, or a component of their program, when challenged by the audience. _____

The group effectively used their backup material to support its presentation. _____

Total _____

(40 possible)

Students are graded as part of their group for this portion of the student evaluation. Each student within the group will receive the same grade.

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EVALUATION FORM FOR FINAL PRESENTATION BACKUP MATERIALS

Project or Group Name: _____

Component of Backup Material*	Complete?**(circle [0 pts] if incomplete; circle [10 pts] if complete)
Resolution (optional) --formal document presented for the agenda	N/A
Executive Summary --one-page overview of the problem and solution	(0 pts) (10 pts)
Project Overview --detailed description of the program and how it solves the identified problem	(0 pts) (10 pts)
Equipment Requirements --detailed description of any additional equipment requirements, including justification; specifications; acquisition, training, and maintenance costs.	(0 pts) (10 pts)
Staffing Requirements --detailed description of the manpower requirements, staffing options, labor costs, and training requirements.	(0 pts) (10 pts)
Budget --spreadsheet summarizing the projected costs of implementing and maintaining the proposed program expansion	(0 pts) (10 pts)
Total Points	

(40 possible)

*For a component to be considered complete, it must be clearly labeled and its content must be consistent with the description in the above form.

** These components are evaluated only on completion, so the assignment options are either 10 points if completed, or 0 points if not completed. A group can receive a maximum of 40 points toward the final grade if all components are completed. If a component is designated as optional, no points are assigned; an optional component has no impact on the grade.

Students are graded as part of their group for this portion of the student evaluation. Each student within the group will receive the same number of points.

**EVALUATION FORM FOR FINAL PRESENTATION BACKUP MATERIALS
(40 POINTS)**

Project or Group Name: _____

Date: _____

Score: _____

Points: Adjectival Rating

7-8 Consistently does all of the following:

- Information is presented in a logical and interesting sequence.
- Students demonstrate full knowledge by answering all questions with explanations.
- Graphics explain and reinforce text and presentation.
- Presentation has no misspellings or grammatical errors.
- Maintains good eye contact, uses clear voice.

4-6 Does most or many of the following:

- Information is presented in a logical sequence.
- Answers questions, but without elaboration or explanation.
- Graphics relate to text and presentation.
- Very few misspellings or grammatical errors.
- Maintains eye contact but frequently returns to notes, uses clear voice.

1-3 Does most or many of the following:

- Information is not clearly organized.
- Unable to answer questions.
- Occasionally uses graphics that rarely support text and presentation.
- Presentation has multiple misspellings and/or grammatical errors.
- Student occasionally uses eye contact, mostly reads presentation.

0 Essentially incomplete or does not turn in assignment:

- No organization to presentation.
- Unable to answer questions.
- No graphics.
- Reads report.
- No eye contact.
- Does not speak clearly so that the audience can understand.

COURSE SCHEDULE

- Unit 1: Defining Special Operations
- Unit 2: Cultural Influences
- Unit 3: Laws, Regulations, Standards, and Guidance
- Unit 4: Community Risk Assessment and Jurisdictional Analysis
- Unit 5: Financial Consideration
- Unit 6: Equipment
- Unit 7: Staffing
- Unit 8: Selling Your Program

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FIREFIGHTER CODE OF ETHICS

Background

The Fire Service is a noble calling, one which is founded on mutual respect and trust between firefighters and the citizens they serve. To ensure the continuing integrity of the Fire Service, the highest standards of ethical conduct must be maintained at all times.

Developed in response to the publication of the Fire Service Reputation Management White Paper, the purpose of this National Firefighter Code of Ethics is to establish criteria that encourages fire service personnel to promote a culture of ethical integrity and high standards of professionalism in our field. The broad scope of this recommended Code of Ethics is intended to mitigate and negate situations that may result in embarrassment and waning of public support for what has historically been a highly respected profession.

Ethics comes from the Greek word ethos, meaning character. Character is not necessarily defined by how a person behaves when conditions are optimal and life is good. It is easy to take the high road when the path is paved and obstacles are few or non-existent. Character is also defined by decisions made under pressure, when no one is looking, when the road contains land mines, and the way is obscured. As members of the Fire Service, we share a responsibility to project an ethical character of professionalism, integrity, compassion, loyalty and honesty in all that we do, all of the time.

We need to accept this ethics challenge and be truly willing to maintain a culture that is consistent with the expectations outlined in this document. By doing so, we can create a legacy that validates and sustains the distinguished Fire Service institution, and at the same time ensure that we leave the Fire Service in better condition than when we arrived.



FIREFIGHTER CODE OF ETHICS

I understand that I have the responsibility to conduct myself in a manner that reflects proper ethical behavior and integrity. In so doing, I will help foster a continuing positive public perception of the fire service. Therefore, I pledge the following...

- Always conduct myself, on and off duty, in a manner that reflects positively on myself, my department and the fire service in general.
- Accept responsibility for my actions and for the consequences of my actions.
- Support the concept of fairness and the value of diverse thoughts and opinions.
- Avoid situations that would adversely affect the credibility or public perception of the fire service profession.
- Be truthful and honest at all times and report instances of cheating or other dishonest acts that compromise the integrity of the fire service.
- Conduct my personal affairs in a manner that does not improperly influence the performance of my duties, or bring discredit to my organization.
- Be respectful and conscious of each member's safety and welfare.
- Recognize that I serve in a position of public trust that requires stewardship in the honest and efficient use of publicly owned resources, including uniforms, facilities, vehicles and equipment and that these are protected from misuse and theft.
- Exercise professionalism, competence, respect and loyalty in the performance of my duties and use information, confidential or otherwise, gained by virtue of my position, only to benefit those I am entrusted to serve.
- Avoid financial investments, outside employment, outside business interests or activities that conflict with or are enhanced by my official position or have the potential to create the perception of impropriety.
- Never propose or accept personal rewards, special privileges, benefits, advancement, honors or gifts that may create a conflict of interest, or the appearance thereof.
- Never engage in activities involving alcohol or other substance use or abuse that can impair my mental state or the performance of my duties and compromise safety.
- Never discriminate on the basis of race, religion, color, creed, age, marital status, national origin, ancestry, gender, sexual preference, medical condition or handicap.
- Never harass, intimidate or threaten fellow members of the service or the public and stop or report the actions of other firefighters who engage in such behaviors.
- Responsibly use social networking, electronic communications, or other media technology opportunities in a manner that does not discredit, dishonor or embarrass my organization, the fire service and the public. I also understand that failure to resolve or report inappropriate use of this media equates to condoning this behavior.

Developed by the National Society of Executive Fire Officers

A Student Guide to End-of-course Evaluations

Say What You Mean ...

Ten Things You Can Do to Improve the National Fire Academy

The National Fire Academy takes its course evaluations very seriously. Your comments and suggestions enable us to improve your learning experience.

Unfortunately, we often get end-of-course comments like these that are vague and, therefore, not actionable. We know you are trying to keep your answers short, but the more specific you can be, the better we can respond.



Actual quotes from student evaluations:	Examples of specific, actionable comments that would help us improve the course:
1 "Update the materials."	<ul style="list-style-type: none"> The (ABC) fire video is out-of-date because of the dangerous tactics it demonstrates. The available (XYZ) video shows current practices. The student manual references building codes that are 12 years old.
2 "We want an advanced class in (fill in the blank)."	<ul style="list-style-type: none"> We would like a class that enables us to calculate energy transfer rates resulting from exposure fires. We would like a class that provides one-on-one workplace harassment counseling practice exercises.
3 "More activities."	<ul style="list-style-type: none"> An activity where students can physically measure the area of sprinkler coverage would improve understanding of the concept. Not all students were able to fill all ICS positions in the exercises. Add more exercises so all students can participate.
4 "A longer course."	<ul style="list-style-type: none"> The class should be increased by one hour per day to enable all students to participate in exercises. The class should be increased by two days so that all group presentations can be peer evaluated and have written abstracts.
5 "Readable plans."	<ul style="list-style-type: none"> The plans should be enlarged to 11 by 17 and provided with an accurate scale. My plan set was blurry, which caused the dotted lines to be interpreted as solid lines.
6 "Better student guide organization," "manual did not coincide with slides."	<ul style="list-style-type: none"> The slide sequence in Unit 4 did not align with the content in the student manual from slides 4-16 through 4-21. The instructor added slides in Unit 4 that were not in my student manual.
7 "Dry in spots."	<ul style="list-style-type: none"> The instructor/activity should have used student group activities rather than lecture to explain Maslow's Hierarchy. Create a pre-course reading on symbiotic personal relationships rather than trying to lecture on them in class.
8 "More visual aids."	<ul style="list-style-type: none"> The text description of V-patterns did not provide three-dimensional views. More photographs or drawings would help me imagine the pattern. There was a video clip on NBC News (date) that summarized the topic very well.
9 "Re-evaluate pre-course assignments."	<ul style="list-style-type: none"> The pre-course assignments were not discussed or referenced in class. Either connect them to the course content or delete them. The pre-course assignments on ICS could be reduced to a one-page job aid rather than a 25-page reading.
10 "A better understanding of NIMS."	<ul style="list-style-type: none"> The instructor did not explain the connection between NIMS and ICS. The student manual needs an illustrated guide to NIMS.

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UNIT 1: DEFINING SPECIAL OPERATIONS

COURSE GOAL

Upon successful completion of this course, each student will be able to effectively manage a Special Operations program while administering their program with a focus on constant quality improvement. To include

1. *Personnel and resources.*
2. *Enhanced operational performance.*
3. *Sustainment of response capability.*

UNIT OBJECTIVE

Recognize that the Special Operations Program Manager must balance the demands of a variety of specialized services within the scope of a single program consisting of interdependent program elements.

ENABLING OBJECTIVES

1. *Review the course goal.*
 2. *Review the course structure, including content, sequence, and methodology.*
 3. *Participate in an activity allowing students to introduce themselves to one another.*
 4. *Define the Special Operations Program Manager.*
 5. *Develop a list of influences on a Special Operations program.*
 6. *Identify different types of Special Operations Teams.*
 7. *Identify challenges to managing the different types of Special Operations.*
-

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NOTE-TAKING GUIDE

Slide 1-1

**SPECIAL OPERATIONS
PROGRAM MANAGEMENT**

Slide 1-1

Slide 1-2

**UNIT 1:
DEFINING SPECIAL
OPERATIONS**

Slide 1-2

Slide 1-3

UNIT OBJECTIVE

Recognize that the Special Operations Program Manager must balance the demands of a variety of specialized services within the scope of a single program consisting of interdependent program elements.

Slide 1-3

Slide 1-4

ENABLING OBJECTIVES

- Review the course goal.
- Review the course structure, including content, sequence, and methodology.
- Participate in an activity allowing students to introduce themselves to one another.
- Define the Special Operations Program Manager.

Slide 1-4

Slide 1-5

ENABLING OBJECTIVES (cont'd)

- Develop a list of influences on a Special Operations Program.
- Identify different types of Special Operations Teams.
- Identify challenges to managing the different types of Special Operations.

Slide 1-5

Slide 1-6

COURSE ADMINISTRATION

- Class hours
- Breaks
- Lunch
- Smoking and tobacco use policy
- Restrooms
- Location of emergency exits and fire extinguishers
- Electronic distractors

Slide 1-6

Slide 1-7

STUDENT MATERIALS

- **Student Manual (SM)**
 - Note-Taking Guide with activities
 - Background text
- **Resource documents disc, including Comprehensive Emergency Management Plan (CEMP) Manual, based on Central City**
- **CEMP binder**
- **Central City laminated maps**
- **Resource documents binder**

Slide 1-7

Slide 1-8

COURSE REQUIREMENTS

- **Class attendance**
- **Completion of assignments**
- **Group project**
- **Test**

Slide 1-8

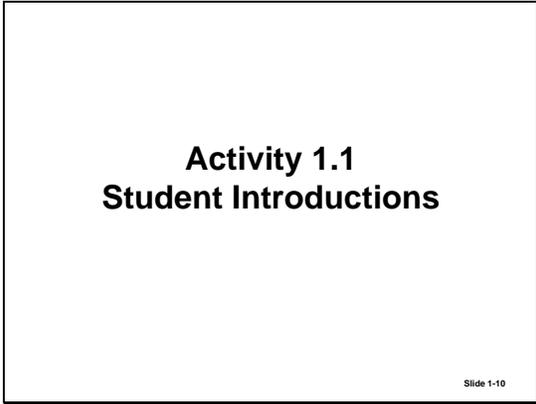
Slide 1-9

GRADING METHODOLOGY

Evaluation Component	Percentage of Final Grade
Final Presentation (Group Evaluation)	40 points (40%)
Final Presentation Backup Materials (Group Evaluation)	40 points (40%)
Final Exam (Individual Evaluation)	20 points (20%)
Total	100 points (100%)

Slide 1-9

Slide 1-10



Activity 1.1

Student Introductions

Purpose

To introduce you to one another.

Directions

1. You will have 2 minutes to introduce yourself to the class.
2. Report on the following information:
 - a. Name, place of residence.
 - b. Size and description of your organization.
 - c. What is your experience with Special Operations (e.g., Hazardous Materials, Rescue, Multidisciplinary)?
 - d. What are your expectations for this course?
3. Instructors will then introduce themselves.

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NOTE-TAKING GUIDE

Slide 1-11

COURSE GOAL

Upon successful completion of this course, each student will be able to effectively manage a Special Operations program while administering their program with a focus on constant quality improvement. To include

- Personnel and resources
- Enhanced operational performance
- Sustainment of response capability

Slide 1-11

Slide 1-12

COURSE OVERVIEW

- Unit 1: Defining Special Operations
- Unit 2: Cultural Influences
- Unit 3: Laws, Regulations, Standards, and Guidance
- Unit 4: Community Risk Assessment and Jurisdictional Analysis
- Unit 5: Financial Considerations
- Unit 6: Equipment
- Unit 7: Staffing
- Unit 8: Selling Your Program

Slide 1-12

Slide 1-13

PROJECT OVERVIEW

Group Project Activities

1. Introduction to the Team Project (4.1)
2. Probability of Occurrence and Vulnerability/Rating of Risks (4.2)
3. Strategic Planning Session (4.3)
4. Equipment Solutions (6.3)
5. Staffing and Training Solutions (7.1)

Each group will give a 20-minute presentation on the last day of class.

Slide 1-13

Slide 1-14

Activity 1.2
Building a
"Web of Influences"

Slide 1-14

Activity 1.2

Building a "Web of Influences"

Purpose

To recognize that the Special Operations Program Manager must balance the demands of a variety of specialized services within the scope of a single program consisting of interdependent program elements.

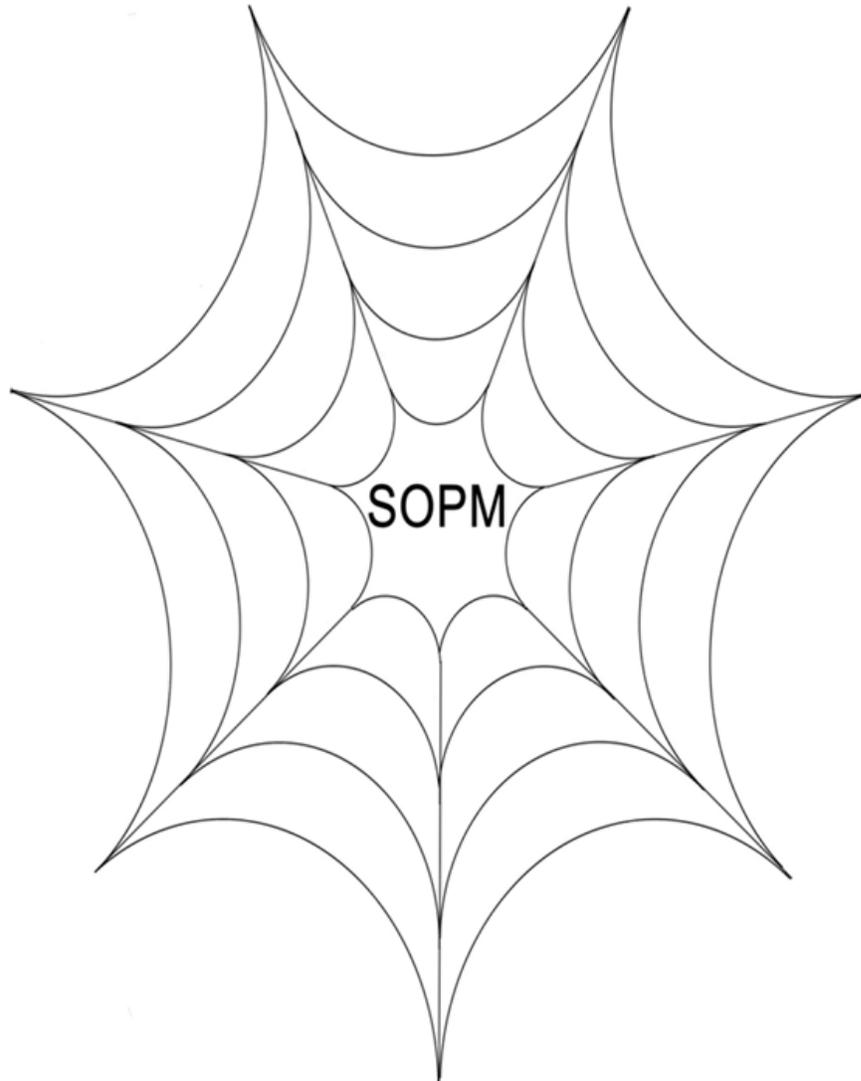
Directions

1. You will have 30 minutes to build your "Spider Web."
2. You may use the worksheet provided, you may draw your own spider web, or you may draft your spider web directly on the easel pad.
3. Each student will share with their group the area(s) of Special Operations for which they have responsibility in their own department.
4. The group will then develop a representative list of the variety of teams and specialties from each of the group members and add these to their group's "Spider Web."
5. The group will also make a list of the "influences" that the Special Operations Program Manager must manage. Represent these influences as labels for the "points" on the spider web.
6. Transcribe your list of teams and influences in the form of a 'spider web' onto the large easel pad for presentation to the class.
7. At the end of the 30-minute preparation time, each group will select a spokesperson to present their findings to the rest of the class.

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Activity 1.2 (cont'd)

Web of Influences



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Slide 1-18

**HAZARDOUS MATERIALS
TEAMS**

- Personnel from several departments at one event.
- Equipment and vehicles require specialized training and maintenance.
- National Fire Protection Association (NFPA) 472, *Standard for Competence of Responders to Hazardous Materials/ Weapons of Mass Destruction Incidents.*

Slide 1-18

Slide 1-19

TECHNICAL RESCUE TEAMS

Types of technical rescue include

- Rope
- Structural Collapse
- Confined Space
- Vehicle
- Water (various circumstances)
- Wilderness

Slide 1-19

Slide 1-20

**TECHNICAL RESCUE TEAMS
(cont'd)**

- Trench and Excavation
- Machinery
- Special Tactical
 - Federal Urban Search and Rescue (US&R)
 - Regional teams
- Others
 - Cave
 - Mine and tunnel
 - Helicopter

Slide 1-20

Slide 1-21

**TECHNICAL RESCUE TEAMS
(cont'd)**

- *NFPA 1006, Standard for Technical Rescuer Professional qualifications*
- *NFPA 1670, Standard on Operations and Training for Technical Search and Rescue Incidents*

Slide 1-21

Slide 1-22

SPECIALIZED MEDICAL TEAMS

- **Hazmedic/Toxmedic**
- **Tactical medic**
- **National programs that are locally managed**

Slide 1-22

Slide 1-23

**SPECIALIZED MEDICAL TEAMS
(cont'd)**

National Disaster Medical System Response Teams (NDMS)

- **Disaster Medical Assistance Team (DMAT)**
- **National Medical Response Team (NMRT)**
- **Disaster Mortuary Operational Response Team (DMORT)**
- **National Nurse Response Team (NNRT)**
- **National Pharmacy Response Team (NPRT)**

Slide 1-23

Slide 1-24

**SPECIALIZED MEDICAL TEAMS
(cont'd)**

Challenges of hosting a Federal team

- Supplies
- Transportation
- Distribution
- Security
- Pharmaceuticals
- Coordination with Health Department
 - Responders
 - Critical infrastructure
 - Transportation operators

Slide 1-24

Slide 1-25

**SPECIALIZED MEDICAL TEAMS
(cont'd)**

- Strategic national stockpile of pharmaceuticals
- Strategic veterinary stockpile

Slide 1-25

Slide 1-26

**SPECIALIZED MEDICAL TEAMS
(cont'd)**

NFPA 473, Standard for Competencies for EMS Personnel Responding to Hazardous Materials/Weapons of Mass Destruction Incidents.

Slide 1-26

Slide 1-27

NONFIRE TEAMS

- Bomb squad
- Clandestine operations
- Special Weapons and Tactics (SWAT) teams
- Special event planning
- Civilian Emergency Response Teams (CERT)
- Coast Guard Strike Teams
- Federal Bureau of Investigation (FBI) Hazardous Materials Response

Slide 1-27

Slide 1-28

Balancing the Special Operations Program Manager "Web of Influences"

Slide 1-28

Slide 1-29

BALANCING THE SPECIAL OPERATIONS PROGRAM MANAGER WEB

- Common use of equipment between teams to maximize purchasing efficiency
- Cross training
 - For example, would you train hazmat technicians to be paramedics or paramedics be hazmat technicians?

Slide 1-29

Slide 1-30

BALANCING THE SPECIAL OPERATIONS PROGRAM MANAGER WEB (CONT'D)

- The end goal of the program is to ensure that the "customer" is paramount.
- The Special Operations Program Manager should consider the impact on the entire program when applying policies.

Slide 1-30

Slide 1-31

SUMMARY

- Defining the Special Operations Program Manager
- Balancing the Special Operations Program Manager Web of Influence
- Types of Special Operations
- Management Challenges

Slide 1-31

OVERVIEW OF COURSE

Course Goal

Upon successful completion of this course, each student will be able to effectively manage a Special Operations program, including personnel and resources, while enhancing operational performance, and while ensuring response-capability sustainment, through continuing delivery with constant quality improvement.

Course Units

Unit 1: Defining Special Operations

Recognize that the Special Operations Program Manager must balance the demands of a variety of specialized services within the scope of a single program consisting of interdependent program elements.

Unit 2: Cultural Influences

Evaluate the organization's ability and willingness to meet the mission of Special Operations.

Unit 3: Laws, Regulations, Standards, and Guidance

Evaluate the organization's regulatory obligations to meet the mission of Special Operations.

Unit 4: Community Risk Assessment and Jurisdictional Analysis

Given a simulated community, evaluate the jurisdictional characteristics including the potential for natural, technological, and man-made hazards as well as any target hazards that constitute a high risk to the community.

Unit 5: Financial Considerations

Identify the financial processes for a Special Operations Team.

Unit 6: Equipment

Evaluate the equipment necessary to carry out the defined mission.

Unit 7: Staffing

Evaluate the organization's ability, with regard to staffing, to meet the mission of Special Operations.

Unit 8: Selling Your Program

Given the Central City model and the information provided in this course, present funding options and level of service for a Special Operations program.

Group Project Overview

Students will use Central City to analyze the risk and document the needs that relate to Special Operations. Based on the risk analysis and consideration of the need for a particular Special Operations capability presented to you by the Central City fire chief, your group will propose a solution to address the risk. Throughout the course, you will participate in activities during class that will help your group to consider all of the influences that affect your proposed program. There will be a written requirement consisting of an executive summary and backup material for your presentation, describing how you would implement a change in Central City's Special Operations program. Activities will cover current capabilities and resources, relevant laws and standards, staffing, equipment, and budget and funding considerations.

Central City Activities

Each student has a disk copy of the Central City Manual and there is a hard copy of the book for each table group.

- Activity 4.1: Probability of Occurrence and Vulnerability/Rating of Risks;
- Activity 4.2: Strategic Analysis Session;
- Activity 4.3: Introduction to the Team Project;
- Activity 6.3: Equipment Solutions;
- Activity 7.1: Staffing and Training Solutions; and
- Activity 8.1: Final Presentation.

Final Presentation

For the final activity, your group will make a presentation to the Central City council. The presentation will be 20 minutes long with a 10-minute question-and-answer period. It will provide an opportunity for your group to justify your proposal based on the identified need and your careful consideration of all of the changes that would have to be implemented to address the need.

Student Materials

- Student Manual (SM);
- Note-Taking Guide with activity worksheets;
- background text;
- resource disc, including Central City Manual;
- handouts;

- Central City Manual binder;
- Central City laminated maps; and
- resource documents binder.

Course Completion Requirements

- class attendance;
- completion of all assignments;
- group project; and
- test.

Grading Methodology

Evaluation Component	Percentage of Final Grade
Final Presentation (Group Evaluation)	40 points (40%)
Final Presentation Backup Materials (Group Evaluation)	40 points (40%)
Final Exam (Individual Evaluation)	20 points (20%)
Total	100 points (100%)

THE MANAGER

"A manager is the person who makes sure that things are done right.

A manager knows all of the rules, the guidelines, the policies, and practices that have been adopted by the organization to control the processes internal to the organization.

A manager is someone who knows how to make the system function in a standardized, uniform manner.

He is focused on the organization's behavior of being consistent, with form and function working to support the workforce in achieving the organization's mission and its goals and objectives."

- Ron Coleman, *The Fire Chief's Handbook*. 5th ed., 1995, PenWell Publishing Company, page 5.

A Special Operations Manager will develop skills in:

- planning;
- financing;
- structuring;
- staffing;
- training requirements;
- credentialing;
- resource typing;
- program sustainment; and
 - personnel,
 - resources, and
 - funding;
- directing;
 - implementing standard procedures,
 - maintaining special operations,
 - response resources, and
 - evaluating the progress or lack thereof.

It is necessary to become familiar with National Fire Protection Association (NFPA) 1600, *Standard on Disaster/Emergency Management and Business Contingency Programs*.

HAZARDOUS MATERIALS TEAMS

Probably the most common group in Special Operations will be the Hazardous Materials Team.

Differing Makeups of These Teams

Managing the Hazardous Materials Team can be a new experience due to the many differing makeups of these teams.

They may be full career in a large metropolitan department while all volunteer in a more rural setting.

There are also combination teams and regional teams.

Regional Teams

Regional teams can have personnel from several departments, both career and/or volunteer, that come together at incidents. With team members spread over a wide geographical area, supervision and training increases in difficulty. Notification and coordinated response can also become problem areas.

The Range of Vehicles

The range of vehicles used, from tractor trailer units to trailers behind a prime mover, can lead to new requirements for driver training and unit maintenance.

It is necessary to become familiar with NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*.

For more information on the different types of specialized Hazardous Materials Teams, see the U.S. Coast Guard's "Hazardous Materials Response Special Teams Capabilities and Contact Handbook" (2005), which is provided on the Resources Disc you received with your materials for this course.

TECHNICAL RESCUE TEAMS

The Technical Rescue component of the Special Operations Program can also be very complex.

The Variety of Rescue Operations

This is mainly due to the variety of rescue operations that can be required in a jurisdiction. Special Operations may manage the traditional Rescue Company skilled in extrication and entanglement, but generally will extend far beyond this to include

- Rope Rescue (High and Low Angle);
- Structural Collapse Search and Rescue;
- Confined Space Search and Rescue;
- Vehicle Search and Rescue;
- Water Search and Rescue (Dive, Ice, Surf, Surface/Swift Water);
- Wilderness Search and Rescue;
- Trench and Excavation Search and Rescue;
- Machinery Search and Rescue;
- Special Tactical Rescue; and
 - Federal Urban Search and Rescue Teams (US&R), and
 - Regional teams built around the same concepts for local responses;
- Other: Cave, Mine and Tunnel, Helicopter.

Technical Skills and Equipment

Due to the technical skills and equipment required to perform all of the tasks in these wide-ranging areas of rescue, an individual will not be an "expert" in all.

The Special Operations Program Manager will need to trust those supervised, delegate responsibilities, and seek outside assistance as needed.

The Special Operations Program Manager should also acquire as much general knowledge and education as time permits in each of the special areas he/she manages.

It is necessary to become familiar with NFPA 1600, *Standard on Disaster/Emergency Management and Business Continuity Programs* and 1670, *Standard on Operations and Training for Technical Search and Rescue Incidents*.

The concerns discussed above concerning regional teams, specialized training, and credentialing requirements, equipment and vehicle needs, and maintenance all apply here as well. Due to the vast range of equipment needs, justification, purchasing, and the entire budget process will be complex. Another difficulty to consider is the recruitment and maintenance of personnel for the different teams.

SPECIALIZED MEDICAL TEAMS

A field that is rapidly developing is Specialized Medical Teams that may fall under the Special Operations Program. In this area, the Special Operations Program Manager may manage some teams and also coordinate with several federal organizations during a major disaster such as an earthquake or hurricane.

The teams in this arena include

- Haz Tech Medic/Tox Medic;
- Tactical Medic;
- National Disaster Medical System Response Teams (NDMS);
- Strategic National Stockpile (SNS); and
- Local Medical Cache.

National Disaster Medical System Response Teams

The NDMS are national programs that are locally managed. They are made up of several smaller teams that each focus on a particular area of disaster relief. More information on NDMS teams can be found in the U.S. Coast Guard's "Hazardous Materials Response Special Teams Capabilities and Contact Handbook."

- Disaster Medical Assistance Team (DMAT)--provides medical care during a disaster or other incident.
- National Medical Response Team (NMRT)--provides mass decontamination and medical care to victims of a release of weapons of mass destruction (WMD), or a large-scale release of hazardous material.
- Disaster Mortuary Operational Response Team (DMORT)--provides victim identification and mortuary services during a disaster or other incident.

- National Veterinary Response Team (NVRT)--provides assistance in assessing the need for veterinary services following major disasters or emergencies.
- Federal Coordinating Centers (FCCs)--recruits hospitals and maintain local non-Federal hospital participation in the NDMS and coordinates exercise development and emergency plans.
- National Pharmacy Response Team (NPRT)--assists in chemoprophylaxis or the vaccination of large numbers of Americans in response to an emergency such as a disease outbreak.
- International Medical Surgical Response Team (IMSuRT)--is widely recognized as a specialized team; trained and equipped to establish a fully capable field surgical facility anywhere in the world.
- National Nurse Response Team (NNRT)--a specialty DMAT that will be used in any scenario requiring hundreds of nurses to assist in chemoprophylaxis, a mass vaccination program, or a situation that overwhelms the nation's supply of nurses.

Over 1,800 civilian hospitals in the United States are members of NDMS. Their role is to provide approximately 100,000 treatment beds to support NDMS operations in an emergency. When a civilian or military crisis requires the activation of the NDMS system, participating hospitals communicate their available bed space to a central control point. Patients are able to be distributed to a number of hospitals without overwhelming any one facility with casualties.

There are 80 teams based across the country.

CHALLENGES TO MANAGING SPECIALIZED MEDICAL TEAMS

Special Operations Program Manager to Have Good Working Relationships

A major concern is the conflict of the Medic Teams with the other teams with whom they must work. Issues can arise of "turf" and who makes some decisions. This will require the Special Operations Program Manager to have a good working relationship with the leadership of the other teams involved.

It is necessary to become familiar with NFPA 473, *Standard for Competencies for EMS Personnel Responding to Hazardous Materials/Weapons of Mass Destruction Incidents*.

In a Major Disaster, the Special Operations Program Manager Will be Tapped to Liaise and Coordinate

In a major disaster, the Special Operations Program Manager will be tapped to liaise and coordinate with several Federal teams and programs, which may be arriving to assist. These include the teams listed above who will need locations to stage, help setting up for work, housing, reimbursement, and documentation assistance. The Special Operations Program Manager must be familiar with these teams and their functions.

Logistics

Logistics will be an important part of the liaison and being the host is difficult. The following considerations will need to be addressed:

- warehousing of supplies;
- transportation;
- distribution of pods;
- security of controlled drugs;
- pharmaceutical expirations;
- coordination with Health Department on distribution vaccinations; and
 - responders,
 - critical infrastructure operators, and
 - transportation operators.

Strategic National Stockpile

Another Federal asset of importance to the Special Operations Program Manager is Strategic National Stockpile of pharmaceuticals that may be required for a WMD biological event. In some areas of the country there are similar medical caches at the local level. Again, the Special Operations Program Manager needs to be aware of the availability of these resources and how to request them when necessary. Medical stockpiles normally require local storage capability and distribution pods. There is also a Strategic Veterinary Stockpile for animal bio-security events.

NONFIRE TEAMS

A major difference with these teams will be response protocols.

Their operations are generally more law enforcement based. This will require developing a close working relationship with the team leadership and gaining an understanding of the operations.

Finally, the Special Operations Program Manager may find that there is a need to manage teams that do not ordinarily fall under the fire department. This will require the acquisition of knowledge and skills to handle these teams. Some may have an overall operational philosophy or body of personnel that are entirely different from the fire service.

These could include but are not limited to:

- Bomb Squad for Explosive Ordinance Disposal;
- personnel to assist a Special Weapons and Tactics (SWAT) Team (often with personal protective equipment (PPE) and decontamination);
- personnel to assist with clandestine lab operations (drugs and/or explosives);
- special event planning (political visits, major sporting events, Olympics, Super Bowl);
 - could have national agencies involved like the Federal Bureau of Investigation (FBI) or Secret Service,

- have oversight management responsibility, but may not totally manage the event, and
- can be several levels of managers to coordinate;
- Civilian Emergency Response Teams (CERT);
- National Guard;
 - CERF-P the CBRN Emergency Response Force Package, and
 - Civil Support Team (CST);
- Coast Guard Strike Teams; and
- FBI Hazardous Materials Response.

BALANCING THE SPECIAL OPERATIONS PROGRAM MANAGER "WEB OF INFLUENCES"

Remember that the goal of all Special Operations Teams is

- to save lives;
- reduce injuries; and
- conserve property whenever possible.

In order to achieve this Special Operations can be a very complex division of the department with numerous teams functioning in a myriad of directions.

Special Operations Program Manager

There will be a variety of interrelationships that will tax the manager's skills at planning, financing, structuring, staffing, directing, training, maintaining resources, and evaluating. The Special Operations Program Manager must become familiar with all the special services he/she will manage and how they function; the who, what, where, when, and how. Special Operations Program Managers need to acquire the broad picture of how these teams interface and work together and can support each other. If they do not work well together, he/she must strive to develop better interteam relationships.

Special Operations Program Manager Becomes the Arbitrator

At times, this will be difficult due to funding, budgeting, resource allocations of both personnel and equipment, and personalities. Then the Special Operations Program Manager becomes the arbitrator and balances his/her resources fairly to bring about the best results for the community. In some areas, the balancing will be accomplished by common departmental policies and procedures. In other cases, the Special Operations Program Manager will work with the teams to create operational procedures that apply to all. These often will be in the area of safety and procedures for the protection of personnel.

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APPENDIX PRECOURSE ASSIGNMENT

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PRECOURSE ASSIGNMENT

CONTENTS

1. Precourse Assignment Instructions.
2. Excerpts from the "Comprehensive Emergency Planning Guide for Central City and Liberty County" (CEMP):
 - a. Section 2.0: Community Profile for Liberty County and Central City.
 - b. Section 3.0: Hazard/Vulnerability Analysis.
 - c. Appendix E: Fire Service, and Addendum, "Squad 1 HAZMAT 1 Combined Equipment Inventory."

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PRECOURSE ASSIGNMENT

Part of this course will be based on the potential risks, vulnerabilities, and response capabilities of a fictional metropolitan area called Central City. This city, and the predicaments facing it, will serve as a backdrop for many discussions and group activities during the program. The results of these activities will yield real world solutions that you can take back and apply to your home agency.

Part 1: Become Familiar with Central City

Become familiar with the "Community Profile and Hazard/Vulnerability Analysis" of Central City and the surrounding area. This profile has also been provided to you in the set of precourse materials.

Understanding the basic threats and risks facing Central City, and correlating those vulnerabilities back to the capabilities of the Special Operations program, is key to determining if the agency is appropriately staffed, equipped, and funded to meet those challenges.

Review the structure and capabilities of the Central City Fire Department. This profile can be found in the Central City manual excerpt, "Appendix E: Fire Resources" and its attachment "CCFD HAZMAT 1 and Squad 1 Combined Equipment Inventory." This document is available as part of the set of precourse materials provided to you. Pay close attention to staffing, equipment, and apparatus available for response.

Part 2: Write a Paragraph about a Challenge in Your Home Agency

Additionally, this course is intended to address real-world issues you may face in your Special Operations program or elsewhere in your home agencies. These issues could include purchasing and/or budgeting difficulties; staffing questions; training or regulatory influences; positive or negative perceptions about Special Operations disciplines inside the organization, or a myriad of other problems that plague a Special Operations program. To that end, you are to craft a written paragraph that outlines an ongoing or emerging dilemma facing the program. Along with your written problem statement, you should also propose a desired and realistic solution. These challenges will be brought out during group activities and instructor-led discussion, with the intent of offering solutions or suggestions about ways the challenge could be addressed.

Materials to Bring with You to the Class

You are encouraged to bring a laptop to class for use during some of the group activities; however, having a laptop is not a requirement for participation in these activities. Classroom computers are also available.

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SECTION 2.0
COMMUNITY PROFILE FOR LIBERTY
COUNTY AND CENTRAL CITY

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Liberty County Overview

General Description

Liberty County is primarily a rural coastal county of 302,412 people. There are ten incorporated communities in the county: Apple Valley, Bayport, Blue Water, Central City, Deep River, Fisherville, Gold Mine, Harvest Junction, Jasper, and Kingston.

Population

The population of the county has been recorded by the United States Department of Commerce, Bureau of the Census, as follows:

1999	1990	1980	1970	1960
302,412	284,912	247,251	219,641	184,073

Government

Liberty County Government

The governing body of Liberty County is the Board of Supervisors, consisting of five supervisors. The members of the board are elected at large for staggered four-year terms and serve on a part-time basis. The board elects a president to direct meetings. It also selects a county manager to serve at its pleasure. The Columbia State Constitution specifies that counties elect the following 11 county officials (although the law makes allowances for county size):

- Five supervisors,
- Sheriff,
- Recorder of deeds,
- Clerk of courts,
- District attorney,
- Treasurer, and
- Controller.

Other officials are provided for by statute. The County Courthouse is located in the Palmer Building at X and 19th Streets.

Central City Government

The government of Central City is the council-manager form with seven council members making up the legislative body. The council is elected at large on a nonpartisan ballot for four-year terms. It elects one of its own members as mayor to preside over meetings and to vote on matters before the council, but the mayor has no veto power.

The manager, who is the chief administrative officer of the city, is selected by the council and serves at its pleasure. The manager carries out the ordinances of the council, makes recommendations to the council, prepares and executes the annual budget, negotiates with labor unions, and appoints and removes department heads and other administrative personnel. The manager has no vote in council meetings. City Hall is located at Z and 21st Streets.

Transportation

Highways

The county is divided north/south by Interstates 107 and 102 and east/west by State Highway 5. State Highway 69 intersects with Interstate 102 at Kingston; runs north to Harvest Junction and south through Jasper to the Coastal Highway. The Coastal Highway (State Route 1) parallels the coast and intersects Interstate 107 at Fisherville. State Routes 3 and 19 run north from the Coastal Highway inland.

Railroads

The Great Atlantic and Pacific Railroad operates two lines within Liberty County. The line running east/west, paralleling State Highway 5 and US 10, is both a passenger and a freight route. There are three passenger trains per day scheduled through Central City, 7:30 a.m., noon, and 5 p.m. There are four freight trains scheduled during the late evening and mid-morning hours. The line running from Tower Beach to Fisherville and through Jasper is strictly a freight line, hauling mining machinery and material.

Airport

The Liberty County Regional Airport is centrally located within the state and is capable of handling large passenger and cargo planes. With runways of 8,000 feet and 4,000 feet, Regional Airport has the capability of serving all but the largest commercial aircraft in use.

The main lines serving Liberty County are Linx Airlines and Atlantic Airlines. Direct flights are available to Washington, D.C.; New York; Atlanta; Memphis; St. Louis; New Orleans; and Mobile.

During 1990, there were approximately 15,000 departures from Regional Airport with 210,796 passengers boarding flights. Additionally, 200,000 pounds of mail and 2,750,000 pounds of freight were handled at the facility.

Liberty Coliseum and Convention Center

The Convention Center was completed in 1985 and accommodates the Lightning semiprofessional basketball team, the Pounders semiprofessional hockey team, and the Liberty Regional Concert Orchestra. The Convention Center has 95,000 square feet of usable floor space with 350 exhibit booths and meeting space for 8,000 people. For sporting events, it can be arranged to seat 12,000 people and has parking facilities for 3,000 cars. The Convention Center is located at the intersection of State Route 69 and Interstate 102, one mile east of Kingston.

Coastal Liberty County

The coastal areas of Liberty County were settled in 1752 by Welsh colonists who were attracted to the plentiful fishing and hunting grounds. Fisherville was their first permanent community established by charter in 1756. The town grew as more colonists arrived to settle in Columbia. In those times Fisherville served as an important port and trading post for colonists who went up the Turtle River to settle the inland areas of the new colony.

Soon after the American Revolution tragedy struck the area in the form of the "Great Storm of 1780" which all but wiped out the established settlements. Based on historical records, experts believe that this storm was at least a category 3 hurricane. As a result of this storm many survivors left the area for higher ground, particularly to the community of Albertville which is now Central City. Those who remained established two new communities on the barrier islands. Bayport, founded by merchant Joshua Masland in 1781 and Buffets Landing in 1784 led by fisherman James Buffet.

These three communities, Fisherville, Bayport, and Buffets Landing remained quiet fishing villages until the late 1880's when Bayport was "discovered" by railroad baron Robert Van Deusen. He and other wealthy industrialists from Central City bought up huge tracts of land on eastern Masland Island for seashore summer homes. To more easily access the area Van Deusen built a spur of his Great Atlantic and Pacific Railroad to Fisherville and began regular ferry service to Bayport in 1891. They built opulent ocean front homes and established the exclusive Bayport Yacht and Golf club. Bayport became the summer playground for Columbia's wealthy.

The "Great Storm of 1934" ended this era of Bayport's history. This storm, with sustained winds of 130 mph and a 12 foot storm surge, destroyed homes in Bayport and the railroad line. Because of the extent of the Great Depression most of the private property in the area was taken over by the Cities of Bayport and Fisherville due to unpaid taxes.

All of these events contributed to make Bayport what it is today. Former engineer and then Bayport Mayor Bernard Marshall established a master plan for the city in 1938. He laid out the street grid envisioning a "...community of cottages for the common man. The beauty and grandeur of the sea should be available to all." Marshall took advantage of New Deal era public works projects to begin street construction. World War II slowed these efforts but at the end of the war development began.

Through the 1950s Bayport's potential as a summer resort was hampered because it was only accessible by ferry or private boat. During this time it remained primarily a fishing village with clusters of small summer homes and a few Inns. Most of the year round residents were retirees.

The Bayport Boom began in 1959 when it was announced that the construction of Interstate 107 would include a 4-lane causeway connecting Bayport to the mainland. This meant that Central City would be less than an hour away by car. The causeway opened in 1963 and construction was at an all time high. Between 1963 and 1970, 12 new ocean front high rise hotels, dozens of motels and hundreds of homes and apartments were built. This prosperity changed again because of another hurricane.

Hurricane Emily struck in September of 1973 with almost the same force as "Great Storm of 1934." Particularly hard hit were the high rise hotels along the beach. Six of the hotels were so badly damaged that they had to be torn down. As a result this storm and new Federal and State regulations on coastal construction, in 1974 the Bayport City Council passed new building codes restricting building height to 4 stories and all new housing had to be elevated 10 feet above ground level. This new interest in Hurricane protection was heightened, and the codes strengthened in 1978 when Bayport came into full compliance with the National Flood Insurance Program. Although a relatively minor hurricane, Edward in 1991 caused little damage to Bayport.

Today Bayport remains the most popular beach resort in the State of Columbia. It's year round population of 15,400 triples during the summer. Many residents commute to Central City taking advantage of the express bus service started by Liberty County Transit in 1984. All of this plus good schools, plentiful shopping, and its natural beauty makes Bayport your year round seaside town!

Employment

Residence-Based Employment	<u>1999</u>	<u>1998</u>	<u>1997</u>	<u>1996</u>	<u>1995</u>
1. Civilian Labor Force	98,490	98,430	98,890	96,930	96,290
2. Unemployed	10,045	8,366	8,207	7,657	8,569
Percent of civilian labor force	10.2	8.5	8.3	7.9	8.9
3. Employed	88,445	90,064	90,683	89,273	87,721
a. Nonagricultural wage/salary workers	64,595	65,712	66,813	65,353	63,786
b. Other nonagricultural workers	12,520	13,012	12,540	12,570	12,555
c. Agricultural workers	11,330	11,340	11,330	11,350	11,380
 Establishment-Based Employment					
1. Manufacturing (total)	12,382	12,608	12,695	12,498	12,280
2. Non-manufacturing	77,000	77,900	78,000	77,000	76,000
a. Mining	4,924	4,896	4,890	4,950	4,940
b. Construction	3,939	3,930	3,936	3,990	3,900
c. Transportation and utilities	4,432	4,550	4,540	4,600	4,486
d. Wholesale and retail	19,698	19,760	19,770	19,840	19,665
e. Finance, insurance, & real estate	4,136	4,030	4,050	4,045	4,131
f. Service and misc.	19,993	19,773	19,770	19,820	19,690
g. Government	25,547	26,004	25,970	25,420	24,905

Major Employers

The following is a partial listing of the county's major employers, their products or services, and their number of employees:

	<u>Employees</u>	<u>Product</u>
Blue Water Nuclear Facility	1,039	Electricity
Central City Hospital	650	Medical Facility
Faith Hospital	620	Medical Facility
Columbia Veterans, Hospital	564	Medical Facility
Liberty National Bank	629	Financial
Dupont Chemical	4,243	Missile Fuel
Huge Mining Company	5,010	Coal
Lance Glass Company	250	Glass/Bottles
Colonial Baking Company	206	Baking
Great Grapes Winery	201	Wine
Happy Times Nursing Home	198	Elderly Care
Columbia State Prison	500	State Prison
Columbia State University	870	Educational
Farmers A&M College	559	Educational
Palumbo Plastics Company	217	Plastics
Fay Fertilizer Company	250	Fertilizer
Dorsey Drug Company	510	Medicine
Columbia Telecommunications	203	Telephone

Educational Facilities

The county encompasses six school districts including Liberty County School District, Central City Municipal Separate School District, Fisherville Municipal Separate School District, Harvest Junction Municipal Separate School District, Kingston Municipal Separate School District, and the Bayport Municipal School District.

Columbia State University, located in Central City, has an annual enrollment of 15,000 students. Farmers A&M College, also located in Central City, has an annual enrollment of 5,500 students.

The county's public school enrollment from 1988-89 to 1992-93 is as follows:

Year	Enrollment
1998-99	26,589
1997-98	26,390
1996-97	26,291
1995-96	26,112
1994-95	25,999

Population Distribution for Liberty County

<u>City</u>	<u>Population</u>
Apple Valley	5,500
Bayport	15,500
Blue Water	4,500
Central City	149,000
Deep River	14,000
Fisherville	23,000
Gold Mine	6,500
Harvest Junction	21,000
Jasper	5,000
Kingston	17,000
<u>Unincorporated Areas</u>	<u>41,412</u>
Total	302,412

School Names and Locations in Liberty County

<u>Name</u>	<u>Location</u>	<u>Enrollment</u>
U.S. Grant High School	T and 14th Streets, Central City	1300
Harris High School	I and 11th Streets, Central City	1200
Hoover High School	LL and 22nd Streets, Central City	800
McNamara High School	I-107 and 18th Streets, Central City	1000
J.D. Lerew Jr. High	I and 11th Streets, Central City	1000
Central City Jr. High	AA and 19th Streets, Central City	850
St. Xavier Jr. High	CC and 3rd Streets, Central City	1300
McGraw Elementary School	HH and 11th Streets, Central City	450
Thomas Elementary School	T and 2nd Streets, Central City	500
Harvest Valley Day School	HH and 33rd Streets, Central City	800
Eisenhower Elem. School	O and 37th Streets, Central City	800
Holy Cross Elem. School	OO and 18th Streets, Central City	300
Wilson Elementary School	L and 3rd Streets, Central City	200
Kennedy Elementary School	S and 38th Streets, Central City	456
Collins Elementary School	CC and 30th Streets, Central City	500
Truman Elementary School	Q and 21st Streets, Central City	400
Bayport High School	Marine Blvd and 5th Avenue, Bayport	450
Bayport Middle School	Marine Blvd and 5th Avenue, Bayport	450
Bayport Elementary School	Marine Blvd and 5th Avenue, Bayport	900
Kingston Area High School	SR 69 at SR 26, Kingston	900
Simmons Jr. High School	HH and 14th Streets, Kingston	900
Goldfinger Elem. School	O and 33rd Streets, Kingston	500
Graham Elementary School	II and 35th Streets, Kingston	400
McMinn Elementary School	D and 16th Streets, Kingston	200
Jeff. Davis High School	I-107 at 32nd Streets, Fisherville	1000
Brooks Jr. High School	O and 11th Streets, Fisherville	1000
Learned Elementary School	O and 28th Streets, Fisherville	400
Roosevelt Elem. School	L and 12th Streets, Fisherville	400
Coolidge Elem. School	S and 23rd Streets, Fisherville	500
Hanover High School	US 10 at SR 100, Harvest Junction	900
Watts Jr. High School	T and 10th Streets, Harvest Junction	450
Kidd Elementary School	C and 8th Streets, Harvest Junction	600
Nye Jr. High School	State Route 5 East, Gold Mine	450
Price Elementary School	State Route 5 East, Gold Mine	283
Liberty High School	I-102 at SR 5, Apple Valley	1200
King Jr. High School	G and 10th Streets, Apple Valley	950
Simon Elementary School	C and 17th Streets, Apple Valley	400
Apple Valley Elem. School	B and 12th Streets, Blue Water	550
Blue Water Elem. School	C and 3rd Streets, Blue Water	500
Liberty Middle School	C and 16th Streets, Blue Water	450

Day Care Centers in Liberty County

<u>Center Name</u>	<u>Location</u>	<u>Enrollment</u>
Upper Valley	KK and 26th Streets, Central City	100-125
Midland	U and 2nd Streets, Central City	50-75
Grassline	L and 7th Streets, Central City	150-250
Overbrook	G and 11th Streets, Central City	100-130
Leemore	W and 27th Streets, Central City	100-130
Sunnyside	H and 4th Streets, Central City	70-90
Happy Valley	S and 4th Streets, Central City	100-130
Funny Farm	FF and 30th Streets, Central City	100-130
Penn Brook	G and 6th Streets, Central City	50-70
Scidmore	F and 7th Streets, Central City	15-25
Alice's	F and 20th Streets, Central City	100-130
Lima	Route 69, Kingston	100-130
ABC	Route 69, Harvest Junction	100-130
Hickory	D Street, Harvest Junction	100-130
Dickory	1200 A Street, Jasper	15-30
Dock	1430 B Street, Gold Mine	25-30
School Day	100 A Street, Fisherville	100-130
Great Care	650 C Street, Deep River	100-120
Sunny Brook	1950 X Street, Apple Valley	20-30
Garden Hooks	1555 D Street, Blue Water	10-13
Garden Top	149 K Street, Fisherville	150-250
Smithwich	1600 A Street, Fisherville	150-250
Dunmore	425 AA Street, Fisherville	75-100
Topside	1100 G Street, Kingston	50-75
Garden Grove	600 B Street, Harvest Junction	100-130
Kindercare	Ferry Blvd and 5th Avenue, Bayport	100-125
Gentlecare	Ocean Blvd and 13th Avenue, Bayport	75-85

Other Facilities and Locations

Nursing Homes	<u>Location</u>	<u>Average Patient Load</u>
Lower Allen	B and 23rd Streets, Center City	250
Happy Times	N and 1st Streets, Center City	100
Hill Top	J and 33rd Streets, Central City	250
Riverside	EE and 29th Streets, Central City	200
Liberty	S and 29th Streets, Central City	150
Columbia	O and 11th Streets, Central City	150
Green	MM and 27th Streets, Central City	100
Garden Run	T and 35th Streets, Central City	250
Turkey Hill	AA and 14th Streets, Fisherville	100
Harvest Junction	F and 12th Streets, Harvest Junction	100
Kingston Center	B and 3rd Streets, Kingston	150
Sunshine	C and 11th Streets, Deep River	150
Oceanside	Ocean Blvd and 7th Avenue, Bayport	175
Gillmore	Bay Blvd and 10th Avenue, Bayport	100

Hospitals	<u>Location</u>	<u>Beds</u>
Central City	East of D Street, between 31st and 34th	199
Faith Hospital	S and 14th Streets, Central City	110
Levine Hospital	MM and 17th Streets, Central City	43
Fisherville General	S and 1st Streets, Fisherville	100
Harvest Junction	C and 3rd Streets, Harvest Junction	100
Columbia Veterans	J and 7th Streets, Central City	100

Other Facilities and Locations

Mobile Home Parks	<u>Location</u>	<u>Number of Homes</u>
Roaring River MHP	Interstate 107, Central City	75
Route 5 East MHP	Route 5, 2 miles east of Central City	100
Columbia Central MHP	U and 15th Streets, Central City	125
Columbia East MHP	MM and 6th Streets, Central City	500
Columbia West MHP	E and 21st Streets, Central City	150
Columbia North MHP	X and 2nd Streets, Central City	75
Cedar Rapids MHP	R and 29th Streets, Central City	100
Swatera Creek MHP	M and 7th Streets, Central City	100
Hospital Pines MHP	F and 35th Streets, Central City	150
Whispering Oaks MHP	JJ and 27th Streets, Central City	120
Kings MHP	K and 18th Streets, Central City	75
Queens MHP	J and 18th Streets, Central City	75
Liberty Court MHP	W and 10th Streets, Central City	100
Liberty Court #2 MHP	V and 10th Streets, Central City	125
Liberty Court #3 MHP	U and 10th Streets, Central City	150
Happy Acres MHP	E and 24th Streets, Central City	125
Hillside MHP	SR 69 at SR 26, Kingston	75
Mellborn Creek MHP	A and 10th Streets, Kingston	150
McCain Creek #2 MHP	1112 Sullivan Court, Harvest Junction	75
Willows Center MHP	US 10 at SR 100, Harvest Junction	100
Eden Sparrows MHP	345 Homer Drive, Harvest Junction	125
Swimmers MHP	Interstate 107 West, Blue Water	75
Quicksand MHP	Jasper Pike at SR 69, Jasper	120
Mr. Stever's MHP	State Route 5 West, Gold Mine	120
Waterview Estates	Ocean Blvd and 16th Avenue, Bayport	200
Oceanside Estates	Ocean Blvd and 9th Avenue, Bayport	125
Bayview Estates	Ferry Blvd and 15th Avenue, Bayport	50
Swanson's MHP	Marine Blvd and 15th Avenue, Bayport	100
Harrison's MHP	State Route 1 West, Fisherville	100
Willmore's MHP	State Route 1 East, Fisherville	125
Salmon's MHP	Interstate 107 North, Fisherville	75
Smiling Fish's MHP	A and 8th Streets, Fisherville	75
Winner's Circle MHP	F and 6th Streets, Fisherville	110
Palmer's South MHP	Orchard Pike at SR 18, Deep River	100
Jack's Mountain MHP	Orchard Pike at Turtle River, Deep River	75
High Point MHP	B and 7th Streets, Deep River	75
Hobbs Village MHP	134 Elm Street, Deep River	50
Wellborn Village MHP	State Route 3 South, Apple Valley	50
Rockside Manor MHP	Orchard Pike at SR 5, Apple Valley	75

Central City Population Densities

Location	Population
Single Family	
1. NN east to SS street, 24th north to O street	6,425
2. II east to SS street, 32nd north to 26th street	3,175
3. DD east to HH street, 41st north to 32nd street	2,250
4. I-107 east to N street, 39th north to 26th street	3,425
5. A east to F street, 24th north to O street	8,175
6. FF east to NN street, 9th north to O street	4,200
7. A east to I-107, 30th street north to 26th street	<u>1,750</u>
	29,400
Multi-residential	
1. A east to I-107, 39th north to 30th street	7,550
2. J east to BB street, 10th north to O street	14,325
3. N east to X street, 41st north to 26th street	12,775
4. FF east to NN street, 20th north to 9th street	<u>8,250</u>
	42,900
Residential/Commercial	
1. X east to DD street, 41st north to 26th street	14,650
2. R east to BB street, 20th north to 10th	17,850
	32,500
Residential/Commercial/Industrial	
1. R east to BB street, 24th north to 20th street	9,525
2. FF east to NN street, 24th north to 20th street	<u>7,775</u>
	17,300
Commercial	
1. FF east to J street, 24th north to O street	6,550
2. BB east to FF street, 24th north to O street	<u>8,775</u>
	15,325
Industrial	
1. J east to Q street, 24th north to 10th street	5,500
2. A east to SS street, 26th north to 24th street	<u>4,500</u>
	10,000
Urban Renewal	
1. DD east to II street, 32nd north to 26th street	<u>1,575</u>
	1,575

Central City Construction Types

Construction

Description

Single Family Dwellings

Predominantly wood frame with some un-reinforced masonry structures. NO significant later support at the foundations; cripple stud foundations.

Multi-Family Dwellings

Predominantly wood frame for the smaller units. For larger units in the older part of the city, mainly un-reinforced masonry. Larger units in the newer part of the city are either reinforced concrete or steel frame.

Industrial Buildings

In the older parts of the city, un-reinforced masonry. In the newer, parts, a mix of reinforced concrete, steel frame and tilt-up wall structures.

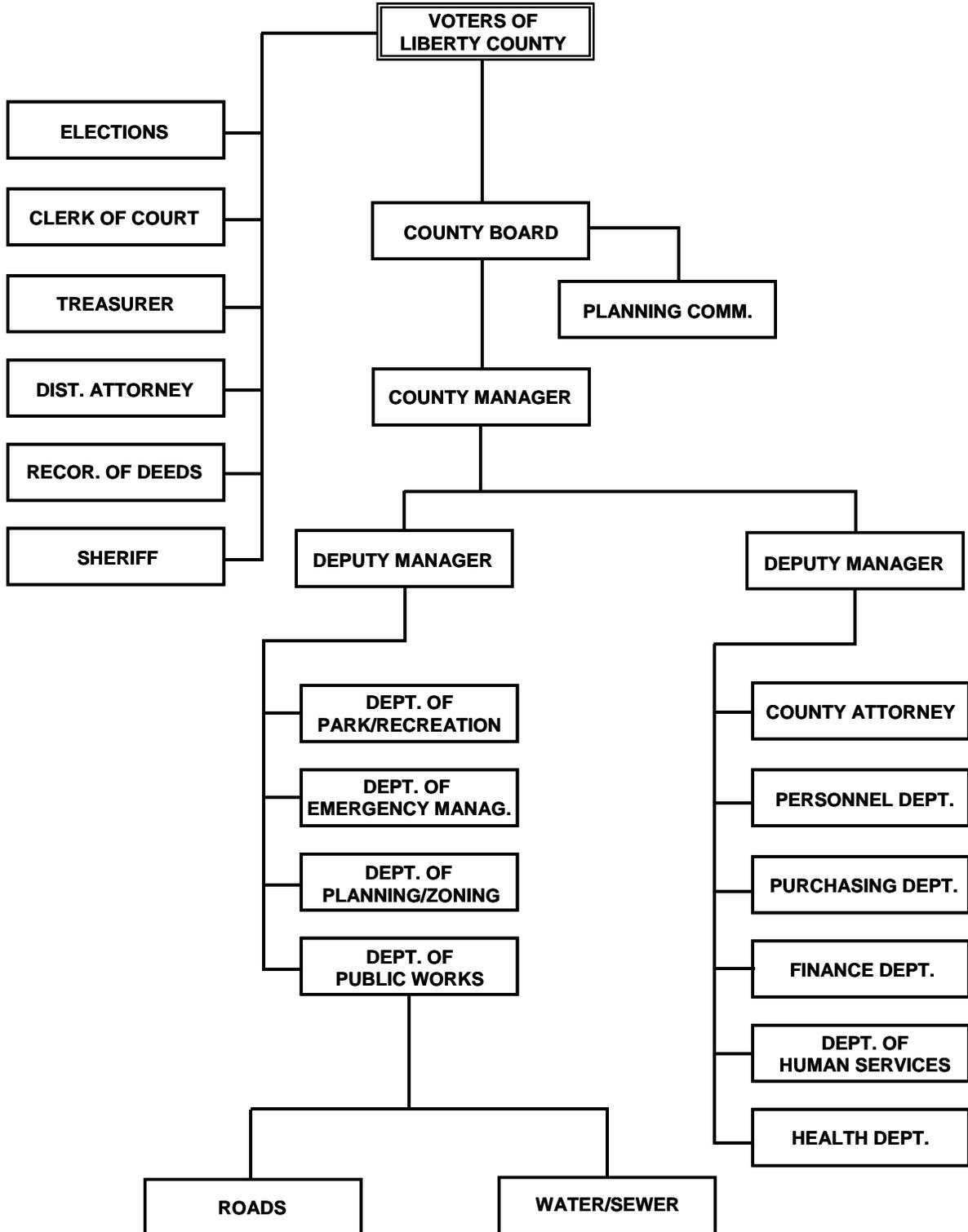
Commercial Buildings

In the older parts of the city, low rise commercial buildings either un-reinforced masonry or wood frame. High rise buildings in these areas are un-reinforced masonry. In newer parts of the city, low-rise buildings are reinforced concrete or steel frame.

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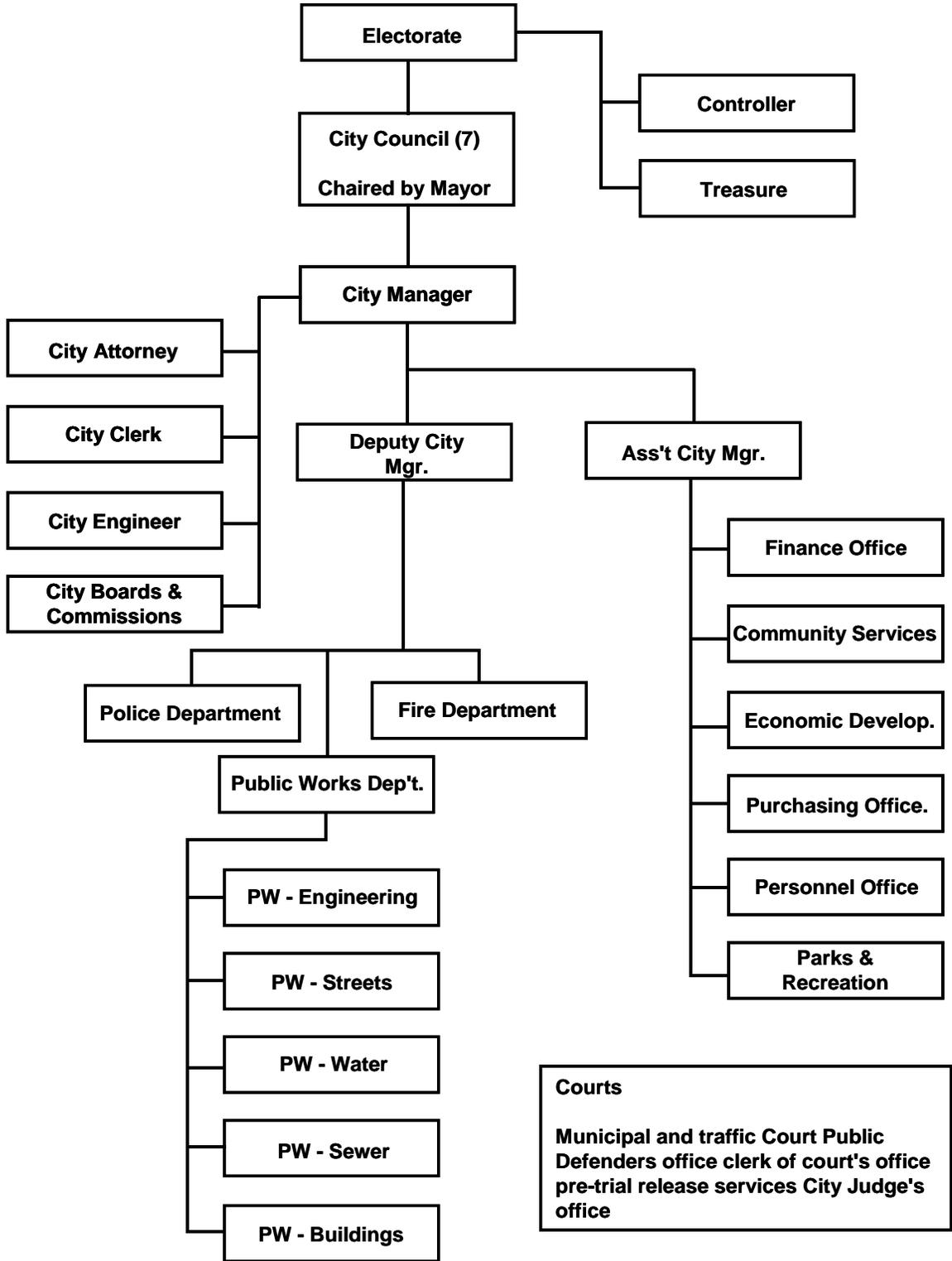
Government Organizational Chart
Liberty County

June 1, 2008



Government Organizational Chart
Central City

June 1, 2008



SECTION 3.0

HAZARD/VULNERABILITY ANALYSIS

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After-Action Report

Hurricane Edward

Hurricane Edward moved past Columbia on Wednesday, June 21, 2008, with little force, but causing torrential rains. The storm looped around the Central/Capitol City metropolitan area causing the Roaring River to overflow. Because the ground was saturated from previous rains, it could not absorb the water.

The Liberty County Civil Defense organization was activated on the evening of June 21. The Roaring River overflowed its banks in the early morning hours of June 22, causing \$28.3 million worth of damage, 28 deaths, 656 injuries, and the evacuation of 75,000 people from low-lying areas in Liberty County.

The plans, procedures, resources, and communications systems proved to be totally inadequate to cope with the devastation generated by Tropical Storm Edward. The following list of shortcomings was derived from an analysis of the operations initiated by Liberty County Civil Defense in response to Tropical Storm Edward.

Plans and Procedures

The storm's initial onslaught began at approximately 2:30 p.m. on June 21. The heavy rains continued until 3 a.m. on June 22. The warning system, established to alert sleeping citizens in the rural areas between Central and Capitol Cities, proved totally inadequate. Virtually all deaths occurred as a result of failure of Liberty County Civil Defense to initiate timely warning and to implement evacuation of the low-lying areas between Central and Capitol Cities.

Evacuated residents were placed in school systems in Liberty County, Paradise, Danton, Clifton, Jamestown, and Wicks. There were no procedures established for evacuating and sheltering residents; this led to confusion. The following shortcomings were noted:

- Evacuation traffic control procedures were not coordinated among state police, county sheriff, and local law enforcement officials. This resulted in traffic gridlock that delayed evacuation.
- The Red Cross was not tasked to operate the opened shelters. The management of each shelter directly depended on the management skills of the school system. There was no previous training of school system personnel on shelter operation. In addition, there were no written materials available on shelter operation.
- Shelter management was marginal, at best, and there was no registration and systematic processing of evacuees. This was believed to be the underlying cause for the rumors that developed on June 21, that Tropical Storm Edward caused hundreds of deaths. These rumors resulted in hours of anxiety for relatives and close friends of the evacuees.

- Private-sector resources were not used. Many private-sector resources able to assist in the response and recovery activities were immediately available but were left unused because of lack of previous coordination.
- The Liberty County commercial telephone facility, was damaged, as were many of the telephone lines. Without telephones, RACES communication was used to transmit critical information. There was no prior effort to organize RACES personnel and to incorporate their systems and capabilities into the emergency plan.
- The county did not have a communication plan that integrated the fire service, law enforcement, and emergency medical service personnel into the overall communication plan.
- The CCFD lacked the resources to respond to multiple water related rescues. The rescue boat was difficult to operate in rapidly moving water to due to an underpowered outboard motor.

Update on Status of After-Action Report

On July 5, 2008, Mary Smith was appointed by the Board of Supervisors as the new emergency program manager, replacing the director of civil defense.

The Board of Supervisors specifically directed Ms. Smith to implement integrated emergency management concepts. Every attempt should be made to integrate all response agencies into the emergency planning process. The directive stated that mitigation and preparedness measure were to be emphasized, and that the new Department of Emergency Management was to work closely with the Planning Commission, as well as with other county and city departments. In addition, private-sector resources were to be integrated into the planning.

Ms. Smith's first steps in initiating the Board of Supervisors' directive were to develop a comprehensive hazard/vulnerability analysis for Liberty County, revise the Liberty County Basic Emergency Plan and complete a resource listing.

This section of the document outlines the most likely hazards that may affect Liberty County and the communities within the county. These are by no means the only possible incidents that could occur in the county. All agency planners and emergency management personnel are urged to provide flexibility within standard operating procedures or guides in their specific agency plans.

The Liberty County Emergency Management Agency conducts briefings with all county and city employees on the potential hazards and vulnerable areas of the community on a yearly basis. Changes are made to the hazard/vulnerability analysis yearly based on a continued assessment of risks countywide.

Enemy Military Attack

Predictability of enemy military attack is considered low as based on an assessment of international tension and world events. Liberty County is listed as a host area for residents from other more vulnerable locations in the State of Columbia; this is modified by the possibility that the Blue Water Nuclear Power Station may be a target of enemy military attack.

Frequency of enemy military attack is limited to historical evidence and the past conflicts. This is modified by the international capability of weapon carrying missiles.

Controllability of enemy military attack is vested with the federal government. Federal organizations have resources and personnel for the four phases of attack activity. State and local governments have preparedness, response, and recovery capability, including shelter management and radiological monitoring, but local government must deal with initial response alone until outside help is mobilized if possible.

Duration of enemy attack could be from a period of a few minutes, if the incident is nuclear, to weeks or months if it is conventional, biological, or chemical in nature.

Scope of damage of an enemy attack would be widespread, if not nationwide. Life, property, and the economy would be affected. The attack could initiate many of the hazards identified below.

Intensity of impact would be widespread, if not nationwide. Life, property, and the economy would be seriously impaired.

Hurricane

Predictability of a hurricane affecting Liberty County is certain, based on the past experience of several major storms, including Hurricane Edward, in 2008, which was one of the most devastating storms ever recorded. Minimum daylight warning time for hurricane landfall is 18-24 hours.

Frequency of a major hurricane historically, Category IV or V, has been one every ten years. Minor storms, including the classic northeastern, can be expected as often as every year.

Controllability of hurricane damage is limited to the mitigation measures of building codes, land-use management, and setback and elevation criteria.

Duration of the actual onslaught is from several hours to several days, depending upon the forward movement of the hurricane. The duration of the aftereffects varies with the severity of the storm and can range from several days to several years.

Scope of damage ranges with the severity of the hurricane, from minimal damage to nearly total destruction of community facilities, business, and residences. Building collapses may create major mass casualty incidents.

Intensity of impact ranges with scope and location of damage.

Flood

Predictability of a flooding on the Roaring River, Turtle River, East Lake River, Muddy Creek, Mineral Creek and the Swatera Creek is enhanced through the rain gauge system and staff gauge installation established in 2002, owned and monitored by the Department of Emergency Management and the Liberty County Department of Public Works. Other streams and rivers in Liberty County are not monitored.

Frequency of moderate flooding is at least once a year; major flooding is generally limited to once in five years. A severe flood in 2008 killed 28 people, injured 656, caused the evacuation of 75,000, and destroyed 23 mobile homes. Last year, 10 more people were killed in rapidly rising and fast moving flood water. Home building has increased along the riverfront in recent years, expanding the amount of shoreline and adjacent water responsibility for the Central City Fire Department.

Controllability of flood damage is limited to mitigation measures of land-use management and elevation criteria. Clearance of debris along steamways can also affect flooding.

Duration of actual onslaught is from several hours to several days.

Scope of damage ranges with severity of flooding.

Intensity of impact ranges from a few houses with water damage to several hundred houses involved, including road washouts and bridge damage.

Hazardous Materials Accident-Fixed Site

Predictability of a fixed site hazardous-material accident is uncertain due to lack of fixed site monitoring equipment. Hazardous materials are commonly used, and produced in Liberty County in quantities which, if released into the environment during an accident, could be harmful or injurious to humans, animals, property, and the economy. There are several large oil refineries in the area, as well as a newly constructed semi-conductor manufacturing facility that uses large quantities of silane, arsine, hydrofluoric acid, concentrated sulfuric acid, isopropyl alcohol, and diborane.

Frequency of a fixed site hazardous-material accident ranges from five or more minor incidents a year to one of major consequence every five years. There have been fires at the refineries over the years, but no major releases at fixed facilities.

Controllability of a fixed site hazardous-material disaster is limited to SARA Title III enforcement, LEPC activities, Hazmat, state, federal and private sector team response, local plans, zoning, and training of response and management forces for both public and private sectors.

Duration of an incident can be for as little as a few minutes to as long as several days or weeks.

Scope of damage ranges with the severity of the incident but is generally localized unless vital community infrastructure is located nearby. See Listing of Liberty County SARA Title III sites.

Intensity of impact ranges with the scope of damage but may impact on surrounding facilities.

High-pressure Gas Line Blowout

Predictability of incident is uncertain despite pipeline companies' internal inspection of pipeline runs. High-pressure lines in Liberty County are located in the vicinity of the right of way of the Great Atlantic and Pacific Railroad and along State Route (SR) 69 south of the railroad to SR 1. Then running west along SR 1 to and over the interstate bridge into Bayport.

Frequency of blowout is limited to two incidents in the last two years, both of which were minor in scope.

Controllability of a hazard is limited to the mitigation efforts of the industry, the state and federal regulation, local planning for warning and response and response of private and public teams.

Duration of an incident is generally short in nature, limited to no more than several hours.

Scope of damage is generally limited, except for evacuation.

Intensity of impact ranges with scope of damage in relation to location.

Hazardous Materials Accident-Transportation

Predictability of a transportation hazardous-material accident is uncertain, however, hazardous materials are commonly transported into, out of and through Liberty County in quantities which, if released into the environment during an accident, could be harmful or injurious to humans, animals, property, and the economy.

Frequency of a transportation hazardous-material accident ranges from ten to fifteen minor or potential incidents a year to one of major consequence every five years.

Controllability of a hazardous-material disaster is limited to local plans, state and federal routing controls, state trucking law enforcement and training of response and management forces.

Duration of an incident can be for as little as a few minutes to as long as several days or weeks.

Scope of damage ranges with the severity of the incident but is generally localized.

Intensity of impact ranges with the scope of damage and location of the incident.

Earthquake

Predictability of an earthquake in Liberty County is limited to early history (1911) and knowledge of tectonic studies. The county is vulnerable to the Apple Valley Fault Zone.

Frequency of earthquake activity is limited to a few minor tremors, detectable only by instrumentation, and activity noted in the 1911 Apple Valley quake and again in 1959.

Controllability of earthquake damage is limited to local plans and building codes.

Duration of earthquake damage can be from a few minutes to long period of time.

Scope of damage ranges with the severity of the quake. However, it is noted that Columbia has not been involved in programs to quake proof buildings. Thus most buildings are susceptible to major damage.

Intensity of impact ranges from minor impact to major damage.

Tornado

Predictability of tornadoes in Liberty County is uncertain since the county lies on the edge of the National Weather Service Doppler radar system located in Capital City.

Frequency of a major tornado, based on past history, is approximately one every ten years, with two or three minor occurrences, including straight line shear winds, yearly.

Controllability of tornado damage is limited to local plans and building codes and rapid warning.

Duration of actual onslaught is relatively short.

Scope of damage ranges with the severity of a tornado, varying from moderate to total destruction.

Intensity of impact ranges with scope and location of damage.

Fuel and/or Commodity Shortage

Predictability of a fuel or commodity shortage is based on the condition of world events, international tensions, transportation systems and strikes along with the impact of severe weather.

Frequency of a fuel or commodity shortage is limited to historical events.

Controllability of a fuel or commodity shortage is limited to the mitigation measures of conservation and rationing.

Duration of a fuel or commodity shortage could be from a few days to several years.

Scope of damage may be widespread, affecting life, property, and the economy depending on which product is involved.

Intensity of impact of a fuel or commodity shortage is that life, property, and the economy would be seriously impaired.

Fixed Nuclear Facility Incident

Predictability of a fixed nuclear facility incident is uncertain given the industry experience since T.M.I. The Edison Electric Company has operated the Blue Water Nuclear Power Plant for eighteen years. During this period, there have been ten incidents classified as unusual events in addition to three alerts. The plant is located 11.5 miles north of Central City on Interstate 107. This means that Liberty County Emergency management has responsibility for both ten-mile Emergency Planning Zone and fifty-mile Ingestion Pathway Control Zone actions within Liberty County.

Frequency of a fixed nuclear facility incident above the classification level of an alert is estimated at one in 30 years.

Controllability of a fixed nuclear facility incident is limited operator training and maintenance/safety programs at the facility along with the Nuclear Regulatory Commission's resident inspector program and the utility off site emergency training.

Duration of actual onslaught could range from hours to days.

Scope of damage ranges from the sheltering of people in homes to evacuation of the ten mile E.P.Z. within Liberty County and interdiction of the 50-mile food ingestion pathway.

Intensity of impact ranges with scope of damage.

Terrorism

Predictability of terrorist incidents is dependent on the degree of tension on major local, state, national and international subjects along with the degree of activity within the county of persons with links to terrorist linked individuals and groups. Targets include all SARA Title III sites, Blue Water Nuclear Power Station, Columbia State University along with other governmental facilities in the county. There are reports of militia style groups using the Mineral Mountains as a training area. There has been an increase in suspicious powder incidents over the last 12 months.

Frequency is dependent on law enforcement risk assessments based on local, state and federal intelligence gathering and analysis operations.

Controllability is dependent on a coordinated response by crisis and consequences management agencies to the event.

Duration of a terrorist event could be from a few hours to more than one week.

Scope of damage may be widespread, affecting life, property, and the economy or very narrow in scope.

Intensity of impact of a terrorist event is that life, property, and the economy would be seriously impaired. Mass casualties may be expected.

Severe Weather

Predictability of a severe weather event is based on the capability of the National Weather Service and other private and public weather forecasting and monitoring services to correctly predict pending storms.

Frequency of a Severe Weather event is based on experience that two severe and eleven moderate storms are experienced.

Controllability of a severe weather event is limited to mitigation measures carried out pre disaster to reduce the impacts of high wind, hail and flooding.

Duration of a severe weather event could be from a few hours to several weeks.

Scope of damage could be widespread, affecting life, property, and the economy. Scope will vary due the type and intensity of the storm.

Intensity of impact of a severe weather event is that life, transportation, property, and the economy would be seriously impaired.

Winter Storms

Predictability of a winter storm is based on the capability of the National Weather Service and other private and public weather forecasting and monitoring services to correctly predict pending storms.

Frequency of a winter storm is based on experience that one storm of more than 5 inches accumulation and 3 storms of 1/2 to 5 inches are experienced each year on average.

Controllability of a winter storm is limited to mitigation measures carried out pre disaster to reduce the impacts of snow and response by streets and road snow plowing crews.

Duration of a winter storm could be from less than one hour to a couple of days.

Scope of damage could be widespread, affecting life, property, and the economy. This past winter, a number of buildings suffered roof collapse due to snow loading. Six people were killed when a roof collapsed at a fast food restaurant. Many discussions have occurred at the management level about the probability of future significant events.

Intensity of impact of a winter storm is that life; transportation, property, and the economy would be seriously impaired.

Blizzards

Predictability of a blizzard is based on the capability of the National Weather Service and other private and public weather forecasting and monitoring services to correctly predict and track pending storms.

Frequency of a blizzard is based on experience that one blizzard of more than 25 inches accumulation is experienced every twenty-five years.

Controllability of a blizzard is limited to mitigation measures carried out pre disaster to reduce the impacts of snow and response by streets and road snow plowing crews supported by policy making on the part of elected officials to ban travel.

Duration of a blizzard could be from less than one day to more than one week.

Scope of damage could be widespread, affecting life, property, and the economy.

Intensity of impact of a blizzard storm is that life; transportation, property, and the economy would be seriously impaired and shut down.

Ice Storms

Predictability of an ice storm is based on the capability of the National Weather Service and other private and public weather forecasting and monitoring services to correctly predict and track pending storms.

Frequency of an ice storm is based on experience that one ice storm of more than 1-inch accumulation of ice is experienced every twenty-five years and that one storm of less than 1-inch is experienced every decade.

Controllability of an ice storm limited to mitigation measures carried out pre disaster to reduce the impacts of ice accumulation and response by streets and road snow plowing crews supported by policy making on the part of elected officials to ban travel and utilities to maintain service.

Duration of an ice storm could be from less than one day to more than one month.

Scope of damage could be widespread, affecting life, property, and the economy.

Intensity of impact of an ice storm is that life; transportation, property, and the economy would be seriously impaired and shut down.

Agricultural Disaster

Predictability of an agricultural disaster is based on the condition of transportation systems and the impact of severe weather.

Frequency of an agricultural disaster is limited to historical events.

Controllability of an agricultural disaster is limited to the measures of conservation and rationing.

Duration of an agricultural disaster could be from a few weeks to several years.

Scope of damage would be widespread, affecting agricultural production and distribution, prices, property, and the economy.

Intensity of impact of an agricultural disaster is that life, property, and the economy would be seriously impaired.

Drought

Predictability of a drought or other water shortage is based on the condition of public and private water sources and the impact of severe weather.

Frequency of a drought or other water shortage is limited to historical events. However, global warming may be creating a more frequent incidence of droughts.

Controllability of a drought or other water shortage is limited to the mitigation measures of conservation and rationing and the provisioning of alternate sources of supply.

Duration of a drought or other water shortage would be from a few days to several years.

Scope of damage could be widespread, affecting life, property, and the economy or localized to area of the county.

Intensity of impact of a drought or other water shortage is that life, property, and the economy would be seriously impaired.

Wild-land Fires

Predictability of a wild-land fire is based on the condition of natural cover along with the impact of weather. Of concern are Casper County Park, Van Deusen Park, Gish Island Wildlife Preserve and the Mineral Mountains.

Frequency of a wild-land fire is that Liberty County fire departments respond to 1,500 natural cover and wild-land fires each year.

Controllability of a wild-land fire is limited by the capability to rapidly mobilize and deploy firefighting resources.

Duration of a fire could be from a few days to several months.

Scope of damage could be widespread, affecting life, property, and the economy.

Intensity of impact of a wild-land fire is that life, property, and the economy would be seriously impaired.

Major Structural Fire

Predictability of a major fire is based on the condition of buildings and facilities in the community along with the impact of weather.

Frequency of a major fire is based on the experience that Liberty County Fire departments experience thirty-two extra alarm fires each year. Of these, five exceed the third alarm. A fifth or greater alarm has been experienced on a once per decade basis.

Controllability of a major fire is limited to the efforts of firefighting and support agencies operating within the community pre-incident plan. The ability to prevent large blocks or areas from igniting may be critical to community survival.

Duration of a major fire could be from a few hours to several days.

Scope of damage may be widespread, affecting life, property, and the economy.

Intensity of impact of a major fire is that life, property, and the economy may be destroyed.

Civil Disturbance

Predictability of a civil disturbance is dependent on intelligence about the specific area involved. Areas of concern include Gish Island Wildlife preserve, Columbia State University, Farmer's A&M University, Columbia State Prison, Liberty County Jail, Columbia Veteran's Hospital and Liberty County Health Department Family Health clinics and Animal Shelter. All may attract protests by groups or individuals that could escalate to civil disturbances.

Frequency of a civil disturbance is limited to historical events with the note that tensions existed in Liberty County during the late 1960's and 1970's but no events occurred.

Controllability of civil disturbance is dependent on rapid response of local law enforcement supplemented by available State police resources. National Guard involvement will need to be coordinated.

Duration of a civil disturbance could be from a few hours to more than a week.

Scope of damage would be limited, affecting life, property, and the economy in the immediate area only.

Intensity of impact of a civil disturbance is that there may be additional strains on public facilities and resources along with other peaceful protests.

Dam Failure

Predictability of a dam failure is based upon inspections by the Army Corps of Engineers and its classifications of dams. Liberty County has one earthen dam classified as red (East Lake Dam). It is possible that an earthquake more severe than expectations may affect dam safety.

Frequency is limited to historical events and projection of dam failure based on current conditions.

Controllability of a dam failure is based on dam safety inspection/compliance programs.

Duration of failure onslaught would be rapid, causing flooding of a major portion of the northwest section of Central City.

Scope of damage ranges from minor flooding to flooding of several hundred homes and businesses.

Intensity of impact ranges with scope of damage.

Aircraft Accident

Predictability of an aircraft accident is based upon increased air traffic, unpredictable windshear conditions, and other unknown contingencies.

Frequency of aircraft accidents historically has been three in ten years, two of which were minor incidents.

Controllability of aircraft accidents is limited to mitigation measures of air traffic control, land-use management of landing and takeoff approaches, and the state of readiness of local response services.

Duration of an incident can range from as short as a few minutes to as long as several days or weeks.

Scope of damage ranges with the intensity of the accident but is always localized. Passenger aircraft crash sites will be declared as a bio hazard site.

Intensity of an accident depends on the severity of the accident and the location and the type of involved aircraft.

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**APPENDIX E
FIRE SERVICE
AND
APPENDIX E ADDENDUM:
SQUAD 1 AND HAZMAT 1 COMBINED
EQUIPMENT INVENTORY**

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APPENDIX E. FIRE SERVICE

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E.1. Liberty County Fire Service

Liberty County is protected by 12 fire departments with varying capabilities composed of paid, volunteer, and/or combination fire fighters. The departments are Central City, Apple Valley, Bayport, Big Rock, Blue Water, Buffets Landing, Deep River, Fisherville, Gold Mine, Harvest Junction, Jasper, and Kingston.

Liberty County's 12 fire departments have been rated according to the Insurance Services Office (ISO) Rating Schedule. The ratings are as follows: Central City (2), Apple Valley (5), Bayport (4), Big Rock (6/9), Blue Water (9), Buffets Landing (9/10), Deep River (5), Fisherville (4), Gold Mine (6/9), Harvest Junction (4), Jasper (7), and Kingston (4).

E.2. Liberty County National Incident Management System (NIMS) Compliance

All Liberty County emergency service functions will be accomplished in accordance with the NIMS, complying with the Homeland Security Presidential Directive (HSPD). The HSPD requires all federal, State, local, and tribal agencies and jurisdictions to adopt NIMS and use it in their individual domestic incident management (emergency prevention, preparedness, response, recovery, and mitigation activities) as well as in support of all actions taken to assist local entities.

E.3. Central City Fire Department (CCFD)

The administrative head of the fire department is a fire chief who reports directly to the city manager. There is an assistant chief, three deputy chiefs, and six battalion chiefs. The deputy chiefs are shift commanders and one is assigned to each of the three shifts. The battalion chiefs are battalion commanders. One is assigned to the north battalion (Battalion 2) and one is assigned to the south battalion (Battalion 8) on each shift.

The assistant chief responds to incidents when requested by the incident commander. The deputy chief responds to incidents as required. The battalion chief responds on full alarm assignments in his battalion or when requested to assist at other incidents outside of his battalion territory.

Firefighters are assigned to three shifts and work a 24/48-hour shift schedule, with 24 hours on duty followed by 48 off duty. There is one officer and four firefighters assigned to each fire company, and one officer and six firefighters assigned to Station 12 at Liberty International Airport.

Minimum daily staffing for fire companies is one officer and three firefighters, except Engine 12 at Liberty International Airport, which is staffed with a minimum of one officer and five firefighters.

All CCFD members are trained in defibrillation. CCFD provides Basic Life Support (BLS) first responder service to life threatening EMS emergencies.

Engine 1, Ladder 1, and Squad 1 members are trained to the hazardous material (Hazmat) technician level. Squad 1 responds with HAZMAT 1 to all calls.

When HAZMAT 1 is called upon to respond to the scene of a hazardous materials incident, Engine 1 and Squad 1 (for decontamination) will respond and assume hazmat duties.

In the event of a "working incident" in which additional hazmat and decontamination units are required, Central City Ladder 1 will be called to the scene, along with Fisherville's Station 21 (engine, hazmat, and squad) as needed. Other fire stations within Liberty County having hazmat/squad capabilities (e.g., Blue Water and Harvest Junction, respectively) can be called upon as needed for additional support.

The CCFD under contract staffs the Liberty International Airport. CCFD deploys Battalion 8, Engine 8, and HAZMAT 1, staffed with one officer and 3 firefighters from Station 1, for all confirmed incidents. Kingston and Harvest Junction provide additional engines, ladders, and EMS support to Liberty International Airport.

Note: Upon request, the Environmental Management and Risk Assessment Program (EMRAP), under the authority and control of the Liberty County Public Health Department, will respond to the scene of an emergency involving environment/health emergencies to lend support and assistance as needed.

Station 4 stores 200 five-gallon cans of all-purpose foam and 200 five-gallon cans of 3% fluoroprotein foam.

All regular, special, and reserve apparatus are housed in the station of the last digit of their call number designation. All special and reserve apparatus are staffed as needed.

CCFD pumpers are equipped with 500-gallon water tanks, except brush trucks. All CCFD pumpers and aerial devices are equipped according to the National Fire Protection Association (NFPA) Standards. Special and reserve apparatus, along with support vehicles, are staffed upon request. CCFD apparatus and support vehicles are purchased from the Central City capital fund program.

The training officer for the fire department is a captain, who is assisted by a lieutenant.

All Central City engines are equipped with 1,500 feet of 5" hose, 500 feet of 2 1/2", 500 feet of 1 3/4", and four self contained breathing apparatus (SCBA) with eight spare bottles. All Central City Sqrts are equipped with 1,00 feet of 5" hose, 400 feet of 2 1/2", 400 of 1 3/4", and four SCBA with eight spare bottles. All CCFD ladders, snorkels, and towers are equipped with 209 foot of ground ladders and six SCBA with 12 spare bottles.

The office of the fire marshal is responsible for investigating complaints involving fire protection and building code violations, fires of suspicious nature, and all fires in which the incident officer is unable to determine a cause. The office has a chief fire marshal and six deputy fire marshals assigned. The city is divided into four quadrants for inspection purposes. There is one deputy fire

marshal assigned responsibility for yearly inspection of public assembly occupancies, institutional buildings, and commercial/industrial occupancies in their assigned quadrant. Field fire companies assist in the inspection process. One deputy fire marshal is assigned to the arson squad along with a Central City police officer.

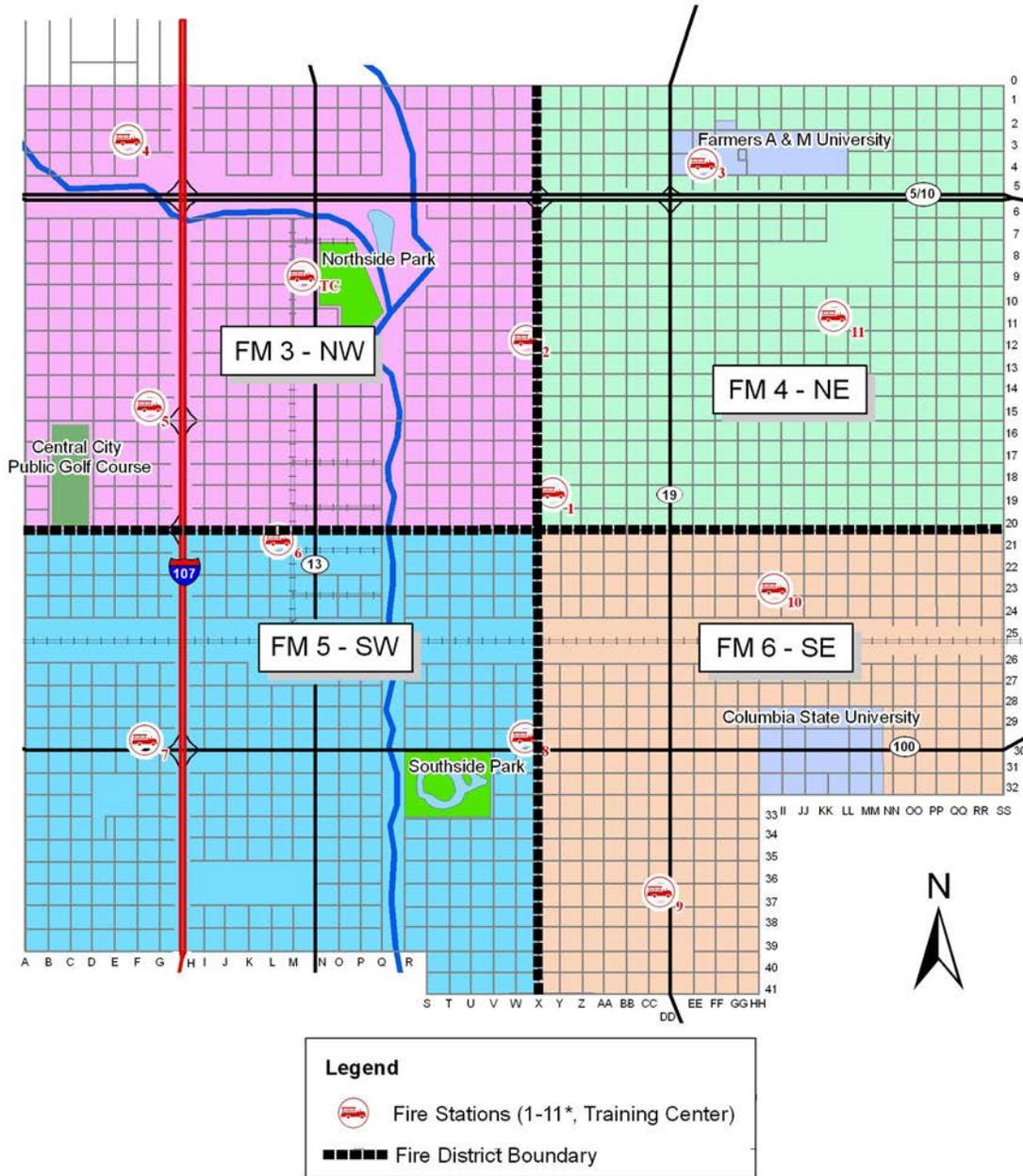
- Central City is divided into four quadrants for fire inspection purposes.
 - X Street is the east-to-west dividing line.
 - 20th Street is the north-to-south dividing line.

- Deputy fire marshals are assigned primary inspection responsibility for their assigned quadrant.

Table 63. Deputy Fire Marshals Quadrant Assignments

Quadrant	Fire Marshal (FM)
Northwest (NW)	FM 3
Northeast (NE)	FM 4
Southwest (SW)	FM 5
Southeast (SE)	FM 6

The city has adopted the comprehensive National Building Code, which contains provisions for life safety from fires.



*Fire Station 12 - Liberty International Airport
(1200 Aviation Drive, Kingston)

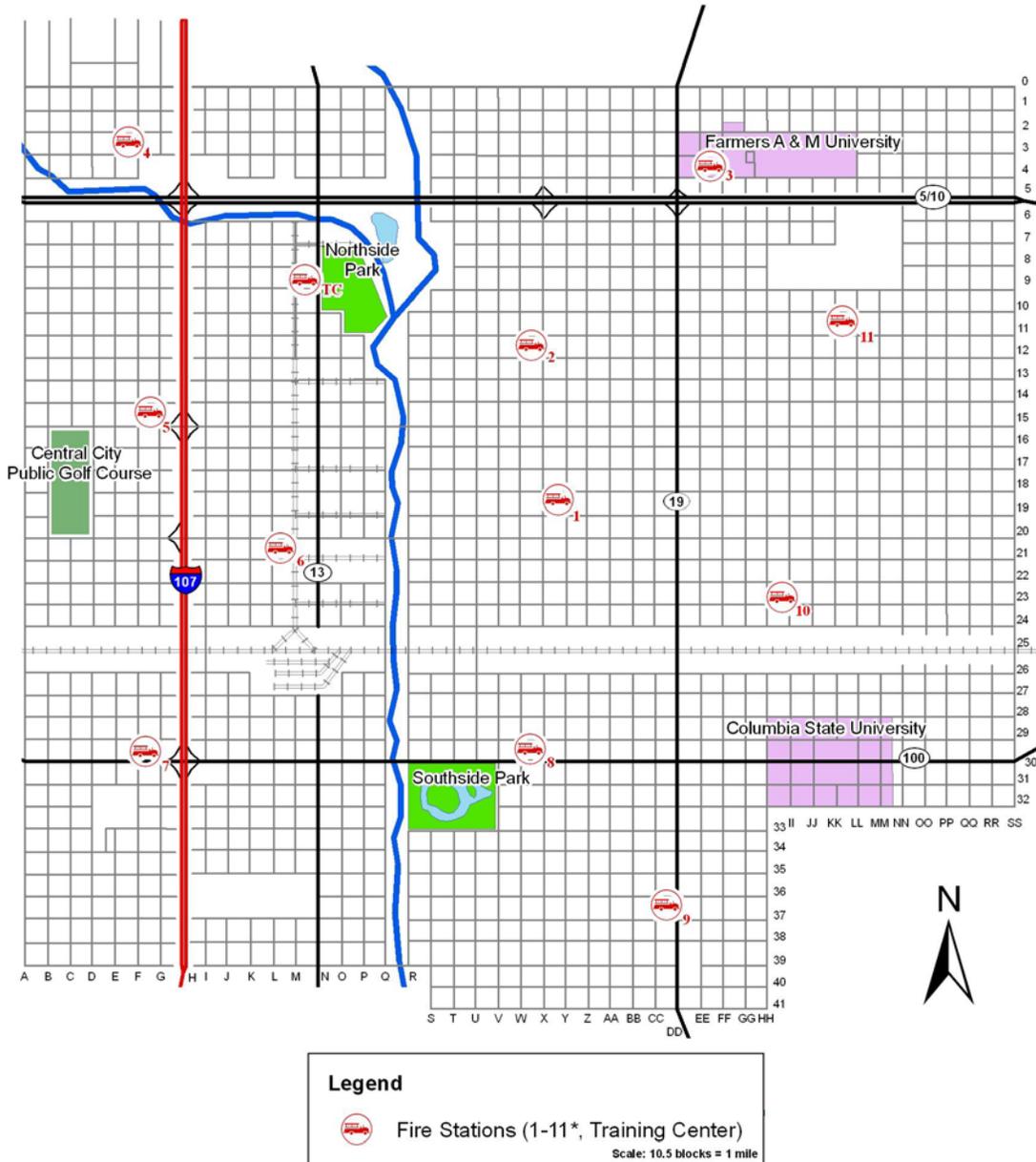
Figure 50. Central City Fire Marshal Quadrants Map

All CCFD emergency response assignments are dispatched by the Liberty County 911/Emergency Communications Center. All fire dispatchers are assigned to the Liberty County 911/Emergency Communications Center for dispatching purposes and are trained in emergency medical dispatch procedures. The 911/Emergency Communications center is located within the Emergency Management Center (AA and 39th Streets) in Central City.

Vehicle and building maintenance services, including fuel supply, is provided by the Central City Public Works Department.

Photo needs at incidents are handled by the Central City Police Department.

E.3.1. Central City Fire Stations



*Fire Station 12 - Liberty International Airport
(1200 Aviation Drive, Kingston)

Figure 51. Central City Fire Stations Map

E.3.2. Central City Fire Department Organization

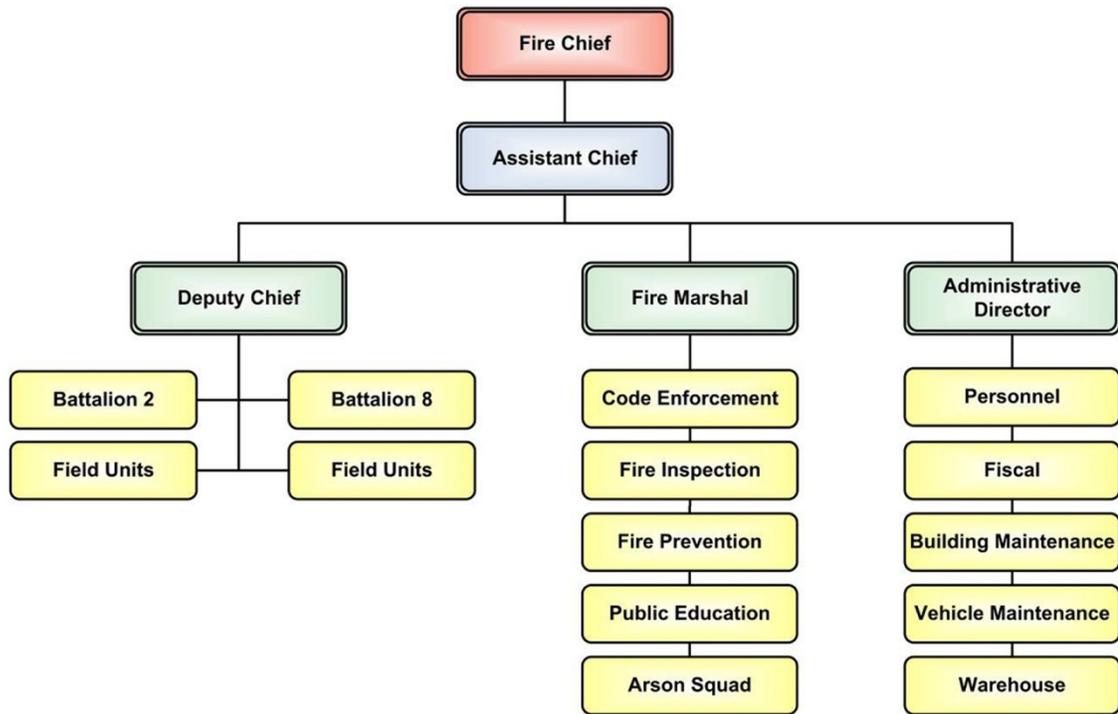


Figure 52. Central City Fire Department Organization

E.3.3. Central City Fire Department Response Information and Incident Management Team (IMT) Activation

A battalion chief responds on first alarm assignments in his/her battalion or when requested to assist at other incidents outside assigned battalion territory.

The deputy chief responds to "all hands working incidents" and as required.

The CCFD activates a full IMT upon transmission of a third or greater alarm or when a request is made for credentialed ICS personnel commensurate to the scope and complexity for responding to an emergency outside assigned territory.

Note: Incident Command System (ICS) IMT functions can be pre-assigned to field and staff personnel, as shown below, or may be placed according to need as prescribed by the authority of the Incident Commander (IC).

The following paragraphs provide examples of IMT ICS pre-assigned function roles.

When full activation of the CCFD IMT is implemented, the field deputy chief will assume the function as Incident Commander unless relieved by the fire chief.

When full activation of the CCFD IMT is implemented, the first assigned battalion chief for the incident will assume the function of operations section chief.

The assistant chief responds to all major incidents as a member of the CCFD IMT and assumes the function of planning section chief.

The safety officer responds to all major incidents as a member of the CCFD IMT and assumes the function of incident safety officer.

The chief fire marshal responds to all major incidents as a member of the CCFD IMT and assumes the function of logistics section chief.

The first assistant deputy fire marshal responds to all major incidents as a member of the CCFD IMT and assumes the function of liaison officer.

The 2nd Deputy Fire Marshal responds to all major incidents as a member of the CCFD IMT and assumes the function of information officer.

The administrative director responds to all major incidents as a member of the CCFD IMT and assumes the function of finance/administrative section chief.

E.3.4. Central City Fire Department Incident Management Team

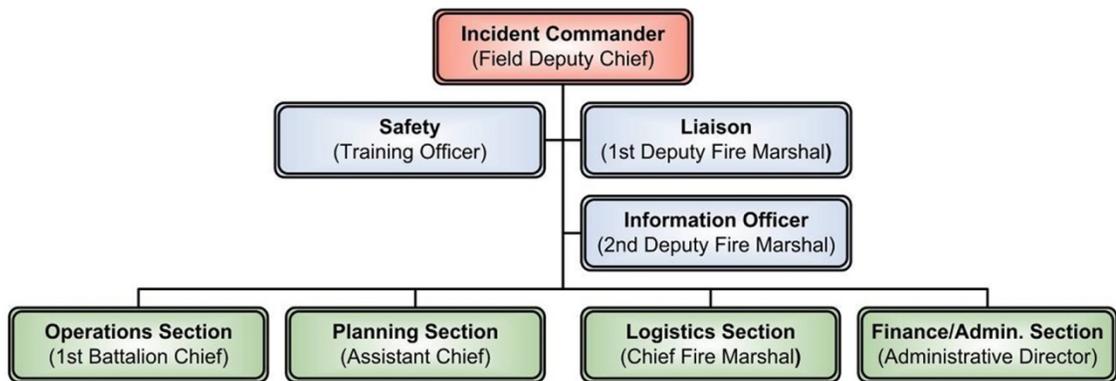


Figure 53. Central City Fire Department Incident Management Team

E.3.5. Central City Fire Department--Staff Personnel

Table 64. Central City Fire Department Fire Chief Staffing

Fire Chief Personnel	Quantity
Fire Marshal*	1
Assistant Chief	1
Administrative Director	1
Secretary	1
Total	4

*Fire marshal is equivalent to the rank of deputy chief

Table 65. Central City Fire Department Administrator Staffing

Administrative Director Personnel	Quantity
Personnel Officers	3
Fiscal Officers	2
Secretary	1
Building and Vehicle Maintenance	1
Warehouse Division	3
Total	10

Table 66. Central City Fire Department Fire Marshal Staffing

Fire Marshal Personnel	Quantity
Deputy Fire Marshal**	6
Secretary	1
Total	7

Table 67. Central City Fire Department Training Staffing

Training Personnel	Quantity
Captain	1
Lieutenant	1
Total	2

Table 68. Central City Fire Department Staff Personnel Summary

Staff Personnel Summary	Quantity
Fire Chief Personnel	4
Administrative Director Personnel	10
Fire Marshal Personnel	7
Training Personnel	2
Total	23

CCFD uniform and nonuniform personnel--288 (including Fire Chief)

Field firefighting personnel (uniformed personnel assigned to firefighting forces)--264

Table 69. Central City Fire Department Field Firefighting Personnel

Field Firefighting Personnel	Per Shift	Min/Day	Total
Deputy Chiefs	1	1	3
Battalion Chiefs	2	2	6
Captains	16	16	48
Relief Captains (as needed)	2	0	6
Fire Fighters	60	60	180
Relief Firefighters	7	0	21
Total	88	79	264

The CCFD has a three shift system with 88 firefighters assigned to each shift, which includes chief officers, company officers, and firefighters.

Minimum daily staffing is 79 firefighters each shift, which includes chief officers, company officers, and firefighters. Working out of position and overtime is authorized when warranted.

E.3.6. Staffing and Call Back Procedure

E.3.6.1. Normal Staffing

Level I (79 on duty/89 assigned to shifts)

The minimal level of personnel required for day to day operations is 79.

Table 70. Central City Fire Department Level I Normal Staffing

Level I Staffing	Staffing Quantity	Staffing Personnel per Equipment/Position	Total Personnel on Duty
Engine	11	4	44
Ladder Truck	4	4	16
Rescue	3	2	6
Squad	1	6	6
Mask Service Unit (MSU)	1	1	1
Battalion Chief	2	2	4
Deputy Chief	1	2	2
Total Firefighters on Duty			79

E.3.6.2. Below Desired Staffing

Level II (60 on duty/99 assigned to shift)

Table 71. Central City Fire Department Level I Below Desired Staffing

Level II Staffing	Staffing Quantity	Staffing Personnel per Equipment/Position	Total Personnel on Duty
Engine	11	3	33
Ladder Truck	4	3	12
Rescue	1	2	2
Squad	1	6	6
MSU	1	1	1
Battalion Chief	2	2	4
Deputy Chief	1	2	2
Total Firefighters on Duty			60

E.3.6.3. Normal Staffing

Level III (132 on duty three shifts combined into two shifts)

Level III staffing is for major readiness where the three shifts are combined into two shifts working 12 hour tours on duty and taking 12 hours off.

Table 72. Central City Fire Department Level II Disaster Staffing

Level III Staffing	Staffing Quantity	Staffing Personnel per Equipment/Position	Total Personnel on Duty
Engine	14	6	84
Ladder Truck	5	5	25
Rescue	4	2	8
Squad	1	6	6
MSU	1	3	3
Battalion Chief	3	2	6
Deputy Chief	1	1	1
Total Firefighters on Duty			133

E.3.7. Staffing Levels

E.3.7.1. Normal Daily Staffing

When the staffing level deteriorates to a total of 60 personnel on duty, an extra engine and extra ladder truck shall be dispatched on all full alarm assignments.

When the staffing level deteriorates to a total of 60 personnel on duty and a multiple alarm incident is in progress, a call back of personnel shall be implemented to raise the staffing level back up to normal. This level of staffing will be maintained until the multiple alarm incident is terminated and the specific tour of duty on which the incident is terminated has ended. Any questions raised about this procedure are to be answered by the on duty deputy chief.

All firefighters assigned to Engine 1, Truck 1, and Squad 1 must be trained to the hazmat technician level.

E.4. Central City Fire Apparatus and Staffing Levels

E.4.1. Central City - Station 1

Combination Department

- 100 Volunteers Citywide
- Minimum Career Staffing: 3 Officers + 9 Firefighters (FFs) + 1 Battalion Chief
- Deputy Chief works an eight hour schedule, 8 a.m. to 5 p.m. and is subject to call after hours.

Table 73. Central City Fire Apparatus and Staffing for Fire Headquarters Station 1, X & 19th Streets

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 1	Type I--1500 GPM pumper	1 Officer + 3 FFs
Ladder 1	Type I--100' aerial ladder	1 Officer + 3 FFs
Squad 1	32' van with heavy rescue equipment	1 Officer + 3 FFs
HAZMAT 1	<ul style="list-style-type: none"> • 36' van-fully equipped • Personal Protective Equipment (PPE)--Level "A" 	*

Apparatus/Vehicle Designator	Type/Capability	Staffing
Deputy Chief 1	4-door Suburban	1 Deputy Chief

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

NOTE: GPM = gallons per minute

E.4.2. Central City--Station 2

Paid Department

- Minimum Career Staffing: 1 Officer + 3 FFs + 1 Battalion Chief each shift

Table 74. Central City Fire Apparatus and Staffing for Station 2, W and 12th Streets

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 2	Type I--1250 GPM pumper	1 Officer + 3 FFs
Marine 2	<ul style="list-style-type: none"> • 14' zodiac • 25 HP motor 	*
Utility 2	350 pick-up	*
Battalion Chief 2	4-door Suburban	1 Battalion Chief

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

NOTE: HP = horsepower

E.4.3. Central City--Station 3

Paid Department

- Minimum Career Staffing: 2 Officer + 6 FFs each shift

Table 75. Central City Fire Apparatus and Staffing for Station 3--EE and 4th Streets

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 3	Type I--1500 GPM pumper	1 Officer + 3 FFs
Tower 3	Type I--75' tower ladder	1 Officer + 3 FFs
Reserve Engine 103	Type I--2500 GPM pumper	*
Reserve Ladder 103	85' rear mount ladder	*

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.4.4. Central City--Fire Station Training Center

Training Staff work Monday through Friday from 8 a.m. to 5 p.m. and are subject to call after hours.

Table 76. Central City Fire Apparatus and staffing for Fire Station Training Center--M and 9th Streets

Apparatus/Vehicle Designator	Type/Capability	Staffing
Safety (Training) 30	4-door Suburban	Training Captain
Safety (Training) 31	4-door Suburban	Training Lieutenant

E.4.5. Central City--Station 4

Paid Department

- Minimum Career Staffing: 1 Officer + 3 FFs each shift

Table 77. Central City Fire Apparatus and Staffing for Station 4, F and 3rd Streets

Apparatus/Vehicle Designator	Type/Capability	Staffing
Squirt 4	<ul style="list-style-type: none"> • Type I--1500 GPM pumper • 60' articulating boom 	1 Officer + 3 FFs
Foam 4	<ul style="list-style-type: none"> • Type I--150 GPM pumper • 500 gallon (gal) aqueous film forming foam (AFFF) foam tank 	*

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.4.6. Central City--Station 5

Paid Department

- Minimum Career Staffing: 2 Officer + 6 FFs each shift

Table 78. Central City Fire Apparatus and Staffing for Station 5, F and 15th Streets

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 5	Type I--1500 GPM pumper	1 Officer + 3 FFs
Ladder 5	Type I--100' aerial ladder	1 Officer + 3 FFs
Reserve Engine 105	Type I--1000 GPM pumper	*

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.4.7. Central City--Station 6

Paid Department

- Minimum Career Staffing: 2 Officer + 6 FFs each shift

Table 79. Central City Fire Apparatus and Staffing for Station 6, L and 21st Streets

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 6	Type I--2500 GPM pumper	1 Officer + 3 FFs
Air Unit 6	<ul style="list-style-type: none"> • Air compressor with high rise extension • 60 spare bottles • 20 mask assemblies 	*
Light 6	<ul style="list-style-type: none"> • 4 mounted towers • 20 large portable lights 	*

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.4.8. Central City--Station 7

Paid Department

- Minimum Career Staffing: 2 Officer + 6 FFs each shift

Table 80. Central City Fire Apparatus and Staffing for Station 7, F and 30th Streets

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 7	Type I--1500 GPM pumper	1 Officer + 3 FFs
Reserve Engine 107	Type I--2500 GPM pumper	*
Reserve Car 107	4-door Suburban	*

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.4.9. Central City--Station 8

Paid Department

- Minimum Career Staffing: 2 Officer + 6 FFs + 1 Battalion Chief each shift

Table 81. Central City Fire Apparatus and Staffing for Station 8, W and 30th Streets

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 8	Type I--2500 GPM pumper	1 Officer + 3 FFs
Snorkel 8	Type I--85' aerial platform	1 Officer + 3 FFs
Battalion 8/Car 8	4-door Suburban	1 Battalion Chief

E.4.10. Central City--Station 9

Paid Department

- Minimum Career Staffing: 1 Officer + 3 FFs each shift

Table 82. Central City Fire Apparatus and Staffing for Station 9, CC and 37th Streets

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 9	Type I--1500 GPM pumper	1 Officer + 3 FFs
Reserve Sqrt 109	<ul style="list-style-type: none"> • Type I--1250 GPM pumper • 50' articulating boom 	*

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.4.11. Central City--Station 10

Paid Department

- Minimum Career Staffing: 1 Officer + 3 FFs each shift

Table 83. Central City Fire Apparatus and Staffing for Station 10, HH and 23rd Streets

Apparatus/Vehicle Designator	Type/Capability	Staffing
Sqrt 10	<ul style="list-style-type: none"> • Type I--1250 GPM pumper • 55' articulating boom 	1 Officer + 3 FFs

E.4.12. Central City--Station 11

Paid Department

- Minimum Career Staffing: 1 Officer + 3 FFs each shift

Table 84. Central City Fire Apparatus and Staffing for Station 11, KK and 11th Streets

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 11	Type I--1500 GPM pumper	1 Officer + 3 FFs
Brush 11	<ul style="list-style-type: none"> • Type VI Engine --250 GPM pump • 200 gal tank 	*
Utility 11	25' stake body	*
Collapse 11	25' trailer	*
Communication 11	<ul style="list-style-type: none"> • 32' van • 20 reserve radios • Batteries 	*

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.4.13. Central City--Station 12

Paid Department

- Minimum Career Staffing: 2 Officer + 6 FFs each shift

Table 85. Central City Fire Apparatus and Staffing for Station 11, Liberty International Airport, 1200 Aviation Drive, Kingston

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 12	<ul style="list-style-type: none"> • Type I--150 GPM pumper • 500 gal water tank • 100 gal fluoroprotein foam tank 	2 FFs
Crash 12A (Quick Response Vehicle (QRV))	<ul style="list-style-type: none"> • 500 lb dry chemical • 100 gal AFFF foam tank • 150 gal water tank 	1 Officer + 1 FF
Crash 12B (QRV)	<ul style="list-style-type: none"> • 500 LB dry chemical • 100 gal AFFF foam tank • 150 gal water tank 	1 Officer + 1 FF
Foam 12	<ul style="list-style-type: none"> • Type I--150 GPM pumper • 1500 gal AFFF foam tank 	1 FF
Water Tender 12	Type I--3000 gal water tender	1 FF
Mass Casualty 12	30' trailer 250 spine boards 200 cervical collars 250 body bags 250 first aid kits w/oxygen	*

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.4.14. Staff Vehicle Assignments

Table 86. Central City Fire Staff Vehicle Assignments

Vehicle #	Vehicle Type	Staff
Car 1	4-door sedan	Fire Chief
Car 2	4-door sedan	Assistant Chief
FM 1	4-door sedan	Fire Marshal
FM 2	4-door suburban	1st Deputy Fire Marshal
FM 3	4-door suburban	Deputy Fire Marshal
FM 4	4-door suburban	Deputy Fire Marshal
FM 5	4-door suburban	Deputy Fire Marshal
FM 6	4-door suburban	Deputy Fire Marshal
FM 7	4-door suburban	Deputy Fire Marshal
AD 1	4-door sedan	Administrative Director
AD 2	14' van	Mechanic/Maintenance
AD 3	14' van	Warehouse Driver
AD 4	25' stake body	Warehouse Driver

E.5. Central City Alarm Dispatch Criteria

All CCFD emergency response assignments are dispatched by the Liberty County 911/Emergency Communications Center. All fire dispatchers are assigned to the Liberty County 911/Emergency Communications Center for dispatching purposes and are trained in emergency medical dispatch procedures.

To expedite appropriate emergency response (type and number of emergency response personnel and equipment), dispatchers are provided with an Alarm Dispatch Criteria matrix to assist them in the dispatching of emergency resources. **Table 87** below shows various responses for Central City for structural, non-structural, and hazmat emergencies respectively. Areas of concentration for emergency response are as follows:

- Structural – Fires involving structures where ordinary combustibles are expected (e.g., house fires and building fires)
- Target Hazards – Structures involving high fire load(s), hazardous materials, and/or occupancy hazards (mercantile, industrial, hospitals, etc.)
- Hazmat – Incidents involving liquids, solids, or gases; when unintentionally released from their containers, they can cause harm to humans and/or the environment.

Table 87. Fire Dispatch Criteria--Central City

Assignments	Alarm Type	Engine	Ladder Trucks	Squad	Battalion Chief	EMS/ALS Units	EMS Supervisor	Deputy Chief Officer	Rapid Intervention Team (RIT)	Safety Officer	Air Cascade
1st Alarm	Structural	3	1			1 EMS					
Working Incidents	Structural	2		1	1				1	1	1
1st Alarm	Target Hazards	3	2	1	1	1 EMS					
Working Incidents	Target Hazards	2				1 ALS	1	1	1	1	1
2nd Alarm	Structural/ Target Hazards	2	1		1	1 EMS				1	1
3rd Alarm	Structural/ Target Hazards	2	1			1 ALS					1
4th Alarm	Structural/ Target Hazards	2	1		1						
5th Alarm	Structural/ Target Hazards	2	1			1 ALS					1
6th Alarm	Structural/ Target Hazards	2	1		1						
7th Alarm	Structural/ Target Hazards	2									

Notes:

1. ALS = Advanced Life Support, EMS = Emergency Medical Service
2. Eight and subsequent alarms will have two engines each, with consideration for relocating Liberty County tankers to Central City Fire Stations if the water system is being taxed.
3. On all runs, including Mutual Aid, Squad 1 will accompany HAZMAT 1 unless a callback has been initiated and HAZMAT 1 has been staffed by off duty personnel.
4. If Squad 1 is committed on a call, a truck company can be assigned to vehicle rescue assignments since they carry extra vehicle rescue equipment.
5. On any complex special assignments, a safety officer will be assigned.
6. Sqrirt can be substituted for engine, depending on availability.
7. On any reported fire on the airport complex, Station 12, with support from Kingston Fire Department, will be assigned. On any reported major aircraft incident, Station 12, with support from Harvest Junction and Kingston Fire and EMS, along with Central City Station 8, will be assigned.

Table 88. Hazardous Materials Dispatch Criteria--Central City

Assignments	Alarm Type	Engines	Ladder Trucks	Squad	Hazmat Unit	Decontamination Unit	EMS Units	EMS Supervisor	Chief Officer	RIT	Safety Officer	Air Cascade
1st Alarm	Hazmat	3		1	1	1	1		1 BAT		1	1
Working Incidents	Hazmat	2	1				2 ALS		1 DEP	1		
2n Alarm	Hazmat	2	1	1	1		1 ALS		1 BAT	1	1	1
3rd Alarm	Hazmat	2	1		1		1 ALS		1 BAT			1

Note: BAT = Battalion Chief, DEP = Deputy Chief

Table 89. Miscellaneous/Special Assignments--Central City

Alarm Type	Engines	Ladder Trucks	Squad	Marine Unit	EMS/ALS Units	Chief Officer
Rubbish	1					
Vehicle	1					
Commercial Vehicle	2					
Investigation	1					
Motor Vehicle Accident	1	1	1		1 EMS	
Industrial Accident	1	1	1		1 ALS	
Water Rescue	1	1	1	1	1 EMS	1 BAT
Activated Alarm System	1	1				
EMS Assist	1					
Police Assist	1	1				1 BAT

Notes:

1. On all runs, including Mutual Aid, Squad 1 will accompany HAZMAT 1 unless a callback has been initiated and HAZMAT 1 has been staffed by off duty personnel.
2. If Squad 1 is committed on a call, a truck company can be assigned to vehicle rescue assignments since they carry extra vehicle rescue equipment.

3. On any complex special assignments, a safety officer will be assigned.
4. On any reported fire on the airport complex, Station 12, with support from Kingston Fire Department, will be assigned. On any reported major aircraft incident, Station 12, with support from Harvest Junction and Kingston Fire and EMS, along with Central City Station 8, will be assigned.
5. Sqrts can be substituted for engine, depending on availability.

E.6. Liberty County Station and Fire Resource Information

Fisherville Station 1 is a low-rise unreinforced masonry structure. All other fire stations in Liberty County are low-rise reinforced concrete structures.

Fisherville, Harvest Junction, Kingston, Deep River, and Bayport are combination career/volunteer departments.

Apple Valley, Blue Water, Jasper, and Buffets Landing are full volunteer fire departments.

Big Rock and Gold Mine are combination departments serving the Roaring River Tribal Community (RRTC).

Liberty County fire resources are dispatched by the Liberty County 911/Emergency Communications Center.

Liberty County fire pumpers are equipped with 500-gallon water tanks, except brush trucks.

Liberty County pumpers and aerial devices are equipped according to the NFPA standards.

Liberty County activates an IMT on assignments of 3rd alarm or greater.

Liberty County Fire Coordinator (LCFC) Command Unit is stationed at Liberty County Sheriff Headquarters at I-102 & State Route (SR) 5. The LCFC responds to all working fires greater than single-family residents.

Buffets Landing Fire Station 95 is active with career staff from April to November and with volunteers year-round.

All Liberty County Engines have 2,000 feet of 4" hose, 250 feet of 2 1/2", and 500 feet of 1 3/4". All have six SCBA with six spare bottles. All Liberty County ladders, snorkels, and towers have 250 GPM pumps and 300 gallon water tanks with 200 feet of 1 3/4" hose. All RRTC Engines have 2,000 feet of 5" hose, 600 feet of 3", and 600 feet of 1 3/4". All RRTC ladders have 750 GPM pumps with 400 gallon water tanks with 500 feet of 3" hose and 600 feet of 1 3/4" hose.

E.7. Liberty County Fire Apparatus and Staffing Levels

E.7.1. Apple Valley--Station 61

Volunteer Department

- 25 Volunteers

Table 90. Liberty County Fire Apparatus and Staffing for Station 61, 98 Pine Street

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 61	Type I--1500 GPM pumper	*
Squad 61	<ul style="list-style-type: none"> • 20' van • Light rescue equipment 	*
Water Tender 61	Type I--3000 gal tank	*
Brush 61	<ul style="list-style-type: none"> • Type VI--250 GPM pump • 200 gal water tender 	*
Marine 61	<ul style="list-style-type: none"> • 12' flat bottom • 25 HP motor 	*
Traffic 61	<ul style="list-style-type: none"> • 22' van • 25--6' folding saw horse barricades • 100 traffic cones • 8 portable stop signs • 5000' barricade tape 	*
Reserve Engine 161	Type I--1000 GPM pump	*
Battalion 61	4-door Suburban	*

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.7.2. Bayport--Station 91

Combination Department

- 29 Volunteers
- Minimum Careers Staffing: 4 Officers + 16 FFs + 1 Battalion Chief

Table 91. Liberty County Fire Apparatus and Staffing for Station 91, 55 Bay Blvd.

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 91	Type I--1500 GPM pumper	1 Officer + 3 FFs
Snorkel 91	Type I--85' platform	1 Officer + 3 FFs
Water Tender 91	Type I--2000 gal water tender	*
Brush 91	<ul style="list-style-type: none"> • Type VI--150 GPM pump • 200 gal tank 	*
Marine 91	<ul style="list-style-type: none"> • 16' whaler • 75 HP motor 	*
Collapse 91	24' trailer	*
Utility 91	350 pick-up	
Reserve Engine 191	Type I--1000 GPM pumper	*
Battalion 91	4-door Suburban	1 Battalion Chief

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.7.3. Bayport--Station 92

Combination Department

- 18 Volunteers
- Minimum Careers Staffing: 3 Officers + 14 FFs

Table 92. Liberty County Fire Apparatus and Staffing for Station 92, 1350 Marine Blvd.

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 92	Type I--1250 GPM pumper	1 Officer + 3 FFs
Ladder 92	<ul style="list-style-type: none"> • 24' van • Light rescue equipment 	1 Officer + 3 FFs
Squad 92	<ul style="list-style-type: none"> • 14' zodiac • 35 HP motor 	*
Marine 92	<ul style="list-style-type: none"> • Type I--1000 GPM foam pumper • 500 gal AFFF foam tank 	*
Foam 92	<ul style="list-style-type: none"> • 16' whaler • 75 HP motor 	*

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.7.4. Big Rock--Station 75

Combination Department

- 12 Volunteers
- Minimum Careers Staffing: 1 Officer + 3 FFs each shift

Table 93. Liberty County Fire Apparatus and Staffing for Station 75, RRTC SR 22

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 75	Type I--1250 GPM pumper	1 Officer + 3 FFs
Squad 75	<ul style="list-style-type: none"> • 20' van • Light rescue equipment 	*
Brush 75	250 GPM pump--200 gal tank	1
Water Tender 75	Type I--5000 gal water tender	*
Battalion 75	<ul style="list-style-type: none"> • SUV • Captain/Battalion Chief 	2 Officers
Car 75	Fire Chief	1 Officer

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

NOTE: SUV = Sport Utility Vehicle

E.7.5. Blue Water--Station 71

Full Volunteer Department

- 18 Volunteers

Table 94. Liberty County Fire Apparatus and Staffing for Station 71, River Rd and Center Street

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 71	Type I--1500 GPM pumper	*
Water Tender 71	Type I--2000 gal water tender	*
Brush 71	<ul style="list-style-type: none"> • Type VI engine--250 GPM pump • 200 gal tank 	*
Marine 71	<ul style="list-style-type: none"> • 16' zodiac • 40 HP motor 	*
HAZMAT 71	<ul style="list-style-type: none"> • 18' van • light hazmat equipment • PPE-Level "B" 	*
Traffic 71	<ul style="list-style-type: none"> • 3/4 Ton pick-up • 6-4' folding saw horse barricades • 40 traffic cones • 2 portable stop signs • 2000' barricade tape 	*
Reserve Engine 171	Type I--1000 GPM pumper	*
Battalion 71	4-door suburban	*

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.7.6. Buffets Landing--Station 95

Volunteer Department

- 15 Volunteers (volunteers active April to November only; 2-3 career personnel are assigned from Bayport to support the volunteers)

Table 95. Liberty County Fire Apparatus and Staffing for Station 95, SR 1A Buffets Landing

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 95	Type I--1000 GPM pumper	*
Brush 95	<ul style="list-style-type: none"> • Type VI engine--150 GPM pump • 200 gal tank 	*
Marine 95	<ul style="list-style-type: none"> • 14' zodiac • 35 HP motor 	*

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.7.7. Deep River--Station 51

Combination Department

- 22 Volunteers
- Minimum Career Staffing: 1 Officer + 3 FFs + 1 Battalion Chief each shift

Table 96. Liberty County Fire Apparatus and Staffing for Station 51, 128 Main Street

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 51	Type I--1500 GPM pumper	1 Officer + 3 FFs
Water Tender 51	Type I--2000 gal water tender	*
Brush 51	<ul style="list-style-type: none"> • Type VI engine--250 GPM pump • 200 gal tank 	*
Marine 51	<ul style="list-style-type: none"> • 14' zodiac • 25 HP motor 	*
Traffic 51	<ul style="list-style-type: none"> • 18' step van • 15-4' folding saw horse barricades • 75 road cones • 2 portable stop signs • 2500' barricade tape 	*
Reserve Engine 151	Type I--1250 GPM pumper	*
Battalion 51	4-door suburban	1 Battalion Chief

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.7.8. Fisherville--Station 21

Combination Department

- 37 Volunteers
- Minimum Career Staffing: 3 Officers + 9 FFs + 1 Battalion Chief each shift

Table 97. Liberty County Fire Apparatus and Staffing for Station 21, H and 7th Streets

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 21	Type I--1250 GPM pumper	1 Officer + 3 FFs
Squrt 21	<ul style="list-style-type: none"> • Type I--1250 GPM pumper • 55' articulating boom 	*
Ladder 21	Type I--85' aerial ladder	1 Officer + 3 FFs
HAZMAT 21	<ul style="list-style-type: none"> • 36' van--fully equipped • PPE-Level "A" 	*
Reserve Car 121	4-door suburban	*
Battalion 21	4-door suburban	1 Battalion Chief

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.7.9. Fisherville--Station 22

Combination Department

- 22 Volunteers
- Minimum Career Staffing: 1 Officer + 3 FFs each shift

Table 98. Liberty County Fire Apparatus and Staffing for Station 22, A and 3rd Streets

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 22	Type I--1500 GPM pumper	1 Officer + 3 FFs
Squad 22	<ul style="list-style-type: none"> • 20' van • light rescue equipment 	*
Water Tender 22	Type I--3000 gal water tender	*
Brush 22	<ul style="list-style-type: none"> • Type VI engine--200 GPM pump • 200 gal tank 	*
Marine 22	<ul style="list-style-type: none"> • 14' zodiac • 25 HP motor 	*
Mass Casualty 22	<ul style="list-style-type: none"> • 26 trailer • 50 spine board • 25 cervical collars • 25 first aid kits w/oxygen 	*
Reserve Engine 122	Type I--1000 GPM pumper	*

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.7.10. Gold Mine--Station 76

Combination Department

- 16 Volunteers
- Minimum Career Staffing: 4 Officers + 6 FFs + 1 Assistant Chief

Table 99. Liberty County Fire Apparatus and Staffing for Station 76, RRTC SR 5

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 76	Type I--1250 GPM pumper	1 Officer + 3 FFs
Ladder 76	Type I--85' Midship aerial	1 Officer + 3 FFs
Water Tender 76	Type I--5000 gal water tender	*
Reserve Engine 76	Type I--1000 GPM pumper	
Battalion 76	4-door Suburban	2 Officers
Car 76	Assistant Chief	1 Officer

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.7.11. Harvest Junction--Station 31

Combination Department

- 26 Volunteers
- Minimum Career Staffing: 3 Officers + 6 FFs + 1 Battalion Chief each shift

Table 100. Liberty County Fire Apparatus and Staffing for Station 31, L and 10th Streets

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 31	Type I--1500 GPM pumper	1 Officer + 3 FFs
Squirt 31	Type I--1250 GPM pumper	*
Ladder 31	Type I--85' aerial ladder	1 Officer + 3 FFs
Brush 31	<ul style="list-style-type: none"> • Type VI--200 GPM pump • 200 gal tank 	*
Marine 31	14' whaler w/75 HP motor	*
Battalion 31	4-door Suburban	1 Battalion Chief

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.7.12. Harvest Junction--Station 32

Combination Department

- 18 Volunteers
- Minimum Career Staffing: 1 Officer + 3 FFs each shift

Table 101. Liberty County Fire Apparatus and Staffing for Station 32, C and 16th Streets

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 32	Type I--1250 GPM pump	1 Officer + 3 FFs
Squad 32	24' van w/light rescue equipment	*
Water Tender 32	Type I--2000 gal tank	*
Rehab 32	22' trailer	*
Reserve Engine 132	Type I--1250 GPM pump	*

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.7.13. Jasper--Station 81

Volunteer Department

- 30 Volunteers

Table 102. Liberty County Fire Apparatus and Staffing for Station 81, 111 Highland Ave.

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 81	Type I--1250 GPM pumper	*
Squad 81	<ul style="list-style-type: none"> • 22' van • Light rescue equipment 	*
Water Tender 81	Type I--2000 gal water tender	*
Brush 81	<ul style="list-style-type: none"> • Type VI--150 GPM pump • 150 gal tank 	*
Marine 81	<ul style="list-style-type: none"> • 14' flat bottom • 35 HP motor 	*
Collapse 81	23' trailer	*
Reserve Engine 181	Type I--1000 GPM pumper	*
Battalion 81	4-door Suburban	*

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.7.14. Kingston--Station 41

Combination Department

- 40 Volunteers
- Minimum Career Staffing: 3 Officers + 9 FFs = 1 Battalion Chief each shift

Table 103. Liberty County Fire Apparatus and Staffing for Station 41, B and 2nd Streets

Apparatus/Vehicle Designator	Type/Capability	Staffing
Engine 41	Type I--1500 GPM pump	1 Officer + 3 FFs
Squirt 41	Type I--1250 GPM pump	1 Officer + 3 FFs*
Tower 41	Type I--75' tower ladder	1 Officer + 3 FFs
Water Tender 41	Type I--2000 gal tank	*
Marine 41	<ul style="list-style-type: none"> • 14' zodiac • 25 HP motor 	*
Brush 41	<ul style="list-style-type: none"> • Type VI engine--250 GPM pump • 200 gal tank 	*
Utility 41	350 pick-up	*
Reserve Engine 141	Type I--1000 GPM pump	*
Battalion 41	4-door Suburban	1 Battalion Chief

*Denotes an apparatus/vehicle that is staffed upon request or by volunteers.

E.8. Liberty County Alarm Dispatch Criteria

All Liberty County emergency response assignments are dispatched by the Liberty County 911/ Emergency Communications Center. All fire dispatchers are assigned to the Liberty County 911/ Emergency Communications Center for dispatching purposes and are trained in emergency medical dispatch procedures. Alarm dispatch for Central City and Liberty County are similar. (See also **Section E.5**)

Note regarding a "Move Up" situation: When a "Working Incident" occurs that has emptied several stations, leaving their individual territories without fire/EMS protection, dispatchers will contact a Chief Officer* having authority of jurisdiction, for his/her direction of which engine/truck/ambulance that will need to be "moved up" to vacant stations until the incident has been resolved.

*Preferably not involved in the working incident, if possible.

Table 104. Fire Dispatch Criteria--Liberty County

Assignments	Alarm Type	Engine	Ladder Trucks	Squad	Battalion Chief	EMS/ALS Units	EMS Supervisor	Deputy Chief Officer	Rapid Intervention Team (RIT)	Safety Officer	Air Cascade
1st Alarm	Structural	2			1	1 EMS					
Working Incidents	Structural	2	1	1				1 BAT	1		
1st Alarm	Target Hazards	3	1		1	1 EMS		1 BAT			
Working Incidents	Target Hazards	2	1	1		1 ALS	1	1 BAT	1		1
2nd Alarm	Structural/ Target Hazards	2	1		1	1 EMS				1	1
3rd Alarm	Structural/ Target Hazards	2	1			1 ALS					1
4th Alarm	Structural/ Target Hazards	2	1		1			1 BAT			
5th Alarm	Structural/ Target Hazards	2	1			1 ALS					1
6th Alarm	Structural/ Target Hazards	2	1		1			1 BAT			
7th Alarm	Structural/ Target Hazards	2			1						

Notes:

1. Eight and subsequent alarms will have two engines each, with consideration for relocating Liberty County tankers to Central City Fire Stations if the water system is being taxed.
2. Departments with specialized units such as brush or traffic control units will deploy them within their service area.
3. On any complex special assignments, a safety officer will be assigned.
4. Squirt can be substituted for engine, depending on availability.

Table 105. Hazardous materials Dispatch Criteria--Liberty County

Assignments	Alarm Type	Engine	Ladder Trucks	Squad	Hazmat/Tanker	Decontamination Unit	EMS Units	EMS Supervisor	Chief Officer	RIT	Air Cascade
1st Alarm	Hazmat	3		1	1 Hazmat	1	1		1 BAT		1
Working Incidents	Hazmat	2	1		1 Tanker		2 ALS	1	1 BAT	1	
2nd Alarm	Hazmat	2	1	1	1 Hazmat		1 ALS		1 BAT	1	1
3rd Alarm	Hazmat	2	1	1	1 Hazmat		1 ALS		1 BAT		1

Note: Squrt can be substituted for engine, depending on availability.

Table 106. Miscellaneous/Special Assignments--Liberty County

Alarm Type	Engines	Ladder Trucks	Squad	Tank/Marine Unit	EMS/ALS Units	Chief Officer
Rubbish	1			1 Tanker		
Vehicle	1			1 Tanker		
Commercial Vehicle	2			1 Tanker		
Investigation	1					
Motor Vehicle Accident	1	1	1		1 EMS	
Industrial Accident	1	1	1		1 ALS	
Water Rescue	1	1	1	1 Marine	1 EMS	1 BAT
Activated Alarm System	1	1				
EMS Assist	1					
Police Assist	1	1				1 BAT

Note: Squrt can be substituted for engine, depending on availability.

E.9. Forestry

The various forest services provide fire protection for the National Wildlife Preserve on Gish Island, Robert S. Haywood State Park on Masland Island, Van Deusen Park and Camp Ground, and Casper Park.

Units are generally stationed at Par/Campground Headquarters when in service.

E.10. Roaring River Tribal Community Information

The fire department is a tribal government department with a full-time paid staff together with modern equipment and facilities. The fire chief has responsibility for the routine and emergency operations of the fire department and answers to the public safety director. There is also an assistant chief who reports directly to the fire chief. The fire department utilizes the ICS in firefighting operations and other emergency operations. Community council has not adopted a fire code and the community does not have an ISO rating.

There are fire stations in Green County (Station 75 in Big Rock) and in Liberty County (Station 76 in Gold Mine). No fire stations are located in Mineral or Kane Counties. Tables 93 and 99 in Section E.7 above show the apparatus and personnel assigned to these two stations. The fire department headquarters is located at Station 75 in Big Rock.

E.11. Mutual Aid

Mutual aid agreements are in place with six counties adjacent to Liberty County to provide manpower and equipment during a Liberty County emergency. Both paid and volunteer fire departments are included in these mutual aid agreements. The following table depicts total resources of the communities listed and not those resources that would be available during an emergency. It should be noted that although mutual aid resources are shown in totality, the entire number of resources are not always available due to their jurisdictional obligation and need. A minimum of 20% of an individual locale's resources has to stay to protect their own community and citizens.

Due to the necessity of having unique call signs for equipment used in any mutual aid situation, all apparatus/vehicle designators listed in the following tables must be preceded by the home location when used in a jurisdiction other than the one to which the equipment belongs.

E.11.1. Apple County

Table 107. Apple County Fire Apparatus Inventory

Department	Engine Numbers in Service w/ Type I 1250 GPM	Engine Numbers in Service w/ Type I 1500 GPM	Truck Numbers in Service w/ Type I 85' Aerial
Crows Point Volunteer Department	1, 2, 3	4	1
Levering Volunteer Department	1, 2, 3		

DEFINING SPECIAL OPERATIONS

Department	Engine Numbers in Service w/ Type I 1250 GPM	Engine Numbers in Service w/ Type I 1500 GPM	Truck Numbers in Service w/ Type I 85' Aerial
Shelby Volunteer Department	1, 2, 3		

Table 108. Apple County Fire Apparatus Inventory--Levering and Shelby Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Mask Service Unit 106	40 extra Survivair air tanks on board
Light Unit 206	8 mounted, 4 portable lights

E.11.2. Granite County

Table 109. Granite County Fire Apparatus Inventory

Department	Engine Numbers in Service w/Type I 1250 GPM	Engine Numbers in Service w/Type I 1500 GPM	Engine Numbers in Reserve w/Type I 1250 GPM	Truck Numbers in Service w/Type I 85' Aerial	Truck Numbers in Service w/Type I 100' Aerial	Rescue in Service w/ Medium Duty, BLS don't transport
Hibbing Volunteer Department	1, 2, 4	3, 5				
Jamestown Paid Department	2, 3, 4, 6, 7, 9, 10	1, 5, 8	3, 5, 8	3, 5, 8	1	1, 3, 5, 8
Salmon Volunteer Department	1, 2, 3					

Table 110. Granite County Fire Apparatus Inventory--Hibbing and Salmon Volunteer Departments Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Mask Service Unit 106	40 extra Draeger air tanks on board
Light Unit 206	8 mounted, 4 portable lights

Table 111. Granite County Fire Apparatus Inventory--Jamestown Paid Department Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Squad 1	24' Van Hazmat-Heavy Rescue-Manpower
Mask Service Unit 106	20' Van 60 extra Draeger air tanks on board

DEFINING SPECIAL OPERATIONS

Apparatus/Vehicle Designator	Type/Capability
Light Unit 206	Trailer mounted 8 mounted, 8 portable lights
Boat 2 (Rescue)	14' 20 horsepower motor

E.11.3. Green County

Table 112. Green County Fire Apparatus Inventory

Department	Engine Numbers in Service w/Type I 1250 GPM	Engine Numbers in Service w/Type I 1500 GPM	Engine Numbers in Reserve w/Type I 1250 GPM	Truck Numbers in Service w/Type I 85' Aerial	Rescue in Service w/ Medium Duty, BLS don't transport
Casperville Volunteer Department	1, 2, 3				
LaPort Volunteer Department	1, 2, 3				
Monroe Paid Department	2, 3, 4, 5, 6	1, 5, 8	3, 5		
Paradise Volunteer Department	1, 2, 3				
Ponel Volunteer Department	1, 2, 4	3			
Zurich Paid Department	2, 3, 4, 6, 7, 9, 10, 11	1, 5, 8	3, 5	3, 8	1, 3, 5

Table 113. Green County Fire Apparatus Inventory--Casperville and LaPort Volunteer Departments Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Mask Service Unit 106	40 extra Survivair air tanks on board
Light Unit 206	8 mounted, 8 portable lights
Boat 1 (Rescue)	18' 150 horsepower
Boat 2 (Rescue)	16' 90 horsepower
Boat 3 (Rescue)	14' 20 horsepower

Table 114. Green County Fire Apparatus Inventory--Monroe Paid Department Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Mask Service Unit 106	20' Van 60 extra Survivair air tanks on board
Light Unit 206	Trailer mounted 8 mounted, 8 portable lights
Boat 1 (Rescue)	18' 150 horsepower
Boat 2 (Rescue)	16' 90 horsepower
Boat 3 (Rescue)	14' 20 horsepower

Table 115. Green County Fire Apparatus Inventory--Monroe Paid Department Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Mask Service Unit 106	40 extra Survivair air tanks on board
Boat 1 (Rescue)	14' 20 horsepower
Light Unit 206	8 mounted, 4 portable lights

Table 116. Green County Fire Apparatus Inventory--Zurich Paid Department Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Squad 1	24' Van Hazmat-Heavy Rescue-Manpower
Mask Service Unit 106	20' Van 20 extra Survivair air tanks on board
Light Unit 206	Trailer mounted 8 mounted, 8 portable lights

E.11.4. Kane County

Table 117. Kane County Fire Apparatus Inventory

Department	Engine Numbers in Service w/Type I 1250 GPM	Engine Numbers in Service w/Type I 1500 GPM	Engine Numbers in Reserve w/Type I 1250 GPM	Truck Numbers in Service w/Type I 85' Aerial	Truck Numbers in Service w/Type I 100' Aerial	Rescue in Service w/ Medium Duty, BLS don't transport
Clifton Paid Department	2, 3, 4, 6, 7, 9, 10, 11	1, 5, 8, 12	3, 5, 7, 8	3, 8	1, 5	1, 3, 5, 8

DEFINING SPECIAL OPERATIONS

Department	Engine Numbers in Service w/Type I 1250 GPM	Engine Numbers in Service w/Type I 1500 GPM	Engine Numbers in Reserve w/Type I 1250 GPM	Truck Numbers in Service w/Type I 85' Aerial	Truck Numbers in Service w/Type I 100' Aerial	Rescue in Service w/ Medium Duty, BLS don't transport
Gable Volunteer Department	1, 2, 4	5				
Largot Volunteer Department	1, 2, 3					
Murray Hill Volunteer Department	1, 2, 4	3, 5		1		
Rusten Volunteer Department	1, 2, 3					

Table 118. Kane County Fire Apparatus Inventory--Clifton Paid Department Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Squad 1	24' Van Hazmat-Heavy Rescue-Manpower
Mask Service Unit 106	20' Van 60 extra Mine Safety Appliances (MSA) air tanks on board
Light Unit 206	Trailer mounted 8 mounted, 8 portable lights

Table 119. Kane County Fire Apparatus Inventory--Gable and Murray Volunteer Departments Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Mask Service Unit 106	40 extra MSA air tanks on board
Light Unit 206	8 mounted, 4 portable lights

Table 120. Kane County Fire Apparatus Inventory--Largot and Rusten Volunteer Departments Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Mask Service Unit 106	40 extra MSA air tanks on board
Light Unit 206	8 mounted, 8 portable lights

E.11.5. Mineral County

Table 121. Mineral County Fire Apparatus Inventory

Department	Engine Numbers in Service w/Type I 1250 GPM	Engine Numbers in Service w/Type I 1500 GPM
Bradley Volunteer Department	1, 2, 4	3, 5
Ceresco Volunteer Department	1, 2	3
Danton Volunteer Department	1, 2, 3	
Sumpter Volunteer Department	1, 2, 3	
Wicks Volunteer Department	1, 2, 3	

Table 122. Mineral County Fire Apparatus Inventory--Bradley, Ceresco, Danton, Sumpter, and Wicks Departments Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Mask Service Unit 106	40 extra Scott air tanks on board
Boat 1 (Rescue)	14' 20 horsepower motor
Light Unit 206	8 mounted, 4 portable lights

E.11.6. Stramford County

Table 123. Stramford County Fire Apparatus Inventory

Department	Engine #s in Service w/Type I 1250 GPM	Engine #s in Service w/Type I 1500 GPM	Tender #s in Reserve w/Type I 3000 Gal, Water Tender	Truck #s in Service w/Type I 85' Aerial	Truck #s in Service w/Type I 85' Articulating Boom
Annville Volunteer Department	31, 32	Squrt 41			
Bloomsburg	41	Squrt 41			
Cassel Volunteer Department	21, 22	Squrt 21			
Forksville Volunteer Department	51, 61				
Harbor Place Volunteer Department	71		71		
Hughsville Volunteer Department	75, 76				
Hyerstown	91, 92			Ladder 91	Snorkel 92

DEFINING SPECIAL OPERATIONS

Department	Engine #s in Service w/Type I 1250 GPM	Engine #s in Service w/Type I 1500 GPM	Tender #s in Reserve w/Type I 3000 Gal, Water Tender	Truck #s in Service w/Type I 85' Aerial	Truck #s in Service w/Type I 85' Articulating Boom
Lewisburg Volunteer Department	81, 82				
Masland Island	95				

Table 124. Stramford County Fire Apparatus Inventory--Tower Beach Paid Department

Department	Engine #s in Service w/Type I 1250 GPM	Engine #s in Service w/Type I 1500 GPM	Engine #s in Service w/Type I 1500 GPM	Engine #s in Reserve w/Type I 1250 GPM	Engine #s in Reserve w/Type I 1500 GPM	Truck #s in Service w/Type I 85' Aerial	Truck #s in Service w/Type I 100' Aerial	Truck #s in Service w/Type I 85' Articulating Boom	Rescue in Service w/ Medium Duty, BLS don't transport
Tower Beach Paid Department	2, 3, 4, 6, 7, 9, 11	1, 5, 8, 10	Squrt 10	103, 105	Squrt 109	3	1	Snorkel 8	3, 5, 8

Table 125. Stramford County Fire Apparatus Inventory--Annville Volunteer Department Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Tender 31	Type I--3000 Gal Water Tender
Brush Unit 31	Type VI engine--4X4 Pickup 150 gal tank

Table 126. Stramford County Fire Apparatus Inventory--Bloomsburg Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Tender 41	Type I--3000 Gal Water Tender
Utility Unit 41	Equipment Truck

Table 127. Stramford County Fire Apparatus Inventory--Forks ville Volunteer Department Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Tender 51	Type I--3000 Gal Water Tender
Tender 61	Type I--3000 Gal Water Tender
Brush Unit 51	Type VI engine--4X4 Pickup 150 gal tank
Brush Unit 61	Type VI engine--4X4 Pickup 150 gal tank

Table 128. Stramford County Fire Apparatus Inventory--Harbor Place Volunteer Department Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
HAZMAT Unit 71	18' van light hazmat equipment PPE-Level "B"
Marine Unit 71	16' 90 horsepower motor

Table 129. Stramford County Fire Apparatus Inventory--Hughsville Volunteer Department Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Tender 75	Type I--3000 Gal Water Tender
Tender 76	Type I--3000 Gal Water Tender

Table 130. Stramford County Fire Apparatus Inventory--Hyerstown Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Tender 92	Type I--3000 Gal Water Tender
Marine Unit 92	18' 150 Horsepower

Table 131. Stramford County Fire Apparatus Inventory--Lewisburg Volunteer Department Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Tender 81	Type I--3000 Gal Water Tender
Brush Unit 81	Type VI engine--4X4 Pickup 150 gal tank

Table 132. Stramford County Fire Apparatus Inventory--Tower Beach Paid Department Special Equipment in Service

Apparatus/Vehicle Designator	Type/Capability
Squad 1	26' Van Hazmat-Heavy Rescue-Manpower
Mask Service Unit 106	60 extra MSA air tanks on board
Light Unit 206	8 mounted, 8 portable lights
Marine Unit 2 (Rescue)	18' 150 horsepower motor
Utility Unit 2	Equipment Truck
Foam Unit 4	Type II--Foam Trailer 250 gallons
Brush Unit 11	Type VI engine--4X4 Pickup 150 gal tank

DEFINING SPECIAL OPERATIONS

Apparatus/Vehicle Designator	Type/Capability
Utility Unit 11	Equipment Vehicle
Comm. Unit 11	Communications Van

Note: A not so readily identified problem often overlooked in the mutual aid environment is that of interoperability of equipment (not just communications). Such equipment as fire hydrant threads, hose couplings, fire fighting appliance threads, and self-contained breathing apparatus tank threads can be vastly different, creating dramatic problems in water supply and air tank refilling and/or usage. Universal adapters have to be available to overcome the problem of different threads for fire hydrants, hose couplings, and appliance threads.

Appendix E. Fire Service

Central City Fire Department

Squad 1 and HAZMAT 1 Combined Inventory

All equipment purchased with UASI grant funds 5 years ago. **Items with an asterisk purchased within the last calendar year

- (4) SCBA units with 1 hour bottles Scott Next Gen
- (8) 1 hour reserve SCBA bottles Scott
- Portable fire extinguisher assortment (including two 5 gallon water extinguishers and MET-L-X)
- (1) Thermal imaging camera
- (4) Hand lights

Shoring lumber and cribbing

Vehicle rescue shore system (vehicle stabilization)

Hydraulic vehicle extrication system with extended tool compliment (cutters, spreaders, rams, etc)

- (1) Battery operated sawzall
- (1) Multi-gas meter (sensors: oxygen; CO; LEL/UEL; Hydrogen sulfide)
- (1) gas calibration kit (cal gas expired)
- (1) Set of colorimetric tubes with hand pump (tubes: ammonia; chlorine; carbon dioxide; perchlorethylene; acetone; alcohol; WMD agents)
- (1) Photo-ionization detector (currently out of service requiring \$1,200.00 in repairs)

300' static kernmantle rope

Extensive rope hardware compliment (pulleys, carabiners, ascenders, webbing, etc.)

- (1) Stokes
- (1) SKED
- (2) Class III Harnesses

- (3) Dry suits (neck rings on 2 suits require repair)
- (3) Sets of gloves, booties and fleece liner for dry suits
- (3) Rescue helmets with head lamps
- (3) PFD's (Equipped with strobe light, rescue knife and whistle)

Rope Launcher (long distance rope delivery system)

**underwater search camera (capable of operating 150' under water)

- (1) Night vision goggles
- (1) Hand held GPS unit

(2) Intrinsically safe portable radios

(3) Post screw jacks (used with 4 X 4 posts for shoring and trench incidents) (How many 4x4 post?)

- (1) Speed shore (trench rescue)
- (1) Carpentry belt with tools

(1) Nail gun with air hose
supply of nails (Including nails for nail guns)

(2) Chainsaws (gasoline and electric)
(1) Rotary saw (metal, concrete and wood blades)
**(1) Concrete cutting chainsaw
**(1) Petrogen cutting torch
Spray paint (3 cans orange)
(1) 25 KW generator (gas)
(1) Tool grade air compressor
(1) Chlorine A kit
(1) Chlorine B kit

(1) Portable generator (6KW)
Portable lighting and extension cords (4 ea)
(2) Salvage covers (color coded)

Heavy duty rubber lineman's gloves

pH and water finding paper
(1) Radiation detector (single channel analyzer)
**(1) PCR technology pathogen identifier
(4) NFPA 1991 compliant vapor protective garments
(4) NON-NFPA 1992 compliant liquid splash protective garments
Miscellaneous compliment of tyvek/saranex garments
(4) Pairs non-steel shank rubber boots
(10) Pairs nitrile rubber gloves
(4) M 256 WMD agent detector kits (w/M8, M9, Paper)
Technical decontamination tools and equipment
(6) Non CBRN approved APR's with HEPA/organic vapor filter cartridges
Pipe patch kit
Drum patch kit
On board computer with electronic reference sources and plume modeling (CAMEO)
ICS forms and position checklists

M.S.A. (model number 2A)

Hand tools

Current version of the ERG
Crop Protection Handbook
Sax's Dangerous Property of Industrial Materials
NIOSH Pocket Guide to Chemical Hazards
Toxic & Hazardous Industrial Chemicals Safety Manual
The Condensed Chemical Dictionary
Fire Protection Guide on Hazardous Materials
Guidelines for the Selection of Chemical Protective Clothing

Compatibility Charts for all applicable PPE
Local maps

(2) 5 gallon buckets of containers of acid neutralizer
(2) 5 gallon buckets of soda ash

Telescope with tripod

BLS medical bag

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UNIT 2: CULTURAL INFLUENCES

UNIT OBJECTIVE

Evaluate the organization's ability and willingness to meet the mission of Special Operations.

ENABLING OBJECTIVES

1. *Evaluate the organization's culture and team dynamics.*
 2. *Identify how cultural influences can drive the formal and informal decisionmaking processes within an organization, both negatively and positively.*
-

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NOTE-TAKING GUIDE

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**UNIT 2:
CULTURAL INFLUENCES**

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UNIT OBJECTIVE

Evaluate the organization's ability and willingness to meet the mission of Special Operations.

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ENABLING OBJECTIVES

- Evaluate the organization's culture and team dynamics.
- Identify how cultural influences can drive the formal and informal decisionmaking processes within an organization, both negatively and positively.

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ABILITY VERSUS WILLINGNESS



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ORGANIZATIONAL CULTURE

- Identifying organizational culture can be a challenge--culture is intangible.
- If you had to capture the culture of your organization in one sentence, how would it read?

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**ORGANIZATIONAL CULTURE
(cont'd)**

Consist of:

- Beliefs.
- Assumptions.
- Values.
- Attitudes.
- Behaviors.

It is a set of written and implied rules of engagement.

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**PROGRESSIVE, REGRESSIVE,
AND STATIC CULTURE**

- **Progressive:** Planning for the future.
- **Regressive:** This is the way we've done it for years. Why change now?
- **Static:** Why rock the boat when things are going smoothly?

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ORGANIZATIONAL LEADERSHIP

Perception is everything.

- **Hitler, Lincoln, and Gandhi.**
- **Do they align toward a common goal?**
- **Do they motivate others?**
- **Do they hold others responsible for their performance?**
- **Fire Department of New York (FDNY)-- Phoenix--Los Angeles Fire Department (LAFD)--Chicago.**

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**HOW IS LEADERSHIP
CULTIVATED?**

- **Promotional opportunity based on merit?**
- **What about succession planning?**
- **The "good old boy network." Don't worry about the dinosaurs, watch out for the eggs they lay!**
- **Do the new leaders challenge the established norm?**
- **The culture may control the leader.**

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RISK ASSESSMENT FOR PROGRAM MANAGERS

Situation

Organization

Politics

Money



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PREPARATION FOR THE JOB

- Should the Special Operations Program Manager be the most experienced and technically qualified team member?
- How do you gain credibility when you do not have experience?
 - Do you have the tactical and technical skills to fill this position?



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PREPARATION FOR THE JOB (cont'd)

- Can any manager run any kind of Special Operations program?
- Where do you get manager skills?
- On-the-job training (OJT) can be an expensive education!

You can't escape your past--the organization won't let you anyway.



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WHO OWNS THE TEAM?

- You may have only administrative control over the Special Operations Team.
- You may have a combination of administrative and operational control.

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GAINING POLITICAL CAPITAL AND OTHER CHALLENGES

The Grapevine

- Individual leadership acknowledges the "grapevine" through unofficial means
- Informal leadership can:
 - Build trust and acceptance
 - Help shape the response to policy changes
 - Cause initiatives to succeed or fail

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GAINING POLITICAL CAPITAL AND OTHER CHALLENGES (cont'd)

- Reputation + Rolodex + Relationships = Political Capital.
- How do you know when you have political capital?

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GAINING POLITICAL CAPITAL AND OTHER CHALLENGES (cont'd)

- Political capital is a fluid bank; know when to spend it.
- Relationships are critical.

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GAINING POLITICAL CAPITAL AND OTHER CHALLENGES (cont'd)

- Politics of committees
- Labor organizations
- Marketing

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IDENTIFYING CULTURAL INFLUENCES

Organizational culture is identified through:

- Language
- Symbology
- Decisionmaking
- Legends
- Daily operations
- Discipline
- Labor relations
- Regional activities



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IDENTIFYING CULTURAL INFLUENCES (cont'd)

- Who are these guys?
- They don't run any calls.
- I don't get it.
- Why are we talking about a new rescue boat when the budget is ugly?



What culture obstacles do you encounter?

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**Activity 2.1
Identifying Cultural
Influences**

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Activity 2.1

Identifying Cultural Influences

Purpose

To identify how cultural influences can drive the formal and informal decisionmaking processes within an organization, both negatively and positively.

Directions

1. Individually, take a few minutes to develop a list of cultural influences in your own organization. Then, decide which among these influences is the biggest cultural obstacle you encounter in your organization.
2. In the next 25 minutes, share your list with your table group. Come to a consensus on which cultural obstacle the group thinks is the most influential.
3. The instructor will lead a discussion where you may share your responses with the class.

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NOTE-TAKING GUIDE

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SUMMARY

- Ability versus willingness.
- Organizational culture and leadership-- progressive, regressive, or static?
- Risk assessment for program managers.
- Preparing to manage a Special Operations program.
- Gaining political capital.
- Assessing cultural influences.

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WHAT DOES THE ORGANIZATIONAL CULTURE LOOK LIKE?

Success and failure as the Special Operations Program Manager revolves around identifying your organization's culture and how your program is accepted or rejected by that culture. There are so many cultural influences that can reduce our ability to meet our mission. These include biased opinions from those within the rank structure, both above and below; negative or positive perceptions of line and staff personnel; the turbulence caused by implementing a new program or specialty pay; budget issues, etc. At the same time, really understanding your organization's culture can be a challenge. Organizational culture is intangible; it is 'just there,' and it often changes with a change in leadership.

Nevertheless, if you can articulate the philosophy of your organization's culture, you will be more aware of the difference between what your organization is **able** to do with the resources it has and what it is **willing** to do, as determined by the culture.

In many cases, an organization is able to support some level of Special Operations, but it is unwilling to do so due to some of the cultural influences listed above. It is up to you to determine which of the two barriers might exist and navigate a way around or through those barriers.

A lack of willingness can manifest in many ways. Often, executive management doesn't fully understand Special Operations, and they are afraid to embrace something they are not comfortable with. In many cases, cost is thrown up as the first barrier. When cost is an actual issue, or management doesn't embrace a Special Operations program fully, they may want to 'slide in gradually,' not realizing that if you don't have **all** of the equipment and people you need, you are not really a player in Special Operations.

Be prepared to answer the 'why' questions right up front, but also be prepared for what comes after. 'Do you **really** need that new fireboat?' This is a logical first question and perhaps easy to answer. The tough followup is, 'Do we really need a new fireboat when we are looking to brown out a truck company?' Admittedly, it is difficult to justify the purchase of the expensive boat when you only run 10 calls a year, or when you are shutting down response companies. Specialty pay is often a subject of debate also. Does it make sense to pay people to perform a specialty? It seems we are just 'throwing more money' at trying to run those 10 Special Operations calls a year.

It becomes our job, then, to justify our Special Operations program. Doing this effectively requires not only technical knowledge and administrative skills, but also strong leadership.

What Does Good Leadership Look Like?

Leadership is action-centered. It is important to focus on what an effective leader actually does. A good leader will engage in contingency planning as well as situational awareness.

In a response organization, does the leadership establish a clear direction and have the strength and influence to align others within toward a common goal, motivating them to commit to action and making them responsible for their performance?

Do those leaders in the organization possess the personal qualities that distinguish them from others? For example, do they have the ability to express their ideas and to express by action and behavior, rather than by a strong personality?

Do those leaders have the ability to be adaptive to different situations?

Does the leadership in your organization look at the progressive nature of the emergency response environment today?

Influences on Organizational Culture

Oftentimes, committees are formed to investigate the notion of purchasing new equipment or deciding whether or not to implement a new program. Be wary of committees and pay close attention to those selected to participate. Committees can be formed to kill a deal just as easily as they are formed to objectively come to a conclusion or rubber stamp an existing idea. If someone other than you forms a committee, it is wise to understand how those participants are selected. You could have the deck stacked against you before the game even begins. Not all committees are effective and there is an old adage in business--the best way to kill a good idea is to form a committee.

If you have the opportunity to form the committee yourself, be mindful of whom you select. Ideally, you want to arrive at a good conclusion and it is not always effective to choose members that agree with you or think like you do. A "group think" mentality might follow, leading everyone down a path that is not truly looking at the issue objectively. Select members that represent views or levels of experience from across the board. You might even consider adding a member that knows nothing about the topic--they ask some crazy questions, but will keep you on your feet and require you to explain your idea/position/program. If you can explain and/or convince a person who knows nothing about your idea, you can probably explain/convince an expert! Committees are as much about good team dynamics as they are about expertise.

Labor Organizations

The union influence is a big one. It is a good idea to develop a good relationship with labor representatives. Invite union representatives to be a part of your committees and meetings. If they are included, it helps ease transitions and efforts to get programs through. By educating union representatives about your mission, you reduce the likelihood of an adversarial relationship.

Generational Culture

We have a younger workforce now, which means there is a different culture coming in than the one that currently exists.

There are generation gaps between trainees and training officers. The younger generation tends to ask 'Why?' more often, and tends to be more critical of authority. We may find ourselves having to 'justify' why things are done a certain way to the younger generation.

Progressive, Regressive, and Static Leadership

The culture of Special Operations can be somewhat paradoxical. In some respects, it is ever-evolving, especially with regard to acceptance of and adaptation to new technology. At the same time, a Special Operations culture can often be resistant to change.

Three ways to categorize organizational culture are progressive, regressive, and static.

Progressive Leadership

A progressive leader will proactively plan for future response issues, and will include in his or her plan changes in the economic environment, threat analysis, and technological advances. The progressive-/future-oriented leader is looking at the issues that are outside of the simple process above. They look at how to improve the outcomes and how to best achieve them while meeting the needs of the community.

Regressive Leadership

Regressive leadership holds the attitude that 'this is the way we have done it for years, why change now?' The regressive leader only looks at the basic framework of a response, for example. 'Putting the wet stuff on the red stuff.'

Static Leadership

Static leadership holds the attitude of 'why rock the boat' when things are moving smoothly?

Often, a culture can be described as 'progressive, but still resistant to change.' A Special Operations culture may have a progressive outlook and do well keeping up with new technology, for example, yet still not be willing to give up a history, or some of their older policies. This is somewhat understandable. It is often easier to continue doing things 'the way we always have.'

HOW IS LEADERSHIP CULTIVATED?

Most members of Special Operations Teams are highly motivated personnel. As such, they have a great interest in becoming the best at what they are doing. Promotional opportunity is a strong incentive.

New leaders are attracted to promotional opportunity through economic incentives. Because of the increased workloads that are placed on special team members, many communities arrange for incentive pay while they are assigned to the team. This may take the form of incremental pay, percentage for position, paid only during assignment, percentage of salary, or flat-rate pay.

Special Operations are very person-dependent, rather than process-dependent. It is incredibly important, therefore, to look at succession planning. Who will follow the current leader?

Every department has a different organizational culture, and succession plans are influenced in a variety of ways. For example, some departments allow the 'cream of the crop' to rise on its own purely based on performance on tests. The best test-taker will be your new leader, rather than someone who has been mentored by the current leaders.

Sometimes, the prevailing attitude toward an individual who is actually mentored is negative. The view is that he or she has been fast-tracked into a position because he or she is a 'brown noser.' Other departments may take the approach on the opposite end of the spectrum, where leaders are essentially elected through the "good old boy network." Even if a more capable candidate is available, the individual who has an 'in' in the "good old boy network" will get the job.

Is promotional opportunity in your organization based on merit or just 'the next person on the list?'

How will the union affect your succession plan?

In many organizations, labor groups are involved in promotional processes, or become involved when there is perceived bias or the possibility that a test is considered to have been "tainted." This is a very delicate topic in most organizations and is a factor in succession planning. How will the union within an organization view a person who has been offered or selected by the organization to attend special classes or is afforded the opportunity to gain experience that wasn't offered to everyone that participates in a promotional exam. The person that grieves the test is generally the one that feels slighted and suggests that another candidate was given unfair advantage because he was 'chosen' by management. This entire issue is a difficult one to navigate.

In our line of work, we don't do a lot to prepare our people to be leaders. We are often unprepared as managers, and sometimes also as subject matter experts, since we deal with such diverse technical fields.

The fire service doesn't breed good skills in management. A good commander sees the situation, filters a lot of information, and learns to size it up really well. But in the managerial realm, it is harder to see what you need to see as well; it can be a 'dark corridor.' We aren't trained to see the

managerial cues. You come into the job without the formal managerial training, and you don't get analogous repetition in training, as you do in the field, responding to calls. On-the-job training (OJT) is difficult and can cost you.

Frequently, we come into this position with only our natural abilities and on the job experience as either a strong manager or a strong technical expert, but rarely both.

INDIVIDUAL LEADERSHIP

The Special Operations Program Manager must be ahead of the curve today with the changes that are occurring in the field. The changes alone in the detection and monitoring field will keep him/her on the edge. The Special Operations Program Manager has to be able to look at the situations that the team may face, the personnel and resources available, and economic and logistical needs of the team. The Special Operations Program Manager must be innovative in funding and using what is currently available.

Good leadership starts with overcoming personal barriers.

When constantly following negative thought patterns, most of us:

- Judge.
- Condemn.
- Criticize.

This pattern will not only make you lose confidence in yourself, but it will also result in a lack of self-esteem, which could even lead to anxiety, indecision, and other problems. If this occurs, your teams may lose confidence in your leadership abilities. You have the power to reverse this process and make it work in your favor.

Many of these negative thought patterns could go back to the beginning of your career. Perhaps a prominent person during your early days might have put limiting thoughts in your mind. A Captain or a Lieutenant, an engineer, or a fellow firefighter may have remarked that you were 'not as good as another guy,' for example. You might have heard remarks at the kitchen table or in training that 'You can't do this' or 'You're weak or he/she is better than you.' As a firefighter and as you moved up the career ladder, you clung to those patterns and, even today, you believe that you cannot do this or that and that others are better than you.

These influences play a crucial role in the life of any individual. And those in emergency services are impacted even more so. However, it is within your power to convert the 'I can't, I won't' into 'I can and I will.' There needs to be a strong emphasis during a morning roll call by motivating personnel that they 'can achieve anything placed in front of them today.' If this is done during each shift and whenever possible, it can change the negative attitudes. It can empower your personnel to want to strive to be and do better.

All through your personnel's careers, most actions and behaviors are based on a belief that they are unable to perform job tasks or that they are not capable (physically or mentally). However, by converting the limiting and/or negative reinforcement patterns into empowerment and positive reinforcement, you will find your personnel behaving differently, accomplishing tasks and assignments with a desire to do more. This empowerment and positive reinforcement can take shape in many ways.

For instance:

- Assign a specific equipment purchase project including design, specification, and budget with ownership.
- Assign specific personnel a leadership role.
- Assign personnel mentoring roles for new recruits or probationary personnel.

The feedback that you receive, both negative and positive, from your peers and from persons in authority, stay with you throughout your career. They play an important role in the decisions you have to make on a day-to-day basis. The negative feedback reflects in your attitude and behavior and the way you perceive yourself. Often, you are not even aware of it because this negative feedback is in the depths of your subconscious mind.

Those that give you negative feedback also have the ability to help you achieve success. You might not be able to escape the negative influences around you, but you can surely win them over by refusing to accept the negative things they say about you. You can do so by positive reinforcement and encouragement, where you strive to convert these patterns into positive ones.

Seek the origins of the negative behaviors of others and do what is in your realm of influence to replace them with positive behaviors and actions that will put you in a position of power.

Finding the causes and solution for negative behaviors can help to remedy a long-standing problem that exists in an organization. Ask personnel why they are intent on making the new member feel in this manner. At the same time, remember to applaud the achievers for their success in overcoming the negative influences successes. Reward these personnel for this success and you will see a change to the positive for your organization.

Gaining Credibility Without Experience--The Manager Versus the Subject Matter Expert

A Special Operations Program Manager who is a stronger manager than he is a subject matter expert needs to be able to pick his key people to be his sources of information. One pitfall of being a strong manager who does not have extensive or diverse enough technical knowledge is that you may end up somewhat of a servant to the subject matter experts from whom you get your information. On the positive side of being a stronger manager than subject matter expert is you may not feel the need to micromanage the technical details of daily operations, and can instead focus on a vision.

Moreover, some credibility can be gained through the servant leadership approach. It's not necessarily a bad thing to be somewhat at the mercy of the subject matter experts who advise you.

Let's look at the problem from the other direction. What if so far in your career, you are the technical guru, and now, suddenly, you are the Special Operations chief? While it may be easier to adopt a leadership role after you've proven yourself in the field, there can be pitfalls. How does your department perceive you? You might anticipate apprehension from those within specialties other than your own. They may think you are biased toward your own specialty. This is something you may have to overcome. If you have been the technical guru, the 'go to guy' within your specialty for several years, it may be much harder to delegate your responsibilities. Not only do you yourself know that you can get the job done well, but other people may still expect you to continue doing that job, since you have done it for so long. It is harder to avoid the seduction of getting 'down in the weeds.' The need to 'do everything yourself' can cause you to neglect your responsibilities--sure, all of the equipment is calibrated, but you have unanswered phone calls. This can affect you physically and emotionally.

On the other hand, there are positive perceptions that come along with having the technical background. People may perceive that you are more 'dialed in' to their needs since you have walked in their shoes, so to speak. And, as mentioned earlier, it is easier to adopt a leadership role when you have the confidence that you have already proven yourself in the field.

Getting promoted does not mean you are any smarter, or more well respected, than you were the day before you took the position!

How can you gain credibility if you don't have experience, particularly if you don't have the technical background? Do you have to have tactical or technical skills to be in this position?

The tactics and strategy of administration are completely different than leadership.

Whether you have strong managerial skills or a strong technical background, play to your strengths. Know where to find answers if you do not have the technical knowledge. Keep in mind that 'leading the army is different from leading the charge.' It's not really what you know in terms of skills, technical or managerial, as it is what you know about yourself; what your strengths and weaknesses are. We all have strengths and weaknesses. The name of the game is knowing how you can best play to your strengths to support the program. Even with a technical background, you will inevitably need to look to your subject matter experts for support (no one can know everything). You can then play the role of the 'torch-holder.' It may be easier to lead if you have a technical background and you've proven yourself in the field. However, there are still 'landmines.' You need to know what the job is, who you are, and where those landmines are in your particular organization.

There are pros and cons to both of these ends of the spectrum. This is something to think about coming into the job.

Administrative Control and Operational Control

In your organization, you will likely either have administrative control over the Special Operations Team, or a combination of administrative and operational control. Administrative control is centered on the fact that the manager is solely responsible for the budget, maintenance, training, etc. of the program, but when the bell rings, the team belongs to the shift battalion chief, or other operational officer.

There are pros and cons to each.

The danger of not having any operational control is that you can become very far removed--you don't know what's going on in the street. If this is the case, even if you just go out and observe, without command responsibilities, you can improve your effectiveness as a manager. Being viewed by the 'line' personnel while on the scene will demonstrate your intent to be involved in what is happening, as well as strengthening your connection to the program.

Another implication of not having operational control is that you are 100 percent dependent on your subject matter experts. This can make it a little more difficult to keep your finger on the pulse of what is going on. On the other hand, sometimes having operational control makes things run more smoothly. By being present on a call, even if you do not participate in the tactical operations, you give the operations personnel 'horse power' and confidence to go ahead and carry out the job. In that way, you can still help with execution.

Ultimately, a Special Operations Team requires a good leader with influence inside the organization and the ability to get things done from a programmatic perspective. If this is done, the team will most likely function well under other operation leadership in the field.

The Grapevine

Your reputation precedes you. Sometimes people try to reinvent themselves on the job after receiving a promotion. Often, this doesn't work too well. It is best to just accept that the past is there and you can't escape it.

Individual leadership acknowledges the grapevine. The grapevine can be an informal way to build trust and acceptance. The informal leaders, or "bees" can help shape informal response to policy changes.

Most agencies have a 'pope,' sometimes an entire papacy, that can cause any initiative to succeed or fail. No matter what you try to get done formally, the papacy can kill. In smaller departments, the 'pope' is typically stronger than he is in larger departments. The 'general' leads a 'Special Operations' army, and Special Operations is a representative microcosm of the entire fire department.

It can really help your cause to garner support through the grapevine with people that will advocate for you, before you bring your idea up at a meeting and it is shut down by an informal leader. But it takes a while to garner that support. On the job, think about 'time' and start looking at elongated timeframes to get things done.

Gaining Political Capital

How do you know when you have political capital?

There are signs. Productivity accelerates. You get your budget approved. People ask you what you think, even those above you in rank. Your phone calls get answered; people apologize for missing your call; you get approval or an answer for something when the recipient is on vacation in Aruba. It's maybe tough to put your finger on, but when things happen and you can make deals and make things happen without too much red tape or too many phone calls or justifications, you have it!

Political capital is a fluid bank. If you have political capital, know when to spend it. Relationships are critical. Relationships build political capital, and this in turn helps to get things done quicker.

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UNIT 3: LAWS, REGULATIONS, STANDARDS, AND GUIDANCE

UNIT OBJECTIVE

Evaluate the organization's regulatory obligations to meet the mission of Special Operations.

ENABLING OBJECTIVES

- 1. Identify various laws, regulations, and standards that have the potential to affect a Special Operations program.*
 - 2. Define Standard of Care.*
 - 3. Identify the relationship between Standard Operating Guidelines (SOGs)/Best Practices, Standard Operating Procedures (SOPs), and Standard of Care.*
 - 4. Apply the applicable laws, regulations, and standards required to manage a Special Operations program.*
-

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NOTE-TAKING GUIDE

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**UNIT 3:
LAWS, REGULATIONS,
STANDARDS, AND
GUIDANCE**

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UNIT OBJECTIVE

Evaluate the organization's regulatory obligations to meet the mission of Special Operations.

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ENABLING OBJECTIVES

- Identify the various laws, regulations, and standards that have the potential to affect a Special Operations program.
- Define Standard of Care.

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ENABLING OBJECTIVES (cont'd)

- Identify the relationship between Standard Operating Guidelines (SOGs)/Best Practices, Standard Operating Procedures (SOPs), and Standard of Care.
- Apply the applicable laws, regulations, and standards required to manage a Special Operations program.

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COMPONENTS OF A SPECIAL OPERATIONS PROGRAM

- Responders and managers
- Tools, equipment, apparatus
- Personnel recruitment, retention, and training
- Training records
- Replacement schedules for capital assets
- Budgets

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Slide 3-6

THE REGULATORY UNIVERSE

A wide variety of laws and standards affect your program, including

- An established Standard of Care
- Agency-specific SOPs
- Regional response plans
- Industry standards

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A BALANCING ACT

Think of laws and regulations as a filter through which you must run the components of the program.

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A BALANCING ACT (cont'd)

- Unique operational requirements of each Special Operations discipline.
- Special Operations Program Manager must balance regulatory influences with Special Operations program needs.

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A BALANCING ACT (cont'd)

- Regulatory influences dictate
 - Staffing levels
 - Training requirements
 - Equipment needs
 - Liability
- If you've seen one Special Operations program, you've seen ONE Special Operations program!

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PROGRAM VERSUS FUNCTION

- **Special Operations *Program*:**
– A plan or system under which action may be taken toward a goal.
- **Special Operations *Function*:**
– The action for which a person is specially trained, or which a thing is specially engineered to do.

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STANDARD OF CARE

- **Standard of Care is the level at which the average, prudent responder would be expected to perform.**
- **Different Standard of Care for each discipline.**
- **Failure to exercise reasonable care could result in negligence.**

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LAWS AND REGULATIONS VERSUS STANDARDS

Laws and regulations are issued and enforced by government entities, such as:

- **Occupational Safety and Health Administration (OSHA)**
- **Environmental Protection Agency (EPA)**
- **Department of Transportation (DOT)**
- **Department of Energy (DOE)**

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**LAWS AND REGULATIONS
VERSUS STANDARDS (cont'd)**

- **Standards:**
 - Issued by nongovernmental agencies.
 - Complied with voluntarily.
- **Standards sometimes carry the weight of law.**
 - **National Fire Protection Association (NFPA) standards for hazmat response are a good example of this.**

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**HAZARDOUS MATERIALS:
OCCUPATIONAL SAFETY AND
HEALTH ADMINISTRATION AND
BEYOND**

- **Hazardous materials response is a predominant player in a Special Operations program.**
- **Numerous regulations govern hazardous materials training, response, and recovery.**

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**HAZARDOUS MATERIALS:
OCCUPATIONAL SAFETY AND
HEALTH ADMINISTRATION AND
BEYOND (cont'd)**

OSHA's 29 Code of Federal Regulation (CFR) 1910, *Occupational Safety and Health Standards*

- **A suite of regulations on worker safety**
- **Sections important to hazardous materials response include**
 - **Subpart H.--Hazardous Materials**
 - **Subpart I.--Personal Protective Equipment**
 - **Subpart J.--General Environmental Controls**
 - **Subpart Z.--Toxic and Hazardous Substances**

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**HAZARDOUS MATERIALS:
OCCUPATIONAL SAFETY AND
HEALTH ADMINISTRATION AND
BEYOND (cont'd)**

- Some OSHA 1910 regulations
- 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response
 - 29 CFR 1910.134 Respiratory Protection
 - 29 CFR 1910.146 Permit Required Confined Spaces
 - 29 CFR 1910.147 The Control of Hazardous Energy (Lock Out/Tag Out)
 - 29 CFR 1910.1030 Bloodborne Pathogens
 - 29 CFR 1910.1200 Hazard Communication

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**SUPERFUND AMENDMENTS AND
REAUTHORIZATION ACT OF 1986**

- Landmark piece of legislation.
- Standardized training for hazardous materials response and hazardous waste site operations.



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**SUPERFUND AMENDMENTS AND
REAUTHORIZATION ACT OF 1986
(cont'd)**

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III--the Emergency Planning and Community Right-to-Know Act (EPCRA).

- Created a method and standard practice for a local community to understand and be aware of the chemical hazards in their community.
- Hazards in the community must be reported to the fire department and the Local Emergency Planning Committee (LEPC).

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SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (cont'd)

- LEPCs disseminate information about hazardous materials to the public.
- Members consist of representation from:
 - Industry
 - Transportation
 - Media
 - Fire and police agencies
 - The public at large

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SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (cont'd)

- State Emergency Response Commission (SERC)
- Members consist of:
 - The fire service
 - Police services
 - Elected officials
- A SERC is the liaison between local and State levels of authority.

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HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE AND TRAINING

Training levels in Hazardous Waste Operations and Emergency Response (HAZWOPER) are much like those identified in NFPA 472, *Standard for Professional Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*.

- Awareness.
- Operations.
- Technician.
- Specialist.
- Incident Commander (IC).



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HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE AND THE INCIDENT COMMAND SYSTEM

HAZWOPER mandates use of the Incident Command System (ICS).

Specific requirements include

- Backup personnel in place when an entry team is operating in the hot zone.
- Designate a safety officer.
- IC must have 24 hours of first responder operations-level training.
- IC must have competencies in several other areas.

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**STATE PLAN STATES:
OCCUPATIONAL SAFETY AND HEALTH
ADMINISTRATION 1910.120 VERSUS
ENVIRONMENTAL PROTECTION AGENCY 311**



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**STATE PLAN STATES:
OCCUPATIONAL SAFETY AND HEALTH
ADMINISTRATION 1910.120 VERSUS
ENVIRONMENTAL PROTECTION AGENCY
311 (cont'd)**

- State-plan States have exercised their right to develop their own plan.
- Where States choose not to develop their own State plan, EPA 311 governs that State with regard to:
 - Hazardous materials response.
 - Environmental issues related to hazardous materials.

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OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION CITATION DOCUMENT (2007)
Inspection Procedures for 29 CFR 1910.120 and 1926.65, Paragraph (q): Emergency Response to Hazardous Substance Releases.



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OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION CITATION DOCUMENT (2007) (cont'd)
Provides clarification to ensure uniform enforcement of paragraph (q) of the Hazardous Waste Operations and Emergency Response Standard (HAZWOPER), 29 CFR 1910.120 and 1926.65.

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**DEPARTMENT OF TRANSPORTATION:
49 Code of Federal Regulation**

- DOT's 49 CFR, is a comprehensive set of transportation regulations.
- Enforces and publicizes laws and regulations governing transportation of goods by highway, rail, and marine transport.

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**HAZARDOUS MATERIALS:
NATIONAL FIRE PROTECTION
ASSOCIATION AND OTHER
STANDARDS**

- NFPA 472, 2008 revision
- NFPA 473, *Standard for Competencies for EMS Personnel Responding to Hazardous Materials/Weapons of Mass Destruction Incidents*

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**NATIONAL FIRE PROTECTION
ASSOCIATION STANDARDS**

- NFPA standards for hazardous materials response
- Created by committees of technical experts from:
 - Private industry
 - The fire service
 - Law enforcement
 - Professional organizations
 - Government agencies



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**NATIONAL FIRE PROTECTION
ASSOCIATION 472**

NFPA 472, 2008 revision

- Bulk of the 2008 revision surrounds operations-level of competency.
- It is now possible to choose to add a suite of specialized response competencies based on the needs of the agency.



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NATIONAL FIRE PROTECTION ASSOCIATION 472 (cont'd)

The intent of the 2008 revision:

- Creates a standard applicable to all response disciplines
- Defines the skills and competencies for responders
- Provides a framework to meet the OSHA HAZWOPER requirements

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NATIONAL FIRE PROTECTION ASSOCIATION 472 (cont'd)

NFPA 472 revisions to the operations-level competency

- A set of "core" operations-level competencies
- Optional "mission-specific" operations-level competencies



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NATIONAL FIRE PROTECTION ASSOCIATION 472 (cont'd)

Revised NFPA 472 mission-specific competencies include

- The use of personal protective equipment (PPE)
- Technical decontamination
- Mass decontamination
- Product control
- Air monitoring and sampling
- Victim rescue and removal
- Evidence preservation and sampling
- Responding to incidents involving illicit laboratories

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NATIONAL FIRE PROTECTION ASSOCIATION 1582

NFPA 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments.*

Provides guidance on annual physicals for firefighters and members of Hazardous Materials Response Teams.

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NATIONAL FIRE PROTECTION ASSOCIATION 1500

NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*

- PPE
- Staffing
- Medical requirements
- Physical requirements

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NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS ON PERSONAL PROTECTIVE EQUIPMENT

- NFPA 1991, *Standard on Vapor-Protective Ensembles for Hazardous Materials Emergencies*
- NFPA 1992, *Standard on Liquid Splash-Protective Ensembles and Clothing for Hazardous Materials Emergencies*
- NFPA 1994, *Standard on Protective Ensembles for First Responders to CBRN Terrorism Incidents*

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**OTHER STANDARDS:
UNDERWITERS LABORATORY**

- Third-party testing and certification
- Offers compliance testing, evaluation, and certification for PPE

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**OTHER STANDARDS:
UNDERWITERS LABORATORY
(cont'd)**

Underwriters Laboratory (UL) Classified PPE has been tested to levels of safety determined by NFPA PPE standards for:

- Firefighters
- Hazardous Materials Response Teams
- Other emergency responders

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**OTHER STANDARDS:
AMERICAN SOCIETY FOR
TESTING AND MATERIALS**

American Society for Testing and Materials (ASTM) F1127-07, *Standard Guide for Containment of Hazardous Material Spill by Emergency Response*

- A voluntary standard
- Helps to shape the Standard of Care for hazardous materials response personnel

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**OTHER STANDARDS:
AMERICAN SOCIETY FOR
TESTING AND MATERIALS
(cont'd)**

ASTM E2458 Procedures for sample collection:

- Bulk sampling
- Onsite testing

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**RESCUE: NATIONAL FIRE
PROTECTION ASSOCIATION
STANDARDS**

NFPA 1670, *Standard on Operations and Training for Technical Search and Rescue Incidents*

Defines levels of operational capability in order to:

- Manage an incident efficiently and effectively
- Maximize personnel safety
- Ensure the successful rescue of victims
- Ensure successful termination of the event



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**RESCUE: NATIONAL FIRE
PROTECTION ASSOCIATION
STANDARDS (cont'd)**

- Comprehensive, covers all types of rescue situations
- Interconnectivity with NFPA 472
- Defines levels of competencies for various disciplines

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RESCUE: NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS (cont'd)

- Structural Collapse Rescue (Chapter 3)
- Rope Rescue (Chapter 4)
- Confined Space Rescue (Chapter 5)
- Vehicle and Machinery Rescue (Chapter 6)
- Water Rescue--ice, swift water, surf, and dive (Chapter 7)
- Wilderness Search and Rescue (Chapter 8)
- Trench Rescue (Chapter 9)

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RESCUE: NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS (cont'd)

Awareness--The minimum level of capability (i.e., training and equipment) for a responder who in the course of his regular duties could be called on to respond to or be the first on the scene of a technical rescue incident.

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RESCUE: NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS (cont'd)

Operations--This represents the capability of hazard recognition, equipment use, and techniques necessary to support and participate safely in a technical rescue incident.



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RESCUE: NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS (cont'd)

Technician--This level represents the capability of hazard recognition, equipment use, and techniques necessary to safely and effectively coordinate, perform, and supervise a technical rescue incident.



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RESCUE: NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS (cont'd)

NFPA 1006, *Standard for Technical Rescuer Professional Qualifications*

- Establishes minimum job performance requirements
 - Requisite knowledge
 - Requisite skills
- Recommended tools and equipment
- Watermanship test

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RESCUE: NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS (cont'd)

NFPA 1983, *Standard on Life Safety Rope and Equipment for Emergency Services*

- Certification
- Design
- Construction
- Harnesses
- Carabiners
- Pulleys



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RESCUE: NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS (cont'd)

NFPA 1951, Standard on Protective Ensembles for Technical Rescue Incidents

- Design
- Performance
- Testing
- Certification
- Chemicals
- Biological agents
- Radiological particulate protective ensembles

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RESCUE: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS

- 29 CFR 1926 Subpart P Safety and Health Regulations for Construction
- CFR 1910.134 Respiratory Protection
- CFR 1910.120(q)(9)--OSHA guidance on medical surveillance

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RESCUE: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS (cont'd)

- 29 CFR 1910.146 Permit Required Confined Spaces
- 29 CFR 1910.147 The Control of Hazardous Energy (Lock Out/Tag Out)
- 29 CFR 1910.134 Respiratory Protection
- 29 CFR 1910.1030 Bloodborne Pathogens

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**ACCREDITATION VERSUS
CERTIFICATION**

- **Accreditation**
 - Programs and institutions are accredited
- **Certification**
 - People are certified
- **OSHA --"the employer shall so certify"**

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**INTERNATIONAL FIRE SERVICE
ACCREDITATION CONGRESS**

- **Peer driven, self-governing system**
- **Accredits the certification processes of both fire service certification programs and higher education fire-related degree programs**

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PRO BOARD

- **Accredits organizations that use the NFPA's professional qualification standards.**
- **The purpose is to establish an internationally recognized means of acknowledging professional achievement in the fire service and related fields.**

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Activity 3.1
Applying Laws and
Standards--Scenarios

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Activity 3.1

Applying Laws and Standards--Scenarios

Purpose

To determine the most effective way to structure a response to a particular audience, based on relevant laws, regulations, and standards, given a scenario.

Directions

1. In your table groups, read your assigned scenario. Each scenario presents a problem that requires you to format a solution based on the laws and standards of a particular Special Operations discipline. Each solution, however, must be oriented toward a unique audience and must be presented in a fashion that is meaningful to that audience.
2. In order to evaluate the problem at hand, respond to the questions on the following Worksheet. Use the information from the lecture, the background text provided in your Student Manual (SM), and the copies of the regulations and standards provided to each table group for reference in developing your responses.
3. Tailor your responses according to the assignment that accompanies your scenario, which defines the audience to which you will present your proposed solution.
4. Select a spokesperson from your group to present your solution to the class.

Background Information

In most circumstances, it is necessary to identify not only the problem, but also the factors that surround it, and the people that have influence on the outcome.

The Circumstances Surrounding the Problem

The driving force behind each problem is unique. Developing a program or enhancing an existing capability under these circumstances is different than proactively deciding to do the same thing when a new industry is coming to town. This includes, among other things (i.e., training needs; equipment; response configurations; labor considerations; new standard operating procedures (SOPs); personnel considerations, etc.), acknowledging the laws and standards that govern the discipline.

There are many ways to frame a solution to a problem. The first objective of this exercise is to look at each scenario and decide how to address the problem by using laws and standards to justify your argument. In doing so, you will be incorporating laws and standards in a strategic and powerful way.

The People That Influence the Outcome

A Special Operations Program Manager would not make the same type of presentation to a city council that would be made to a group of rookie firefighters or to a civic group. The content may be similar, but the approach and presentation style must be tailored to the audience. The audience and players may be different in each case. Therefore, the acceptance and "buy-in" for the program might need to be gained differently.

The second objective of this exercise is to address the people and the circumstances. Problems don't make decisions, or create obstacles, or have expectations, or need to be convinced--people do.

Scenario 1

Background

The Central City Fire Department (CCFD) is consolidating with the Big Rock Fire Department. It is a combination fire department that serves an adjacent city along the river. Each year, there are 8-10 drownings, and many near drownings on their section of the river. In the past, water emergencies in that area were handled by Big Rock Station 75, although the agency is not consistently staffed with trained responders; is minimally equipped; and without an organized team or training program. There is political upheaval over the consolidation, and the two agencies do not typically work or train together. In fact, the line personnel of the Big Rock Fire Department were against consolidation and mounted a political campaign to try to stop it. The effort failed, largely because the CCFD staff demonstrated that fire consolidation would save enough money to keep a local library open.

Your agency also covers the same river, upstream of Big Rock, and experiences the same sort of call volume when it comes to water-related emergencies. Unlike the Big Rock Fire Department, your agency has a fully staffed water rescue team that is available to respond on a 24/7 basis. You are the Special Operations Program Manager that built the program, using National Fire Protection Association (NFPA) 1670, *Standard on Operations and Training for Technical Search and Rescue Incidents* and NFPA 1006, *Standard for Technical Rescuer Professional Qualifications*, as guidance documents for your training and proficiency testing.

Assignment

The date for the consolidation is approaching and the Fire Chief assigns you to put together a training and operational plan which will integrate the Big Rock firefighters into your water rescue program. Specifically, you are to give a presentation to the Big Rock firefighters in order to acquaint them with your water rescue program, illustrating how you will incorporate them into your agency's response plan when it comes to team member selection, training, response, etc. As they are completely unfamiliar with the NFPA regulations regarding water rescue, you must include a comprehensive overview of them as they are the backbone of your training program.

Scenario 2

Background

Your local law enforcement agency recently served a high-risk warrant on a murder suspect. During the operation, an operating methamphetamine lab was discovered. The officers in your area have little experience with clandestine drug labs and after the suspect was arrested, they began to poke around the lab equipment looking for evidence. One of the officers opened a plastic container and was overcome by the fumes. Two other officers assisted him out of the building but were experiencing burning eyes and nausea. All three went to the hospital for treatment. The Police Chief realized his offices needed some hazardous materials training and gave direction to his training officer (TO) to contact the fire department and see what they could recommend.

Assignment

You, as the Special Operations Program Manager, are directed to meet with the law enforcement TO and his staff and brief them on the laws and regulations that govern hazardous materials training and response, and recommend a plan that outlines their options.

Scenario 3

Background

A large corporation is building a multimillion dollar recycling center in your jurisdiction. The site has many confined spaces and large pieces of machinery. A member of the corporate environmental health and safety division (EH&S) contacted your Fire Marshal and discussed the department's ability to respond to confined space emergencies and the ability to perform machinery rescue. Your agency does not have a Special Operations program and has no technical rescue team or confined space training. The Fire Chief directs you to "figure out what kind of training we need to do to address the rescue problems at the site." Additionally, a member of the town council had a similar conversation with the EH&S representative during a walk-through of the facility. He is also asking the Fire Chief for a report on how the fire department will respond to these situations.

Assignment

Your assignment is to research the laws and standards appropriate for the situation and prepare a staff report to the Fire Chief, Deputy Chief of Operations, and the Fire Marshal. Your findings will be presented at the monthly staff meeting.

Scenario 4

Background

In a rural community, a small child is trapped in a cave-in while playing in an abandoned mine shaft. The local career fire department, along with many civilians, tried for hours to reach the child but had no heavy tools or training to perform the rescue. The child dies, and the blame falls on the fire department because it had no response capability or training to make that type of rescue. The fact is, the fire department was almost a bystander during the incident because the townspeople took over and did most of the work. The town council is up in arms over the incident and is unhappy that the fire department is "unprepared." The Mayor makes it very clear to the Fire Chief that the department better do something to make sure this never happens again. While the expectation may be unrealistic and vague, it places the agency in the position to respond to the situation politically, from a response perspective, and also in a manner that restores community confidence.

Assignment

Your assignment is to research the laws and standards appropriate for this situation and prepare a presentation for the town council explaining/outlining the plan of action to address these types of incidents in the future.

Activity 3.1 (cont'd)

Worksheet

1. What happened or is happening that drives you to respond or react to a given circumstance?

2. What problem are you trying to solve?

3. Is there a legal requirement to act and will that support your argument?

4. Are there any moral or ethical considerations? If so, what are they?

5. Are there any safety considerations? If so, what are they?

6. How do the financial considerations play into your justifications? (What if you must act, but cannot afford to do it the way you want to?)

NOTE-TAKING GUIDE

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FEDERAL GUIDANCE: BEST PRACTICES AND STANDARD OPERATING PROCEDURES

Best Practice

- The most efficient and effective way to accomplish a task or function.
- Standards of Care are established from best practices.

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FEDERAL GUIDANCE: BEST PRACTICES AND STANDARD OPERATING PROCEDURES

SOPs

- Documents that define and codify your best practices
- SOPs take the guesswork out of the job because they allow everyone to understand what their job entails

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FEDERAL GUIDANCE: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION BEST PRACTICES

"OSHA Best Practices for Hospital-Based First Receivers of Victims from Mass Casualty Incidents Involving the Release of Hazardous Substances."

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**FEDERAL GUIDANCE:
OCCUPATIONAL SAFETY AND
HEALTH ADMINISTRATION
GENERAL DUTY CLAUSE**

The "general duty clause" is not a specific standard, but has been applied by OSHA as a catchall regulation to require employers to assure that workplaces are free of recognized hazards, and to require employees to comply with standards, rules, regulations and orders issued by OSHA.

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**FEDERAL GUIDANCE:
THE NATIONAL RESPONSE
FRAMEWORK**

- The National Response Framework (NRF) is a comprehensive how-to guide which spells out how the nation should conduct an all-hazard response.
- Intended to capture all levels of government and all incident levels.
- Local plans feed into State plans, which feed into the NRF.

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**FEDERAL GUIDANCE:
NATIONAL RESPONSE
FRAMEWORK (cont'd)**

The Special Operations Program Manager should go outside boundaries of his own agency and attend

- Regional or operational area (Op Area) planning meetings
- Regional or State Emergency Management Agency (EMA) meetings
- The LEPC meetings

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**FEDERAL EMERGENCY
MANAGEMENT AGENCY
GUIDANCE: NATIONAL
PREPAREDNESS GUIDELINES**

"A NATION PREPARED with coordinated capabilities to prevent, protect against, respond to, and recover from all hazards in a way that balances risk with resources and need."

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**FEDERAL EMERGENCY
MANAGEMENT AGENCY
GUIDANCE: TARGET CAPABILITIES
LIST**

- The National Preparedness Guidelines define a Target Capabilities List (TCL).
- The TCL supports an all-hazards approach to building capabilities.
- It is also a tool for planning and responding.

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**FEDERAL EMERGENCY
MANAGEMENT AGENCY:
RESOURCE TYPING**

From Federal Emergency Management Agency (FEMA) document FEMA 508-4:

Resource typing is "the categorization and description of resources that are commonly exchanged in disasters via mutual aid, by capacity and/or capability," for the purpose of facilitating ordering and tracking.

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**FEDERAL EMERGENCY
MANAGEMENT AGENCY:
THE STAFFORD ACT**

**Robert T. Stafford Disaster Relief and
Emergency Assistance Act (The Stafford Act)**

- **FEMA is the primary Federal agency responsible for responding to disasters within the United States.**
- **The Stafford Act is the central legislation governing Federal response to disasters.**

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**FEDERAL EMERGENCY
MANAGEMENT AGENCY:
THE STAFFORD ACT (cont'd)**

The Stafford Act spells out:

- **How disasters are declared**
- **Types of assistance to be provided by Federal government**
- **Distribution of medicine and other relief supplies**
- **How search and rescue teams will be provided**
- **Debris removal**
- **Coordinating cost sharing between Federal, State, and local governments**
- **Provisions for reimbursement**

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**FEDERAL EMERGENCY
MANAGEMENT AGENCY:
THE STAFFORD ACT (cont'd)**

The Stafford Act also defines incident levels:

- **Emergencies--limited events with abbreviated Federal role.**
- **Major disasters--larger events with more Federal involvement.**

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OTHER RESOURCES

- U.S. Chemical Safety Board
www.csb.gov
- National Transportation Safety Board
www.nts.gov
- Lessons Learned Information Sharing
www.llis.dhs.gov

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OTHER RESOURCES (cont'd)

- FEMA's National Training and Education Division
www.firstrespondertraining.gov
- The National Fire Fighter Near-Miss Reporting System
www.firefighternearmiss.com

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SUMMARY

- Components of a Special Operations program
- The Regulatory Universe; Laws and Regulations versus Standards impacting Special Operations programs, such as:
 - Hazardous Materials
 - Response
- Program versus Function
- Standard of Care
- Best practices and SOPs
- Federal Guidance
 - The NRF
 - Target Capabilities
 - Resource Typing
 - The Stafford Act

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SUMMARY (cont'd)

- **NFPA Standards for Hazardous Materials**
 - NFPA 472
 - NFPA 473
 - NFPA 1582
 - NFPA 1500
 - NFPA standards for PPE
- **Laws and Standards that impact rescue**
 - OSHA Regulations
 - NFPA 1670
 - NFPA 1006
 - NFPA 1983
 - NFPA 1951

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SUMMARY (cont'd)

- **Best Practices, SOPs, Job Descriptions**
- **Federal Guidance**
 - The NRF
 - Target Capabilities
 - Resource Typing
 - The Stafford Act

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OVERVIEW

As a Special Operations Program or Team Manager, it is vital to acknowledge the regulatory universe that governs or has influence on your agency. This universe includes a wide variety of laws and standards; agency-specific standard operating procedures (SOPs); regional response plans; industry standards, and an established and recognized Standard of Care for each response discipline.

A Special Operations Program Manager must decide how to balance the legal and operational requirements of each discipline against the overall needs of the Special Operations program, while staying within the boundaries of the agency's overall mission. In many cases, regulatory influences dictate staffing levels, training curriculum/certification, and equipment needs. Unfortunately, these influences are not static for each discipline. Changes in laws and standards happen during scheduled revision cycles and typically create, at a minimum, changes in training or overall service delivery or equipment. These changes invariably cause a shift in budgetary priorities. Initially, and over the years, a Special Operations Program Manager will have to adjust and flex the spider web against this ever-changing universe to accommodate competing priorities--a delicate balancing act to be sure.

The intent of this chapter is to provide an overview of the various laws, standards, and regulations that have the potential to affect your program. The list of regulatory influences mentioned here is not intended to be a complete list; rather, it is designed to stimulate your long-term thinking on the topic of the "legal" aspect of managing a Special Operations program. Keep in mind that whether you have inherited an established Special Operations program or you are just starting out, the rules under which you operate will change. If it's not something related to hazardous materials response, it will be something with water rescue, or trench rescue, or perhaps Urban Search and Rescue (US&R). For example, there are guidelines from the Federal Emergency Management Agency (FEMA)/National Incident Management Systems (NIMS) Integration Center on standardized team typing and asset inventory lists that well-established Special Operation Teams are grappling with (more on this later). Again, regardless of the size and scope of your team, there will not be long periods of static existence. The only constant is change when it comes to Special Operations--as the Program Manager, you will have to figure out how to address that change without losing the focus and momentum of the entire program.

DEFINITIONS

Standard of Care

Standard of Care is the level at which an average prudent responder, within a given discipline, would be expected to perform. This standard is measured against the performance of similar responders, in similar situations, within the same discipline. Failure to exercise reasonable care or to act as a similar professional would, given a set of circumstances and a decision to make, could result in negligence.

Program versus Function

A program, by definition, is a plan or system under which action may be taken toward a goal; this is a much broader perspective than a function. A function can be defined as the action for which a person is specially trained, or which a thing is specially made to do. So as the Special Operations Program Manager, you are the manager of the system (**program**), not the individual functions. This is sometimes a hard distinction to make, as a typical career progression to the position of Special Operations Program Manager is normally based on **function**--action--at the field level. Many firefighters who have been promoted to the rank of Chief Officer have done so on the basis of performance in the field, operationally, instead of administratively. Very few fire agencies in the country spend appreciable time preparing its staff to look at managerial positions from the programmatic standpoint. With Special Operations, this is a particularly tough situation as there are so many interrelationships between the disciplines, or with outside agencies, or within your own organization which require you to constantly look at your program from the 30,000 foot level. Remember, there is interconnectivity between anything and everything you do in Special Operations. Performing a specialized **function** is not the same as having a specialized response **program**.

Laws and Standards

The process of defining and prioritizing your regulatory universe begins with the fundamental understanding of the difference between a law and a standard. Laws are issued and enforced by governmental entities such as the U.S. Occupational Safety and Health Administration (OSHA), the U.S. Environmental Protection Agency (EPA), and the U.S. Department of Transportation (DOT).

Standards on the other hand, are issued by nongovernmental agencies, and are complied with voluntarily. When in doubt, when it comes to the regulatory universe, make sure you follow the law. Standards are usually constructed in such a way that you will comply with an applicable law by following the standard, but it is your first responsibility to make sure your program is compliant with applicable laws.

The National Fire Protection Association (NFPA) standards serve as a good example. The NFPA standards which govern hazardous materials response and technical rescue come from consensus based technical committees. The technical committee for hazardous materials response for example, includes over 30 members from private industry, the fire service and law enforcement, professional organizations, and governmental agencies. Due to the diverse makeup of the group, a wide variety of opinions and viewpoints are acknowledged, allowing for a standard that reaches across many disciplines. These standards are weighty when it comes to performing a function up to industry standards and/or setting the Standard of Care for hazardous materials or technical rescue. So weighty in fact, that from a legal standpoint, the NFPA standards may be adopted as law in a particular jurisdiction. Choosing to comply with NFPA standards for hazardous materials response or rescue will ensure compliance with OSHA--the law.

HAZARDOUS MATERIALS: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION AND BEYOND

Typically, the predominant player in a Special Operations program is hazardous materials response. Since the events of September 11, 2001, many local, regional, county, and State level Hazardous Materials Teams have come into existence; become more solidified than perhaps they once were; or expanded their prominence within an organization. This has created both opportunity and challenge. The opportunity lies in the fact that an agency can deliver a higher level of service to its 'community,' whatever that may be. The challenge lies in the fact that having a hazardous materials program is more than just chemical protective suits and high-tech gadgetry. There are training records to establish and retain; equipment to service and maintain; replacement schedules for capital assets such as specialized response vehicles, personal protective equipment (PPE), and detection and monitoring gear; budgets to develop within the framework of the agency's mission, direction, and personnel recruitment; retention and training. As in most public safety agencies, starting a program is not the most difficult part; keeping it going is the challenge. Training for example, and maintaining proficiency, keeping the Standard of Care, is largely dictated by laws and standards.

The Superfund Amendment and Reauthorization Act of 1986 and OSHA 1910.120, "Hazardous Waste Operations and Emergency Response"

As mentioned earlier, laws have a significant impact when it comes to training and/or performing a specialized function such as hazardous materials response. The OSHA document containing the hazardous materials response competencies is commonly referred to as Hazardous Waste Operations and Emergency Response (HAZWOPER). The HAZWOPER regulations were promulgated after the creation of the Superfund Amendment and Reauthorization Act of 1986 (SARA). SARA was a landmark piece of legislation as it **standardized** training for hazardous materials response along with hazardous waste site operations. The early 1990s saw an increase in a specialized response capability--hazardous materials response--which at the time was fairly unique to the fire service and not even on the radar screen of allied agencies such as law enforcement, public works departments, or State highway agencies. Today, in each part of the country, each of the public agencies mentioned, and many that were not mentioned, participate to some level in a hazardous materials response system. To that end, it could be viewed that HAZWOPER, a key regulatory influence, caused a change in the way services were delivered in an entire industry.

SARA also created a method and standard practice for a local community to understand and be aware of the chemical hazards in their community. Under SARA Title III, the Emergency Planning and Community Right-to-Know Act (EPCRA) requires a business that handles chemicals to report storage type, quantity, and storage methods to the fire department and the Local Emergency Planning Committee (LEPC).

LEPCs gather and disseminate information about hazardous materials to the public. These committees are comprised of members of industry, transportation, media, fire and police agencies, and the public at large. Essentially, LEPCs ensure that local resources are adequate to

respond to a chemical event in the community. Fire departments should be familiar with their LEPC and know how their department works with this committee. Each State has a State Emergency Response Commission (SERC). The SERC is the liaison between local and State levels of authority. The SERC involves agencies such as the fire service, police services, and elected officials for the collection and dissemination of information relating to hazardous materials.

Subsection (q) of HAZWOPER--"Emergency Response"

The complete HAZWOPER regulation can be found in the Code of Federal Regulations (CFR), book number 29, part 1910.120. Any agency responding to hazmat emergencies are primarily concerned with subsection (q) Emergency Response. The training levels found in HAZWOPER, much like the NFPA training levels, are identified as awareness, operations, technician, specialist (recognized only in the HAZWOPER regulations), and Incident Commander (IC). In most cases, a Special Operations Team functions to at least the technician level, with other field support personnel trained to the operations level.

Other Occupational Safety and Health Administration Regulations

There are numerous OSHA regulations that are important to acknowledge; CFR 1910.134 Respiratory Protection; CFR 1910.146 Confined Space; and CFR 1910.1200 Hazard Communication. In fact, the entire suite of regulations found in 29 CFR Worker Safety (which is quite comprehensive and covers every topic from citations to welding to employee privacy and beyond), is an excellent and important source of information relating to Special Operations. OSHA also provides guidance on medical surveillance in section CFR 1910.120(q) (9) (baseline physical examinations for those members assigned to Hazmat Teams).

Additionally, the OSHA best practices document for Hospital Based First Receivers of Victims from Mass Casualty Incidents Involving the Release of Hazardous Substances, should be acknowledged by the Special Operations Program Manager as a valuable reference. This document spells out the relationship between the operations of in-hospital resources with those assets operating in the field.

The use of the Incident Command System (ICS) for example, according to the HAZWOPER regulation, is mandated for use during a hazardous materials incident. So is the use of self-contained breathing apparatus (SCBA), and PPE. A designated safety officer must be appointed by the IC and backup personnel must be in place when an entry team is operating in the hot zone. Additionally, any IC who will assume control of the incident scene beyond the first responder awareness level shall receive at least 24 hours of training equal to the first responder operations level and, in addition, have competency in a number of other subject matter areas. These requirements certainly help shape the Standard of Care for hazardous materials responders and require certain actions during an emergency.

Department of Transportation, Title 49

There is also 49 CFR, a comprehensive set of transportation regulations from the DOT. Other important influences on hazardous materials response come from the DOT and the EPA. The DOT for example, enforces and publicizes laws and regulations that govern the transportation of goods by highway, rail, air, and, in some cases, marine transport.

Response Plans

Other factors that a Special Operations Program Manager should recognize are employer-generated response plans; area response plans, typically written and administered by County entities; State response plans and/or other regional response plans. These plans are written and revised on a regular basis, and there are times when the authors do so with little or no input from public safety agencies such as police and fire. You may find yourself surprised to find, during a major event, that a number of representatives from agencies you have never worked with, arrive and begin making decisions and/or taking action, or have an expectation that your agency will perform some specific function or fill a particular role, based on a plan you might never have seen or know anything about. Most counties across the United States have the authority to write and administer these sorts of plans, many of which have a direct impact on the Special Operations Teams. It behooves the Special Operations Program Manager to look outside the boundaries of his/her own agency and attend regional or operational area (Op Area) planning meetings, regional or State Emergency Management Agency (EMA) meetings, or the LEPC. In most cases local plans feed into State plans which feed into the National Response Framework (NRF).

The NRF is a comprehensive how-to guide that spells out how the Nation conducts all-hazard response. It is intended to capture all levels of government and best practices for handling incidents ranging from large-scale terrorist attacks to catastrophic natural disasters.

HAZARDOUS MATERIALS: NATIONAL FIRE PROTECTION ASSOCIATION AND OTHER STANDARDS

There are two published standards which are important to personnel who may be called upon to respond to hazardous materials incidents: NFPA 472, *Standard for Professional Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents* and NFPA 473, *Standard for Competencies for EMS Personnel Responding to Hazardous Materials/Weapons of Mass Destruction Incidents*.

As an example, the revised 2008 version of NFPA 472 might require an agency to provide additional training time, student materials including textbooks and/or online training materials, additional response equipment, and perhaps updating or writing the agency's standard operating procedures (SOPs) if it chooses to adopt and follow the revised standard. The bulk of the revision surrounds the operations level of training and the flexibility to choose to add a suite of specialized response competencies based on the needs of the agency. The intent of the NFPA

472 revision is to create a standard that is applicable to all response disciplines, not just the fire service, and to provide a skill and competency based process in order that an agency can make sure its personnel are trained to perform the expected tasks. Lastly, the revision of NFPA 472 is intended to provide a framework by which an organization can meet the requirements of the OSHA HAZWOPER regulation. Remember, OSHA is the law!

The makeup of the standard includes a body of "core" competencies that all responders trained to the awareness and operations level should have, along with the option to be trained to carry out certain mission-specific competencies such as the use of PPE and/or performing technical decontamination; mass decontamination; product control; air monitoring and sampling; victim rescue and removal; evidence preservation and sampling; and illicit laboratories incident response.

A wise Special Operations Program Manager will understand the cost of that additional time and effort is not always measured in dollars and cents; the real cost may be in the things you can't accomplish while working to maintain or evolve a particular segment of your Special Operations program.

Each State in the United States has the right to adopt and supersede health and safety regulations put forth by Federal OSHA. States that have exercised this right are called State-plan States. California, for example, is a State plan State; its regulatory body is called CAL-OSHA. About half of the States in the United States are State plan States. **If a State is not a State plan State, then the EPA regulates and governs issues relating to hazardous materials response as well as hazardous materials in the environment. The EPA's version of HAZWOPER can be found in Title 40, Protection of the Environment, Part 311: Worker Safety**

The hazardous materials response piece of a Special Operations program probably has the widest regulatory universe of all the potential disciplines. Ideally, the Program Manager must be intimately familiar with at least the OSHA regulations and the NFPA standards to understand how the regulatory influences help shape the Standard of Care for hazardous materials responders. There are other standards, however, available to guide the Special Operations Program Manager such as the American Society for Testing and Materials (ASTM) standard for hazardous materials response. ASTM F1127-07, *Standard Guide for Containment of Hazardous Material Spill by Emergency Response Personnel*, is a voluntary standard that could be viewed as a document that shapes the Standard of Care for hazardous materials response personnel.

NFPA standards on PPE may also play into the regulatory universe of a Special Operations program, especially when it comes to team typing. In the FEMA typed resource definitions (Fire and Hazardous Materials), there are specific references made to the NFPA standards regarding PPE. In the FEMA document on resource typing, there is a specific reference to the NFPA standards on chemical protective clothing for Type I, II, and III Hazardous Materials Response Teams. A Type I Team, for example, must carry vapor and splash protective garments which must be compliant with NFPA 1994, *Standard on Vapor-Protective Ensembles for First Responders to CBRN Terrorism Incidents*, as well as NFPA 1991, *Standard for Vapor Protective Ensembles for Hazardous Materials Emergencies*, and NFPA 1992, *Standard on Liquid Splash-Protective Ensembles and Clothing for Hazardous Materials Emergencies*. The document also

calls for a NIMS certified Hazmat Safety Officer, among other things, and also makes reference to personnel being trained in accordance with the HAZWOPER regulation **and** NFPA 472 when it comes to training. This can be quite a task to implement and maintain. Perhaps the agency cannot support such a requirement over the long run and may choose not to become a NIMS typed resource. As you can see, the regulatory universe comes into play in many circumstances; remember to determine what applies to your operation.

Consider the Underwriters Laboratory (UL) and the influence this agency has in terms of third-party testing and certification. UL Classified PPE for example, is equipment that has been tested to the appropriate levels of safety as determined by NFPA PPE Standards for firefighters, Hazardous Materials Response Teams, and other emergency responders. The UL offers compliance testing, evaluation, and certification for a wide range of PPE products such as gloves, safety shoes, helmets, garments, protective eyewear, and other PPE.

To take a step back, the Special Operations Program Manager must understand the intent of the resource typing on a national level. According to the FEMA document FEMA 508-4, resource typing is:

...for ease of ordering and tracking. Resource typing is the categorization and description of resources that are commonly exchanged in disasters via mutual aid, by capacity and/or capability. Through resource typing, disciplines examine resources and identify the capabilities of a resource's components (i.e., personnel, equipment, and training). During a disaster, an emergency manager knows what capability a resource needs to have to respond efficiently and effectively. Resource typing definitions will help define resource capabilities for ease of ordering and mobilization during a disaster. As a result of the resource typing process, a resource's capability is readily defined and an emergency manager is able to effectively and efficiently request and receive resources through mutual aid during times of disaster.

To that end, applicable laws and standards are referenced in this and other guidance documents in order to set a consistent bar for Program Managers across the country to acknowledge and follow in the event they choose to become a Typed Team.

Two other important NFPA standards have influence on Special Operations programs; NFPA 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments*, and NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*. NFPA 1582 provides guidance on annual physicals for firefighters and members of Hazardous Materials Response Teams. There is specific guidance on the different types of testing that should be performed annually for firefighters that participate in regular firefighting duties as well as specialized functions such as hazardous materials response, technical rescue, water rescue, and emergency medical service delivery.

NFPA 1500 has become the de facto standard for occupational health and safety for the fire service. While its defined scope is simple, "This standard shall contain minimum requirements for a fire service-related occupational safety and health program," its impact is far from small.

Fire departments across the country struggle with NFPA 1500 as it relates to PPE, staffing, medical and physical requirements, and much more. The Special Operations Program Manager can easily become overwhelmed by the breadth of the document and the requirements contained within. It is not the intent of this course to decide whether or not NFPA 1500 is useful for your organization, or how it applies to your organization; it is only mentioned to make you aware of its existence so that you may become familiar with it.

LAWS AND STANDARDS: RESCUE

Other pertinent standards relative to the mission of Special Operations include NFPA 1670, *Standard on Operations and Training for Technical Search and Rescue Incidents* and NFPA 1006, *Standard for Technical Rescuer Professional Qualifications*. Like the NFPA standards on hazardous materials, the rescue standards are consensus-based and open for public comment. The intent of NFPA 1670, according to the scope as written by the authors, is 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. These defined levels provide an outline of a system used to manage an incident efficiently and effectively, to maximize personnel safety, and to bring about the successful rescue of victims and the eventual termination of the event.

NFPA 1670 is a comprehensive document covering all types of rescue situations including (but not limited to) structural collapse, water rescue, trench rescue, machinery, mine, and cave rescue. The document is divided into training levels similar to hazardous materials in that each rescue discipline is separated into awareness, operations, and technician levels. Each level builds on the previous one, thereby creating an escalating series of training competencies. As with hazardous materials response, a Special Operations rescue program, regardless of the type of technical rescue, requires more than just trained personnel and technical equipment. In other words, a fully functioning and 'legal' rescue program should include such things as written SOPs; continuing education; ensuring and documenting proficiency on an annual basis; and ensuring that the members called upon to perform technical rescues are mentally and physically capable of doing so. With the FEMA US&R system, there are a set of well-defined criteria that team members must adhere to, along with rigorous training standards and medical fitness for duty. In these instances, the response mechanism is spelled out and easy to follow, with financial and administrative from the Federal government.

Local search and rescue programs may not be so well-defined, funded, or administered. Perhaps your organization is a small combination (part paid-part volunteer) department located in a predominantly rural area where machinery rescue is needed. The only element of a Special Operations program is a small group of members that are trained to respond to these emergencies. Funding for a small cache of equipment is secured from the town council. The truth is, from a programmatic standpoint, the easy part is done. The hard part lies in looking for guidance for initial and continuing education training (NFPA 1670); ensuring there is an adequate recurring budget for tools and equipment that need to be replaced on a regular basis or break down during use; developing a succession plan to replace members that leave the program and ensuring that proper recordkeeping is done on member training and equipment use. After

the luster of a new program has worn off (typically within 5 years or less of inception), or in the event the Special Rescue Team does not respond often enough, interest in the program may wane. It may be harder to justify the funding and political support as new priorities emerge. Perhaps the department must shift emphasis to purchasing or replacing a ladder truck, and the once adored rescue program becomes the target of a shifting budget priority and organizational interest. You may find that the very same people that once championed the rescue program are now throwing rocks at it as a waste of money, time, and training because there aren't enough calls to justify all the effort of keeping the program up and running. This happens when a new program was based and justified on want instead of actual need. Technical rescue seems particularly susceptible to the want versus need trap; make sure to truly assess the need for any specialized service or program prior to implementation. You and the program will be better off in the long run.

Additionally, some of the sections of NFPA 1670 link the specific training of that section to other sections of NFPA 1670 and/or to other NFPA standards such as NFPA 472. Chapter 8, for example, "Vehicle Rescue" also requires that individuals trained to the operations level must also be trained to Chapter 5 (the "core" operations level) of NFPA 472. Another example lies in Chapter 7, "Confined Space Rescue." This section also requires team members to be trained in providing medical care to at least the first responder level and also be trained in CPR. Again, there is interconnectivity that will affect the program in some fashion.

NFPA 1006 is an important document for the Special Operations Program Manager to understand. The intent of this standard is to establish the minimum job performance requirements necessary for fire service and other emergency response personnel who perform technical rescue operations. In the simplest terms, NFPA 1670 spells out training competencies for the various training disciplines; NFPA 1006 provides guidance in terms of job performance. When used in conjunction, they provide an excellent roadmap for training and job performance for a wide variety of rescue situations. NFPA 1006 also has information on building marking systems and a comprehensive section on the recommended tools and equipment required for each type of rescue. There is also guidance on a standard watermanship test--a five exercise evaluation of stamina and comfort in the water--a useful benchmarking tool for team members participating in a water rescue program. Again, both standards are an excellent resource to the Program Manager.

Other standards that apply to the technical rescue portion of a Special Operations program include NFPA 1983, *Standard on Life Safety Rope and Equipment for Emergency Services*. This standard provides guidance on certification, design and construction requirements, performance requirements, and test methods for rescue rope and equipment. NFPA 1951, *Standard on Protective Ensembles for Technical Rescue Incidents* is in place to specify the minimum design, performance, testing, and certification requirements for utility technical rescue, rescue and recovery technical rescue, and chemicals, biological agents, and radiological particulate protective ensembles for use by emergency services personnel during technical rescue incidents. An important standard to recognize as it pertains to the individual PPE that might be used by a Technical Rescue Team.

Additionally, there are several OSHA regulations that should be understood by the Special Operations Program Manager when it comes to technical rescue. Each listed below should be factored into the operational mindset of the team from a job function perspective and program perspective as they have an impact on both aspects.

- 29 CFR 1910.146 Permit Required Confined Spaces.
- 29 CFR 1910.147 The Control of Hazardous Energy (Lock Out/Tag Out).
- 29 CFR 1910.134 Respiratory Protection.
- 29 CFR 1910.1030 Bloodborne Pathogens.
- 29 CFR 1926 Subpart P Safety and Health Regulations for Construction.

As you can see, the regulatory universe for technical rescue is quite complex. It is rare that a Technical Rescue Team fully complies with every single regulation or standard--it's just not practical or realistic--but it is a goal that should be on the horizon for every Program Manager.

THE NATIONAL RESPONSE FRAMEWORK AND TARGET CAPABILITIES LISTS: ALL-HAZARDS EMERGENCY RESPONSE

A Special Operations Program Manager must acknowledge and understand the position of the team and the agency in the overall scheme of an all-hazard emergency response mechanism. Within the NRF for example, there is an expectation that local governments and local leaders prepare their communities to manage incidents locally. The local agencies (you) will be expected to function and interact with State and Federal resources and agencies in the event of a large-scale incident. Again, the Special Operations component of an organization is typically in the forefront of these incidents. Flooding, earthquakes, mudslides, tsunamis; you name the flavor of the disaster, generally rely on specialized services such as technical rescue, water rescue of some form, or hazardous materials assets. To that end, the Special Operations program is oftentimes the tentacle that reaches out past the agency's traditional boundaries into mutual-aid and automatic-aid agreements; regional response plans; and ultimately into the NRF. Refer to a complete version of the NRF: <http://www.fema.gov/emergency/nrf/>

Most every public safety agency in the United States could find themselves on the front lines of a national disaster or terrorist event, suddenly working within a Unified Command (UC) with a State Coordinating Officer (SCO) and/or a Federal Coordinating Officer (FGO), perhaps with the assistance of a Federal Incident Management Team (IMT) with a half dozen FEMA US&R Teams working on the incident. A situation that can easily sweep even the most experienced fire officer or law enforcement commander right off his or her feet. Being prepared and understating the players that you might encounter during a large-scale incident is the only way to keep from being overwhelmed.

The Robert T. Stafford Disaster Relief and Emergency Assistance Act (The Stafford Act)

A piece of legislation that the Special Operations Program Manager should be familiar with is the Robert T. Stafford Disaster Relief and Emergency Assistance Act, also referred to as the Stafford Act. In short, the Stafford Act is the central legislation governing the Federal response to disasters within the United States. The act spells out such things as how disasters are declared, the types of assistance to be provided by Federal government including coordinating disaster relief personnel and other assets; distributing medicine and other relief supplies; providing Search and Rescue Teams and removing debris along with coordinating the cost sharing arrangements between Federal, State, and local governments. The Stafford Act also has provisions for reimbursement of costs incurred by the local jurisdiction including overtime for employees called back to duty. FEMA is the primary Federal agency responsible for responding to disasters within the United States and carrying out the provisions of the Stafford Act. The Special Operations Program Manager should be aware that if a disaster occurs and is 'declared' in his or her jurisdiction, there will be a large number of contractors, team leaders, and coordinators of all kinds converging on the incident. This dizzying array of assistance may be difficult to sort out and to figure where the local assets fit in. To that end, the Special Operations Program Manager must understand and accept where the local assets and authority fits in.

The Stafford Act establishes two incident levels--emergencies and major disasters. Emergencies are generally judged to be limited events with an abbreviated Federal role. Major disasters are obviously larger events that will undoubtedly affect more people, but the distinction between the two events is not easily drawn. The good news for the Special Operations Program Manager is that he or she will not have to make that call; it will be made at a much higher level of authority. The Special Operations Program Manager will be tasked with handling a more operational approach to the situation.

The *Target Capabilities List (TCL): A Companion to the National Preparedness Guidelines*, produced by the U.S. Department of Homeland Security (DHS) in 2007, provides the Special Operations Program Manager with a framework for operational readiness planning, priority-setting, and program implementation. The document, although produced by the Federal government, is intended to be used by all levels of government. The Special Operations Program Manager can and should refer to the TCL to help assess and determine appropriate response capabilities locally; identify needs; and construct plans and strategies that address the specific risks found in the agency's operational area. The vision of the National Preparedness Guidelines should be in line with the general thinking of Specialized Response Teams, and used a guiding principle:

A NATION PREPARED with coordinated capabilities to prevent, protect against, respond to, and recover from all hazards in a way that balances risk with resources and need.

When applied locally, the approach may be much smaller and easier to define. Regardless of the size of the agency, conceptually, a TCL is a tool for planning and responding to those anticipated incidents in your jurisdiction. This includes natural disasters, major fire, chemical and

multicasualty emergencies, and terrorist events. According to the TCL document, "Target capabilities provide the means to accomplish a mission and achieve desired outcomes by performing critical tasks, under specified conditions, to target levels of performance. Capabilities are delivered by appropriate combinations of planning, organization, equipment, training, and exercises. The TCL supports an all-hazards approach to building capabilities that may be needed in the event of terrorist attacks, natural disasters, health emergencies, and other major events. It identifies 37 capabilities that were developed with the active participation of stakeholders representing all levels of government, nongovernmental organizations, and the private sector." Again, the TCL provides a solid skeleton upon which the Special Operations Program Manager can construct or refine a local program, taking into account the five major tenets of the document: Prevent--Protect--Respond--Recover. The document is too intricate and complicated for a full discussion here. The goal is to acquaint you with the document and the notion of target capabilities and to provide a place to go for further reading and reference. The guidelines adopt a capabilities-based planning process supported by three planning tools: the National Planning Scenarios, Target Capabilities List (TCL), and Universal Task List (UTL). They can be viewed online at <https://odp.esportals.com> or <https://www.llis.dhs.gov>

Lessons Learned Information Sharing (LLIS.gov)

The Lessons Learned Information Sharing (LLIS) is the national network of Lessons Learned and Best Practices for emergency response providers and homeland security officials. The LLIS Web site (LLIS.gov) is an excellent tool that the Special Operations Program Manager should be aware of. The site is a secure, restricted-access information clearing house designed to facilitate efforts to prevent, prepare for and respond to acts of terrorism and other incidents across all disciplines and communities throughout the United States. There are case studies, informative articles and after-action reports, as well as links to other excellent government-sponsored sites. The content is peer reviewed by homeland security professionals so you are assured the content is sound.

Other Sources on Lessons Learned

Two other resources, the U.S. Chemical Safety Board (<http://www.chemsafety.gov/>) and the National Transportation Safety Board (<http://www.nts.gov/>), offer up-to-the-minute information on a wide variety of recent incidents and accidents of all types. Both sites have case studies and articles on recent response activities and lessons learned. Much of the content can be used as training materials for your own agency and understanding the best practices for technical rescue and hazardous materials response.

BEST PRACTICES, STANDARD OPERATING PROCEDURES, JOB DESCRIPTIONS, AND STANDARD OF CARE

A best practice can be loosely defined as the most efficient and effective way to accomplish a task or function. In order to become a best practice, the function must be repeatable over time.

Usually, a best practice contributes to the establishment of a Standard of Care by combining a set of tasks or actions in such a way that they become the most accepted way of 'doing business.' Best practices are the fiber upon which Standards of Care are established.

Setting up a technical decontamination corridor serves as a good example. Your agency may have established a certain way of setting up the corridor based on your tools and equipment and staffing levels. This methodology becomes the accepted best practice for your agency, but must also be scrutinized and accepted in terms of the Standard of Care for the entire profession. Simply put, your agency must develop the best practice for technical decontamination that is also consistent with the Standard of Care for the same function across the entire industry.

The documents that codify your best practices are SOPs. The collection of standard operating practices for your agency, for all types of tasks and procedures, is the way in which the organization communicates consistently the message of "this is the way we do things" to all members. An agency without an SOP opens itself up, to some degree, of liability because it has not set clear expectations and best practices for such things as anchoring systems for rescue; donning and doffing PPE; using detection and monitoring equipment, etc.

This again is where laws and standards come in. In many cases, but particularly with training and job performance, the laws and standards that govern your individual specialized functions set the consistent boundaries of what is acceptable. Your agency and each employee has some flexibility with how it accomplishes the required and assigned functions, but not so much flexibility to be outside the boundaries of what the industry expects--the Standard of Care.

Another part of the SOP to Standard of Care continuum is the job description. Job descriptions should be in place for all members of Specialized Rescue Teams. These job descriptions should define the minimum job requirements to hold the position; expected levels of participation; continuing education, etc. In short, the job description spells out the rules of engagement for the person in the position in the same fashion that best practices define what the person will be doing. Essentially, it takes the guess work out of the job and allows everyone involved, from the highest ranking member to the lowest, to understand what the job entails. Recruitment and retention, and succession planning to some degree, all rely on job descriptions. If your Special Operations program is without job descriptions, it is suggested you put them in place. They can be used as a marketing tool to attract good candidates and to ensure that all applicants know what will be expected of them.

The interconnectivity of these three elements can be viewed in this way: SOPs define best practices. In turn, best practices help define the Standard of Care for each discipline. In practical terms, it is up to the organization to put the expectations in place; it is up to the individuals in the organization to be mindful of those expectations and perform accordingly. When all goes right, a predictable level of performance, consistent with what other reasonable and prudent individuals would do, should become the norm.

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UNIT 4: COMMUNITY RISK ASSESSMENT AND JURISDICTIONAL ANALYSIS

UNIT OBJECTIVE

Evaluate the jurisdictional characteristics of a community to include the potential for natural, technological, and man-made hazards that constitute risk to the community.

ENABLING OBJECTIVES

1. *Identify three methods of conducting a community risk assessment.*
 2. *Explain capability assessment.*
 3. *Explain threat/hazard, vulnerability, and risk analysis.*
 4. *Explain risk mapping to include the process for determining the level of risks.*
 5. *Given a scenario for a simulated community:*
 - a. *Conduct a community risk assessment.*
 - b. *Evaluate the probability of occurrence for a community.*
 - c. *Conduct a vulnerability analysis.*
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NOTE-TAKING GUIDE

Slide 4-1

**UNIT 4:
COMMUNITY RISK
ASSESSMENT AND
JURISDICTIONAL ANALYSIS**

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Slide 4-2

UNIT OBJECTIVE

Evaluate the jurisdictional characteristics to include the potential for natural, technological, and man-made hazards that constitute risk to the community.

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ENABLING OBJECTIVES

- Identify three methods for conducting a community risk assessment.
- Explain capability assessment.
- Explain threat/hazard, vulnerability, and risk analysis.
- Explain risk mapping to include the process for determining the level of risks.
- Given a scenario for a simulated community:
 - Conduct a community risk assessment.
 - Evaluate the probability of occurrence for a community.
 - Conduct a vulnerability analysis.

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Slide 4-4

Activity 4.1
Probability of Occurrence and Vulnerability/Rating of Risks

- Given the list of hazards, apply a rating scale to their probability of occurrence.
- Rate the vulnerability to the community in terms of population affected.

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Activity 4.1

Probability of Occurrence and Vulnerability/Rating of Risks

Purpose

Given the list of hazards that are present in Columbia State/Liberty County/Central City, to apply a rating scale to their probability of occurrence. Rate the vulnerability to the community in terms of population affected.

Directions

Part 1: Probability of Occurrence

1. Read Section 3.0 in the Central City manual "Hazard/Vulnerability Analysis (HVA)" (included in Unit 1: Defining Special Operations) and become familiar with the types of hazards and frequency of those hazards in Central City.
2. Using the information, rate each hazard's probability of occurrence using the following rating scale.

0 = Improbable	The probability of the occurrence is zero.
1 = Remote	The hazard is not likely to occur in a 25-year timeframe, but it is possible.
2 = Occasional	The hazard is likely to occur at least once in a 25-year timeframe.
3 = Probable	The hazard is likely to occur several times in a 25-year timeframe.
4 = Frequent	The hazard is likely to occur cyclically, i.e., annually or seasonally.

3. Record your scores on the following Hazard Analysis Worksheet.

Part 2: Vulnerability Analysis

4. Estimate the impact of the incident on the community's population. Using the population scale below, rate the impact of each of the hazards on the Hazard Analysis Worksheet on the community in terms of the portion of the population that would be affected.
5. Record ratings in the "Vulnerability" column of the worksheet.

Potential Population Affected	Rating Value
0	0
1-250	1
251-5,000	2
5,001-15,000	3
15,001-50,000	4
50,001 +	5

6. Multiply the ratings for Probability of Occurrence and Vulnerability and write the total in the "Total Hazard Analysis Rating" column for each hazard.

Activity 4.1 (cont'd)

Hazard Analysis Worksheet

Hazard	Probability of Occurrence (0-4)	Vulnerability (0-5)	Total Hazard Analysis Rating
Hurricane			
Flood			
Earthquake			
Tornado			
Wildland Fires			
Severe Weather			
Winter Storms			
Blizzards			
Ice Storms			
Agricultural Disaster			
Drought			
Pandemic Illness (Specifically Pandemic Influenza)			
Hazardous Materials Accident			
High-Pressure Gas Line Blowout			
Major Structural Fire			
Dam Failure			
Aircraft Accident			
Nuclear Powerplant Accident			

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NOTE-TAKING GUIDE

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COMMUNITY RISK ASSESSMENT

- America is a diverse and complex nation.
 - Super urban to extremely rural.
 - Industrial to agricultural.
 - Highrises to highways.
- Some general standards and guidance apply.
 - Standard of Care.
 - Laws, Rules, Regulations, and Standards.

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COMMUNITY RESPONSE

How do we develop emergency services?

- Out of need.
- Out of want.
- Out of evaluation.

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COMMUNITY RISK MANAGEMENT

"Risk Management is the identification and evaluation of risks, and the development, selection and implementation of control measures up front to lessen the probability of a harmful consequence."

– Gordon Graham

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COMMUNITY RISK ASSESSMENT (cont'd)

- A methodology to determine situations the responders will likely face.
- Community risk assessment should be the foundation of any Special Operations program.

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RISK ASSESSMENT PROCESS

- Determine what hazards are present.
- Estimate the probability of occurrence.
- Assess the severity of impact to the community.
- Characterize the hazards based on their frequency and severity of impact.

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HAZARDS IN THE COMMUNITY

- Know the community's history.
- History includes previous natural and man-made events.
- Knowing how the jurisdiction managed these in the past.

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**HAZARDS IN THE COMMUNITY
(cont'd)**

Geographical Information Systems (GIS) is "a strategically significant technology for effective data sharing, analysis and visualization in support of coordinated emergency preparedness and response."

- National Alliance for Public Safety GIS, *A Quick Guide to Building a GIS for your Fire Department*, www.publicsafetygis.org

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WHAT ARE RISKS?

**Hazard + Vulnerability –
Protective Measures (Mitigation)
= Risk**

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**COMMUNITY RISK
ASSESSMENT (cont'd)**

- There are many models.
- Doesn't matter which model you choose, as long as it:
 - Identifies the risks in the community.
 - Considers the likelihood of occurrence.
 - Produces data in a useful format.

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ADDRESSING RISKS

- **Removal.**
- **Prevention.**
- **Mitigation.**
- **Remediation (response).**
- **What is the "acceptable level?"**

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SOME RISK ASSESSMENT TOOLS

- **National Oceanic and Atmospheric Administration (NOAA)--Community Risk and Vulnerability Assessment Tool (C-RVAT)**
- **Sandia National Laboratories--Vulnerabilities Assessment Model**
- **Department of Homeland Security (DHS)--The Chemical Security Assessment Tool (CSAT)**
- **Carver Shock**
- **National Center for Food Protection and Defense (NCFPD)--Food Agriculture Sector Criticality Assessment Tool (FAS-CAT)**
- **Risk, Hazard, and Value Evaluation (RHAVE)**

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**SOME FIRE SERVICE
RISK ASSESSMENT TOOLS
(cont'd)**

- **Risk mapping (Gordon Graham)**
- **Life safety code**
- **Strengths, Weakness, Opportunities, Threats (SWOT)**
- **Incident Command System (ICS) Forms 215 and 215a**
- **Historical risk analysis**
- **Strategic planning**

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**RISK ASSESSMENT--
DEFINITIONS**

Risk is the exposure of life or property to conditions that could result in a loss.

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**RISK ASSESSMENT--
DEFINITIONS (cont'd)**

- **Threat/Hazard is any indication, circumstance, or event with the potential to cause loss of, or damage to, life or property.**
- **The term threat and hazard are used interchangeably.**
- **"Mechanisms of harm."**

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**RISK ASSESSMENT--
DEFINITIONS (cont'd)**

Vulnerability

- **Capable of being physically or emotionally wounded**
- **Open to attack or damage**

- Merriam-Webster Dictionary

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HAZARD ANALYSIS

Hazard Identification Information

- Information available in disciplines other than fire and rescue (e.g., seismologists have earthquake information).
- The quality of the information available is related closely to the frequency of the hazard's occurrence.

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HAZARD ANALYSIS (cont'd)

Probability of occurrence is the likelihood of occurrence of each unforeseeable event or emergency.

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HAZARD ANALYSIS (cont'd)

- Estimating probability of occurrence.
- Rate hazards on the following scale, with regard to their frequency:
 - 0 = Improbable.
 - 1 = Remote.
 - 2 = Occasional.
 - 3 = Probable.
 - 4 = Frequent.

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VULNERABILITY

Hazard analysis involves determining the severity of the consequences to the community from the primary event or cascading events.

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VULNERABILITY (cont'd)

Potential Population Affected	Rating Value
0	0
1-250	1
251-5,000	2
5,001-15,000	3
15,001-50,000	4
50,001 +	5

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**Activity 4.2
Strategic Analysis Session**

Using a Strategic Analysis Session to evaluate community risks and identify the resources necessary to address the need

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Activity 4.2

Strategic Analysis Session

Purpose

To use the Central City Comprehensive Emergency Management Plan (CEMP) and a community risk assessment to develop a list of specialized services that would be required to effectively provide services to the type of events given in your team's project.

This information will be used in processing the team project and to justify the recommended program that your team develops.

Directions

1. Each group will use the assigned Special Operations program from Activity 4.1.
2. Your group will be given 60 minutes to prepare its strategic analysis. At the end of the 60 minutes, the instructor will lead a class discussion and the groups will present their findings.
3. You may use any of the optional worksheets on the following pages to document the outcome of your team's discussion.

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Activity 4.2 (cont'd)

Strategic Analysis Worksheet

EVENT TYPE:		
ANTICIPATED HAZARDS:		
POTENTIAL VULNERABILITIES		
POTENTIAL RESOURCE NEEDS	Identify potential resource needs.	How will you obtain the needed resource?
OTHER REMARKS		

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Activity 4.2 (cont'd)

SWOT Worksheet

STRENGTHS	
WEAKNESSES	
OPPORTUNITIES	
THREATS	

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Activity 4.2 (cont'd)

ICS 215A, Incident Action Plan Safety and Risk Analysis

INCIDENT ACTION PLAN SAFETY ANALYSIS	1. Incident Name	2. Date	3. Time
Division or Group	Potential Hazards	Mitigations (e.g., PPE, buddy system, escape routes)	
Type of Hazard:	Type of Hazard:		
Type of Hazard:	Type of Hazard:		
Type of Hazard:	Type of Hazard:		
Type of Hazard:	Type of Hazard:		
Type of Hazard:	Type of Hazard:		
Type of Hazard:	Type of Hazard:		
Type of Hazard:	Type of Hazard:		
Type of Hazard:	Type of Hazard:		
Type of Hazard:	Type of Hazard:		
Type of Hazard:	Type of Hazard:		
Type of Hazard:	Type of Hazard:		
Type of Hazard:	Type of Hazard:		
Type of Hazard:	Type of Hazard:		
Type of Hazard:	Type of Hazard:		

Prepared by (Name and Position)

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NOTE-TAKING GUIDE

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MITIGATION

- **Removal of the hazard**
 - Some hazards cannot be removed (natural)
- **Engineering controls**
 - Costly
- **Prepare for the consequences**
 - Responder preparation
- **Complain**
 - Politics

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RISK MAPPING

- Risk mapping is a method for prioritization of identified hazards.
- The traditional approach to risk mapping involves plotting the frequency and severity of a hazard along an X/Y diagram.

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RISK MAPPING (cont'd)

Classic Risk Map

	High	II	I
Severity	Low	IV	III
		Low	High
		Frequency	

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RISK MAPPING (cont'd)

Hazards are categorized into four groups on Frequency and Severity of Impact:

- **Quadrant I: High Frequency/High Severity**
Requires Immediate Action
- **Quadrant II: Low Frequency/High Severity**
Requires Immediate Attention
- **Quadrant III: High Frequency/Low Severity**
Requires Periodic Attention
- **Quadrant IV: Low Frequency/Low Severity**
Requires Annual Reevaluation

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RISK MAPPING (cont'd)

- It provides a simple and inexpensive method to segregate the hazards in a community into more manageable groupings.
- Focuses time and resources on addressing the hazards that fall into Quadrants I and II (requiring Immediate Action or Immediate Attention).

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Video:
"Gordon Graham--
Risk Management"

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CAPABILITY ASSESSMENT

The next step is to evaluate the community's ability to respond to a potential event that was identified in the community risk analysis.

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CAPABILITY ASSESSMENT (cont'd)

What is a capability gap?

- The difference between the ability of an existing system to meet operational requirements and the expected capability of that system.
- Can be attributed to lack of knowledge, skill, political will, internal culture, resources.

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CAPABILITY ASSESSMENT (cont'd)

What causes a capability gap?

- Incorrect identification of required resources
- Inability to sustain and scale-up existing capability
- Shortage of required, trained professionals
- Rapid changes in technology and systems
- Funding

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**CAPABILITY ASSESSMENT
(cont'd)**

How can a capability gap be spotted?

Formal or informal discussions, to gather feedback from:

- Industry leaders
- Peers
- Subject matter experts

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**CAPABILITY ASSESSMENT
(cont'd)**

Competency mapping:

- Identify required competencies
- Chart critical competencies
- Chart desired competencies

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**CAPABILITY ASSESSMENT
(cont'd)**

How can capability gaps be avoided?

- Integrate strategic planning into decisionmaking process.
- Constantly redefine response needs.
- Constantly review and evaluate solutions and personnel capabilities.
- Constantly evaluate whether or not response needs are being met.

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**CAPABILITY ASSESSMENT
(cont'd)**

- Reducing capability gaps is an ongoing process.
- Interest on the part of the Program Manager is just as important as resources, personnel, training, etc.
- Daily guidance and mentoring goes a long way toward reducing gaps.

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**CAPABILITY ASSESSMENT
(cont'd)**

How can a capability gap be filled?

- Update equipment and technology to meet the needs of the mission.
- Maintain appropriate capabilities.
- Train personnel.
- Motivate, coach, and mentor existing team members.
- Recruit new team members.

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**CAPABILITY ASSESSMENT:
IDENTIFYING RESOURCES**

Internal Resources	External Resources
<ul style="list-style-type: none">• Personnel• Equipment• Budget• Daily situation status reports	<ul style="list-style-type: none">• Resource typing• Outside aid<ul style="list-style-type: none">– Automatic aid– Mutual aid– Emergency Management Assistance Compact (EMAC)– Federal aid• Funding sources

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Activity 4.3
Introduction to Team Project

- Time will be allotted for work on the project.
- Each unit will require work on the project that is specific to the unit.
- All members of the team are required to participate.

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Activity 4.3

Introduction to Team Project

Purpose

To introduce the table group to the team project.

Directions

1. Work in your assigned groups and review the information contained in a memo from the fire chief.
2. The group will then have a short discussion on their project and start the process of developing ideas to support the project.
3. You will have 15 minutes for your group to discuss the project.
4. At the end of the 15 minute timeframe, the instructor will allow each group to present their mitigation efforts and discuss the effect of the mitigation effort on their Special Operations program.

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Activity 4.3 (cont'd)

Group 1

Confined Space and Cave Rescue

Central City Fire Department Headquarters
X and 19th Streets, Station 1
Central City, Columbia, 55555

Memorandum

Date: Tuesday

To: Special Operations Team Manager

From: Larry Likenstien, Fire Chief

Re: Confined Space and Cave Rescue Capabilities

The Central City Spelunking Society recently invited me to attend one of their monthly meetings. During the meeting, I was asked about Central City's abilities to assist in a cave rescue following an accident or injury. Until this meeting, I was unaware of the 30 area caves or the popularity of the sport. According to the Society, on any given weekend, as many as 100 members may be exploring the area's caves.

While I am aware of the department's responsibilities in providing confined space rescue services, I am unaware of our capabilities in providing cave rescue services. It appears that the techniques and equipment used in each are similar. I also think that it is time to review our confined space rescue equipment and personnel and evaluate the current response readiness of the team.

I am requesting that the Central City Special Operations Team conduct an internal evaluation and determine if our current equipment/staffing levels are sufficient for the level of risk in our community. Include in your assessment an evaluation of the current standards, laws, and regulations affecting the specialized response requiring technical rescue techniques. Please prepare a presentation on your recommendations for any necessary enhancements including recommendations on equipment, staffing, and budgets. Your team's presentation is scheduled for Friday afternoon.

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Activity 4.3 (cont'd)

Group 2

Hazardous Materials Team Assessment

Central City Fire Department Headquarters
X and 19th Streets, Station 1
Central City, Columbia, 55555

Memorandum

Date: Tuesday

To: Special Operations Team Manager

From: Larry Likenstien, Fire Chief

Re: Hazardous Materials Team Assessment

Criswell Chemical Company and the Bayport Refinery announced that they have entered into a joint project to produce aviation gasoline (Avgas) that will be the replacement for the low-lead, high-octane (100 LL) gasoline that is currently in use by the aviation industry. This exciting project is projected to bring 500 new jobs to Central City and the surrounding area.

While this exciting news is good for the community, it has brought attention to the department and our ability to effectively handle a response to an incident involving the transportation and storage of the hazardous chemicals that will be involved in the new process. Through previous staff reports, I realize that the city's Hazardous Materials Team is in need of new equipment and possibly additional staffing. It seems like an opportune time to review our current capabilities and conduct an evaluation of our service needs, and to project future needs.

I am requesting that the Central City Hazardous Materials Team conduct an internal evaluation and determine if our current equipment/staffing levels are sufficient for the community. Include in your assessment an evaluation of the current standards, laws, and regulations affecting hazardous materials response. Please prepare a presentation on your recommendations for any necessary Hazardous Materials Team enhancements including recommendations on equipment, staffing, and budgets. Your team's presentation is scheduled for Friday afternoon.

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Activity 4.3 (cont'd)

Group 3

Urban Search and Rescue Capability

Central City Fire Department Headquarters
X and 19th Streets, Station 1
Central City, Columbia, 55555

Memorandum

Date: Tuesday

To: Special Operations Team Manager

From: Larry Likenstien, Fire Chief

Re: Urban Search and Rescue Capability

Department heads have been directed by the City Manager to review and update the City's Comprehensive Emergency Management Plan (CEMP) and provide recommendations to the City Manager's office on revisions and improvements to the plan. This information will be used to prioritize programs in next year's budget.

As I reviewed the current Central City CEMP, it appeared that the current level of capabilities of the fire department to respond to an incident requiring specialized services of locating and removing trapped victims in structural collapse situations may be lacking. From attending recent national conferences, I know that new tools and techniques have greatly improved the abilities of the national Urban Search and Rescue (US&R) Teams.

I am requesting that the Central City Special Operations Team conduct an internal evaluation and determine if our current equipment/staffing levels are sufficient for the level of risk in our community. Include in your assessment an evaluation of the current standards, laws, and regulations affecting the specialized response requiring special rescue techniques. Please prepare a presentation on your recommendations for any necessary enhancements including recommendations on equipment, staffing, and budgets. Your team's presentation is scheduled for Friday afternoon.

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Activity 4.3 (cont'd)

Group 4

Water Rescue Capabilities

Central City Fire Department Headquarters
X and 19th Streets, Station 1
Central City, Columbia, 55555

Memorandum

Date: Tuesday

To: Special Operations Team Manager

From: Larry Likenstien, Fire Chief

Re: Water Rescue Capabilities

The U.S. Army Corp of Engineers just released their inspection report and hazard assessment of the East Lake Dam. A disturbing section of the report indicated that underflow erosion and seepage are accelerating and exceed the agency's previous estimations. The hazard assessment projects the downstream impact of a catastrophic failure of the East Lake Dam would cause extensive flooding in the North Lake and South Lake areas. The Corp of Engineers has started reducing the level of the East Lake to facilitate repairs. In the interim, the reservoir will not be available to capture heavy rains and will most likely result in localized flooding in the city. The timeframe for the repairs is estimated to last approximately 3 years.

I am concerned about the ability of the Central City Fire Department to respond to water rescue and flooding events in the city. I am requesting that the Central City Special Operations Team conduct an internal evaluation and determine if our current equipment/staffing levels are sufficient for the increased level of risk in our community. Include in your assessment an evaluation of the current standards, laws, and regulations affecting the specialized response requiring water and swift water rescue techniques. Please prepare a presentation on your recommendations for any necessary enhancements including recommendations on equipment, staffing, and budgets. Your team's presentation is scheduled for Friday afternoon.

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NOTE-TAKING GUIDE

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SUMMARY

- Community risk assessment
 - Hazard analysis
 - Probability of occurrence and vulnerability analysis
 - Mitigation
 - Risk mapping
 - Tools to evaluate risks
- Capability assessment/gap analysis
- Strategic analysis

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COMMUNITY RISK ASSESSMENT

First, let's begin with an overview of public safety delivery within America. America is a great and diverse country. It is made up of many cities, towns, and communities that are different and unique. Over the years, we have found that what works in one city/State/county may not work in another. Fire and other emergency services are representative of this concept. For example, one community may offer fire-based Emergency Medical Services (EMS) while another community will have separate Fire and EMS services. In general, this is a community choice.

In Unit 3, we learned that Laws, Standards, and Regulations influence the community's Standard of Care. For the most part however, it is up to the community's leadership to determine the level of public and emergency services that the community will provide.

In general, government is reactionary when it comes to providing public safety services. For example, if there is a fire with a tragic loss, the local government may consider starting or increasing the level of firefighting capability within that community. Many of the fire departments today were established following a tragic fire.

In the 1980s, several events like the Bridgeport, CT. highrise collapse and the earthquake in Mexico City illustrated a need to develop special training and equipment to response to building collapses that involved reinforced concrete. The construction industry changed to lighter weight construction techniques by using stronger reinforced concrete. Rescuers soon found out that when those buildings collapsed, they did not have the training, tools, or equipment to safely and effectively conduct rescue operations. Soon, Urban Search and Rescue (US&R) Teams were created. The Federal government soon realized the value of the US&R Teams. However, few communities could afford the expense of training, equipping, and maintaining a US&R Team. So, the Federal Emergency Management Agency (FEMA) established and funded regional teams that could respond to disasters within America and internationally as well.

Across the nation, local communities are asking more of their emergency responders. As the community identifies a need, special teams are developed to train and prepare for the response. In many jurisdictions, this leads to the formation of specialized "teams" sometimes referred to as Special Operations teams or programs. As the demands grow for governmental services, so does the competition for funds. Jurisdictions must now weigh the need for specialized service against other needs. More often, policy and decisionmakers are requiring justification before approving expenditures for very expensive programs. The Special Operations Program Manager is being asked to conduct detailed studies of the jurisdiction prior to implementing or expanding new programs.

Special Operations Team Managers must learn how to use new or existing tools in their evaluation of the community or jurisdiction. This unit will demonstrate several of the existing assessment tools and processes that can be used by the Special Operations Program Manager to accomplish the task.

Identifying jurisdictional characteristics affecting Special Operations is a key segment to developing your Special Operations program. This unit will provide the basis for the

justification of your local program. This will be accomplished by discussing risk assessment in detail.

The objective is to provide a methodology for the Special Operations Manager to use to determine the situation in which he/she will have to function. The process is to assist in the justifying of more resources, making key changes, and handling new facilities that come into your jurisdiction. By evaluating the probability and severity of hazards, Special Operations Managers will be able to develop "hard data" to use in making their case for wanted resources.

The foundation of this process is knowledge of what is in your jurisdiction. In this course, Central City and its facilities will be used. Information on what is in your jurisdiction is generally already known, especially those that are classified as Critical Infrastructure or Key Resources (CIKR), or available from several sources and agencies. The use of Geographic Information Systems (GIS) can be of assistance in this area. In some instances, it will be necessary to search out the problem areas or add new ones.

Risk mapping is one of the methods that can be used to prioritize the installations for risk assessment. Risk mapping studies the frequency and severity of hazards and places them into four categories: Immediate Action, Immediate Attention, Periodic Attention, and Annual Reevaluation.

With knowledge of what is in the jurisdiction, the probability and severity of the hazards and a prioritization, the Special Operations Manager can then apply the risk assessment process to those requiring Immediate Action. Using Central City as your real-world example, one of the course goals will be to prepare a report for delivery on Friday justifying your needs for a risk-based response to a determined hazard.

This unit will use one of many risk assessment models as an example. The Special Operations Managers may choose to use any of the models available, especially one with which they are comfortable or an electronic version. By performing a risk assessment process to hazards in your jurisdiction, you will be able to develop the needs of the Special Operations Division. These can be compared to available resources and the pertinent gaps determined. Armed with this information, the Special Operations Manager can clearly explain to the fire chief, jurisdiction manager, politicians, and even the community, if necessary, the agency's needs. The subsequent units in the course will all refer back to the risk to hazards developed in Unit 4: Community Risk Assessment and Jurisdictional Analysis.

The end goal of the course is for the students to be able to justify their local Special Operations program when they return home.

SPECIAL OPERATIONS PROGRAM MANAGEMENT DECISIONMAKING

Risk management relies on situational awareness, problem recognition, and good judgment to reduce risks associated with each difficulty or incident encountered. This involves setting and achieving immediate objectives and long-term goals.

To do this, the Special Operations Program Manager must identify the problem and solution for each situation. This can include managing personnel, budgets, equipment, and other resources to solve the problem.

Effective Decisionmaking

Effective decisionmaking depends on the quantity, quality, accessibility, and usability of information provided to decisionmakers.

Information sources in the public sector.

- Local level: fire, public works, public health, Office of Emergency Services (OES) director, councils, boards, schools.
- Regional/State level: State Emergency Management Director (EMD), National Guard, State police.
- Federal/National level: Department of Homeland Security (DHS), FEMA, military, land-management agencies.

Information sources in the private sector.

- Utilities: water, power, communications, waste disposal.
- Vendors: rental equipment, food, shelter.

Information sources in the nonprofit sector.

- American Red Cross (ARC) and Salvation Army.
- Relief agencies--homeless shelters and addiction control.
- Religious organizations.
- Service clubs, Radio Amateur Civil Emergency Services (RACES).

Negative Attitudes

Negative attitudes can affect decisionmaking.

- antiauthority;
- impulsive;
- invulnerability;
- machoism; and
- resignation.

The above attitudes should be discouraged by remembering the following:

- Antiauthority--Follow the rules. They are usually right.
- Impulsive--Think first.
- Invulnerability--It could happen to me.
- Machoism--Taking chances is foolish.
- Resignation--I'm not helpless. I can make a difference.

THE IMPORTANCE OF PLANNING FOR AN ALL-HAZARDS RESPONSE

The Special Operations Program Manager will have to be prepared to handle a myriad of events whether natural or human-caused. Proper prior planning prevents poor performance.

There are a variety of incidents over time for which a Special Operations Manager will have to plan. Incidents can range from unusual hazardous materials or rescue operations; natural events such as floods, tornadoes, hurricanes, and earthquakes; to terrorist events, domestic or international, directed against infrastructure or large numbers of people. The Special Operations Team Manager should evaluate any potential events that could occur in a community, including secondary events that occur after the primary or triggering event.

Significant portion of the planning will be based on risk analysis. Each locale will have to look at its geography and weather history. How did the jurisdiction manage these in the past and how will it do it now. "Lessons Learned."

BENEFITS OF RISK ANALYSIS

Risk analysis provides the community and the fire department with valuable planning information not normally available and catalogues and organizes the information. The outcome of risk analysis is

- list of all potential hazards;
- an analysis of the community's vulnerability to each hazard;
- priorities for planning and mitigation; and
- identification of community resources that can assist with planning.

To complete a risk analysis, a community must understand the process for conducting research.

They must not only follow Federal and State regulations/guidelines, but also examine model policies and procedures to determine ones that may apply to the community. This requires networking with similar-sized communities and neighboring communities.

Risk analysis requires that accurate data be gathered using a reporting system such as U.S. Fire Administration's (USFA's) National Fire Incident Reporting System (NFIRS).

RISK ANALYSIS PROCESS--DEFINITIONS

Possibility

What could happen? For example, wildfires on the West Coast or a hurricane occurring in the Caribbean.

Probability

What is the chance that it will really happen? For example, the probability of a hurricane in California is very low.

Risk

Risk is the exposure of life or property to conditions that could result in a loss. It is important to determine what the acceptable level of risk will be.

Threat/Hazard

Threat is defined as any indication, circumstance, or event with the potential to cause loss of, or damage to, an asset. The terms threat and hazard are often used interchangeably. FEMA uses the term "hazard" in several different contexts.

"Natural hazard" typically refers to a natural event such as a flood, wind, or seismic disaster. Examples include

- floods and flash flooding;
- hurricanes;
- tornadoes;
- earthquakes;
- severe winter storms;
- landslides (also mud and snow);
- tsunamis; and
- wildfires.

Human-caused (or man-made) hazards are technological hazards; civil disturbances and terrorism are distinct from natural hazards primarily in that they originate from human activity.

Technological: Technological hazards (i.e., a hazardous materials leak from a railcar) are generally assumed to be accidental and that their consequences are unintended.

Terrorism: Terrorism is considered an unlawful act of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives. Examples of man-made hazards:

- civil disturbances;
- domestic terrorists;
- international terrorists;
- unusual hazardous materials facilities or transportation;
- technological emergencies;
- large-scale fires;
- communications failure;
- radiological incident;
- explosion; and
- loss of key supplier.

Vulnerability

Vulnerability is a weakness that renders an infrastructure feature or facility susceptible to degradation or destruction. This can result from a human-caused or natural event and can be exploited to gain unauthorized access, destruction, or theft of an asset.

Vulnerabilities can result from, but are not limited to:

- Weaknesses in current management practices.
- Weaknesses in physical security or operational security practices.

The lack of fencing, lighting, or video cameras around an important facility is an example of vulnerability.

Consequence

Consequence is the result of an unwanted event. Terrorist attacks, for example, look for a high number of casualties as a consequence.

Countermeasure/Protective Actions

Countermeasures are any protective actions that reduce or prevent the degradation or loss of a critical asset; for example, putting a fence around a facility or motion detectors.

Risk Analysis

Risk analysis is a six-step process, consisting of:

- identifying critical features;
- determining the threat;
- analyzing vulnerabilities;
- assessing the risk;
- prioritizing the risk; and
- applying countermeasures.

Hazard analysis includes the first two steps in risk analysis: identifying critical features and determining the threat in terms of probability and severity.

HAZARD ANALYSIS

Hazards include vulnerable CIKRs as well as target hazards. Target hazards are properties in a community that present an unusual hazard, such as prisons, hospitals, nursing homes, manufacturing plants, railroad yards, and ports.

Critical Infrastructure

CIKRs impact nearly every aspect of our daily lives. They include energy systems that power our neighborhoods, transportation networks that move us around our communities and the country, and facilities that provide our families with safe drinking water, impacts nearly every aspect of our daily lives.

Homeland Security Presidential Directive 7

Homeland Security Presidential Directive 7 establishes a national policy for Federal departments and agencies to identify and prioritize critical infrastructure.

America's open and technologically complex society includes a wide array of CIKRs. These resources include both physical and cyber-based and span all sectors of the economy. They are owned and operated by the private sector and State or local governments.

The Sector-Specific Plans

Sector Specific Plans (SSPS) detail the application of the National Infrastructure Protection Plan (NIPP) risk management framework to the unique characteristics and risk landscape of each sector. They provide the means by which the NIPP is implemented across all CIKR sectors.

Each sector-specific agency developed an SSP through a coordinated effort involving their public and private sector CIKR partners.

Designated sector-specific agencies:

- Department of Agriculture--agriculture, food (meat, poultry, egg products);
- Health and Human Services--public health, healthcare, and food (other than meat, poultry, egg products);
- Environmental Protection Agency (EPA)--drinking water and water treatment systems;
- Department of Energy--energy, including the production refining, storage, and distribution of oil and gas, and electric power except for commercial nuclear power facilities;
- Department of the Treasury--banking and finance;
- Department of the Interior--national monuments and icons; and
- Department of Defense (DOD)--defense industrial base.

The Web site is www.dhs.gov/criticalinfrastructure. This Web site is beneficial in planning the protection of the local infrastructure. There is information on:

- risk analysis;
- modeling;
- simulation;
- analysis; and
- incident planning and response.

This site is designed to inform the public about department's critical infrastructure protection and readiness and resiliency efforts to heighten awareness about the importance of protecting America's vital assets, systems, and networks.

Hazard Identification Information

Information on most natural and technological hazards is available, but often in disciplines other than fire and rescue (e.g., seismologists have earthquake information).

The quality of the information available is related closely to the frequency of the hazard's occurrence and the development of the associated professional discipline (e.g., meteorology and weather-related hazards). Example: National Weather Service (NWS) Miami Hurricane Center.

Information is generally available in historical archives of local libraries as well as university libraries specializing in that field (e.g., geology, chemistry, meteorology). Usability of hazard information is generally good enough for emergency planning purposes; little additional analysis is required.

Probability of Occurrence

Probability of occurrence is the likelihood of occurrence of each unforeseeable event or emergency. In the case of a target hazard, probability of occurrence is the probability that an event will occur at the target's location.

Use the following rating scale to rate "probability of occurrence."

- 0 = Improbable. The probability of the occurrence is zero.
- 1 = Remote. The hazard is not likely to occur in a 25-year timeframe, but it is possible.
- 2 = Occasional. The hazard is likely to occur at least once in a 25-year timeframe.
- 3 = Probable. The hazard is likely to occur several times in a 25-year timeframe.
- 4 = Frequent. The hazard is likely to occur cyclically, i.e., annually or seasonally.

Severity of Hazards

Hazard analysis involves determining the severity of the consequences from the primary event, cascading events, or at a target hazard. Determining the severity of the consequences is sometimes called an "impact analysis."

Be aware that a true impact analysis is a large undertaking and requires extensive time and resources. In this course, we will be simplifying the process, for the purpose of illustrating what is involved. Several impact criteria are provided in this section as an example of the kinds of criteria you may use. These criteria yield a numerical analysis that can be prioritized into a "severity" rating.

First, analyze the potential human impact of each emergency, the possibility of death or injury. Then, assess the Potential Property Impact. Consider the potential property for losses and damages, including

- cost to replace;
- cost to set up temporary replacement; and
- cost to repair.

Assess the Potential Service Impact. What if your response is limited? Assess the impact of:

- service interruption;
- employees unable to report to work; and
- interruption of critical supplies like water.

These criteria have been expanded upon in a rating scale that can be used to analyze hazards. This rating scale contains the following factors:

Factor 1: Human Impact (Danger/Destruction)

Life risk, i.e., fatalities and serious injuries, can range from very high to very low. They must be known.

Destruction of physical elements of the community, community segments, and individual properties (e.g., in a conflagration such as Baltimore, San Francisco, Chicago; or a segment of the communities: Cedar Canyon (San Diego); Chelsea, MA, rag district; or Oakland Hills).

Utilities (lifeline integrity) such as power, transportation, and communications are top-priority considerations to maintain/restore a community.

Human Impact (Danger/Destruction)	Rating Value
Few Fatalities: Few, if any, fatalities, injuries handled by the emergency medical system. Structural damage limited to one city block or less.	1 point
Some Fatalities: Some fatalities, injuries triaged but handled by community medical facilities. Damage more extensive but infrastructure (lifelines) intact.	2 points
Numerous Fatalities: Numerous fatalities, mass casualties overwhelm EMS, infrastructure compromised for more than 24 hours.	3 points

Factor 2: Economic

In analyzing economics, look at incident control costs, direct loss, and sum of costs plus loss. This is the economic measure of the consequence of an event.

The cost of responding to the emergency causes the fiscal limitation of the community to be exceeded and may lead to bankruptcy. The economic impact is both short term and long term. Immediate duration of incident, effect is temporary. Duration of rebuilding phase, effect is permanent.

Economic Impact	Rating Value
Will not exceed community fiscal limitations and effect is temporary.	1 point
Will either exceed community fiscal limitations or effect is permanent.	2 points
Will exceed community fiscal limits and effect is permanent.	3 points

Factor 3: Environmental Impacts

Water/Food supplies can be compromised. Wilderness values may be affected. There may be limitations on the use of equipment due to environmental value. Rare and endangered plants and wildlife, scenic values, and historical values must be respected. Permanent destruction, long-term recovery is greater than 1 year, short-term recovery less than 1 year.

Environmental Impact	Rating Value
Impact is short term/reversible with no impact on public health.	1 point
Impact is long term or affects public health.	2 points
Impact is long term and affects public health or is irreversible.	3 points

Factor 4: Social Impacts.

Social impacts include those involving emergency personnel safety and the safety and well-being of their families as well as the public safety in all its aspects.

Historical values deserve special consideration. Recreational and cultural values add to the social fabric of a community.

Social Impact	Rating Value
Minor social upheaval limited to a few families.	1 point
Shelters established, some historical/cultural values affected.	2 points
Emergency personnel consider their own families' safety; mass evacuations; shelter requirement exceeds community capability.	3 points

Factor 5: Planning Considerations--Consider Political Influences

Political considerations are measured in terms of whether all of the planning takes place at the local level (e.g., large commercial, single-structure fire) or not.

Is some regional/Statewide planning involved (e.g., interface fire or wind event)? Is national planning involved? Will FEMA be involved (e.g., 09/11/01 WTC or Pentagon)?

Planning Considerations	Rating Value
The planning, response, and recovery are at the local level.	1 point
Planning, response, and recovery are at the regional or State level.	2 points
Planning, response, and recovery are at the Federal level.	3 points

Factor 6: Service Impact

An example of minor service impact is when response times are slowed. Public services are moderately affected and some employees are unable to get to work. Public utilities, health care, police, and fire affected. Service providers unable to get to work and there is an interruption of critical supplies such as water.

Service Impact	Rating Value
Minor service impact. Response times slowed.	1 point
Public services are moderately affected and some employees are unable to get to work.	2 points
Public utilities, health care, police, and fire affected. Service providers unable to get to work. Interruption of critical supplies such as water.	3 points

Total the Columns

Rank
6 to 10--Low
11 to 14--Moderate
15 to 18--High

VULNERABILITY ANALYSIS

Vulnerability analysis identifies weaknesses in areas in the community, segments of the population, and critical facilities susceptible to potential threats, and the potential for property or environmental damage.

A great deal of study that is helpful to planners is available for some vulnerabilities and hazards (e.g., hazmat and structure fires). Other vulnerabilities have considerable data compiled, but not easily usable by emergency planners (e.g., volcanoes).

Vulnerability in an affected community is much more unpredictable than on a national basis because the statistical base is so small in a single community. Many researchers are looking at vulnerability somewhat independently of the hazards (e.g., the whole field of developing vulnerability analysis statistical models from mathematics).

Information is oriented to both the commonalities of human behavior and emergency response, regardless of risk. Regardless of the trigger event, certain effects and behaviors, such as denial, are predictable.

Vulnerability Analysis Criteria

Assess potential hazards using the following factors:

- level of visibility;
- criticality of target site to jurisdiction;
- impact outside of the jurisdiction;
- access to potential target;
- potential target threat of hazard (what is at site that could be used in attack?);
- potential target site population capacity; and
- potential for collateral mass casualties.

Level of Visibility

Assess the awareness of the existence and visibility of target to the general public. Is it easily recognized and known?

Level of Visibility	Rating Value
Invisible: Existence secret. Classified location.	0
Very Low Visibility: Existence not publicized.	1
Low Visibility: Existence public but not well known.	2
Medium Visibility: Existence known locally.	3
High Visibility: Existence known regionally.	4
Very High Visibility: Existence known nationally.	5

Criticality of Target Site to Jurisdiction

How critical is the site as an asset to the local population, to the economy, and to the government? Is the potential target deemed essential to the continuity of the jurisdiction?

Criticality of Target Site to Jurisdiction	Rating Value
No usefulness	0
Minor usefulness	1
Moderate usefulness	2
Significant usefulness	3
Highly useful	4
Critical	5

Impact Outside the Jurisdiction

What is the value of the target site outside the local jurisdiction? What will be the effect of losing the site?

Impact Outside the Jurisdiction	Rating Value
None	0
Very Low	1
Low	2
Medium	3
High	4
Very High	5

Access Into and Out of Target

What is the availability of the target for ingress and egress by a potential threat element (PTE)?

Access to Target	Rating Value
Restricted: Security patrol 24/7, fenced, alarmed, CCTV, controlled access requiring prior clearance, designated parking, no unauthorized vehicle parking within 300 feet of facility, protected air/consumable entry.	0
Controlled: Security patrol 24/7, fenced, alarmed, controlled access of vehicles and personnel, designated parking, no unauthorized vehicle parking within 300 feet of facility, protected air/consumable entry.	1
Limited: Security guard at main entrance during business hours, fenced, alarmed, controlled access of visitors, designated parking, no unauthorized vehicles parking within 300 feet of facility, protected air/consumable entry.	2
Moderate: Controlled access of visitors, alarmed after business hours, protected air/consumable entry, designated parking, no unauthorized vehicle parking within 50 feet.	3
Open: Open access during business hours, locked during non-business hours, unprotected air/consumable entry.	4
Unlimited: Open access, unprotected air/consumable entry.	5

Hazards Present at Potential Target

What is at site that could be used in the attack? Assess the presence of legal hazardous materials/weapons of mass destruction (WMD) in quantities that could be the target of an attack or would complicate the response to an incident at that facility.

Potential Target Threat of Hazard	Rating Value
None: No hazardous material/WMD present.	0
Minimal: hazardous material/WMD present in moderate quantities, under positive control, and in secured locations.	1
Low: hazardous material/WMD present in moderate quantities and controlled.	2
Moderate: Major concentrations of hazardous material/WMD that have established control features and are secured in the site.	3
High: Major concentrations of hazardous material/WMD that have moderate control features.	4
Very High: Major concentrations of hazardous material/WMD that are accessible to nonstaff personnel.	5

Potential Target Site Population Capacity

Assess the maximum number of individuals at a site at any given time.

Potential Target Site Population Capacity	Rating Value
0	0
1-250	1
251-5,000	2
5,001-15,000	3
15,001-50,000	4
50,001 +	5

Potential for Collateral Mass Casualties

The final issue considers the number of casualties offsite. Assess potential collateral mass casualties within a 1-mile radius of target site.

Potential for Collateral Mass Casualties	Rating Value
0-100	0
101-250	1
251-5,000	2
5,001-15,000	3
15,001-50,000	4
50,001 +	5

Summary Score

Once all seven issues have been evaluated, the score can be totaled. Then, the vulnerabilities that have been assessed can be compared and the most serious determined. This will lead to the prioritization of countermeasures to harden the target.

RISK MAPPING

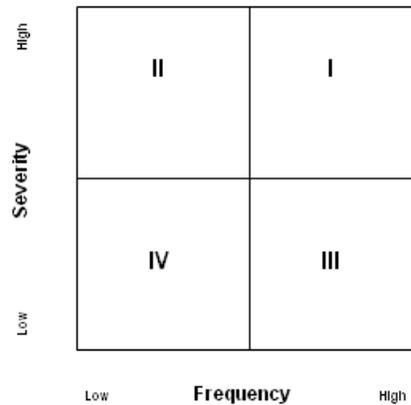
Classical Approach to Risk Mapping

The traditional approach to risk mapping involves plotting the frequency and severity of a hazard along an X/Y diagram. In this instance, the X axis represents Frequency and the Y axis represents Severity.

Classic risk mapping techniques build upon this concept by transforming the X/Y diagram into an enclosed square. The square is then divided into four quadrants. Each of the quadrants then represents a category of risk with Quadrant I containing the greatest risks to the community and Quadrant IV containing the lowest risks.

- Quadrant I includes those hazards with moderate to high severity and frequency. To be placed into Quadrant I, the hazard must have both a high frequency of occurrence and high severity impact.
- Quadrant II includes those hazards with low to moderate frequency, but moderate to high severity.
- Quadrant III includes those hazards with a moderate to high frequency, but with a low to moderate severity.
- Quadrant IV includes those hazards with both low to moderate frequency and low to moderate severity.

Classic Risk Map



Based upon the hazard assessment which includes Frequency and Severity, the community's list of hazards can be prioritized and grouped into one of four categories.

- Risks that require **Immediate Action** because of a high frequency of occurrence and a high severity impact on the community.
- Risks that require **Immediate Attention** due to high severity impact but with a low to moderate frequency of occurrence.
- Risks that require **Periodic Attention** because of moderate severity and moderate frequency.
- Risks that require **Annual Reevaluation** due to low severity and low frequency.

The utility of this process is that it provides a simple and inexpensive method to segregate the hazards in a community into more manageable groupings. It focuses time and resources on addressing the hazards that fall into Quadrants I and II.

Less time and effort can be devoted to hazards in Quadrant III and very little time and effort may be spent on the hazards grouped into Quadrant IV. Risks that fall into Quadrant IV should to be totally ignored.

The next step is to develop a management strategy to address the risks that require either immediate action or attention. In some instances, it may be possible to avoid an exposure to a particular risk. That may work well for a risk caused by human action, but is impractical for a natural hazard such as a tornado. Therefore, strategies for offsetting the impact of an exposure should be explored. Even those events that seldom occur should be periodically revisited to ensure that the community is prepared for such an event should it occur and to make sure that the original prioritization is still appropriate.

OTHER RISK ANALYSIS/VULNERABILITY ANALYSIS METHODS

There are several other risk/vulnerability analysis methods with which the students may be familiar or wish to explore on their own. These include, but are not limited to:

- Sandia National Laboratories Vulnerabilities Assessment Model (<http://www.sandia.gov/ram/index.htm>)
- Community Risk and Vulnerability Assessment Tool (C-RVAT) (<http://www.csc.noaa.gov/rvat/rvat.html>)
- The Chemical Security Assessment Tool (CSAT) (http://www.dhs.gov/files/programs/gc_1169501486197.shtm)
- Carver Shock (<http://www.fda.gov/Food/FoodDefense/CARVER/default.htm>)
- Food Agriculture Sector Criticality Assessment Tool (FAS-CAT) (<http://www.foodshield.org/criticality>)
- FEMA--Risk, Hazard, and Value Evaluation (RHAVE)

SUMMARY

- Overview of risk assessment;
 - Management decisionmaking;
 - Benefits of risk assessment; and
 - The community risk assessment process (definitions).
- Hazard identification;
- Vulnerability analysis;
- Other risk/vulnerability analysis methods;
- Risks that impact Special Operations; and
- Capability assessment.

UNIT 5: FINANCIAL CONSIDERATIONS

UNIT OBJECTIVE

Identify the financial considerations and processes to apply to effectively support and manage a Special Operations Team.

ENABLING OBJECTIVES

- 1. Explain financial management for Special Operations Program Management (SOPM).*
 - 2. Distinguish between budgeting and purchasing.*
 - 3. Identify types of budgets; determine advantages and disadvantages of each type.*
 - 4. Identify elements of budget preparation and the dynamics involved in the budget process.*
 - 5. Explain decisionmaking models for program management.*
 - 6. Use a decisionmaking template for making logical and informed purchases.*
 - 7. Analyze the financial impact of routine spending and capital purchases.*
-

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NOTE-TAKING GUIDE

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**UNIT 5:
FINANCIAL
CONSIDERATIONS**

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UNIT OBJECTIVE

Identify the financial considerations and processes to apply to effectively support and manage a Special Operations Team.

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ENABLING OBJECTIVES

- **Explain financial management for Special Operations Program Management (SOPM).**
- **Distinguish between budgeting and purchasing.**
- **Identify types of budgets; determine advantages and disadvantages of each type.**
- **Identify elements of budget preparation and the dynamics involved in the budget process.**

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ENABLING OBJECTIVES (cont'd)

- Explain decisionmaking models for program management.
- Use a decisionmaking template for making logical and informed purchases.
- Analyze the financial impact of routine spending and capital purchases.

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FINANCIAL MANAGEMENT

- Service: hazardous materials, rescue, hazmedic, etc.
- Organization.
- Politics: you can end up in the middle.
- Money → Decision → Return on invested capital (ROIC).

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FINANCIAL MANAGEMENT (cont'd)

The realities of financial management:

- There is never enough funding.
- Special Operations is costly.
- There is always competition for funding.

No Bucks--No Buck Rogers!

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**FINANCIAL MANAGEMENT
(cont'd)**

It's all about Dollars and Sense!



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**FINANCIAL MANAGEMENT
(cont'd)**

- Do you have a background in finance?
- What is your experience with budgets/purchasing?
- Do you like it?



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**FINANCIAL MANAGEMENT
(cont'd)**

- Inventory
 - People
 - Equipment
- Assessment
 - Capability gaps
 - Technology gaps
 - Expansion/contraction of program
- Projection
 - 1/3/5 years out

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FINANCIAL MANAGEMENT (cont'd)

Budgeting versus purchasing:

- Budgeting makes the money available.
- Purchasing is where the "button is pushed" to procure the item.



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BUDGETING

A budget is

- A planning tool
- A depiction of the proposed expenditures of the organization, broken down by program, over a period of time
- A tangible, visible representation of the financial status of the organization
- A reflection of the policies and priorities of the organization

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BUDGETING (cont'd)

- Where does the Special Operations budget fit into the overall budget?
- Understanding this means keeping track of culture and politics both inside and outside of your agency.
- Educate the line about the process.

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LINE-ITEM BUDGETS

- Each expenditure type has its own line in the budget.
- Much like a shopping list for spending.
- There is potential flexibility in what is purchased.

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ZERO-BASED BUDGETS

- More complicated method of budgeting.
- Can be viewed as a "justification" budget.
- Each year, the budget starts at zero dollars.
- Each expenditure, program, or activity is justified by a cost-benefit analysis of its results in the previous years.

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ZERO-BASED BUDGETS (cont'd)

- Pros:
 - Each program or activity is scrutinized each year for its validity and relevance to the organization.
 - Allows for unexpected expenditures: unfunded mandates.
- Cons:
 - Time consuming to estimate and justify each expenditure the program may foresee.

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PROGRAM BUDGETS

- Tied to long-range or strategic planning
- Overall, budget is the sum of the budgets of its programs
- Organized by the activities of the organization
- A fairly easy way to see and understand the cost of a program

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THE BUDGET CYCLE

- Distinct phases:
 - Preparation.
 - Adoption.
 - Execution.
- In reality, the budget cycle is a never-ending loop.

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BUDGET PREPARATION

- Look at budgeting over a 5-year timeframe.
- Start with a thorough inventory of people and equipment.
- Evaluate costs over time.

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BUDGET PREPARATION (cont'd)

Inventory people and equipment

- Purchase date
- Projected life cycle
- Maintenance/Repair costs
- Post retirement use
- Projected replacement cost include training and disposable goods
- Retirements, recruitment, overtime, and training

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BUDGET PREPARATION (cont'd)

- Evaluate response, maintenance, and training costs for the past 2 years--What was the average cost of doing business?
- Document results over time--What were the benefits of my program over the past 2 years?

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BUDGET PREPARATION--RETURN ON INVESTED CAPITAL

- ROIC, is the basis for funding new programs or buying costly assets.
- For-profit companies allocate funds towards a high ROIC.
- We are a people business; our ROIC is generally people-focused.

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BUDGET PREPARATION--RETURN ON INVESTED CAPITAL (cont'd)

Examples of ROIC for a service-based business:

- Less traffic accidents when speed enforcement tools are purchased and implemented.
- Better onscene decisionmaking due to faster results on a suspicious powder when a new biodetector is purchased.
- Call volume is not the best sales tool!

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BUDGET ADOPTION

- Provide justification--"why?"
- Keep in mind the ROIC of your program.
- Keeping good documentation of results of your program.

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PURCHASING

- There are many controls on purchasing:
 - Dollar limits
 - Restrictions and requirements for sole source
 - Requirements to use local vendors
 - Periodic audits

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PURCHASING (cont'd)

Timeframe for purchases:

- Purchasing capital items can be a lengthy process.
- Important to be realistic about timeframes.
- Remember to factor in replacement schedules.

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PURCHASING (cont'd)

- Vehicles--5 years
- Technology--5 years
- Capital items--5 to 10 years
- Apparatus on custom chassis--20 years



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PURCHASING (cont'd)

- Bidding, request for proposals (RFPs), and request for quotations or request for qualifications (RFQs).
 - Purchasing may require competitive bidding.
 - An RFP must be posted publicly for a period of time.
 - RFPs can be simple or very technical.
 - A city attorney or county counsel may be required to look over proposed contracts or drafts.
- The bidding process takes time. Good documentation is key.

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PURCHASING (cont'd)

Piggybacking on contracts

- Vendor benefits
- Compressed timeframes

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PURCHASING (cont'd)

Working with vendors:

- Important to develop relationships with vendors.
- Vendors are concerned that purchasing rules are followed, so that they have a fair shot in the bidding process.
- Avoid the appearance of bias, or ethical and policy issues will arise.
- What contract will be used?

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FUNDING ALTERNATIVES

Vendor financing:

- Also called carry back financing.
- Vendors provide financing, but charge interest.
- Some pitfalls:
 - Interest rates may be high.
 - Payment schedule may be short, or may not coincide with internal payment schedules.
 - Vendor incentives on future purchases may lock you in.

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**FUNDING ALTERNATIVES
(cont'd)**

Loans:

- **Should be fully understood before making a purchase.**
- **Interest increases the true cost.**
- **It may make sense to look at a Capital Improvement Plan (CIP).**

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FUNDING ALTERNATIVES (cont'd)

Leasing:

- **An increasingly popular way to obtain certain capital items.**
- **Advantages of leasing:**
 - **Cheaper than purchasing outright.**
 - **Get the equipment more quickly.**
 - **Can often lease new equipment at a reduced price, at end of lease term.**
 - **Vendors may offer generous warranty and maintenance packages.**

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**FUNDING ALTERNATIVES
(cont'd)**

Disadvantages of leasing

- **At the end of its useful life span, an item cannot be:**
 - **Retired to a training cache**
 - **Sold on the open market**
 - **Donated to another agency or volunteer program**

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FUNDING ALTERNATIVES (cont'd)

Grants

- A supplemental funding mechanism--cannot fund a program entirely with grants
- Usually a one time effort--probably will not pay for replacement equipment
- Federal Emergency Management Agency (FEMA), U.S. Fire Administration (USFA), *Funding Alternatives for Fire and Emergency Services* is an excellent resource for alternative funding

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FUNDING ALTERNATIVES (cont'd)

- Varying requirements:
 - The rules and requirements to spend money.
 - Distribution of funds may require your agency to match some amount of funding.
 - May or may not provide for maintenance or replacement costs.
 - Some have complicated submission requirements.
- All grants require some justification for ROIC!

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FUNDING ALTERNATIVES (cont'd)

Municipal bonds

- Sometimes referred to as "munis"
- Municipal agency receives cash, pays bond holder interest
- Pros:
 - Usually free of Federal tax
 - A safe and stable way to raise cash
- Cons:
 - Slow to come to fruition

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**FUNDING ALTERNATIVES
(cont'd)**

General obligation (GO) bonds

- Allows issuer of bond to levy financial resources such as property taxes or sales tax, to help repay holders of the bond
- Another way to attract investors and assure them ROIC

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**FUNDING ALTERNATIVES
(cont'd)**

Performance bonds

- Required from a vendor, sometimes a grant requirement
- Guarantees that the product will be delivered as promised
- An increased cost for the vendor
- A good idea when negotiating a big ticket item (\$100,000 or greater)

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**DECISIONMAKING MODELS
FOR PURCHASING**

Matrices are usually used

- Numerical rating system
- Useful because they force the evaluator to take an objective look at the purchasing decision

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THE BOX METHOD

On the lid



How does it fit into our current operations?

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THE BOX METHOD (cont'd)

On the bottom



How will it fit into regional activities?

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THE BOX METHOD (cont'd)

Side 1



Are we committed to the training?

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THE BOX METHOD (cont'd)

Side 2



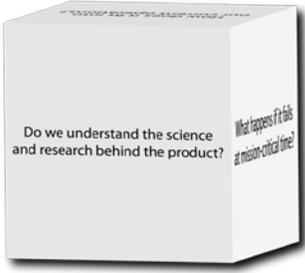
What are the maintenance, upkeep and operational costs? Do we understand the science and research behind the product?

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THE BOX METHOD (cont'd)

Side 3



Do we understand the science and research behind the product? What happens if it fails at mission-critical time?

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THE BOX METHOD (cont'd)

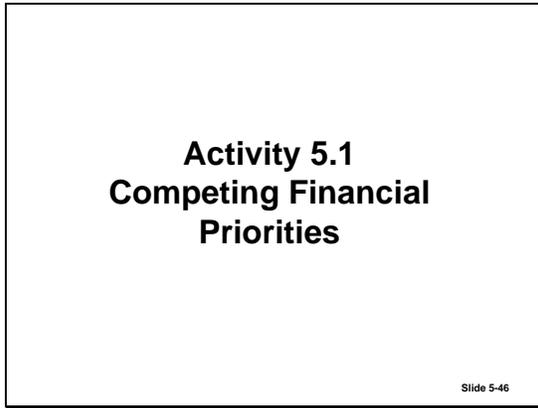
Side 4



What happens if it fails at mission-critical time? Are we committed to the training?

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Activity 5.1

Competing Financial Priorities

Purpose

To draft a written staff report justifying a financial decision.

The goal of this exercise is to evaluate four situations/problems, determine which is most pressing/critical to your program and the agency, choose a piece of equipment that will offer a solution, and justify it. It is acceptable to provide alternative solutions, but those solutions must be detailed enough for the group to visualize and understand and the associated cost must be realistic. Understand that the piece of equipment is not a complete solution, it may only be a part of it. For the purpose of the exercise, we want to focus on the process used to select the piece of equipment in the context of competing issues.

To arrive at an informed and defensible purchasing decision, you are to use the "box method" proposed in this unit. Again, this approach follows a more generalized and holistic view of thinking through a purchase, and the questions are more of a guide than hard and fast rules. You may choose to change the intent of a question to be more appropriate to the potential purchase.

The box method provides a methodology and guideline for assembling justifications and information for writing a report. Your answers to each question in the box method will generate the raw data and background information for the report. Once you have the raw data, you can refine your responses to each question into a sentence or two. Then, use these refined statements as topic sentences for each section of the report. Topic sentences should be declarative statements. Avoid using passive language.

A sample report is provided in the course Appendix; **however, do not follow the format exactly. It is only an example, not a cut-and-paste template!**

Directions

1. In your table group, review the four scenarios. The scenarios will provide the reasoning behind why a particular capital item is being considered. Decide which one is the most critical for the agency to address; this will be your sample scenario.
2. Review the list of proposed capital items (in this exercise) that may be required to address a problem or situation found in one of the scenarios, and how that item fits, does not fit, or is lacking in the current list of CCFD Special Operations equipment found in Appendix E.
3. Look at each piece of equipment with regard to cost, need, and appropriateness of the equipment, as it relates to a problem identified in one of the scenarios.

4. Use the box method to help you justify your purchasing decision by answering the questions on the following worksheet.
5. Expand on your responses to the questions in the box method and articulate your justification in the form of a written report to the fire chief. A template for that report can be found in the Appendix.
6. Select a spokesperson from your group to present your findings to the class.

Scenario 1

The Central City Fire Department (CCFD) is consolidating with the Big Rock Fire Department. It is a combination fire department that serves an adjacent city along the river. Each year, there are 8 to 10 drownings and many near drownings on their section of the river. In the past, water emergencies in that area were handled by Big Rock Station 75, although the agency is not consistently staffed with trained responders; is minimally equipped; and without an organized team or training program. There is political upheaval over the consolidation, and the two agencies do not typically work or train together. In fact, the line personnel of the Big Rock Fire Department were against consolidation and mounted a political campaign to try to stop it. The effort failed, largely because the CCFD staff demonstrated that fire consolidation would save enough money to keep a local library open.

Your agency also covers the same river, upstream of Big Rock, and experiences the same sort of call volume when it comes to water-related emergencies. Unlike the Big Rock Fire Department, your agency has a fully staffed Water Rescue Team that is available to respond on a 24/7 basis. You are the Special Operations Program Manager that built the program, using NFPA 1670, *Standard on Operations and Training for Technical Search and Rescue Incidents* and NFPA 1006, *Standard for Technical Rescuer Professional Qualifications* as guidance documents for your training and proficiency testing.

It is also apparent that the expanded service area will require more ability to respond on the water. Your assignment is to research and recommend a new rescue boat for purchase and determine the components of a training program for the new firefighters assigned to it.

Scenario 2

The Central City Police Department (CCPD) recently served a high-risk warrant on a murder suspect. During the operation, an operating methamphetamine lab was discovered. The officers have little experience with clandestine drug labs. After the suspect was arrested, one of them opened a plastic container and was overcome by the fumes. Two other officers assisted him out of the building but were experiencing burning eyes and nausea. All three went to the hospital for treatment. The Police Chief realized his officers needed some hazardous materials training and gave direction to his training Captain to contact the fire department and see what they recommend for training 20 officers. The Police Chief also recently saw a demonstration of a

robot by one of the neighboring jurisdictions and is interested in buying one for such high-risk situations. The robot he saw also integrated a gas detection device on the frame. He is interested in sharing the purchase and use with the CCFD. You are assigned the task of recommending a basic training program for the police officers and making a recommendation on the robot from a hazardous materials response perspective.

Scenario 3

A large corporation is building a multimillion dollar recycling center in your jurisdiction. The site has many confined spaces and large pieces of machinery. A member of the corporate environmental health and safety division (EH&S) contacted your Fire Marshal and discussed the department's ability to respond to confined space emergencies. Your agency has a Technical Rescue Team and the equipment found in Appendix E. The last confined space training was completed 3 years ago. The Fire Chief directs you to "figure out what we need to address the rescue problems at the site." Additionally, a member of the city council had a similar conversation with the EH&S representative during a walk-through of the facility. He is also asking the Fire Chief if his department is trained and equipped for these kinds of situations. The Chief asks you for a written assessment of the CCFD Technical Rescue Team and its ability to respond to confined space incidents and to make a recommendation on new equipment purchases if necessary.

Scenario 4

The CCFD Hazardous Materials Response Team also responded to the incident listed in Scenario 2. There were challenges with the team's ability to perform atmospheric monitoring and many of the substances found in the lab could not be identified. This prompted you to revisit your cache of detection and monitoring equipment. Along with recommendations to the CCPD for training, you see an opportunity to make a case for a new piece of detection equipment for your team. Based on a technology assessment of the equipment list found in Appendix E, and the suggested piece of equipment listed above, decide what gaps exist in your fleet of instruments and how best to spend the allotted money to fill those gaps.

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Activity 5.1 (cont'd)

Equipment List

Rescue/Fire Boat

- 32' rigid hull (aluminum) inflatable boat (RHIB) with a fully enclosed heated cabin;
- twin outboard motors (150 horsepower each);
- full width dashboard with state of the art electronics and navigation;
- 42 knot top speed;
- 500 gpm fire pump; and
- berthing system for in-water docking.

Total price: \$370,000.

Law Enforcement Robot

- wheel driven unit, capable of climbing stairs;
- lifting, reaching, and gripping capabilities via articulating arm;
- color surveillance camera with image transmission capabilities; 360 degree views; low light capabilities;
- two-way audio; and
- accessories include shotgun; gas dispenser; air monitoring instrument, reciprocating saw; cable cutter and drill.

Total cost \$250,000.

Portable Anchoring System with Miscellaneous Rescue Gear

- the portable anchoring system can be configured in a number of ways including a tripod, gin pole, A-frame, and other nonstandard configurations;
- lightweight transportable pieces are easy to move into place in rugged terrain;
- associated ropes and rigging gear; and
- four National Fire Protection Association (NFPA) 1983 certified harnesses.

Total cost \$6,000.

Raman Spectroscopy (or Other Suitable Instrument(s))

- portable lightweight unit;
- extensive reference library; and
- certified to MIL-STD 810F standards.

Total cost \$55,000 (this is your budget ceiling for any purchase or combination of purchases you make).

Heavy Rescue Response Unit

- 40' long tractor chassis; 7,000 lbs gross vehicle weight; 500 horsepower Detroit motor; roll up doors on all cabinets;
- 32 kW generator;
- 250 gallon water tank with pump;
- self-contained breathing apparatus (SCBA) refilling station;
- 600 psi compressor;
- onboard weather station;
- fully outfitted with radios, computer, printer, fax, phone; and
- *no rescue equipment included; the cost is for the vehicle only.

Total cost \$600,000.

Activity 5.1 (cont'd)

The Box Method Worksheet

1. How will it fit into our current operations?

2. How will it fit into regional activities?

3. Are we committed to the training?

FINANCIAL CONSIDERATIONS

4. What are the maintenance, upkeep, and operational costs?

5. Do we understand the science and research behind the product?

6. What happens if it fails at a mission critical time?

NOTE-TAKING GUIDE

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SUMMARY

- **Financial management for Special Operations programs**
- **Budgeting: budget types, cycle, preparation, adoption, execution, and ROIC**
- **Purchasing: controls, timeframes for purchasing, and bid processes**
- **Funding alternatives: vendor financing, loans, leasing, grants, and bonds**
- **Making informed purchasing decisions--the box method**

Slide 5-47

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INTRODUCTION

To some Special Operations Program Managers, the financial administration of the program may be the most challenging part of the job. Most managers progressed through the ranks to obtain the position having little or no background in municipal purchasing practices or budgeting. If you are one that did, you will find that background and knowledge invaluable.

In order to get your hands around the financial management of the program, it is important to acknowledge two important realities. First, you will likely never have enough funding to do everything you want to do. If your program is multidimensional, meaning that it includes several different disciplines such as hazardous materials response, technical rescue, and water rescue, you may find that each program requires varying levels of financial commitment from year to year. Special Operations is an ever-evolving entity that is, to say the least, costly. The tools and equipment are expensive, the training is time consuming, recruitment and retention cost staff time and money, and the apparatus used to carry all that expensive equipment is itself, expensive.

It seems that right after a new hazmat rig is purchased, a rescue boat is in need of replacement or repair or the cache of Level A suits needs to be replaced at the same time the rescue company wants a new tripod for confined space entry. Your program may be smaller than others, and the needs may be smaller, but it is just economies of scale. Big programs with big budgets get stretched because the costs are greater; small programs feel the same pinch, there are just less zeros involved.

The second important reality to acknowledge is that your program is in constant competition with internal policy decisions, the changing nature of the community, and the influences of elected policymakers outside the agency. If the Executive Management Team of the agency decides not to fund a certain program--yours for example--either partially or fully, it has in effect decided that your program is less important than others or there is not enough money to keep doing things as they have been done in the past. In either case, you and the agency are faced with reducing the levels of service, changing the way in which it is delivered, or cutting something all together. Unfortunately, in the age of diminishing revenues, most agencies are ultimately forced to "do more with less." The unfortunate reality is that this really means "keep doing what you were doing with less," putting you in the position to take such actions as deferring capital purchases and needed maintenance on tools, equipment, and apparatus. When this happens over a few years, the program struggles to regain lost financial ground and is forced to play catchup for many years after. The dollar signs are so large these days, however, that when you fall behind, it is almost impossible to get back on track quickly, if at all.

A new shift in internal policy could be driven by a change in leadership, like getting a new Fire Chief or Fire Commissioner for example, or some outside influence such as a series of loss of life fires, or a large fire in a prominent building. This shift may cause funding to go places other than Special Operations (prevention, community outreach, etc.) and there you are again, doing more with less. Another common scenario occurs when a Hazardous Materials Response Team or rescue squad is put in service to address the hazards of a new facility built within the jurisdiction. After a period of time, the facility closes or curtails the operations that required the specialized service in the first place, reducing or eliminating the need. If the need is gone,

should the service continue to be funded? If the initial and/or sustained funding came from the facility, and that funding dries up, is the agency in a position to pick up the full cost of the service, and if so, why? These are all real problems that may challenge the financial health of the Special Operations Program.

The subsequent sections will identify the various financial aspect of Special Operations Program Management (SOPM). The goal is not to make you a financial manager, it is to give you an overview and further things to consider as you steer the program through the ever-changing waters of budgeting and purchasing.

BUDGETING

The Special Operations Program Manager must understand the dynamics and mechanics of budgeting. He or she must be cognizant of where the Special Operations budget fits into the overall budget of the department. Think of a budget this way; it is a tangible and visible representation of the financial status of the organization. It depicts the proposed expenditures of the entire organization, usually broken down by program, over a given period of time. Budgets are planning tools and a reflection of the policies and priorities of an organization.

If you want to know what the priorities of an organization are, look at the budget. Policymakers shape the budget to address the financial priorities; the financial priorities are (or should be) focused on the needs of the community.

If the community is experiencing an economic downturn, the department's budget will no doubt reflect it. The Special Operations Program Manager may feel that change if the department must return to providing only "essential services" such as fire suppression and Emergency Medical Services (EMS), thereby eliminating or curtailing some of its specialized services. As the manager of the Special Operations Program, you will be well served to keep an eye on what's going on outside the doors of the agency, as well as keeping an eye on the internal culture and politics of the organization.

The **budget cycle** is a term used to discuss the process or steps of budgeting. From an overall perspective, a budget cycle has definite and distinct actions (preparation, adoption, execution) but in reality, the budgeting process is a never-ending loop. Commonly, as one budget cycle is completed or is nearing completion, the next cycle begins.

To begin the budget cycle, steps must be taken to prepare an initial budget. The Special Operations budget will be part of the overall agency budget. This process, while a dollars and cents focused activity, should also include a thoughtful evaluation of what results were achieved by the Special Operations program. It's easy to look back over the previous year and see where the money was spent, and you must do this in order to project what the next year might look like, but this is not the only thing to consider. It's not enough to know that the program cost X dollars, ran a certain amount of calls, and needs a 10 percent increase this year in order to maintain service levels. This type of approach yields little more than a "weather report" of what transpired during the year instead of measuring the results of the Special Operations program--**the return**

on invested capital (ROIC). The private sector is big on looking at the ROIC when it comes to funding new programs or buying costly assets. For-profit companies take great pains to allocate money in a direction they believe will provide some return on the money spent. And while a municipal agency such as a fire or police department does not have a tangible commodity per se, it must look for other ways to determine an ROIC. Reduced crime rates after more officers are added; less traffic accidents when speed enforcement tools are purchased and implemented; faster and more accurate results that allow for more informed onscene decisions on suspicious powders when a new biodetector is purchased; these are ways to express ROIC. Perhaps only one technical rescue was made, but it resulted in a life saved, and provided the team with much needed real-world experience or found that a certain piece of equipment was missing, or that some training issue was identified. What you also look for during the preparation part of the budget cycle, in addition to the money spent and the projected money needed, are the benefits of the program realized by the community. To say that call volume is an indicator of the success or failure of program is shortsighted. Your team may run hundreds of calls per year, but miss the opportunity to really learn about the specialized service and how it is benefitting the community or enriching or enhancing the capacity of the organization.

Some basic steps to take during budget preparation include efforts to determine the cost of the program over the previous year; identify the need when it comes to procuring or replacing equipment; identify costs for initial and ongoing training, recruitment and sustainment--including backfill and overtime if it's required; identify maintenance of effort (MOE) costs to keep up with the status quo of providing the service; keep a contingency fund for unexpected costs and last but not least, articulate the results and benefits of the program.

Suggested Replacement Schedules for Common Capital Assets	
Passenger vehicles/small trucks	4 years
Computers	4 years
Technology lifespan before replacement/update	5 years
Capital equipment (large tools, specialized personal protective equipment (PPE), etc.)	5-10 years
Specialized vehicles on commercial chassis	15 years
Specialized vehicles on custom chassis	20 years

The budget may run over a fiscal year, any continuous 12-month period chosen by the agency, or a calendar year. Regardless, the Program Manager should view budget cycles in 12-month increments.

Most municipal budget types vary from organization to organization, but some common types include line item, zero-based, or program. Each has positive and negative aspects. We won't go into great detail here, but suffice it to say that you should become intimately familiar with the type of budget your organization uses. In most cases, many years ago, the governing body of your organization mandated the type of budget you have.

Line item budgets are characterized by expenditure types, each having its own line in the budget. When taken in total, it looks much like a shopping list of spending. Although each type of expenditure is listed, there is flexibility regarding what exactly is purchased. In some line item budgets, it's even possible to transfer money between line items, which allows for flexibility should spending priorities change. Special Operations may have a \$100,000.00 entry as a line item--the Program Manager would have the flexibility to purchase whatever items fell into that category--rescue rope, detection and monitoring equipment, a new motor for the rescue boat, etc. This is a very simplified view, but is described to illustrate the concept of this budget type. The detail of the line items can be made loose or strict--that depends on the administrator. The line item budget depicts the amount of funds available and allows spending discretion to the budget administrator.

Zero-based budgets are a somewhat complicated method of budgeting. In simple terms, a zero-based budget can be viewed as a "justification" budget. Each year, the budget process starts at zero dollars, assuming there is no commitment to any program or activity, and there is no balance brought forward from the preceding year. Each program, expenditure, or activity is then justified by using a cost-benefit breakdown (the **results** of the program as was discussed earlier). Instead of justifying only an increase in requested funds, the Program Manager must justify the entire program, each year, from top to bottom. A positive outcome is that each program or activity is scrutinized each year for its validity and relevance to the organization this budget method also allows for unexpected expenditures. The down side is that it is time consuming to estimate and justify each expenditure the program might foresee.

Program budgets are organized according to the activities of the organization. Essentially, it is a budgeting tool that is based on what the organization does. Program budgeting is typically tied to long-range or strategic planning. The overall budget becomes the sum of its programs, a fairly easy way to plan a budget and track expenditures. If the Special Operations Program is looked at as a programmatic budget, it is easy to track the costs of the program and evaluate the performance. It's easy to understand. The Special Operations Program has a given amount of money to spend over a given timeframe to accomplish a particular set of goals. It either does that or not and it's easy to see at the end of the year. Missing the mark on a program budget may signal the need for a review or evaluation.

Once an initial budget is prepared, it is usually adopted by the body that governs the agency. There are many variations of governance, too many to list in this text. To that end, it is suggested that if you are not familiar with the governance structure in your jurisdiction, take the time to understand how the budget adoption process works. As the Special Operations Program Manager, the research will be more than worth it.

The adoption phase of the budget is where most of the debate takes place and where paying attention to the results of your program will pay off. Most government officials and department heads want to know **why** money is being spent and that a purchase or request is well justified and needed, instead of simply wanted. When the reasons for the expenditure are sound, it is much easier to support both politically and financially. If the Fire Chief is the one to justify and defend the budget, make it easy for him or her to understand what your program achieved during the year. Keep in mind the ROIC of your program. Take notes during the year to refer back to during the budget preparations time. It will help remind you of the accomplishments during the year and help justify the existence of your program!

PURCHASING

Once a budget is adopted or approved, the real fun begins--spending! And while this is the part of the job that everyone seems to enjoy, it is not without pitfalls. In many city and county organizations, a General Services Agency (GSA), purchasing department, or other financial "watchdog" regulates the action of purchasing. Make no mistake that purchasing and budgeting are two completely different acts. Budgeting makes the money available in the overall financial landscape of the organization; purchasing is where the trigger is pulled to actually procure the item. Each has a set of hoops to jump through that can be time consuming and complicated. Many governmental bodies have strict purchasing regulations to prevent misuse of public funds. These controls include dollar limits on vendor contracts; restrictions and requirements for sole-source contracts; requirements to use local vendors when available, even if they are more expensive to use; periodic audits; etc. Purchasing a big ticket item or contracting for outside services such as specialized training can be a very frustrating proposition. Imagine having your program budget approved only to have to get three additional quotes or draft a sole-source justification in order to set up a purchase order to buy a piece of equipment or procure a service that you already had to justify to the Fire Chief who subsequently justified it to the local legislative body to get the budget adopted in the first place! Confusing--yes. If you've been in the job for a while in a city or county agency, then you are well aware of the pitfalls and challenges of municipal purchasing. The intent is to prevent a misuse of public funds; the result is that it might require a laborious process to ensure it. It is not unusual for capital items to take up to a year to purchase.

Sole Source--one and only one vendor that has a unique product or service that cannot be provided to the organization by any other vendor.

Purchase Order--a financial document that authorizes a purchase. It sets forth the descriptions, quantities, prices, discounts, payment terms, date of performance or shipment, other associated terms and conditions, and identifies a specific seller. When accepted by the seller, it becomes a contract binding on both parties.

Capital Improvement Plan--a medium range (usually 4 to 6 years) plan that identifies capital projects (construction of new buildings, improvements, etc.) and equipment purchase (apparatus, high dollar equipment, etc.). These expenditures are looked at in the long term and require financial planning.

Capital Asset--typically, an expensive item that is expected to be used by the agency for a long period of time. Everything from buildings and response apparatus to portable generators and rescue tools, rescue boats, gas detection equipment, etc. are all examples of capital assets.

A key point to keep in mind is that purchasing capital items can be a lengthy proposition. An agency might assemble a committee to study the potential need and options of purchasing a capital piece of equipment such as a new rescue rig or an umbilical airline system for confined space rescue. A competitive bidding process might need to occur where an open bid or request for proposal (RFP) has to be posted and accessible to the public for a specific period of time. An RFP is a document that an organization, public or private, issues to a particular vendor market, in order to elicit bids from qualified and suitable vendors. Some RFPs are quite lengthy and technical while some are very basic. In each case, it is a way for an organization to benefit from a competitive bid process and in effect, increase its negotiating power. A good RFP makes very clear what the organization is looking for and the conditions under which they are willing to purchase a particular item. A less restrictive request for quotation (RFQ) can also be used on less complicated purchases. In either case, the RFP must be handled correctly so as not to violate the purchasing process. To that end, the process might also call for a city attorney or county counsel to look over draft language or proposed contracts which takes time. Additionally, vendors get touchy when purchasing rules are not followed and/or they do not get a fair shot at bidding; rest assured, when there is lots of money at stake, the process of spending that money can be quite restrictive and time consuming.

Other purchasing considerations include vendor financing. Some vendors are willing to carry back the financing on certain purchases, but will charge interest just like conventional financing. This is an interesting prospect, but it does have potential pitfalls. In some cases, interest rates may be high, the payment schedule may be short or not coincide with internal payment schedules or a county board of supervisors or city council may have rules against vendor financing. Additionally, when a vendor provides the financing, it may include enticements to make a future purchase or later "renew" the contract for an updated or fancier piece of equipment. This tactic may be well and good if you plan to stay with the vendor and have complete confidence in the product or the technology.

Loans in general should be fully understood prior to making a purchase. Just like any consumer product, paying interest over the life of the loan increases the true cost of the item; perhaps it makes more sense to look at a capital improvement plan (CIP) in order to obtain the item or complete the project.

Leasing has become an increasingly popular way to obtain certain capital items. The detection and monitoring equipment carried by Hazardous Materials Response Teams might be well suited to leasing. As an example, a fire department might be in need of an expensive piece of detection equipment in order to be compliant with a Federal Emergency Management Agency (FEMA) Type I Hazmat Response Team. The budget is tight and the agency cannot afford to purchase the equipment outright. A vendor might offer to lease the piece of equipment on a 3-year term, or perhaps a lease-to-own contract. The benefit to the agency is that it can usually lease the equipment cheaper than purchase it outright; it gets the equipment quickly; and most leases allow the lessee to turn the equipment in at the end of the lease for a newer and updated version of the equipment at a reduced cost. Vendors typically offer generous warranty and maintenance

packages with leases such as this. Leasing might not be an advantage in terms of ownership of the item. Since the organization does not technically own the item, when the useful life span has passed, the item cannot be retired into a training cache or perhaps sold on the open market or donated to a less fortunate agency or given to a reserve or volunteer program.

A governmental entity may choose to issue a municipal bond (sometimes referred to as "munis") to raise money for capital improvement projects. This method of financing is slow to come to fruition and generally results from the organizations need to fund projects it will likely not have the cash to fund, even by saving money. In simple terms, the municipal agency issues a bond, receives the cash, pays the holder a specified amount of interest over the life of the bond, and agrees to return the principal loaned on a predetermined maturity date. It's typically a stable investment for the bond holder (usually free of Federal tax) and a safe and effective way for a municipal agency to raise cash. The funds are used for a specific purpose, usually for a given project. Some municipal agencies issue general obligation (GO) bonds. In short, a GO bond allows the issuer of the bond to levy financial resources such as property taxes or sales tax, to help repay the holders of the bond. It is another way to attract investors to purchase municipal bonds and assure their return on invested capital.

An additional method of purchasing apparatus and equipment is by way of a grant. Over the last several years, grant monies have been both plentiful and easy to get, and restrictive and difficult to get. Grants are often thrown around in budget talks as the end all be all way of getting anything. If you can't buy it, some people mistakenly believe there must be grant money sitting out there for the taking. For the most part, this is not the case and it is remiss to try to build or sustain a program on grant money; eventually, the grant money will go away. There are, however, excellent resources out there to point you in the right direction for this type of alternative funding. A comprehensive document on the subject, produced by FEMA and the U.S. Fire Administration (USFA) titled *Funding Alternatives for Fire and Emergency Services*. In it, you will find many suggestions and resources for grants, grant proposals, alternative methods to obtain funding, etc. It is a great guidance document on the subject and will perhaps open your eyes to opportunities you had not previously considered.

Grants are mentioned here only in the sense that they exist as funding mechanisms. It is important to understand that all grants do not function the same; the rules and requirements for you to spend the money are not similar; the distribution of funds may require your agency to provide some amount of matching funds prior to receiving the grant distribution; the grant may not provide for maintenance costs or to replace the equipment when it becomes obsolete. In essence, the sustainment might be 100 percent your responsibility, etc.

Some grants require the vendor to post a performance bond (which in certain cases can increase the cost of what you are trying to purchase) to guarantee that the product will be delivered as promised. A boat vendor, for example, may be required to post a performance bond before a purchase order or contract is issued. This is an increased cost for the vendor; they may build it into the purchase price, or perhaps the entity funding the grant will allow the performance bond to be added to the purchase price. In any event, if you are negotiating a big ticket item (around \$100,000 or greater), make sure to ascertain if a performance bond will be required. This should not be a surprise to vendors who typically deal in high-priced equipment. They will likely have posted this kind of bond before and have a relationship with an insurance company.

Some grants require some degree of technical writing and have complicated submission requirements. If your organization is fortunate enough to have a grant writer, consider yourself lucky and in the minority. Typically, if you want the item, you are the one chasing the grant money and doing the leg work. One thing they all have in common, however, is the requirement to justify the request, to convince someone on the other end of the submission that there is a potential for ROIC.

MAKING INFORMED DECISIONS--THE BOX METHOD

In order to make an informed purchasing decision, some form of decisionmaking model should be employed. Some agencies have a matrix that uses a numerical rating system to determine the importance of a potential capital purchase, especially new equipment. This rating system evaluates the importance of the item to the organization, ease of use, cost, etc. These decisionmaking matrices are often useful in the fact that it forces the evaluators to take a clinical look at the proposed items and hopefully steer clear of the "it's really cool and we gotta have it" trap.

This section proposes a more generalized and holistic view of thinking through a purchase. It prompts a lot of question asking and thinking on the part of the purchaser(s). The potential vendor may not like it much, especially if they are trying to sell you something that isn't excellent.

It is called the box method and is based on asking six basic questions of any piece of equipment, idea, or process that you are interested in bringing into your organization.

The first step is simple. Theoretically, place the proposed item in the appropriately sized box and close the lid; each of the six sides will represent a series of questions.

On the lid: *How will it fit into our current operations?* Anything new brought into the Special Operations Program, any tools or equipment for example, will likely have an affect on something else in the program in terms of financial commitment, training, storage, or a change in staffing or response. Will this 'thing' fit in with what the program is currently doing and will it be a change for the better? Again, focus on the benefits (what it will do for the personnel, the agency, and the community) instead of the features (how it will do it; the functionality of the item). Will it effectively expand the current capacity to deliver services and does it fit into the existing mission? Will it change the mission and take the program or team or a particular type of response in a new direction, and if so, can it go in that direction? Essentially, it takes an upper management level decision, based on the overall direction of the department or the Special Operations Program, to hash out the pros and cons of implementation. At the end of the day, it might not make sense to invest in a piece of equipment that is so specialized it can only be used for one thing; a narrow function item with a high cost/use ratio, that may end up being less useful than a brick.

On the bottom: *How will it fit into regional activities?* All public safety response agencies must acknowledge the fact that there is life outside their own boundaries. From the tools and

equipment perspective of a Special Operations Program, this notion is particularly true. Since most of the tools and equipment that go along with hazardous materials response, water rescue, and technical rescue are by and large expensive, it makes sense to at least acknowledge what equipment resides with neighboring agencies, and could be called into service when needed through mutual-aid or automatic-aid agreements. It may not be feasible for some valid reason, to rely on help from the outside, but the thought should be explored. This approach may seem obvious, but there are still many fire departments in this country that have no interaction with a neighboring department and in fact look at them like lepers when it comes to working together. This "kingdom" approach prohibits the facilitation of the best service for the community in terms of response times, cost sharing, and efficient regional operations. In short, before implementing a new facet of your program or investing in a capital piece of equipment, take a look around and see if it already exists and might be available regionally.

Side 1: *Are we committed to the training?* Adding a piece of training here and there doesn't work. Training programs must be built around an overall plan. If the training doesn't support that plan, you run the risk of getting off track.

The challenge with implementing new equipment or technology of any kind, especially high-tech or mechanically-complicated equipment, is to be able to use the gear when the time comes. The manufacturers are looking for ways to make things user friendly, but an agency must commit the time and money to keep people current on the training. This is tough as most agencies already have a plate full of fire and Emergency Medical Services (EMS) training and all the other daily demands placed on line personnel. Additionally, training should not consist solely of firehouse coffee table training, the talking kind of training. The agency must require that the crews get out and simulate the actual conditions the piece of equipment might be used in or the conditions under which you might be called upon to respond. If the agency can't or won't commit to being proficient with the equipment, than it doesn't make sense to own it in the first place.

Side 2: *What are the maintenance, upkeep, and operational costs?* Any piece of equipment you buy requires some level of use, care, and feeding. Chemical and biological detectors are especially needy and cannot be left on the shelf. They must be continually bump tested in order to function properly and have certain internal parts that require annual service and/or replacement. For example, you can't go out and buy a new detector of any kind, leave it on the shelf for 2 years and expect it to work properly. This means spending money to keep the machine response-ready as well as spending the most important nonrenewable asset on earth--time.

Most machines should be sent in to the manufacturer annually and it seems that \$1,000 to \$1,500 is the ballpark figure for each trip. This doesn't take into account extra sensors, replacement batteries or the repair costs incurred when somebody accidentally draws a nasty liquid into the sample chamber of a four-gas monitor. You should also inquire about a loaner program. Will the vendor provide a replacement unit while yours is out of service?

The reality is that buying the machine is the easy part; learning to use it and keeping up on the maintenance is the challenge. Ask the vendor about projected maintenance costs and what the company is willing to do if the thing goes down in the middle of an incident. Are there regional distributors that will get on the road and be at your side in 2 hours if need be, or are you on your

own once the check clears the bank? Pay special attention to equipment purchased through grants as many do not allow for maintenance or replacement. Those costs are typically borne by you once the equipment is purchased.

Side 3: *Do we understand the science and research behind the product?* This is a very important question to ask, especially in this day and age. Many detection and monitoring devices on the market, especially biological detectors, should be validated by an independent third-party. Is the manufacturer telling you this is the greatest thing since sliced bread or is there a third party surety group that verifies that the device will function as stated? Most vendors are quick to point out their unit is used by every branch of the military, or by some large prestigious fire department, or it's the favorite thing ever at the Dugway or Aberdeen proving grounds. These are great endorsements, but the gold standard is the validation by a third party; this will give you piece of mind. If you're in the chemical or biological detector market, and baffled by the technology, hire an industrial hygienist to educate you in the different technologies. It'll be money well spent and you'll ultimately make a more informed decision. In short, do the homework before you spend the money; it may take longer to get what you want but you'll end up with a purchase that fits your need.

Another factor influencing the detection/monitoring market is the market itself. High-tech markets like this are complex and evolve faster than traditional type markets that compete for sales in firehose, turn out gear, response apparatus, or other traditional fixed assets. They're very competitive and characterized by rapid change and innovation. In many cases, the innovations are driven by changes in the technology itself rather than customer demands. Go to any trade show and talk to any vendor selling a detector and he'll tell you why this machine is great and follow that up by letting you know the next generation will be out in a few months and it'll be faster, easier to use, and able to withstand a fall from a 50-story building. Do you buy now or wait? It's almost like buying a computer; the market changes so fast that the machine you buy today is already slower than what is on the drawing board. A 4-year-old computer is a dinosaur these days. Will the biological detector be in the same boat?

Side 4: *What happens if it fails at a mission critical time?* This is the worst possible scenario. You spent the time to make a wise purchase, did your training, and feel very confident that you're 'ready.' The big day comes and for some unforeseen reason, it breaks down. Now what? How do you recover and keep going? Can you make repairs in the field? Does the vendor offer a 24-hour help line with good technical support like a number that actually goes to somebody who knows something? What's your fallback position? Will the manufacturer send someone right then to offer product support? It's common to preplan potential incidents, but we seldom preplan equipment failures. If you rely too heavily on the technology and it fails, then what?

Remember, tools and equipment don't solve your problems, they help people solve them. A department with solid officers and well-trained firefighters, following good incident leadership, can solve problems regardless of the obstacles. If your agency is good at handling structure fires and other emergencies, they'll more than likely handle the 'big one' just as well. If your basic emergency operations are a disorganized mess, all the toys in the world won't make you perform like a well-oiled machine.

The rest is simple. If the answers come back favorably, then it makes sense to take the item out of the box and look at putting it in service. At the minimum, you have scrutinized many of the

critical facets of bringing on a new piece of equipment. If the answers are unfavorable, leave it in the box and send it back to whoever sent it to you in the first place. Maybe the widget isn't right for you. It may very well be the best product on the market, but even the best product isn't the best if it's not right for your agency.

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APPENDIX SAMPLE REPORT

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Sample Report

Central City Fire Department



EMS Division

DATE: September 15, 2009
TO: Central City Fire Chief
FROM: Division Chief, EMS
SUBJECT: Swine Flu Update

RECOMMENDATION

The EMS Division is presenting the following information as an update to the H1N1 infection and recommends this information be disseminated to line personnel.

EXECUTIVE SUMMARY

The new virus Influenza A (H1N1) may cause a surge in emergency requests in the upcoming months. Information is rapidly changing. This report is to provide information that may be useful to line personnel as they respond in the course of their duties.

BACKGROUND

Influenza A (H1N1) is a new virus and one to which most people have no or little immunity and, therefore, this virus could cause more infections than are seen with seasonal flu. The World Health Organization (WHO) is working closely with manufacturers to expedite the development of a safe and effective vaccine, which may be available soon. The EMS Division is working with Liberty County Public Health to stay informed about the situation. As things progress, further information will be disseminated.

The new influenza A (H1N1) appears to be as contagious as seasonal influenza, and is spreading fast particularly among young people (from ages 10 to 45). The median incubation period from exposure to initial signs and symptoms is 3-7 days. Studies have shown that people may be contagious from one day before they develop symptoms to up to 7 days after they get sick. The severity of the disease ranges from very mild symptoms to severe illnesses that can result in death. The majority of people who contract the virus experience the milder disease and recover without antiviral treatment or medical care. Of the more serious cases, more than half of hospitalized people had underlying health conditions or weak immune systems.

Swine flu is an airborne illness, contagious from person to person, that manifests itself as fever, lethargy, lack of appetite, and coughing. Some people with swine flu also have reported runny nose, sore throat, nausea, vomiting and diarrhea. This is essentially the same presentation seen in patients during the traditional flu season (October to March). Keep in mind that you CANNOT get swine flu from eating pork. Eating properly handled and cooked pork and pork products are safe. Cooking pork to an internal temperature of 160°F kills the swine flu virus as it does other bacteria and viruses (such as trichinosis).

To diagnose swine influenza A infection, a respiratory specimen would generally need to be collected within the first 4 to 5 days of illness (when an infected person is most likely to be shedding virus).

On arrival at a residence where the patient or family informs you that the patient has cold/flu symptoms, use standard universal precautions.

Assessment of "Influenza-Like Illness" (ILI)

- Begin the primary survey at 6 feet and
- Ask if the patient has had a fever (greater than 100.0° F or 37.8° C), AND cough or sore throat
- The patient may additionally report lack of appetite or runny nose, nausea, vomiting, and diarrhea.

Special Patient Population Considerations:

- Respiratory disorders: including Asthma, Emphysema and other pulmonary diseases
- Cardiac disorders
- Immuno-compromised
- Recent illness
- Pediatrics and the elderly

What to do when suspecting an ILI:

- Before moving closer than 6 feet,
- Use PPE for respiratory droplet precautions (fit-tested N95 respirator, disposable gloves and eye protection).
- After contact with patient clean hands thoroughly with soap and water or alcohol-based hand gel.
- After caring for the patient cleanse the vehicle for respiratory droplet contamination.

Additionally, placing a surgical mask or oxygen face mask on the patient will help to reduce the potential for person to person transmission

Wash your hands immediately (for at least 20 seconds) after patient contact. Use the waterless cleaners in the ambulance or soap and water at the hospital. **DO NOT WAIT TO GET BACK TO THE STATION TO CLEAN YOUR HANDS.**

If transporting a potential or confirmed patient with swine flu, here are a few recommendations:

- Clean the side rails of the ambulance stretcher with the Sanicloth wipes. If you do not have Sanicloth wipes use the bleach (1:10 concentration) in the spray bottle.
- Clean the EKG monitor cables and the finger probe and cables for the pulse oximetry.

- Ventilation systems in ambulances should be utilized to minimize the chance of re-circulation of air within the patient compartment. This is important to reduce the exposure of members to viruses from patients, especially if there is a possibility that the patient has the swine influenza viruses.
- Open the front windows of the ambulance. Turn the exhaust fan on in the patient compartment. This will facilitate the flow of air through the ambulance, and will not allow air to sit stagnant in the patient compartment. Also set all ventilation in the ambulance to draw air in from the outside, **DO NOT RE-CIRCULATE AIR**. Recirculation of the air will increase exposure of the virus.

Wear your mask during transport

If a patient has signs of flu/cold and fever, notify the receiving hospital ASAP. Ascertain if the patient has traveled to Mexico recently or has been in the company of someone who has just returned from Mexico or one of US states that has a confirmed case of the virus. Communicate this to the receiving hospital; they may want to place the patient into isolation upon arrival at the emergency department. If you cannot raise the emergency department for whatever reason, on arrival at the ED, one member should stay with the patient, outside in the ambulance, with the doors open, and the other should go inside and inform the charge nurse. Contact Dispatch to notify the EMS Division Chief of suspected or confirmed case of H1N1.

Based on the swine influenza viruses isolated from humans, the medications most effective to treat the illness are oseltamivir or zanamivir (Tamiflu and Relenza). Tamiflu is a flu prevention and treatment medicine belonging to the class of neuraminidase inhibitors. It is widely prescribed and used in influenza cases, as it does not simply relieve symptoms, but attacks the virus causing the illness.

The CDC recommends the use of oseltamivir or zanamivir for the treatment of infection with Swine influenza viruses.

For more information, consult the official website for receiving swine flu information <http://www.cdc.gov/swineflu/>

Prepared by:

Chief, EMS Division

Date

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UNIT 6: EQUIPMENT

UNIT OBJECTIVE

Evaluate the equipment necessary to accomplish the defined Special Operations program mission.

ENABLING OBJECTIVES

1. *Identify the impacts that a maintenance program will have on the management of a Special Operations program.*
 2. *Identify the types of records that are required for specialized equipment and the reason to keep equipment records.*
 3. *Determine the impact of the purchase/use of new technology on the overall organization.*
-

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NOTE-TAKING GUIDE

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**UNIT 6:
EQUIPMENT**

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UNIT OBJECTIVE

Evaluate the equipment necessary to accomplish the defined Special Operations program mission.

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ENABLING OBJECTIVES

- Identify the impacts that a maintenance program will have on the management of a Special Operations program.
- Identify the types of records that are required for specialized equipment and the reason to keep equipment records.
- Determine the impact of the purchase/use of new technology on the overall organization.

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**Activity 6.1
Critical Equipment
Discussion**

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Activity 6.1

Critical Equipment Discussion

Purpose

To discuss how particular pieces of equipment are or have been critical to the core mission of a Special Operations program in your own agency.

Directions

1. In your table groups, take about 10 minutes to discuss equipment purchases you have made for the Special Operations Team in your home community and how a particular piece of equipment was critical to the identified mission.
2. Come to consensus within your group on one piece of equipment that you consider the most important to your Special Operations program. Be able to articulate what makes this piece of equipment so important.
3. For the next 10 minutes, each group will share its choice and a brief explanation of why your group chose this particular piece of equipment with the class.

Later in this unit, you will evaluate the full impact of owning a piece of equipment on your Special Operations program, including the impact of the purchase on the organization, the impact of the maintenance and overhead costs, the impact of training required, and finally, requirements for removal or retirement of the equipment.

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NOTE-TAKING GUIDE

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RECORDKEEPING AND REGULATORY REQUIREMENTS

- Laws, regulations, and standards
- Maintenance
- Calibration
- Cost/Usage justification

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RECORDKEEPING AND REGULATORY REQUIREMENTS (cont'd)

- Liability
 - Lifesaving equipment
 - Initial purchase
 - Maintenance issues
- Documentation
- Removing or retiring equipment
- Justification or impact analysis

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EQUIPMENT NEEDS AND IMPACT

- Mission and technology dependent
- Organizational impact
- Overall team budget
- Overhead (indirect costs)

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**Activity 6.2
Equipment Maintenance
Program**

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Activity 6.2

Equipment Maintenance Program

Purpose

To identify the impacts that a maintenance program will have on the management of the Special Operations Team.

Directions

1. The class will be divided into their existing small groups. In your table groups, take about 10 minutes to discuss equipment for the Special Operations Team in your home community that have presented maintenance challenges.
2. The group will select one piece of equipment that presents a maintenance challenge and offer suggestions on how to overcome those challenges.
3. You will have 20 minutes to discuss your equipment challenges and identify your solutions for discussion in class.
4. At the end of the 20-minute preparation time, each group will select a spokesperson and each group will present its findings to the rest of the class.

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NOTE-TAKING GUIDE

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RATING AND COMPARING EQUIPMENT

Factors influence the decision to purchase:

- Mission
- Cost
- Manpower requirements for operation
- Training/Competency requirements
- Size/Portability/Space
- Politics

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RATING AND COMPARING EQUIPMENT (cont'd)

- Methods for evaluating equipment
- Conduct "market research"
- Decisions guided by:
 - Mission statement
 - Regulatory guidance
 - Needs assessment

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FEDERAL EMERGENCY MANAGEMENT AGENCY'S RESPONDER KNOWLEDGE BASE

Web site: www.rkb.us

- Authorized Equipment List (AEL)
- Standardized Equipment List (SEL)
- Funding sources/grants

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**TRUE COST/IMPACT OF
EQUIPMENT**

Considerations:

- Life expectancy
- Affects on existing programs
- Operating expenses/Software updates
- Maintenance and service
- Operator training/Competency testing

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**TRUE COST/IMPACT OF
EQUIPMENT (cont'd)**

Maintenance schedule:

- Manufacturer's recommendations
- Monitored and audited periodically
- Maintenance abilities
 - Quality assurances
 - Expense

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**TRUE COST/IMPACT OF
EQUIPMENT (cont'd)**

Training:

- Learning curve
- Knowledge audits and evaluations
- Determine the gap analysis
- Develop training program
- Incorporate into current schedule
- Maintain competencies

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**Activity 6.3
Equipment Solutions**

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SUMMARY

- **Equipment list/inventory**
- **Recordkeeping**
- **Regulatory requirements**
- **Equipment needs**
- **Rate and compare available equipment**
- **Determine the true cost/impact of equipment**
- **Remove or retire equipment**

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Activity 6.3

Equipment Solutions

Purpose

Given Central City, evaluate the organization's ability, with regard to equipment, to meet the mission of Special Operations.

Directions

In this activity, you will create a proposal to update the Central City apparatus and equipment cache to support your Special Operations Program. In completing these steps, you will also create the equipment-related documentation required for submittal as backup material for your final presentation. Refer to Handout 4-1: Final Presentation Format and Presentation Package for the recommended documentation format.

As you gather the required information, you may need to do some research. Equipment information relevant to market research would include detailed descriptions, technical data, initial purchase costs and ongoing costs, regulatory and standards compliance information, possible funding sources, etc. You may use any resources available to gather the information. Your sources may include, but are not limited to, Internet resources such as FEMA's Responder Knowledge Base at www.rkb.us; the knowledge and experience of your group's members, classmates, and instructors; the reading material in your Student Manual (SM), your Central City CEMP manual, and other classroom resources; and resources from your own agency.

When doing research for your home agency, you would likely want information that is as accurate as possible, especially cost information. While it is important to make the effort to provide realistic cost information for the equipment you propose, if actual cost information is difficult to find, it is okay to make an informed guess at an estimated cost. Additionally, the **focus** of this activity should be on careful consideration of all of the factors involved in deciding what equipment is appropriate for your Special Operations program and, ultimately, on creating an argument for why your program should be funded. To that end, feel free to fictionalize elements of your proposal as you see fit. Just be sure to address the essential elements of a defensible program, including a justification for the need for the equipment, a proposed budget and funding sources, and a plan for the maintenance and training required.

Part 1: Inventory of Central City Equipment and Apparatus

1. Refer to Appendix E: Fire Service in the Central City CEMP and the equipment list addendum.
2. Review the "Central City Fire Apparatus and Staffing Levels" listed in Appendix E, with attention to apparatus used in Special Operations. Create a list of apparatus in the current

Central City Fire Department (CCFD) that are relevant to Special Operations capability. Take note of any relevant apparatus available to the CCFD through mutual or automatic aid from neighboring agencies.

3. Inventory the combined equipment list for Squad 1 and HAZMAT 1.
4. Create two separate lists which sort the equipment into items that belong on Squad 1 and items that belong on HAZMAT 1.
5. Indicate in your inventory lists which equipment items are outdated and ready for either retirement or replacement due to age. Keep in mind that this may be dictated by relevant regulations, standards, or manufacturer's recommendations. For equipment that should be retired, indicate the estimated cost to retire or dispose of the equipment item, if any.

Part 2: Capability Assessment

6. Refer back to Activity 4.3: Strategic Analysis Session. During this activity, your group developed a list of specialized services that would be needed to address the risks to the Central City community.
7. Now consider the apparatus and equipment inventory you just created. Consider what equipment and apparatus would be needed to fill the capability gap described in your assigned project in Activity 4.1.
8. Create a "wish list" of the kinds of apparatus and equipment you would purchase to replace any retired equipment, or to expand the CCFD's Special Operations capability.

Part 3: Evaluating Equipment for Purchase

Recall that many factors will influence the decision to purchase or acquire specialized equipment, such as your agency's overall mission and the mission of your Special Operations Program; cost; training/competency requirements; size, portability, and space requirements; manpower requirements for operation; and politics.

The box method for making a purchasing decision, which you used in Activity 5.1: Competing Financial Priorities, is a way to evaluate whether or not a piece of equipment is appropriate for your particular Special Operations Program. You may refer back to the questions in the box method as you evaluate the items on your wish list. Additionally, this unit covered several criteria that can be used to assess the true cost of ownership of a piece of equipment and its overall impact on an organization. Whatever method you use to evaluate a purchase, be able to articulate why a recommended item is appropriate and beneficial to your program, and be aware of how ownership of that piece of equipment will impact your organization.

The following are components of a full assessment of the impact that owning a piece of equipment may have on an organization, along with some of the questions that should be considered. You may refer to these questions and the SM reading for this unit as you make your purchasing decisions.

9. **Maintenance Program.** Describe any requirements for a maintenance program associated with each recommended purchase. How long is this piece of equipment likely to remain in operation? Consider emerging technologies. Is this piece of equipment likely to be obsolete in a few years? If so, what will replace it? Is there a maintenance schedule recommended by the manufacturer? Is there a maintenance agreement, and if so, what is the associated cost?
10. **Recordkeeping Requirements.** Consider the extent to which records need to be maintained for each equipment item. Consider any legal implications and the overall level of effort required to maintain records. In a situation where recordkeeping is not mandated, consider whether or not it is important to maintain records for the purpose of gathering information on the cost-effectiveness of a piece of equipment over time.
11. **Training Program.** For any new equipment purchases, consider initial and ongoing training requirements. What is the extent of prerequisite knowledge or level of competency required to operate the equipment? Are there any regulatory requirements for training? How might the training be made available to personnel? Would training on the new piece of equipment be provided by a vendor, through partnership with another agency, or would it be developed and provided by your own agency?
12. **Total Cost of Ownership.** Evaluating the total cost of ownership is an important part of the overall decision whether or not to purchase an item. Consider the following factors, including
 - initial purchase price, including the purchase prices of any accessory items, and consideration of the expected life of the equipment;
 - maintenance costs, including operating expenses, annual testing/maintenance contracts, replacement parts, etc.;
 - cost of expendable supplies;
 - training/competency costs;
 - insurance costs;
 - storage costs;
 - removal or retirement costs; and
 - any other costs.

You may use the "New Equipment Cost Analysis Worksheet" on the following pages to assemble the total cost of ownership information listed above.

After considering all of these factors for each piece of equipment on your wish list, you should have a new list of essential equipment that your group has decided to recommend for your program.

Part 4: Proposal/Executive Summary

Summarize your work in a report. This report should give a justification for the need for the equipment, an overview of the costs, including costs associated with plans for the maintenance and training required, and a proposed budget and funding sources. This report will become part of your Project Overview, and the essential points will become part of your Executive Summary for your final presentation and backup material. Refer to the written reports your group created in Activity 3.1: Applying Laws and Standards--Scenarios, and Activity 5.1: Competing Financial Priorities as models to write this report.

Part 5: Equipment Budget

For the equipment your group proposes for purchasing, include the "cost of ownership" information listed in Part 3 as a spreadsheet or list, as part of your program's proposed budget, to be submitted as part of your backup material for your final presentation.

Activity 6.3 (cont'd)

New Equipment Cost Analysis Worksheet

Name of the selected equipment to be evaluated: _____

Expected life cycle of the item: _____

	Description	Costs
Initial purchase cost		_____
Accessory items	_____	_____
	_____	_____
	_____	_____
	_____	_____
Expendable supplies	_____	_____
	_____	_____
	_____	_____
	_____	_____
Maintenance costs	_____	_____
	_____	_____
	_____	_____
	_____	_____
Training costs	_____	_____
Insurance	_____	_____
	_____	_____
Other costs	_____	_____
	_____	_____
	_____	_____

Total acquisition cost of the project equipment item _____

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EQUIPMENT IN A SPECIAL OPERATIONS PROGRAM

Equipment in a Special Operations Program is the key to the abilities of the team. Properly selected and maintained equipment will often make the difference in life or death to victims of a disaster. Of course, equipment is virtually useless without well-trained and efficient operators of that equipment. This places a huge burden on the Special Operations Program Manager. This unit will outline the many facets of an equipment program in a Special Operations Team.

RECORDKEEPING IN A SPECIAL OPERATIONS PROGRAM

One of the most important aspects of any lifesaving profession is maintaining proper recordkeeping procedures on all of the equipment. There are many influences on the Special Operations Program Manager that will affect the type of records required and the record management system.

Often, the requirements to maintain specific records are mandated by laws or specific regulations. This is especially true of lifesaving equipment and medical equipment that requires specific certification tests to remain in use.

Additionally, professional standards like the National Fire Protection Association (NFPA) may mandate the maintenance of records that are associated with lifesaving equipment. A great example of this is life safety rope that is used in high angle rescue. The rope should be inspected at purchase, as well as after any use. Rescue rope should only be used once for rescue. Training ropes should be inspected before use and each use should be documented. Any equipment failure should also be documented.

Some of the specialized equipment that Special Operations Teams use is so mission critical that it must be regularly tested for accuracy. A great example of this is the atmospheric monitoring equipment that is used by confined space and Hazardous Materials Teams. To evaluate if it is ready for service, it must be "calibrated" on a periodic schedule, according to the manufacturer's recommendations. Additionally, best practices recommend that it should also be tested with a calibration gas to assure that it is working properly prior to use. And because something could go wrong during use and the operator may not know it, it should be tested with the calibration gas after use to confirm that it was working properly. All of these tests should be recorded and maintained as part of the team recordkeeping process.

Finally, keeping track of the number of uses and the in-service time, the Special Operations Program Manager can evaluate the cost effectiveness of the equipment. Identification of poorly performing equipment is a critical piece of the Special Operations Program Manager's responsibilities.

DETERMINING EQUIPMENT NEEDS

Special teams are heavily dependent upon advanced and technical equipment that is rarely used outside of the scope of a large-scale specialized emergency event. This equipment in the hands

of highly trained and skilled personnel has the ability of "changing the odds" in the race for life. Additionally, equipment failures can have disastrous effects on the responders.

Proper selection and acquisition of the appropriate Special Operations equipment is a critical mission of the Special Operations Team Manager. Many factors will affect the selection of that equipment, including how big it is, how much it weighs, what jobs will it do, and specifically what is required for the mission. For example, it would be nice to use a motorized crane for all high angle rescues. However, cranes have a number of issues, including mobility, cost, size, weight, and setup time. Rescuers may elect to use ropes instead. Part of the mission of the Special Operations Program Manager is to evaluate all of the options and select the most appropriate for the mission of the team.

Every piece of equipment that is selected for use has an impact on the team. Equipment has a cost of acquisition, maintenance, repair, training of staff, and storage. With limited budgets, the Special Operations Program Manager cannot afford to make a mistake in equipment selection and use. Additionally, the Special Operations Program Manager must realize that every piece of equipment has costs that go beyond the initial purchase price. For example, maintenance, training, storage, and replacement costs must be figured into the overall team budget. We refer to these costs as "overhead" costs.

RATING AND COMPARING AVAILABLE EQUIPMENT

The Special Operations Program Manager has the responsibility to evaluate specific types of equipment for suitability in the Special Operations program. Many factors will influence the decisions to purchase or acquire specialized equipment. Some of the factors that the Special Operations Program Manager will consider include the team's mission, cost of the equipment, training requirements, size, portability, and manpower requirements for use.

Additionally, equipment selection will become political. Members of the governing body may perceive that a specific piece of equipment is essential to the team. There may be many reasons for the bias of the political decisionmaker, but is often done in the absence of a thorough evaluation. The Special Operations Program Manager must conduct this evaluation and be prepared to present the facts to the governing body. Many Special Operations Teams have purchased equipment for the wrong reasons and the cost of the acquisition and maintenance of those misguided purchases act as a drain on all of the team's resources. Additionally, many times the Special Operations Program Manager may be influenced by the salesperson of the equipment. Vendors and sales staff often do not fully disclose all of the limitations of the equipment. Without thoroughly evaluating the need of the team against the ability/performance of the equipment, the manager may be depleting resources on something that will have little or no benefit to the team.

Equipment Documentation

Lifesaving equipment requires thorough documentation due to liability concerns. Documentation of events like the initial purchase and acceptance tests, training records, and demonstration of competency in using the equipment are essential items in the liability reduction effort. Other events that should be documented include annual testing, equipment failures, and less than desirable outcomes experienced with the equipment.

RATING AND COMPARING AVAILABLE EQUIPMENT

Prior to selecting and purchasing special equipment for a team, the Special Operations Program Manager must conduct "market research." Mission statements, regulatory guidance, must guide the selection of the equipment with the assistance of a thorough "needs assessment."

Too often, teams are influenced by the "wow factor," and purchase equipment and software without a thorough evaluation process. The Special Operations Program Manager must develop a system or matrix to compare and evaluate equipment, systems, and procedures.

DETERMINING THE TRUE COST/IMPACT OF EQUIPMENT

Equipment costs include many factors beyond the initial purchase price. For example, the purchase price must be compared to the expected life of the equipment. A bio-detection system that costs over 100,000 dollars and will be obsolete within 2 years may not be a great deal. However, the same money may purchase a vehicle with a life expectancy of 20 years.

The manager must also consider the effect of new equipment on other existing programs. Many times, space is limited on response vehicles. Sometimes, something must be removed from the vehicle to make room for new equipment. The manager must evaluate the impact of removing the old piece of equipment as well.

Much of the technical equipment that special teams use is computer based. The manager must also consider the cost of software updates required to keep the technology running. Expendables, supplies, and maintenance contract costs must be considered as well. Finally, the manager must also consider the "human factor." All of the technology is designed to support the responder, but we often forget that the responder must be properly trained on the equipment to achieve the greatest effectiveness. To evaluate the effectiveness, the manager should conduct annual competency evaluations of the response staff.

Implementing a Maintenance Schedule

A critical component of keeping technical equipment operating efficiently is an effective maintenance program. Any maintenance program must be implemented based on the manufacturer's recommendations. Maintenance and inspection must be performed on a regular schedule. Because of routine apathy, the Special Operations Program Manager must conduct

audits periodically to assure that the required inspections and maintenance are being properly performed.

Also important for the Special Operations Program Manager is the evaluation of ability of the maintenance staff or contractor. This is truly a quality assurance program of maintenance. Many times preventative maintenance procedures are ignored if the equipment looks new and hasn't been used. Maintenance costs must also be monitored and evaluated. Maintenance agreements may be expensive, but they offer many benefits by proving for the required maintenance and other benefits including loaner units during maintenance, and preferential response if a unit goes down.

Implementing a Training Schedule

Part of a piece of equipment's overhead is the initial and recurrent training that is required of the operators. Sometimes the overhead is extensive because it will require the operator to learn a science as well as the operation of the equipment. A great example is a piece of equipment like a gas chromatograph/mass spectrometer (GC/MS) like the Hapsite GC/MS. Operation of the equipment is fairly straightforward, but understanding the science requires a fairly extensive knowledge of chemistry. While a person could operate the equipment, they would not be able to troubleshoot the equipment or even identify if it was giving inaccurate information.

The Special Operations Program Manager must conduct a knowledge audit of the required operator skills to develop a training management plan. The Special Operations Program Manager must then conduct an audit of the knowledge base of the incumbent workforce, through a needs assessment process. Once the knowledge audit and needs assessment are completed, the Special Operations Program Manager can construct a gap analysis to assist in preparing a plan of instruction. The Special Operations Program Manager is then required to build the needed training plan into the master training schedule, which would also include initial training, recurrent training, and annual competency evaluations of the staff.

REMOVING OR RETIRING EQUIPMENT

Removing or retiring a piece of equipment from service is as critical to the performance of the team as implementing new equipment. The Special Operations Program Manager must evaluate the impact of removing a piece of equipment from service. Additionally, the reasons for retiring a piece of equipment must be thoroughly documented. Questions that must be answered include; "Why is it being retired?," and "How will it be replaced?" This documentation is critical in the liability reduction effort.

Once these questions have been answered, the Special Operations Program Manager must evaluate the impact to the team and mission. If the team is "typed," how will removing or retiring the equipment affect the typing? Therefore, the Special Operations Program Manager must conduct an impact analysis of the action, including how it will affect the budget, training, and certifications of the team.

UNIT 7: STAFFING

UNIT OBJECTIVE

Evaluate an organization's staffing capability to meet the mission of Special Operations.

ENABLING OBJECTIVES

- 1. Identify personnel requirements.*
 - 2. Develop a staffing plan.*
 - 3. Identify requirements for sustainment of personnel.*
-

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NOTE-TAKING GUIDE

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**UNIT 7:
STAFFING**

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UNIT OBJECTIVE

Evaluate an organization's staffing capability to meet the mission of Special Operations.

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ENABLING OBJECTIVES

- Identify personnel requirements.
- Develop a staffing plan.
- Identify requirements for sustainment of personnel.

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TYPES OF STAFFING

Staffing--Personnel on a Special Operations Team may come from various sources:

- Career staff
- Paid oncall
- Volunteer
- Combination
- Contract

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TYPES OF TEAMS AND DEPLOYMENT

Special Operations Teams can be staffed in a variety of ways

- Cross staffed
- Dedicated companies
- Dedicated local teams and satellite teams
- Regional response teams

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RESOURCE TYPING

One of the five components of National Incident Management System (NIMS)

- Tracking
- Identify capabilities
- Efficient and effective response
- Requests and ordering

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WHAT IS RESOURCE TYPING?

- **Categorizes and describes resources by capacity and capability.**
- **Has measurable standards.**
- **Resource users at all levels use these standards to identify and inventory resources.**

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PURPOSE OF RESOURCE TYPING

- **Enhances emergency readiness**
- **Standard definitions**
- **Allows emergency management to:**
 - **Identify**
 - **Locate**
 - **Request**
 - **Order**
 - **Track**

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PROS AND CONS OF TEAMS AND DEPLOYMENT MODELS

- **Cross staffed**
- **Satellite companies**
- **Dedicated teams**
- **Regional deployment**

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TRAINING

- **Formal instruction activities based on specific objectives**
- **Training differs from certification**
- **Certification differs from licensure**
- **Costs of training**
- **Maintaining training requirements**

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CREDENTIALING

- **No universal credentialing system**
- **Proposed credentialing criteria**
 - **Education**
 - **Physical/Medical fitness**
 - **Certification**
 - **Training**

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STAFFING CHALLENGES

- **Your staffing model dictates the level of service you are able to give your community.**
- **You must identify and fill the needs of your community, despite limits placed on staffing.**

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**STAFFING CHALLENGES
(cont'd)**

- Geographic location of teams
- Staffing schedules
- Overtime and backfill required to maintain essential services

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**STAFFING CHALLENGES
(cont'd)**

- Specialty pay
- Union negotiations
- Station bidding--assigned versus seniority position

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MAINTAINING COMPETENCY

Training

- Regulations dictate minimum competency levels
- Maintenance of training
- Documentation of training

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COMPETENCY MAPPING

Competency mapping process:

- Job Task Analysis (JTA)
- Competency-based job description
- Factors to evaluate performance
- Performance evaluation areas that need resources--training, personnel, equipment, and/or funding

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**Activity 7.1
Staffing and Training
Solutions**

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Activity 7.1

Staffing and Training Solutions

Purpose

Given Central City, evaluate the organization's ability, with regard to staffing, to meet the mission of Special Operations.

Directions

1. Review the risk assessment you conducted in Unit 4: Community Risk Assessment and Jurisdictional Analysis, and the memo from the Central City fire chief on the need for a particular Special Operations capability in Central City.
2. Consider what your Special Operations program will really be asked to provide to the community.
3. Use the questions on the following worksheet to develop a plan for staffing and training for your Special Operations program in Central City.
4. Your proposal should include a primary option and one or two alternate options for staffing, as well as descriptions of manpower requirements, training requirements, and labor cost estimates.

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Activity 7.1 (cont'd)

Staffing and Training Solutions Worksheet

Staffing Requirements

1. How many personnel will be assigned to the unit(s)?
 - a. Full-time.
 - b. Part-time.
 - c. Volunteer.
 - d. Oncall.
2. What are the staffing requirements to operate safely? Is there a gap associated with current staffing levels?
3. Is there an ability to recall personnel? (What is the timeframe for response? How many oncill and volunteer assets do you have?)
4. Has there been any mutual aid, including regional response?
5. Has there been any cross training within the jurisdiction?

Training Program

1. Identify personnel requirements (knowledge, skills, and abilities (KSAs)) for the functions required for your Special Operations Program. Consider any training gaps generated by the purchase of new equipment.
2. You may use any available resources to locate existing programs geared toward your project:
 - a. The current requirements (standards, regulations, or laws) requiring this training.
 - b. Certifications or licenses associated with the training.
3. Establish the training methodology to be used for this training program. Your task is to develop a training matrix outlining:
 - a. Who is to be trained.
 - b. Budget considerations.

- c. Duration and frequency.
- d. Certification/Licensure requirements.
- e. Sustainability of this training program.

Proposal/Executive Summary

Summarize your work in a written report. Incorporate the essential points into your Executive Summary.

NOTE-TAKING GUIDE

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SUMMARY

- Staffing types
- Types of teams
- Resource typing
- Deployment models
- Staffing challenges
- Maintaining competency
 - Competency mapping
 - Competency versus proficiency

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TYPES OF STAFFING

Personnel that staff Special Operations Teams may come from various sources. They may be career staff, paid oncall, volunteer, contractors, or a combination department.

Types of Personnel

Career Staff

These personnel are the full-time staff that are assigned to specific daily duties. They may be assigned to the Special Operations Teams as a full-time member or may be crossed staffed with other apparatus and responsibilities.

Paid-on-Call

Paid-on-call firefighters provide coverage for days, nights, and weekends. This is a part-time position that responds to alarms or requests for services as directed. Paid-on-call personnel may be activated by pager or other communications devices. They may receive compensation based on a set rate either by call volume or flat rate per month.

Volunteer

The term "volunteer" contrasts with paid rescue personnel who are full time, working organized shifts, usually based in a centrally-located facility. The term "volunteer" may also be used in reference to a group who may have other occupations when not engaged in occasional firefighting.

Combination

Some volunteer agencies may operate as part of a combination system, where paid firefighters provide emergency services as well. In this way, a station can be regularly staffed for rapid response with apparatus, and the volunteers provide supplementary staffing and/or staffed apparatus before, during, and after an incident, or while the paid staff are out of service doing training.

Contract Personnel

This category is used when personnel work for one agency, but when needed for a large-scale response that requires multiple agencies to work for one organization under contract and that organization covers all of the salaries, benefits, and response costs of the incident.

Types of Special Operations Teams

Many different types of teams have been started since the events of 2001. These teams have been staffed in various ways to meet the needs of the community. Different types of teams include

- Dedicated local teams.
- Regional response teams.
- Dedicated companies.
- Cross staffed.

Regional response teams may be made up of several or a single organization and have responsibilities for a larger geographic area. When made up of multiple organizations, they may use an assembly point to stage personnel, vehicles, and resources before, during, and after the response.

In a dedicated company, personnel are specific to their response capabilities. For example, a Hazardous Materials or Rescue Technician assigned to a unit will have specific duties to that unit.

Dedicated local teams are assigned to a single geographic area with single responsibilities at the local level.

In a cross-staffed team, personnel are trained to handle multiple-response duties. For example, engine company personnel may also be trained as driver/operators as well as hazmat technicians.

DEPLOYMENT MODELS

Satellite Companies

Based on the geographic size of a locality and/or region, organizations may set up satellite companies throughout. This serves several purposes. It places eyes on target early in the incident. This places specialty personnel onscene that can start the size up process early. It does not place all assets onscene at once. It allows for the determination whether to call for additional resources. A satellite location can be a rally point, or a site that all resources can report to be staged (base camp). This site can then be a rehabilitation site for long-term incidents (campaigns).

Regional Deployment

Upon notification by any jurisdiction of a potential or actual regional emergency that would require any Special Operations type team, a communication platform to support the coordinated response of the participating agencies will be established. Initial actions should be to coordinate with other agencies to share information regarding the regional emergency. It is required to

provide periodic situation reports via the Incident Commander (IC) of the affected jurisdictions through designated communications channels.

Continuing actions should include information sharing, monitoring and tracking of trends, and continuous evaluation of needs. The demobilization process will follow Incident Management System (IMS)/Incident Command System (ICS) accepted practices. The after-action critique should include all emergency response agencies.

Cross Training

Cross training is used in almost any position in emergency response. There are interdepartmental and intradepartmental cross-training opportunities as well that can improve the workflow between departments. For example, it may make sense to cross-train police officers to work in a hazardous environment to process a crime scene. Conversely, it may be practical to train hazmat technicians to do crime scene processing.

Cross training can also take the form of "job rotation" which involves an extended period at a different job with higher responsibilities. This can be highly beneficial in that it creates a more knowledgeable employee. Employees may also gain a higher level of confidence in doing the job and consequently may become a more motivated leader.

Dedicated Teams

Since September 11, 2001, there has been an expansion of the number of Special Operations Teams throughout the country and along with the expansion of the numbers of teams, so has the equipment types and technologies grown. Dedicated teams can present many financial challenges, however.

TRAINING

What is Training

What is training? Formal instructional activities based on specific objectives designed to prepare an individual with the core knowledge, skills, and abilities to proficiently perform those tasks necessary to complete an operation.

National Fire Protection Association Standards

National Fire Protection Association (NFPA) standards typically outline the training competencies required for the various disciplines within the realm of Special Operations.

The Authority Having Jurisdiction

The authority having jurisdiction (AHJ) may have specific additional requirements tailored to their needs.

National Programs

National Programs, (Center for Disaster Preparedness, Counter Terrorism Operations Support, Energetic Testing Materials Center, Federal Law Enforcement Academy, etc.) all may have specific training objectives and requirements.

Occupational Safety and Health Administration

OSHA has specific requirements for different jobs/tasks often associated with the operations within Special Operations Programs.

Types Vary with Need

- didactic;
- psychomotor;
- combination; and
- evaluation/competency based skills assessment.

Training Differs from Certification

Training may be offered through various organizations; some offer certification, others do not.

Certification often granted by the AHJ.

- Often require validation of competencies through testing or evaluations.
- May require periodic recertification hours (Paramedic, Emergency Medical Technical (EMT), Inspectors, advanced cardiac life support (ACLS), etc.) to ensure that abilities do not stagnate.

No Universal Certification Titles Exist

State Associations, NFPA, Pro-Board, International Fire Service Accreditation Congress (IFSAC) all offer individual spin on certifications to achieve place with the market.

Titles Vary by Jurisdiction

The National Integration Center (NIC) offers one of the best templates for job titling within Special Operations.

(See **Resource Disc** for examples: Federal Emergency Management Agency (FEMA) (2006) NIC Credentialing System Job Titles-SAR and FEMA (2007) NIC Credentialing System Job Titles-Fire and Hazmat.)

Certification Differs from Licensure

Legal designation granted by the AHJ stating that someone has met the necessary legal requirements to function on a job title.

Does not necessarily mean that they have the skills and/or abilities.

Example: Registered Nurse (license) compared to Paramedic (certification).

Training Costs--What is Truly the Cost?

Direct Financial Cost

- Initial materials, props, equipment.
- Maintenance and sustainability.
- Aging, technology changes.
- Expenses associated with instructors.
- "Built in cost" associated with purchases.

Indirect Costs

- Training backfill costs (overtime, out of class pay, etc).
- Travel, lodging, per diem.
- Personal time and commitment.
- Efficiency and productivity disruptions.

Consistency

- Attendees getting the same training.
- Train-the-Trainer (T-t-T).
- Instructor abilities/inabilities.
- The inability to be a 'prophet in your own land.'
 - Local instructors not effective, everyone knows them.
 - Outsider, "the best thing that ever happened."

Maintaining Training Requirements

- Scheduling (cycles, who is included, etc.).
- Expense.
 - Do you use outdated items?
 - In-service stock from inventory?
 - Real-life situations.
 - Meet established standards (for example, NFPA 1403, *Standard on Live Fire Training Evolution*).

Practice as you would play, reduce administrative allowances.

CREDENTIALING

National Integration Center is Developing a National Credentialing System

NIC is developing a national credentialing system that will help verify, quickly and accurately, the identity and qualifications of emergency personnel responding to an incident. The National Emergency Responder Credentialing System will document minimum professional qualifications, certifications, training, and education requirements that define the standards required for specific emergency response functional positions.

(The Student **Resource Disc** has examples of proposed credentials: FEMA (2006) NIC Credentialing System Job Titles-SAR and FEMA (2007) NIC Credentialing System Job Titles-Fire and Hazmat.)

Criteria for Various Job Titles

The working groups have identified criteria relating to education, training, experience, physical/medical fitness, certification, and licensing as standards and baseline criteria for various job titles associated with the response world. The key components are as follows:

Education--the formal instruction based on a curriculum that prepares an individual with the core knowledge and skill for entry into a discipline and for performing a job function.

Training--the instruction and/or activities that enhance an individual's core knowledge, increases skill sets and proficiency, and strengthens and augments abilities.

Experience--the time required in a job function to attain proficiency in applying knowledge, skills, and abilities and is measured from the time that individual is "certified."

Physical/Medical fitness--physical and medical considerations that, when applied, help to ensure safe performance in risky environments.

Certification--a designation granted by the AHJ that an individual has met the requirements.

Licensing--legal designation granted by the AHJ indicating that a person has met the legal requirements to function in a specific job title.

This is an example of proposed Credentialing Criteria for a Hazardous Material technician as taken from: http://www.fema.gov/pdf/emergency/nims/firehazmattiles_051507.pdf

Example of Proposed Credentialing Criteria

Hazardous Materials Technician

Education

Completion of the following courses/curricula:

- ICS-100: *Introduction to ICS.*
- ICS-200: *Basic ICS.*
- FEMA IS-700: *NIMS, An Introduction.*
- NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incident*, Hazardous Materials Technician and/or OSHA 1910.120 Hazmat Technician Training or equivalent basic instruction on responding to and operating in a chemical, biological, radiation, nuclear, and explosives (CBRNE) incident.

- Self-contained breathing apparatus (SCBA) 1910.120 and 1910.134(f) Respiratory Protection.

Completion of the following baseline criteria:

- Hazard mitigation.
- Personal protective equipment (PPE).
- Use of related tools and devices.
- Risk assessment.

Physical/Medical Fitness

Compliance with the following baseline criteria: NFPA 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments*.

- Medical baseline.
- Fitness status.
- Annual medical.
- Work capacity test.

Certification

NFPA 472 the AHJ determines

- Recertification requirements, if any.
- Training.
- First Responder, EMT, or Paramedic including automated external defibrillator (AED) and/or any additional training determined by the AHJ.

STAFFING CHALLENGES

Whether you have a volunteer, paid, or combination department, your staffing model is what dictates the level of service you are able to give to your community. As the Hazardous Materials Special Operations Program Manager, you must be able to identify and fill the needs of the community, given your staffing limitations.

Some factors that place boundaries or limits on your staffing model include

- budgetary constraints restrict number of staff on duty;

- staffing schedules can be dictated by availability of personnel; variable staffing schedules are a challenge;
- geographic location of teams;
- specialty teams and specialty pay;
- union negotiations;
- station bidding;
- overtime and backfill required to maintain essential services; and
- regulations dictate minimum competency levels; training is necessary and must be documented.

The size of the organization sponsoring this team plays an important role in its development and use.

The number of personnel on duty is based on the budgetary constraints of the community they serve. There must be sufficient number of personnel to staff the response unit and then support the incident response. Insufficient numbers may cause legal ramifications. For instance, OSHA states that there must be "2 in and 2 out" when there is an immediately dangerous to life and health (IDLH) atmosphere present. If the team that arrives cannot support this, then offensive operations cannot begin.

Team location can present staffing challenges. When determining if a team should be started, the organizations should look at what is currently available within their region. Are they located in a geographically advantageous and strategic location? If not, what other agencies are available to meet the needs of the community?

An additional challenge is that of scheduling. Today, many of the organizations responding to Special Operations events are staffed by volunteers. While career personnel are available based on a regular schedule, volunteers must work at different hours of the day and may not be available to serve on the specialty teams when they may be needed. An additional challenge is the issue of initial and then subsequent training of volunteers to maintain the level required to meet the needs of the department.

There may be stringent training requirements that are necessary to appropriately staff a team. Because of the added duties that are involved, a "bonus" is paid as an enticement to both draw and keep personnel on these teams. Specialty teams may require some compensation beyond specialty pay also.

Overtime and backfill is sometimes required to maintain essential services. When an incident exceeds the available personnel on duty, additional personnel may have to be "recalled." These personnel fall into two categories but cost the same. Overtime personnel will assist the onscene teams in supplementing the staff already there. Backfill personnel will fill the need to staff positions that are required to meet the "normal business" of the agency.

Maintaining competency is a very big staffing challenge. It is the responsibility of the Special Operations Program Manager to assure that all personnel meet annual refreshment of skills training. This is required by regulation 29 Code of Federal Regulations (CFR) 1910.120(q)(8).

It is the responsibility of the AHJ to document and maintain records of annual training. Employees who are trained to meet government regulations and consensus standards shall receive annual refresher training of sufficient content and duration to maintain their competencies, or shall demonstrate competency in those areas at least yearly. This training may consist of classroom, practical skill sessions, computer-based learning, and/or a combination of all.

The demonstration portion of the competency may be completed during actual on the job, during the practical skill sessions, or both, and must be documented. A statement shall be made of the training or competency, and if a statement of competency is made, the employer shall keep a record of the methodology used to demonstrate competency.

UNIT 8: SELLING YOUR PROGRAM

UNIT OBJECTIVE

Demonstrate the processes required for "selling" or gaining approval of a Special Operations program.

ENABLING OBJECTIVES

1. *Identify the process to achieve approval for a program from a jurisdictional authority.*
 2. *As a group, develop and deliver a presentation to persuade a jurisdictional authority of an essential need that supports a viable Special Operations program.*
-

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NOTE-TAKING GUIDE

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**UNIT 8:
SELLING YOUR
PROGRAM**

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UNIT OBJECTIVE

Demonstrate the processes required for "selling" or gaining approval of a Special Operations program.

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ENABLING OBJECTIVES

- **Identify the process to achieve approval for a program from a jurisdictional authority.**
- **As a group, develop and deliver a presentation to persuade a jurisdictional authority of an essential need that supports a viable Special Operations program.**

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THE PROCESS

Conduct a risk assessment

- **Hazard analysis**
- **Jurisdictional review**
- **Capabilities assessment**
- **Vulnerability analysis**

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SYNTHESIS

- **Develop "backup" materials**
 - **Gap analysis**
 - **Staffing requirements**
 - **Equipment requirements**
 - **Budget/Cost analysis**
 - **Alternatives**
 - **Impact if not funded**
- **Create an "executive summary"**
- **Develop a "resolution"**
- **Be prepared for a presentation**

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SOLUTION

Presentation to the governing body

- **City/County Commission**
- **Board of Directors**
- **Funding Board**
- **Decisionmakers**

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CHALLENGES

- **Funding challenges**
- **Politics**
- **Citizen influences**
- **Internal forces**
- **Others**

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OPPORTUNITIES

- **Value added**
- **Return on investment (ROI)**
- **Moral imperative**

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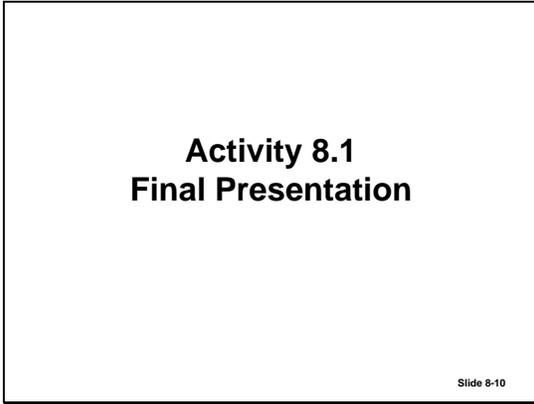
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SUMMARY

- **Each project or program requires research, preparation, and a developed strategy to be successful.**
- **Once developed, your program must be "sold."**
- **"Selling" requires an organized approach.**
- **The Special Operations Program Manager must be prepared to "sell" the program.**

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Activity 8.1

Final Presentation

Purpose

Given an identified Special Operations need within Central City, the student, as a member of a group, will develop a presentation to inform members of the governing body of the need.

Directions

Prepare a presentation to be delivered to your governing body, using the guidelines discussed in this unit. Include in the report that accompanies your presentation, the following components:

1. An executive summary.
2. The program overview and details.
3. A copy of the slide presentation (if used).
4. The background or "backup" material.

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Activity 8.1 (cont'd)

Evaluation Form for Group Presentation

Project or Group Name: _____ **Evaluator:** [] Peer [] Instructor

Please rate the criteria below on the following scale:

- 1- Strongly disagree
- 2- Disagree
- 3- Neutral
- 4- Agree
- 5- Strongly agree

Part 1: Presentation Components

Effectively used applicable regulations and standards to justify its program. _____

Clearly described how the proposed program will address a risk in Central City. _____

Clearly addressed the impact of the proposed program on financial processes. _____

Clearly addressed equipment issues related to its proposed program. _____

Clearly addressed staffing issues related to its proposed program. _____

Part 2: Presentation Format

The group delivered the presentation in a format appropriate for presentations to city government officials. _____

The group was able to effectively defend their justification for their program, or a component of their program, when challenged by the audience. _____

The group effectively used their backup material to support its presentation. _____

Total _____
(40 possible)

Students are graded as part of their group for this portion of the student evaluation. Each student within the group will receive the same grade.

Evaluation Form for Final Presentation Backup Materials

Project or Group Name: _____

Component of Backup Material*	Complete? ** (circle [0 pts] if incomplete; circle [10 pts] if complete)
Resolution (optional) --formal document presented for the agenda	N/A
Executive Summary --one-page overview of the problem and solution	(0 pts) (10 pts)
Project Overview --detailed description of the program and how it solves the identified problem	(0 pts) (10 pts)
Equipment Requirements --detailed description of any additional equipment requirements, including justification; specifications; acquisition, training, and maintenance costs.	(0 pts) (10 pts)
Staffing Requirements --detailed description of the manpower requirements, staffing options, labor costs, and training requirements.	(0 pts) (10 pts)
Budget --spreadsheet summarizing the projected costs of implementing and maintaining the proposed program expansion	(0 pts) (10 pts)
Total Points	

(40 possible)

*For a component to be considered complete, it must be clearly labeled and its content must be consistent with the description in the above form.

** These components are evaluated only on completion, so the assignment options are either 10 points if completed, or 0 points if not completed. A group can receive a maximum of 40 points toward the final grade if all components are completed. If a component is designated as optional, no points are assigned; an optional component has no impact on the grade.

Students are graded as part of their group for this portion of the student evaluation. Each student within the group will receive the same number of points.

Activity 8.1 (cont'd)

Evaluation Form for Group Presentation

Project or Group Name: _____ **Evaluator:** [] Peer [] Instructor

Please rate the criteria below on the following scale:

- 1- Strongly disagree
- 2- Disagree
- 3- Neutral
- 4- Agree
- 5- Strongly agree

Part 1: Presentation Components

Effectively used applicable regulations and standards to justify its program. _____

Clearly described how the proposed program will address a risk in Central City. _____

Clearly addressed the impact of the proposed program on financial processes. _____

Clearly addressed equipment issues related to its proposed program. _____

Clearly addressed staffing issues related to its proposed program. _____

Part 2: Presentation Format

The group delivered the presentation in a format appropriate for presentations to city government officials. _____

The group was able to effectively defend their justification for their program, or a component of their program, when challenged by the audience. _____

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Total _____
(40 possible)

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Evaluation Form for Final Presentation Backup Materials

Project or Group Name: _____

Component of Backup Material*	Complete?** (circle [0 pts] if incomplete; circle [10 pts] if complete)
Resolution (optional) --formal document presented for the agenda	N/A
Executive Summary --one-page overview of the problem and solution	(0 pts) (10 pts)
Project Overview --detailed description of the program and how it solves the identified problem	(0 pts) (10 pts)
Equipment Requirements --detailed description of any additional equipment requirements, including justification; specifications; acquisition, training, and maintenance costs.	(0 pts) (10 pts)
Staffing Requirements --detailed description of the manpower requirements, staffing options, labor costs, and training requirements.	(0 pts) (10 pts)
Budget --spreadsheet summarizing the projected costs of implementing and maintaining the proposed program expansion	(0 pts) (10 pts)
Total Points	

(40 possible)

*For a component to be considered complete, it must be clearly labeled and its content must be consistent with the description in the above form.

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Activity 8.1 (cont'd)

Evaluation Form for Group Presentation

Project or Group Name: _____ **Evaluator:** [] Peer [] Instructor

Please rate the criteria below on the following scale:

- 1- Strongly disagree
- 2- Disagree
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- 4- Agree
- 5- Strongly agree

Part 1: Presentation Components

Effectively used applicable regulations and standards to justify its program. _____

Clearly described how the proposed program will address a risk in Central City. _____

Clearly addressed the impact of the proposed program on financial processes. _____

Clearly addressed equipment issues related to its proposed program. _____

Clearly addressed staffing issues related to its proposed program. _____

Part 2: Presentation Format

The group delivered the presentation in a format appropriate for presentations to city government officials. _____

The group was able to effectively defend their justification for their program, or a component of their program, when challenged by the audience. _____

The group effectively used their backup material to support its presentation. _____

Total _____
(40 possible)

Students are graded as part of their group for this portion of the student evaluation. Each student within the group will receive the same grade.

Evaluation Form for Final Presentation Backup Materials

Project or Group Name: _____

Component of Backup Material*	Complete?**(circle [0 pts] if incomplete; circle [10 pts] if complete)
Resolution (optional) --formal document presented for the agenda	N/A
Executive Summary --one-page overview of the problem and solution	(0 pts) (10 pts)
Project Overview --detailed description of the program and how it solves the identified problem	(0 pts) (10 pts)
Equipment Requirements --detailed description of any additional equipment requirements, including justification; specifications; acquisition, training, and maintenance costs.	(0 pts) (10 pts)
Staffing Requirements --detailed description of the manpower requirements, staffing options, labor costs, and training requirements.	(0 pts) (10 pts)
Budget --spreadsheet summarizing the projected costs of implementing and maintaining the proposed program expansion	(0 pts) (10 pts)
Total Points	

(40 possible)

*For a component to be considered complete, it must be clearly labeled and its content must be consistent with the description in the above form.

** These components are evaluated only on completion, so the assignment options are either 10 points if completed, or 0 points if not completed. A group can receive a maximum of 40 points toward the final grade if all components are completed. If a component is designated as optional, no points are assigned; an optional component has no impact on the grade.

Students are graded as part of their group for this portion of the student evaluation. Each student within the group will receive the same number of points.

Activity 8.1 (cont'd)

Evaluation Form for Group Presentation

Project or Group Name: _____ **Evaluator:** [] Peer [] Instructor

Please rate the criteria below on the following scale:

- 1- Strongly disagree
- 2- Disagree
- 3- Neutral
- 4- Agree
- 5- Strongly agree

Part 1: Presentation Components

Effectively used applicable regulations and standards to justify its program. _____

Clearly described how the proposed program will address a risk in Central City. _____

Clearly addressed the impact of the proposed program on financial processes. _____

Clearly addressed equipment issues related to its proposed program. _____

Clearly addressed staffing issues related to its proposed program. _____

Part 2: Presentation Format

The group delivered the presentation in a format appropriate for presentations to city government officials. _____

The group was able to effectively defend their justification for their program, or a component of their program, when challenged by the audience. _____

The group effectively used their backup material to support its presentation. _____

Total _____
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Students are graded as part of their group for this portion of the student evaluation. Each student within the group will receive the same grade.

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Budget --spreadsheet summarizing the projected costs of implementing and maintaining the proposed program expansion	(0 pts) (10 pts)
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Activity 8.1 (cont'd)

Evaluation Form for Group Presentation

Project or Group Name: _____ **Evaluator:** [] Peer [] Instructor

Please rate the criteria below on the following scale:

- 1- Strongly disagree
- 2- Disagree
- 3- Neutral
- 4- Agree
- 5- Strongly agree

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ASSESSMENT

Planning is Everything

The successful sell of your program is the goal, but planning is the way we meet that goal. The planning process is the nuts and bolts of this course. We have taken several planning steps so far in this course.

So far, you have done research and gathered the following information:

- gap analysis;
- equipment requirements;
- staffing requirements;
- budget/cost analysis;
- alternatives; and
- impact if not funded.

You've done the assessment. You've determined the risk profile of your community. You have articulated the impact to the community, were the worst to actually happen. You've done a gap analysis to determine the staffing and equipment requirements. You've determined how much your chosen solution will cost, and you've explored alternative funding sources. So, now you have all of the pieces. The next step is to bring all of your research together and sell the program.

SYNTHESIS

Backup Materials

When you take your program to your fire chief, city council, county commission, etc., you will be required to provide the decisionmakers with relevant and related materials to "educate" those responsible for making the final decision on your "project." These materials are commonly referred to as the "backup," or backup materials. Your backup materials are essentially a compilation of all of the research you have done to arrive at your chosen program.

Executive Summary

Politicians love to hear themselves talk. They get "smart" and informed by reading the backup material, so the backup material is incredibly important. The executive summary is equally as important because it will entice your chief or council to actually read the backup materials.

Executive summaries usually should not exceed one page. Often, the decisionmakers will make their decision to approve or disapprove your program based on this summary. If you pique their interest with the summary, they **will** read the entire report. If they are not enticed by the executive summary, they may not read the backup materials.

Resolution

Implementing programs that require large expenditures or alter the jurisdiction's "mission" may require approval of a governing body. The first step in getting the issue in front of the jurisdiction's officials is to develop a "Resolution" or ballot item. Resolutions are legal documents that usually must contain very specific language. These documents are prepared by attorneys, clerks, or other trained personnel and must be reviewed by several "layers" of the government prior to presenting them to the "decisionmakers." The resolution may not have the backup or research behind it prior to the peer review. This often depends on the strategy of the department head offering the resolution for consideration. However, prior to it being presented to the elected officials, all backup materials must be attached and in final form.

Politics--Know the Players Involved

The public hearing, or public presentation in whatever form, should not be the first time your audience is hearing your proposal. The new Special Operations Program Manager may fall into this trap. He or she may think the public hearing is where everything is decided. In reality, the decision to approve or disapprove your program has usually been made beforehand by the elected officials.

Lobbying for your program ahead of time is important because you cannot presume you will win everyone over the first time they hear your proposal. To truly sell your program, you have to know the players and approach them informally first. Doing this preparatory work will give you a sense of who's in your corner and who is against you before you even arrive at the final public hearing.

If you are not familiar with your audience, go to stakeholder meetings. Even if you don't have a reason for being there, go anyway, and listen to what they have to say.

Speak to key stakeholders individually and try to sell your proposal to each person. This gives you the opportunity to tailor your selling points to each individual to whom you present it. It also gives people time to talk to one another and share information. There may even be the added benefit that those you have won over will then end up doing some of the legwork for you, by selling your program to others.

CHALLENGES

Funding Challenges

Most agencies are facing funding challenges and competition for resources. Be prepared to answer the question, "what are the other options, given tight funding?"

Partnerships with private industry are an excellent way to garner resources, even if you cannot actually gain additional dollars. For example, partnering with a university and using students of their environmental health and safety program as volunteers on your staff could gain you the

extra staffing you need, while at the same time benefiting the university students by giving them hands-on experience toward their degree. No money exchanges hands, necessarily, but you have gained resources and a relationship with a useful community partner, the university.

Grants are another option, although, as we've discussed, these require a lot of preparation work.

Internal Customer Influences

You need to sell the program internally within your organization, but at the same time, be careful whose toes you may be stepping on along the way. A union is the most organized constituent of an organization, but opposition could emerge even without as structured a constituent as a union. One naysayer with the right ear could shoot your program down. It is important to be aware of the internal politics of your organization for this reason.

An example could be hiring additional staff to replace responsibilities that volunteers have been performing. Unless the organization has come to the reality that the existing programs can no longer meet the required level of service or citizens' expectations, your project may be destroyed from within.

OPPORTUNITIES

It is critical to emphasize the 'value-added' aspects of your program. It is very hard to sell a program that costs money, but cannot be justified simply by call volume, or other simple and concrete measurable criteria. One consideration is to demonstrate the return on investment (ROI).

FINAL PRESENTATION FORMAT: PRESENTATION PACKAGE

The following is a suggested format for the backup materials presented to the Commission for Consideration.

Resolution: formal document presented for the agenda.

Executive Summary: usually a one-page overview of the problem and solution.

Community Risk Assessment (If conducted).

Project Overview: detailed description of the program and how it solves the identified problem.

- program description;
- options; and
- impact analysis (impact if funded verses not funded).

Equipment Requirements: detailed description of any additional equipment requirements including justification, specifications, acquisition, training, and maintenance costs.

- list of additional equipment requirements;
- list of equipment being retired or replaced;
- cost of acquisition;
- cost of disposal (plus or minus);
- maintenance costs and methodology of maintenance;
- equipment descriptions and technical data; and
- detailed description of how equipment is used and describe the role of the equipment in the program.

Staffing Requirements: detailed description of the manpower requirements, staffing options, labor costs, and training requirements.

- new staffing requirement and justification;
- staffing options; and
- training requirements, justifications, and costs.

Budget: spreadsheet overviewing the projected costs of implementing and maintaining the proposed program expansion.

- Spreadsheet identifying itemized cost of program.
- Spreadsheet identifying the cost of the program options.

Copy of Presentation: copy of the Powerpoint presentation.

Be Prepared

Always run through your presentation with your peers beforehand. Consider selling your proposal/project to your internal customers first. They will do the sharp shooting and ask you the hard questions, which will help you better prepare.

Don't forget to scrutinize your presentation and backup materials for typos and mistakes.

During your presentation, you may be called to tack on anything in your report. You will only have a few seconds to react to a question they pick out for you. So, it is important to be prepared and anticipate those questions as well as you can.

Stick to the Backup Material

In general, the less you say, the better. If asked a specific question, it is a good idea just to repeat what is in the backup material, rather than elaborating. (Remember, elected officials like to talk and like to make themselves look smarter than you.)

Address the Following Three Questions

1. What will happen if this program is **not** funded?

The most persuasive piece of your defense of your program is the answer to the question, "What is the impact to the community if your program is **not** funded?"

For example, not implementing a program could result in increased response time, increased reliance on mutual aid, current resources over-extended on large-scale incidents, etc. This is a form of "informed consent." If the unthinkable does happen and your agency or jurisdiction is not prepared, the responsibility now reverts back to the decisionmakers.

Be wary of using "the moral imperative." "The moral imperative" is a justification that should be avoided. In other words, stating that your program should be approved because "we don't want dead babies in the street" is one that will get you in trouble. They have heard it too many times before and will be put off by it. It is not a legitimate justification, in the sense that it plays on emotions rather than the facts. (Leave the drama to the politicians, stick to reality and the facts.)

2. Why now?

The Harvard Business School says, when you are selling something, it is important to convey a sense of urgency. For example, "You are the governing people shouldering the responsibility for safety of our citizens. One bad day will hurt us for time to come if we are unprepared."

Depending on your audience, sometimes this point can be easy to sell. The people who are listening to you may want to be trailblazers. If you have gauged your audience and determined that this is true, then answering this question can be an opportunity to sell your program by simply citing precedent. Simply because this program is new, it will be setting a precedent, and this is appealing to the trailblazers.

Sometimes, your audience is more skeptical and the sell is not so easy. You may be asked, "We haven't been doing this before, so why should we start now?" You should address this question by referring back to your risk analysis and gap analysis, and clearly articulating the magnitude of negative impact on the community. (In other words, in the past we did not know that we were unprepared, but now we do!)

3. Why is the program you are proposing the **best** program?

The best way to answer this question is briefly and directly. Start your presentation by giving an introductory statement, three main points (you could have two points or four points, but three is ideal), and a concluding statement.

- Introductory statement: "We are going to do [this]."
- Then present your three points: "The benefits include..."

When presenting your solution, you should not shy away from the fact that there are alternative solutions. You should say outright, "I'm showing you the best way, but there are other ways." Be prepared to present alternative solutions also, if asked. When you do allude to alternatives, always follow that with "staff has researched and recommended **this particular alternative** as the best one." The backup materials will help you to address the alternative solutions and to defend your reasons why the option for which you have advocated really is the best way.

Sometimes, it may be beneficial to present an alternate plan or option in the backup materials. If you know it ahead of time, you may want to anticipate a politician's preferred solution as your Plan B and include Plan B as one of the alternatives in your backup material. Then, in the event your first solution is presented and is not received well, you will be prepared to present Plan B and the politician thinks it's their idea.

Media Training

Every question you are asked during your presentation is an interview in and of itself. Sometimes it is even being filmed. Sometimes they ask you the same question in a different way, variations on a theme, to get the answer they are after.

Any time you are called upon to answer a question, always start with your name and position. If you are representing a team or a partnership, state that as part of your introduction.

When presenting your team/agency/jurisdiction's conclusions, present it in the third person. For example, say, "it is the staff's opinion" or "this council's opinion," rather than "our" or "my" opinion.

Finally, be wary of questions at the end of the meeting. It is easy at the end of a meeting to let your guard down a bit. Avoid creating an opening for more questions. The more questions are asked, the more likely one will arise that is controversial. Abide by the principle that "shorter is better" and maintain as much brevity as possible in your presentation, from start to finish.

Be a Good Subject Matter Expert

Be a good subject matter expert; "no passion, just the facts." If you are presenting technical information, you must bridge that technical information to a lay audience. This means you must control the conversation so it does not get off track with people asking you to clarify technical details. A good technique is to stay away from technical jargon and acronyms. It also helps to have just two or three core messages and be sure they come through clearly.

Don't be Afraid to Present Cost Figures

You will always be asked about funding, in one way or another. They will always ask "What is it going to cost?" and "How will we pay for it?" The key to a successful presentation is to present the costs in a straightforward way, but always accompany that with a funding **solution**.

It is tempting to shy away from presenting costs, especially when costs are high. Spending money is not a 'con.' Be sure not to present costs with a negative connotation. Spending money is simply a necessary step to accomplish a mission. Elected officials have often had a bad experience with a project that ran over budget, could not be completed, or was dropped due to inadequate funding. Just remember to accompany presentation of cost figures with the associated means of attaining the funding and the ROI.

It is a very good idea to include an itemized budget in your backup materials and actually list all of the cost items outright.

You may be asked, "Are there additional costs?" beyond those you presented. Be prepared to clearly present any additional costs you may not have mentioned up front. Have all figures available in your backup material and put the numbers up for everyone to see. Don't round down cost figures or hide them! As a rule, it is easier to obtain all of the funding information in the beginning of the project than to ask for additional funding for an incomplete project. (Having to return and ask for additional funds indicate poor planning and bring into question the competency of those managing the program.)

Addressing Liability Concerns

Be aware of liability concerns that may arise during your presentation.

As an illustrative example, augmenting your staff with volunteers may raise liability concerns. An attorney in the audience might key in on this and want to discuss it. To circumvent a debate about this issue, which could get your presentation off track by creating a discussion among the audience members, you could say, "staff is consulting with a lawyer to address the liability issues of employing volunteers."

Alternatively, you could simply mention up front that, "If the commission approves this program, it will be in consultation with the legal department." This will assuage concerns that liability issues are not being addressed and may prevent a debate from arising during your presentation.

SUMMARY

In this unit, we have discussed several aspects of gaining approval for your program.

- Each project or program requires research, preparation, and a developed strategy to be successful--"Failing to plan is planning to fail."

- Once developed, your program must be "sold."
- "Selling" requires an organized approach.
- The Special Operations Program Manager must be prepared to "sell" the program.