緊急支援功能
FEMA Emergency Support Functions

全災害取徑應急管理
All-hazards Approach Emergency Management

陽明交通大學土木工程系　單信瑜

大綱

- 何謂全災害取徑災害管理
- 美國聯邦應急管理架構(NRF)與事件整合管理系統(NIMS)
- ICS（事件現場指揮系統）與ESF（緊急應變支援功能）
- ESF解說
- 災害應變中心組織調整探討

（執行緊急應變措施之準備工作）

- 第二十三條（99.08.04修）
- 為有效執行緊急應變措施，各級政府應依權責實施下列整備事項：（整備[應不含減災]）

  一、災害防救組織之整備。

  二、災害防救之訓練、演習。

  三、**災害監測、預報、警報發布**及其設施之強化。

  四、災情蒐集、通報與指揮所需通訊設施之建置、維護及強化。

（緊急避難之措施）

- 第二十四條
- 為保護人民生命、財產安全或防止災害擴大，**直轄市、縣（市）政府、鄉（鎮、市、區）公所**於**災害發生或有發生之虞**時，**應勸告或強制**其撤離，並作適當之安置。
- 直轄市、縣（市）政府、鄉（鎮、市、區）公所於災害應變之必要範圍內，對於有擴大災害或妨礙救災之設備或物件之所有權人、使用人或管理權人，應勸告或強制其除去該設備或物件，並作適當之處置。

第五章 災害應變措施

- （實施緊急應變措施之工作項目）
- 第二十七條
- 為實施災害應變措施，各級政府應依權責實施下列事項：

一、**災害警報之發布、傳遞、應變戒備、人員疏散、搶救、避難之勸告、災情蒐集及損失查報。**

二、警戒區域劃設、交通管制、秩序維持及犯罪防治。

三、消防、防汛及其他應變措施。

四、受災民眾臨時收容、社會救助及弱勢族群特殊保護措施。

五、受災兒童及少年、學生之應急照顧。

六、危險物品設施及設備之應變處理。

七、傳染病防治、廢棄物處理、環境消毒、食品衛生檢驗及其他衛生事項。

八、搜救、緊急醫療救護及運送。

九、協助相驗、處理罹難者屍體、遺物。

十、民生物資與飲用水之供應及分配。

十一、水利、農業設施等災害防備及搶修。

十二、鐵路、道路、橋樑、大眾運輸、航空站、港埠、公用氣體與油料管線、輸電線路、電信、自來水及農漁業等公共設施之搶修。

十三、危險建築物之緊急評估。

十四、漂流物、沈沒品及其他救出物品之保管、處理。

十五、災害應變過程完整記錄。

十六、其他災害應變及防止擴大事項。

- 前項災害應變措施事項，各級政府應依權責列入各該災害防救計畫。
- 公共事業應依其災害防救業務計畫，實施有關災害應變事項。
- 第一項第十三款有關危險建築物緊急評估之適用災害種類、實施時機、處理人員、程序、危險標誌之張貼、解除及其他相關事項之辦法，由**內政部**定之。

第 28 條

各級災害應變中心成立後，參與編組機關首長應依規定親自或指派權責人員進駐，執行災害應變工作，並由災害應變中心指揮官負責指揮、協調及整合。

各級災害應變中心應有固定之運作處所，充實災害防救設備並作定期演練。

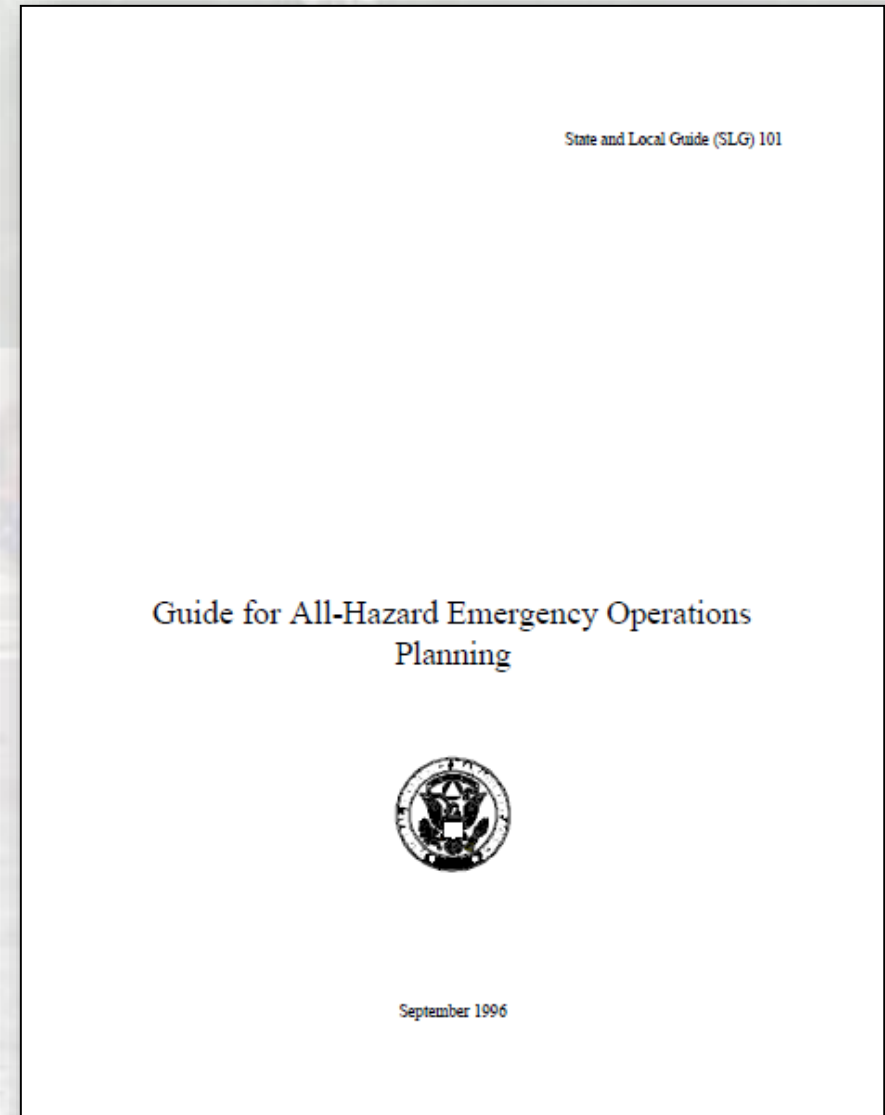為免中央災害應變中心因重大災害致無法運作，或為支援跨直轄市、縣（市）處理區域性重大災害，應異地設置備援應變中心。

第 30 條

各級政府成立災害應變中心後,指揮官於災害應變範圍內,依其權責分別實施下列事項,並以指揮官指定執行之各該機關名義為之:

一、緊急應變措施之宣示、發布及執行。

二、劃定警戒區域,製發臨時通行證,限制或禁止人民進入或命其離去。

三、指定道路區間、水域、空域高度,限制或禁止車輛、船舶或航空器之通行。

四、徵調相關專門職業、技術人員及所徵用物資之操作人員協助救災。

五、徵用、徵購民間搜救犬、救災機具、車輛、船舶或航空器等裝備、土地、水權、建築物、工作物。

第 30 條

六、指揮、督導、協調國軍、消防、警察、海岸巡防、相關政府機關、公共事業、民防團隊、災害防救團體及災害防救志願組織執行救災工作。

七、危險建築物、工作物之拆除及災害現場障礙物之移除。

八、優先使用傳播媒體及通訊設備，蒐集與傳播災情及緊急應變相關資訊。

九、國外救災組織來臺協助救災之申請、接待、責任受災地區分配及協調聯繫。

十、災情之彙整、統計、陳報及評估。

十一、其他必要之應變處置。

減災 **Mitigation**

整備 **Preparedness**

災害管理循環

Emergency Management Cycle

災害發生

復原 **Recovery**

應變 **Response**

State and Local Guide (SLG) 101

Guide for All-Hazard Emergency Operations Planning

September 1996

Instead of establishing a plan and ensuring the organization sticks to it, managers must understand and respond continuously to dynamic and wrenching

以共通性的應急管理架構，處理可能接連或同時發生的天然災害、人為災害或其他衍生、誘發的事件。

災因管理 → 後果管理

對不同災害與事件來說，指揮、通訊、疏散、緊急救護、公共秩序維持、運輸調度、物資調度等應急功能是共通性的

Scenario-based planning

➡️ *Future-proof your organization*

不要把災害或意外事件因應決戰的勝負押在
災害發生時的應變（作為）

對大多數的災害或意外事件來說，
勝負早已決定

"All-hazards" Doesn't Mean "Plan for Everything"
All-hazards planning requires a risk-based approach

全災害管理並非每個可能發生的災害都要擬訂「單獨」且「完整」（複製）的計畫

（絕大部分的內容幾乎都一樣）

全災害管理是以風險為基礎的的執行方式

"All-hazards" Doesn't Mean "Plan for Everything"

All-hazards planning requires a risk-based approach

全危害取徑應急管理並非每個可能發生的災害都要擬訂計畫

全危害應急管理是以風險為基礎的的執行方式

打破過去各機關區分災害原因來管理，
造成災害時容易發生各自為政的狀況。

減災工作

颱風

淹水

土石流

工業管線災害

毒化災

重大火災、爆炸

生物病原災害

核災

海嘯

縣市政府公所 EOC

法令/制度 → 業管

土地管制 → 業管

工程設施 → 業管

稽查檢查 → 業管

防災教育 → 業管 + 民政

風險溝通 → 業管 + 民政

颱風

淹水

土石流

毒化災

工業管線災害

重大火災、爆炸

生物病原災害

核災

海嘯

應變作業

整備任務

縣市政府
公所
EOC

警戒發佈 → 業管 + 民政 + 警、消

疏散撤離 → 民政 + 社政 + 國軍

收容安置 → 社政 + 公所可用人力
+ 衛生所

救災搶險 → 業管 + 警、消 + 國軍

物資人力 → 社政 + 公所可用人力

清理復原 → 環保 + 業管 + 國軍

COVID-19 Pandemic Operational Guidance for the 2020 Hurricane Season

May 2020

FEMA
U.S. DEPARTMENT OF HOMELAND SECURITY

COVID-19 Pandemic Operational Guidance

All-Hazards Incident Response and Recovery

May 2021

FEMA
U.S. DEPARTMENT OF HOMELAND SECURITY

Supply Chain Stabilization Process that Shows Three of the Lines of Effort
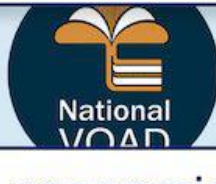
SLOW the spread and flatten the curve.

HEAL the sick and reduce loss of life.

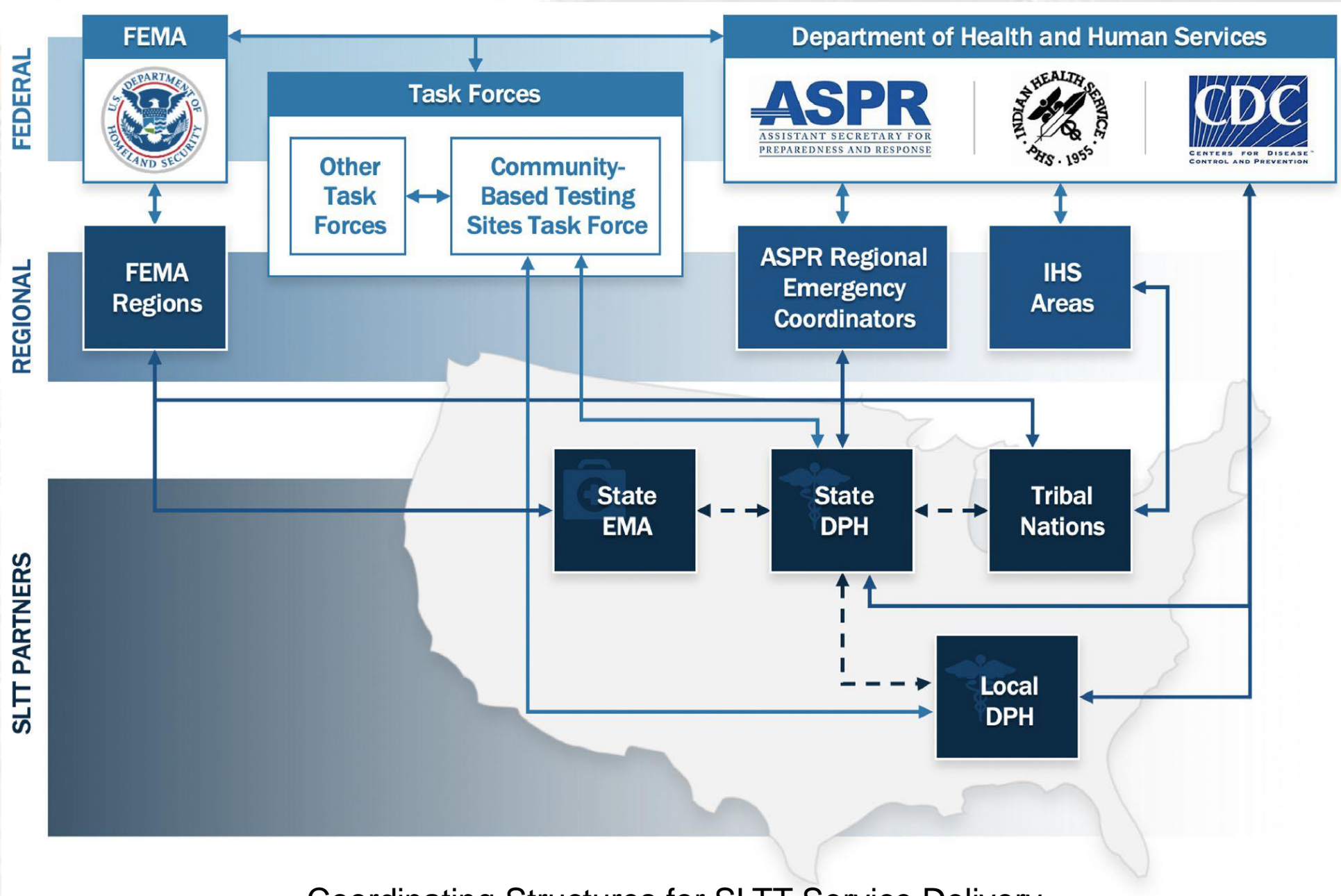SUPPORT healthcare, responders, and infrastructure.

MINIMIZE social and economic impacts.

成本效益概念

Whole-of-Government Response

Coordinating Structures for SLTT Service Delivery

Summary of Key Findings for Organizational Resilience

Section 5: Organizational Resilience Summary of Key Findings	
5.1	FEMA headquarters was delayed in establishing clear coordination on internal workforce guidance and communications in the early stages of the COVID-19 incident, resulting in messaging being perceived as untimely, unclear, or both by the FEMA workforce.
5.2	FEMA investments in mobility enabled the implementation of an agency-wide shift to **telework**, with 95% of FEMA employees reporting high productivity.
5.3	Even though FEMA did not activate its **Continuity of Operations (COOP)** plan, the agency leveraged its Pandemic Annex and continuity tactics for workforce protection; however, using continuity nomenclature in agency messaging caused confusion about how programs and resources should be prioritized.
5.4	Through a shift in resources and workforce innovation, FEMA was largely able to adapt, deliver programs, and carry out the mission while operating in the COVID-19 environment.
5.5	FEMA was not prepared to staff its National Response Coordination Center (NRCC) for a long-duration pandemic incident of national scale, and the need for employees with specialized skillsets presented challenges, as did FEMA's workforce management practices.
5.6	FEMA implemented and enhanced protective measures over time to **protect its workforce's health and safety**; however, the agency experienced challenges implementing and ensuring compliance with these measures nationwide.
5.7	FEMA's restoration planning efforts have provided its workforce COVID-19 guidance and resources, but these efforts should focus more on **behavioral and mental health**.

Summary of Recommendations for Organizational Resilience

Section 5: Organizational Resilience Summary of Recommendations

5.1.A.	Update the Pandemic and Emerging Infectious Disease Workforce Protection Plan (PEIDWPP) in partnership with subject-matter experts from across the agency and with HHS to address **workforce coordination and communication processes** learned from FEMA's COVID-19 experience.
5.1.B.	Formalize the roles and responsibilities for internal communications within the agency, especially for events requiring coordination between FEMA components that are responsible for protecting the workforce. Use the COVID-19 Coordination Team approach or a similar structure to develop future internal communications strategy for the workforce.
5.1.C.	Exercise and validate updated agency documentation on protective measures with a focus on decision-making and implementation of guidance for the workforce; operationalize more of FEMA's mission-enabling functions that are not traditionally exercised at HQ and in the regions.
5.2.A.	Continue investing in cloud computing, information technology infrastructure, and software to meet FEMA's mission with flexibility and adaptability.
5.2.B.	Continue assessing how to integrate telework throughout FEMA and develop courses of action for future operations.
5.3.A.	Identify a FEMA component or office responsible for analyzing of steady-state programmatic work and recommending a process for FEMA leadership to prioritize agency activities when COOP is not activated and the effects do not require only conducting MEFs, but the steady-state resources must be adjusted to support significant operational response or recovery requirements.
5.3.B.	Update the agency's COOP plan to allow for more flexible and adaptable application of continuity tactics to events when the COOP plan is not activated. Develop an updated approach to training,

Table 27. Summary of Recommendations for Organizational Resilience

Section 5: Organizational Resilience Summary of Recommendations

5.4.A.	Institutionalize successful program and policy adaptations and build implementation plans to ensure efficiencies are not lost in the return to steady-state agency operations.
5.5.A.	Determine a cadre management structure for Incident Support personnel and use FEMA's Deployment Tracking System (DTS) to help manage and operationalize resources.
5.5.B.	Analyze NRCC facility requirements for national-level incidents requiring interagency operations and the integration of non-governmental partners to ensure appropriate and adequate space is available for the personnel required.
5.6.A.	Develop a comprehensive agency-wide strategy and guidance for workforce protection.
5.7.A.	Determine how restoration planning and COVID-19 workforce adaptations can inform long-term planning for agency operations and other efficiencies, and designate a responsible FEMA component or entity to own this process.
5.7.B.	Maintain consistent two-way communications with the workforce about when employees should consider returning to the workplace, considering factors such as childcare and transportation.
5.7.C.	Develop a strategy for employee well-being, with an emphasis on mental health.

National Response Coordination Center (NRCC)
The National Response Coordination Center (NRCC) is a multiagency center located at FEMA Headquarters. During an incident, the NRCC operates on a 24/7 basis or as required to:
- Monitor potential or developing incidents.
- Support the efforts of regional and field components, including coordinating the preparedness of national-level emergency response teams and resources.
- Initiate mission assignments or reimbursable agreements to activate other Federal departments and agencies (in coordination with Regional Response Coordination Centers).
- Activate and deploy national-level specialized teams.

recommendations

- **The incident management structure**—that FEMA has built, tested, and proven over years of coordinating federal disaster operations of all scopes and sizes—is critical to building relationships across levels of government. These relationships, **based on trust and partnership**, are vital, and FEMA must take advantage of every opportunity to reinforce these partnerships.

- **Official, repeatable, and clear documentation is needed.** Updating doctrine, guidance, plans, and procedures to reflect the national nature of COVID-19 will help future staff learn from the experience and mitigate issues.

- **The private sector and non-governmental organizations** have a critical role to play in readying the nation for disasters. FEMA must invest in new capabilities for collaboration and pursue innovative solutions for the toughest problems.

- **Data is foundational to make decisions.** Investments in systems and sharing agreements, together with the analysts and staff to make the data actionable and relevant, are needed to advance and leverage new technologies and capabilities.

- **Emergency managers** are flexible, adaptive, and innovative. FEMA's investments over the last decade enabled a quick transition of work environments. Continued investments in personnel, resources, and processes for the future will build on those successes.

COVID-19 有助於全災害取徑應急管理 (Penta et al., 2021)

1. Public health crises, such as pandemics, are **managed like other disasters**.
2. **Creativity and improvisation** are important aspects of the response to public health emergencies, just as they are in other kinds of emergencies and disasters.
3. **Human behavior** during pandemics is consistent with human behavior in other kinds of disasters.
4. Pandemic response/responders face the **same logistical challenges and demands** associated with a convergence that responders must contend with during other types of disasters.
5. Pandemics and other kinds of disasters present similar kinds of challenges to the delivery of **health and medical services**.
6. **Disaster management activities can be a source of harm** independent of the harm caused by the hazard agent itself in both pandemics and other kinds of disasters.

Samantha Penta, James Kendra, Valerie Marlowe, Kimberly Gill, 2021, A disaster by any other name?: COVID-19 and support for an All-Hazards approach, Risks Hazards Crisis Public Policy. 2021;1–26.

1. **Target your early warning systems** - a smart focus
Early detection gives confidence in deciding to escalate to emergency operations

2. **Escalate with practiced protocols** - a salsa tempo
Ensure the pivot to emergency operations includes the required protocols

3. **Embed the EOC with the ability to be decisive**, not just tactical
Encourage the EOC to orient and decide faster through a plan-ahead team and portfolio of strategic actions.

4. Build an **ability to coordinate** and test quickly outside the organization
Empower the EOC to coordinate across multiple geographies and regions

5. **Reach for better data** that cuts through the noise, and an IT infrastructure that can enable that
Build an infrastructure that allows for near real-time data integration

6. **Make sure your EOC team knows what to expect**
Knowing what you will deal with as a team, as a professional, and as a person is critical to building the resilience that the team will rely on when the time comes

強化各局處與公所之間的協做

強化公所與村里長之間的協做

市府
局處

區公所

里長
鄰長

防疫期間府內與公所各項作業模式與程序檢討與制定標準

防疫期間局處與公所作業能量檢討與評估

防疫期間動用之政府資源能量檢討與評估

防疫期間民間企業緊急應變/營運持續案例蒐集與檢討

與其他大規模災害想定進行比較評估

生物病原災害應變中心

生物病原災害應變

指揮官

幕僚

作業　計畫　　　　　後勤　行政

快篩

疫苗施打

隔離

〇〇

車輛　重機械　民生物資　〇〇〇

工務局　環保局　社會局　交通局　〇〇局

貨卡　貨卡　小巴　吊卡

吊卡　稽查車　九人座　九人座
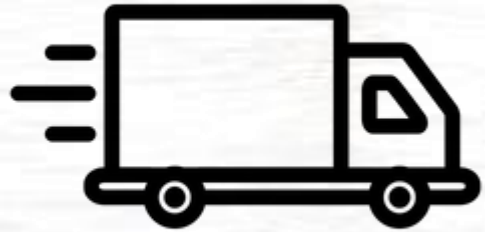
運送疫苗與其他公共衛生物資
運送作業人員、需採檢與隔離民眾
各類物資管理與儲存

毒化災/火災爆炸現場應變

指揮官

環保人員？
消防人員？

聯絡官　安全官

新聞官

作業　計畫　　　　　　後勤　行政

滅火　救護　偵測　除污　交管　○○　　車輛　重機械　民生物資　○○○

消防隊　消防隊　環保局　消防隊　警察　　消防局　環保局　工務局

廠商ERT　　技術小組　技術小組　廠商ERT　　消防車　稽查車

器材車　貨車

聯防人員？
工業區服務中心人員？
科學園區管理局人員？

CBRNe + 毒化災/生物/輻射/爆炸/火災現場應變

指揮官

聯絡官　安全官

新聞官

機場/鐵路/捷運人員？
警政人員？
消防人員？

作業　計畫　後勤　行政

警戒　除彈　滅火/待命　救護　交管　○○　車輛　重機械　民生物資　○○○

保全　除彈小組　ERT　ERT　市警　消防局　環保局　工務局

航警　機場消防　消防隊　機場保全　消防車　稽查車

鐵路警察　消防隊　責任醫院　器材車　貨車

捷運警察

市警

緊急應變流程

啟動通報 → 初步災害控制 → 場域應急作為 → 疏散避難規劃與執行 → 後續應急處置

災時救災應變重要工作
（災防法第27條、第31條）

- 一、適時開設應變中心。
- 二、確定機關權責分工。
- 三、強化查報通報作業。
- 四、確實掌控災害情資。
- 五、及時劃定警戒區域。
- 六、落實災案追蹤列管。
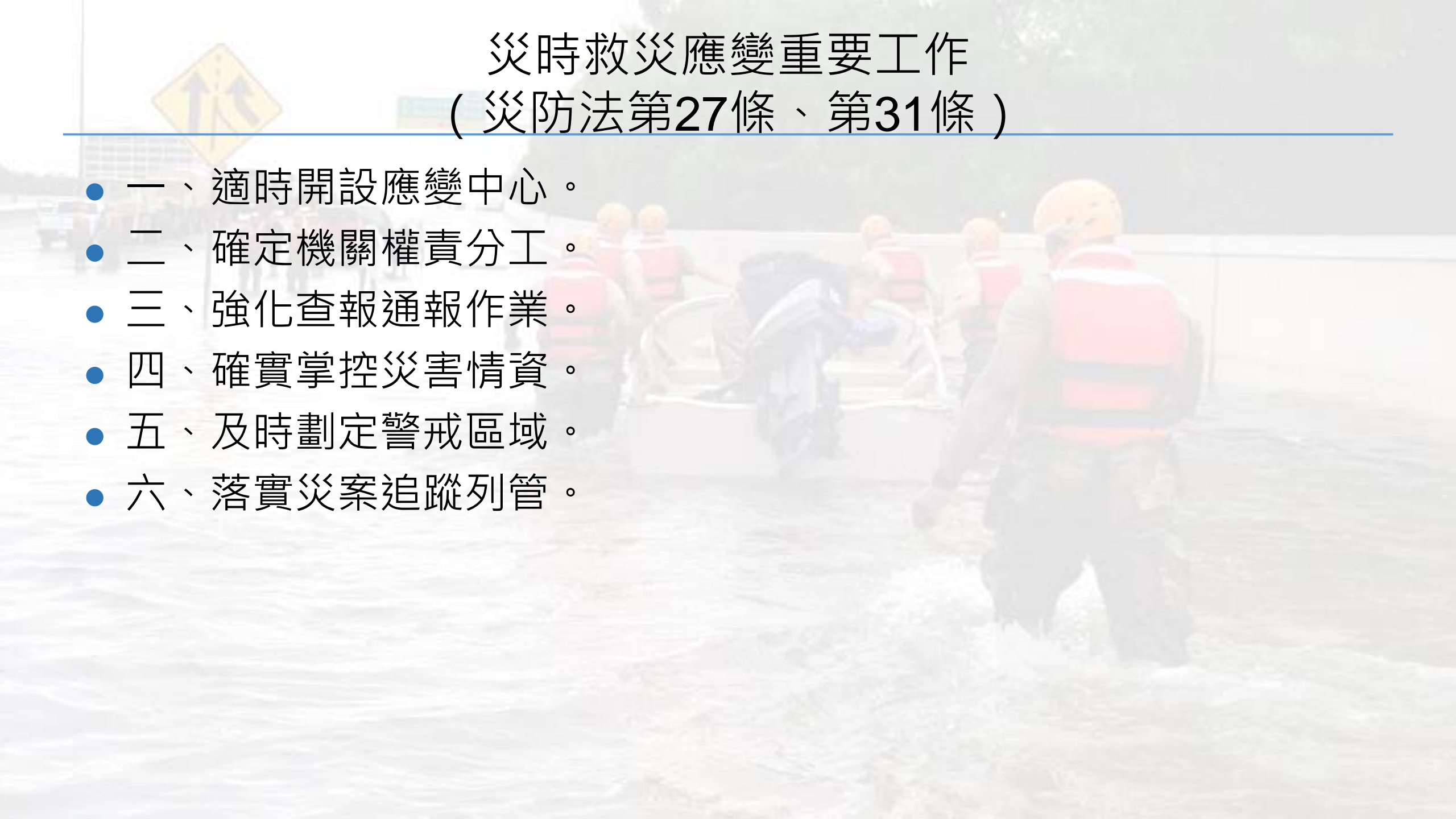
（政府）（鄉鎮市區公所）應變工作

- **警戒傳遞（含、不含發佈）**
- **災情查通報**
- **疏散撤離**
- **收容安置**
- **救災搶險（鄉鎮市）**

- 清理復原（鄉鎮市）
- 災損調查
- 補助發放

全危害取徑系統架構的應變計畫（總體緊急應變計畫）

基本應急管理計畫
- 組織應急基本介紹、危害、基本規則

功能群組說明
- 指揮體系ICS各功能群組的權責說明

基本應急管理功能
- 應急上的共同程序，如通報、召回、任務指派……

特別事件指引
- 不同事件處理的特殊考慮與程序

附件
- 地圖、名單、聯絡清冊、標準作業程序
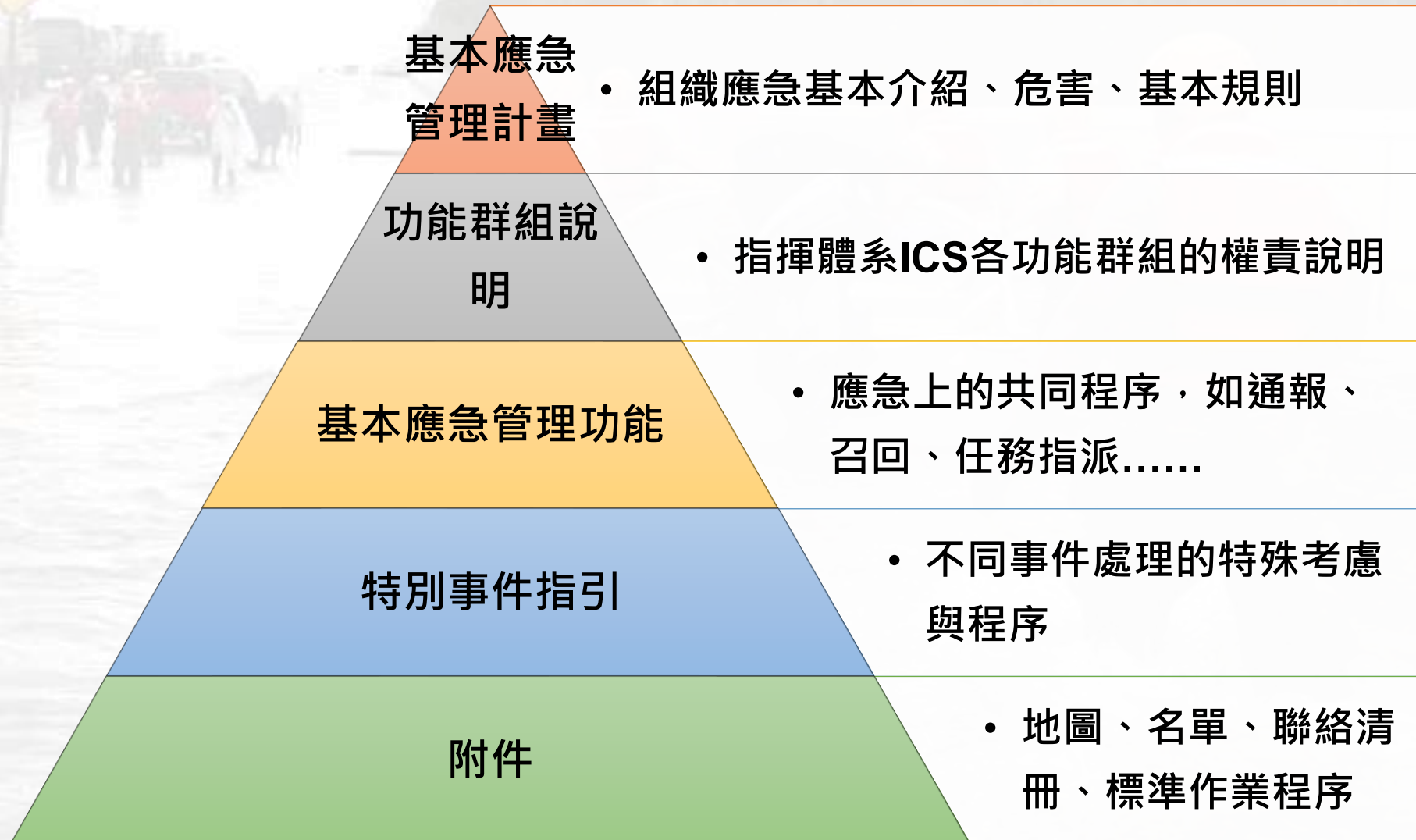
應變計畫整合

- 消防法 - 「消防防護計畫」/「大規模場所消防防護計畫]
- 毒性化學物質運作場所 - 「毒性化學物質危害預防及應變計畫」
- 危險性工作場所訂定緊急應變計畫
  - 勞動部「危險性工作場所審查暨檢查辦法」
  - *從事石油裂解的石化工業的工作場所所；農藥製造工作場所所、爆竹煙火場所所及火藥類製造工作場所所；設置高壓氣體類壓力容器或蒸汽鍋爐，其壓力或容量達中央主管機關規定者的工作場所所；製造、處置、使用危險物、有害物的數量達中央主管機關指定的營造工程的工作場所所及其他中央主管機關指定的工作場所所，事業單位於申請審查或檢查時應辦理須申報緊急應變計畫。*
- 醫療院所、安養場所、學校等依據各目的事業主管機關擬定之緊急應變計畫
  - 「醫院緊急災害應變措施及檢查辦法」
  - 校園災害防救計畫/緊急應變計畫

當災害無法控制時，需幕僚為指揮官擬定整體大方向戰略，再分成細部戰術給機關執行。

事故現場行動計畫
（Incident Action Plan, IAP）

輔助性標準化表單

統一格式	▶項目表單統一格式 ▶內容精簡，方便填寫
系統管理	▶內容依災害情形變動 ▶累積經驗，定期檢討
指定對象	▶固定對象（群組長） ▶避免重複資訊

戰術會議

準備企劃會議

企劃會議

準備戰術會議

幕僚與各組長會議

撰寫現場應變計畫IAP

現場指揮官IC機關代表UC戰略目標會議

執行計畫及評估

作業簡報

新應變階段

IC/UC會議

指揮權轉移

初期應變評估

通知人員

災害發生

初期災害應變
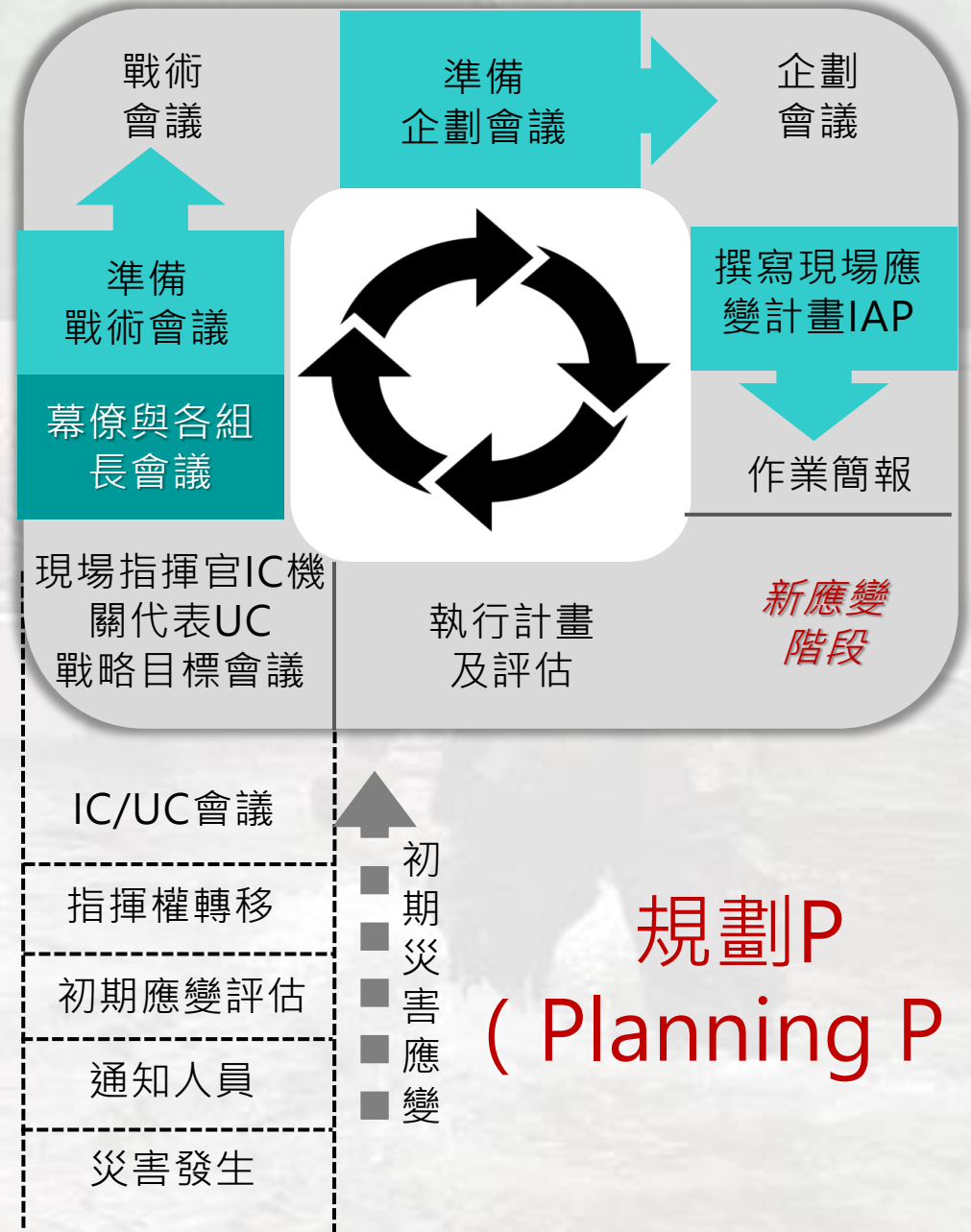
規劃P
（Planning P）

中程：強化群組功能

市級EOC

16組
功能分組

指揮官 ▸ 市長 副市長

協調官 ▸ 副秘書長

副指揮官 ▸ 執行長 消防局長 相關局處首長

新聞官 ▸ 新聞局長

計畫群組
- *#2* 資通訊/災情通報
- *#4* 分析研判
- *#5* 參謀/計畫
- *#14* 公共資訊

後勤群組
- *#7* 後勤支援
- *#15* 軍事支援

財務行政群組
- *#16* 行政庶務

（作業群組）

緊急服務群組
- *#9* 消防/搜救
- *#10* 核生化應變
- *#13* 治安維持

人道服務群組
- *#6* 避難/安置
- *#8* 醫療/公共衛生
- *#11* 民生物資/農糧資源

工程處置群組
- *#1* 交通運輸
- *#3* 公共工程/環境資源
- *#12* 水電、能源

105年度臺北市重大災害應變運作
協調作業機制之研究
計畫主持人 / 王价巨 教授
協同主持人 / 單信瑜 副教授
協同主持人 / 方潤強 執行總監

美國的緊急管理

美國災害防救體系

全球最先進、最完備且資源最充裕的體系？？？

關鍵：PDCA

基本信念

▷ 完美的應變不存在

▷ 每個事故都不一樣

▷ 對一個人是意外事故，對其他人不一定是：風險與風險承受的概念

▷ 應變的重點在於協調與整合

不過…

▷ EM人員無法提出所有災害及風險難題的答案

▷ 美國經驗只是全球EM經驗中的一個

美國應變組織架構

美國災害防救體系

MACS
多機構協調體系

NIMS
共同溝通的基礎

NRF
聯邦與州、地方合作
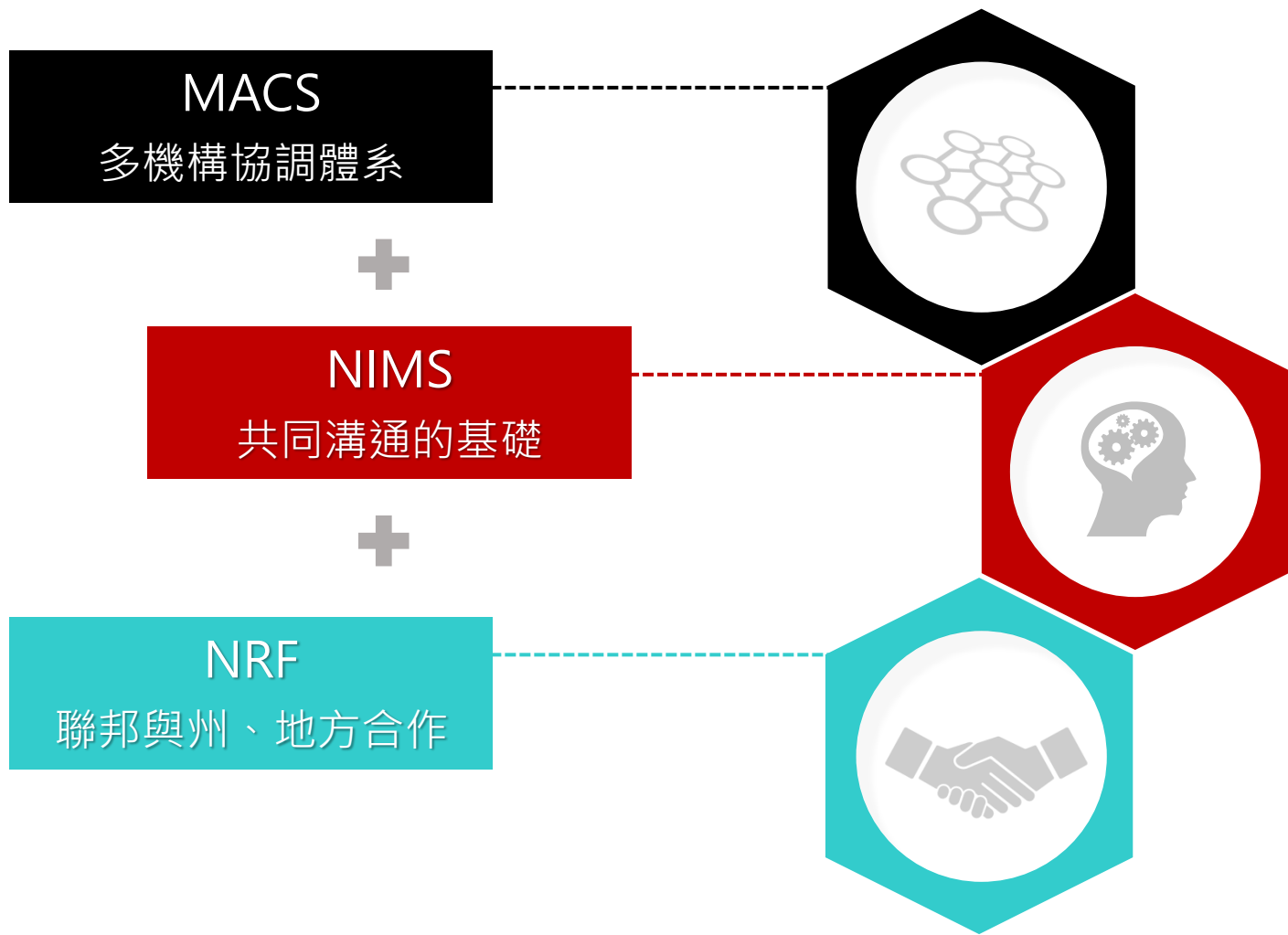
國家事故管理系統&國家應變架構

美國災害防救體系
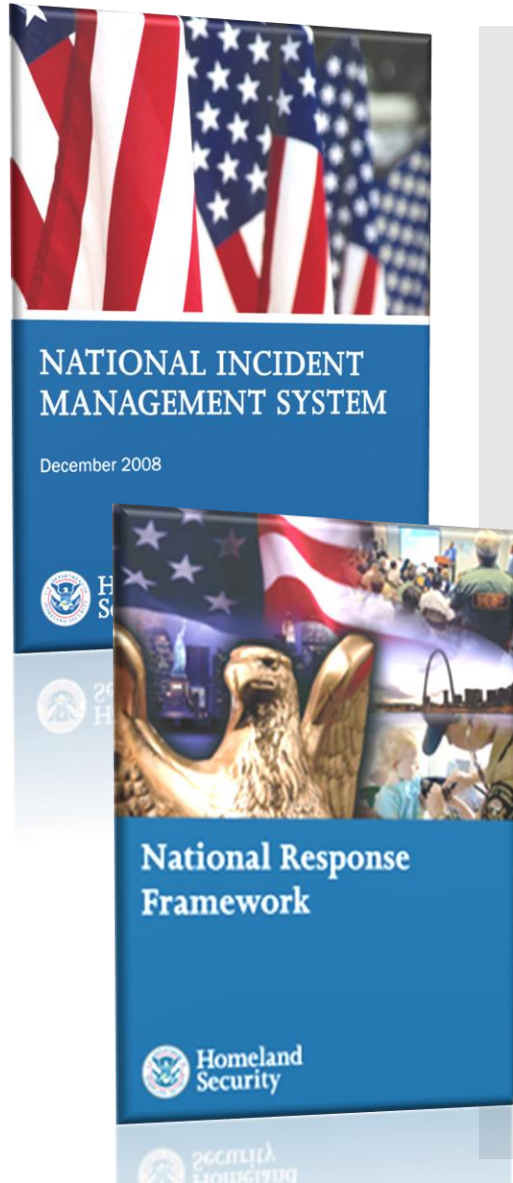
國家事故管理系統 [NIMS]

將管理過程、規章及程序標準化,方便各層級應變人員運用

國家應變架構 [NRF]

1. 建構在NIMS基礎,提供協調聯邦資源分配給州政府,地方政府及部落事故現場管理的架構及機制。

2. 執行聯邦直接授權與責任,以及處理國家重要事故(National Significance)

- 聯邦調解結構/機制
- 現有計畫合併的方向
- 管理事故一致性作業方式

National Response
Framework

Fourth Edition
October 28, 2019

Homeland
Security

National Incident
Management System

Third Edition
October 2017

FEMA

國家事故管理系統 NIMS
National Incident Management System

美國災害防救體系

共同的事故現場管理教義，實踐和原則：

→ ICS的運用

→ 具備彈性的應變作業

→ 統一用語

→ 設備，供給和援助的籌備及配置計畫

→ 應變人員，EOC和大眾間有效的溝通傳播

NIMS is：

→ 彈性（Flexible），可召集所有應變單位一起合作

→ 標準化（Standardized），以改善整體應變及相容操作性
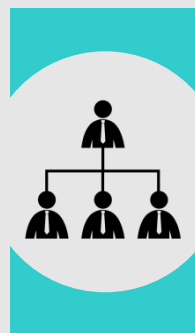
事故現場指揮系統 ICS
Incident Command System

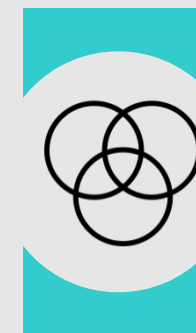概念與原則

美國災害防救體系

1 共通用語　　2 模組化組織　　3 整合通訊　　4 單一指揮
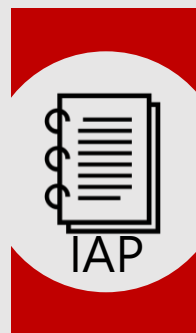
5 一致指揮架構　6 統一事故現場行動計畫　7 適當控管幅度　8 救災所需設施　9 綜合式資源管理

美國ICS相關作業表單

美國災害防救體系

其他標準化表單… *Else*

ICS 表204 分工表
Assignment List

ICS 表203 組織任務表
Organization Assignment List

ICS 表202 事故現場目標
Incident Objectives

ICS 表201 事故現場簡報
Incident Briefing

格式統一

格式統一基本欄位、項目精簡、少於5頁，填寫簡單明瞭。

系統管理

歷年經驗累積，定期檢討增修表單，符合實務需求。
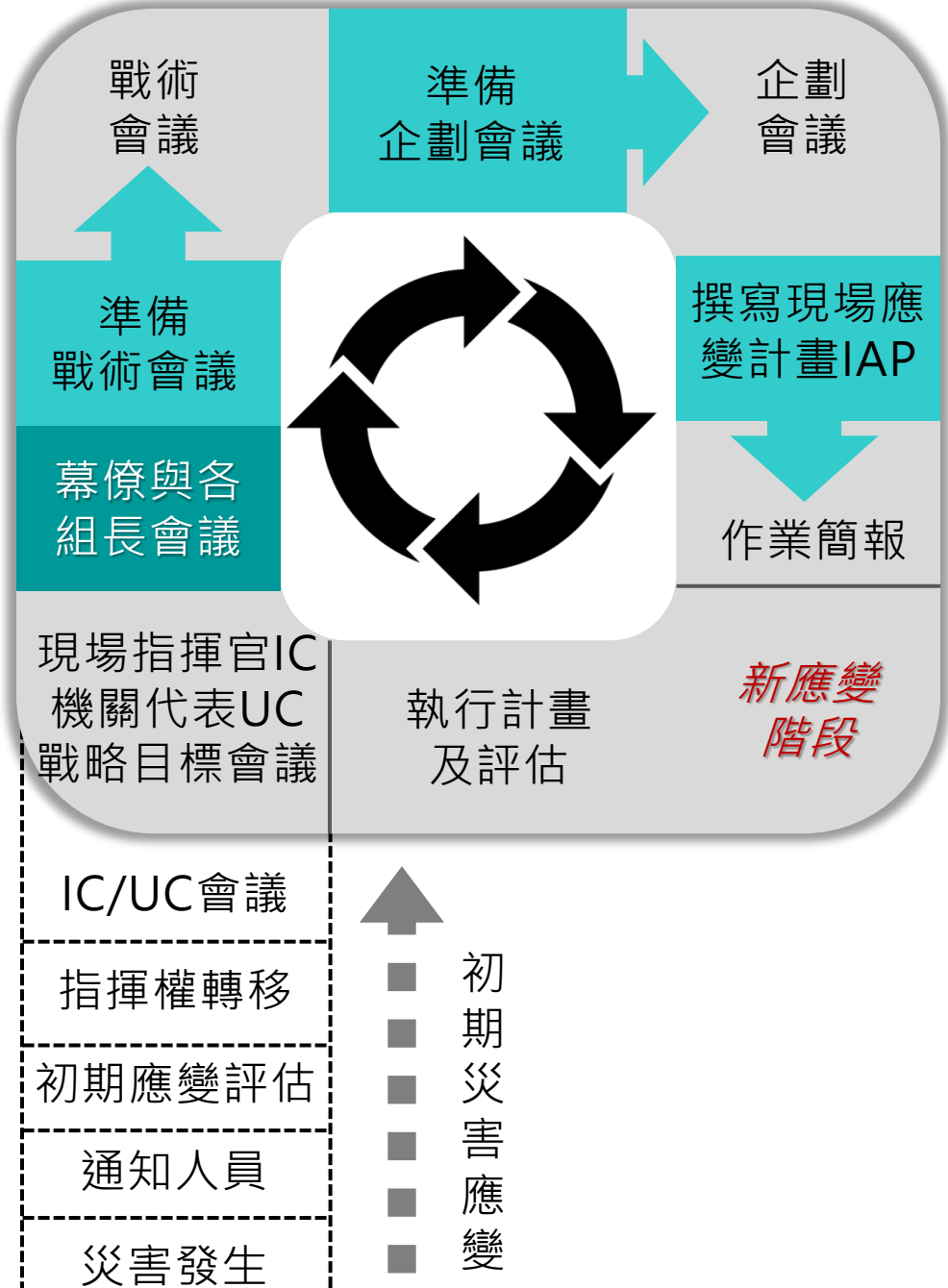
指定對象

填表者須統籌管轄單位資訊，針對表單進行彙整呈報。

21 份標準化表單組成IAP

ICS／規劃P
Planning P

美國災害防救體系

各類會議搭配相關表單使用

戰術會議

準備企劃會議 → 企劃會議

準備戰術會議

撰寫現場應變計畫IAP

幕僚與各組長會議

作業簡報

現場指揮官IC
機關代表UC
戰略目標會議

執行計畫及評估

新應變階段

IC/UC會議

指揮權轉移

初期應變評估

通知人員

災害發生

初期災害應變

應變實例分析探討：珊迪（Sandy）颱風

美國災害防救體系

通訊系統衝擊

醫療院所衝擊

維生設施衝擊

交通系統衝擊

應變經驗探討

整合**全民**網路勘災功能

建立**醫院、社福**撤離計畫

災前訂定**復原重建**計畫

改善關鍵**設施**防洪能力

災後**快速調查**機制

強化災前**整備**

擬定**大規模**疏散撤離計畫

調整防救計畫

[美國 - 卡崔娜颶風]

美國EOC組織架構

事故現場指揮系統
➢ NIMS核心
➢ 現場模組化編排

ICS

+

緊急支援代碼
➢ 協調機制
➢ 選擇性啟動

ESF

ICS架構圖
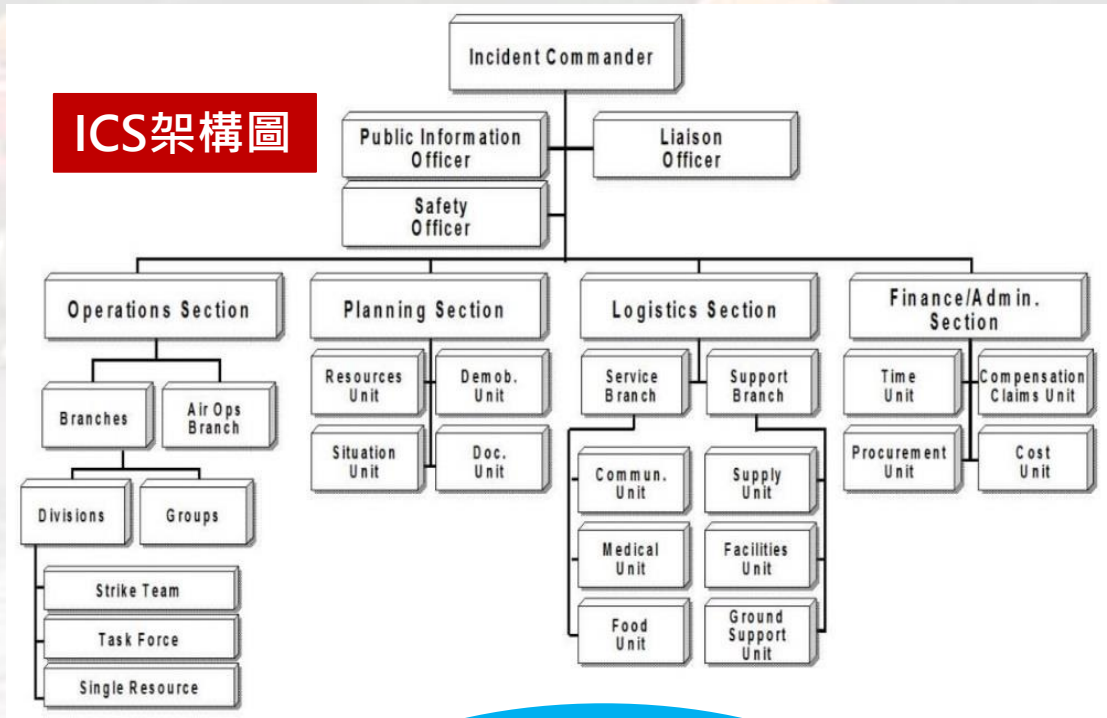
各城市EOC
運作機制

美國政府與非政府組織合作

卡崔娜颶風
▶1250億元經濟損失，1900人死亡
▶地方政府失靈，聯邦政府介入救援
政府開始正視
災害管理、體系運作

非政府組織（Non-Governmental Organization, NGO）

▶ 環境保護、安全、人權...等，公共利益導向。

▶ 監督政府政策實施。

▶ 災害發生後號召人力、財務資源，協助政府初步評估與建置。

監督、提供援助

整合運用

[優勢學習]

美國救災體系優勢

全災害取徑（All-hazards approach）

▶ 一致性應變架構
▶ 專責化專案管理
▶ 整合性專業合作

以人為本的精神

人與資源的管理

彈性調整應變架構

打破官僚體系，組織彈性應變

建立現場緊急應變指揮系統 ICS

- 事故現場指揮官須接受一定的專業訓練，指揮官不一定需要了解繁瑣的搶救技巧，但須掌握毒化災宏觀的應變考量，以人命救助(life safety)為第一要務，災情控制(incident stabilization)為第二考量，最後才是工廠或設備的財產確保(property conservation)。

全危害/All-hazards
事故指揮體系/ICS

指揮部門
Incident command

計畫部門
Planning Section

執行部門
Operation Section

後勤部門
Logistics Section

財務管理部門
Finance/Administration Section

ICS 組織 vs. 野戰部隊連部、營部

直屬上級指揮官

協同作戰上級指揮官

指揮官（連長、營長）
INCIDENT COMMANDER
"the Boss"

作戰（參三）
OPERATIONS

"the Do'ers"

情報（參二）
PLANNING &
INTELLIGENCE

"the Planners"

後勤（參四）
LOGISTICS

"the Get'ers"

人事（參一）
FINANCE &
ADMINISTRATION
"the Keep-
Track'ers"

陸戰隊99師

師長 — 師部

戰鬥單位
- 步兵團
- 砲兵團
- 戰車營
- 兩棲偵搜營

戰鬥支援單位
- 工兵營
- 岸勤營
- 通信營
- 運輸營
- 補保營
- 醫務營

651兩棲登陸戰車大隊

652戰鬥支援大隊

ICS 的歷史淵源

- 1970年代南加州與亞利桑納州有連續的森林大火，損失慘重。
- 森林大火燒出了許多的問題：
  - 無線通信系統的頻率紊亂
  - 雜亂無章的資源分配
  - 溝通合作不良
  - 聯邦、州、地方政府的混亂
- ICS的概念在1968年亞利桑納州鳳凰城的消防局長會議中首度形成。
- ICS的管理層級仿照美國海軍的指揮階層體系以便應付在加州和亞利桑納州經常發生的森林火災。
- 加州消防單位的開始著手解決問題，發展出ICS
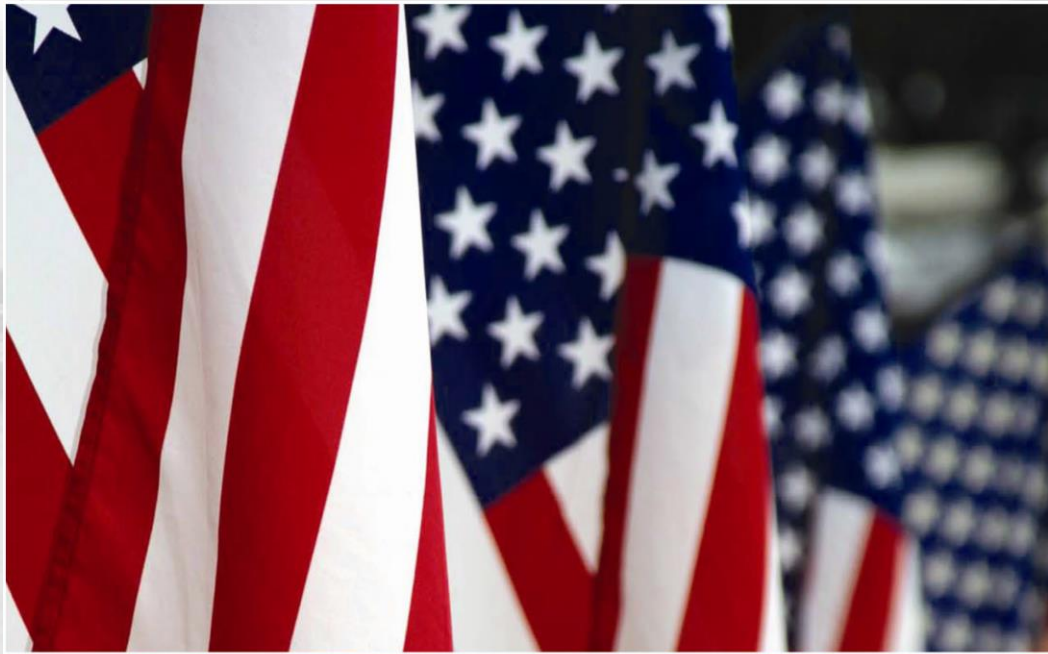
National Incident Management System Guideline for Resource Management Preparedness

June 2021

FEMA

FEMA National Incident Support Manual

February 2011

FEMA

NIMS Components Review

Fundamentals and Concepts of NIMS

Communications and Information Management

Command and Coordination

Resource Management

Incident Command System

Multiagency Coordination Systems

Public Information

Incident Complexity Level: Incident Effect Indicators Summary

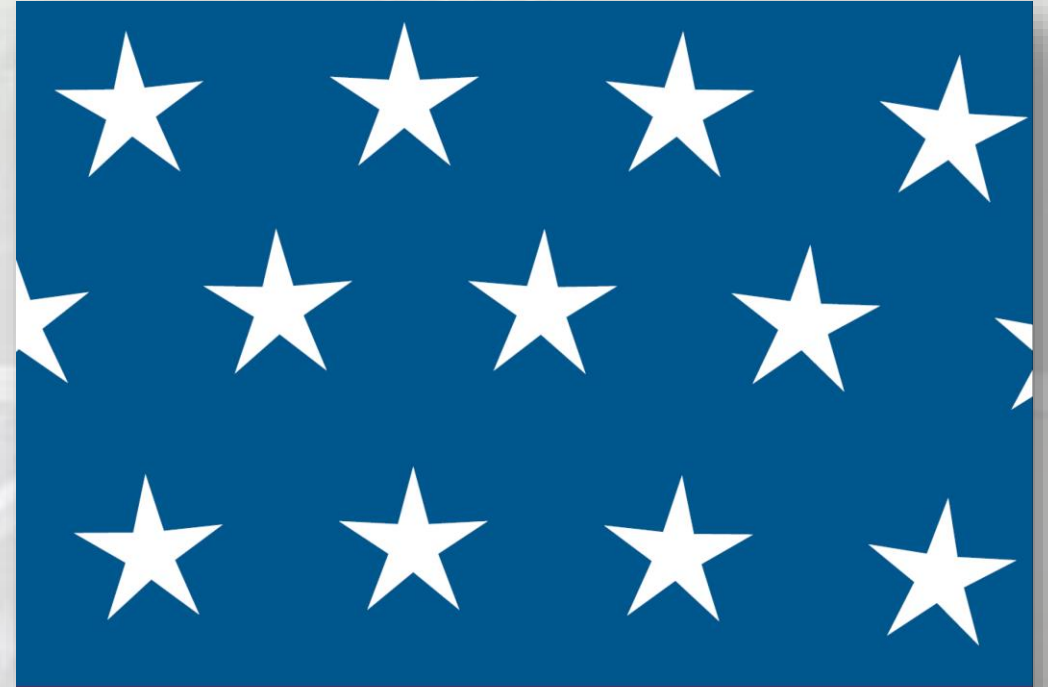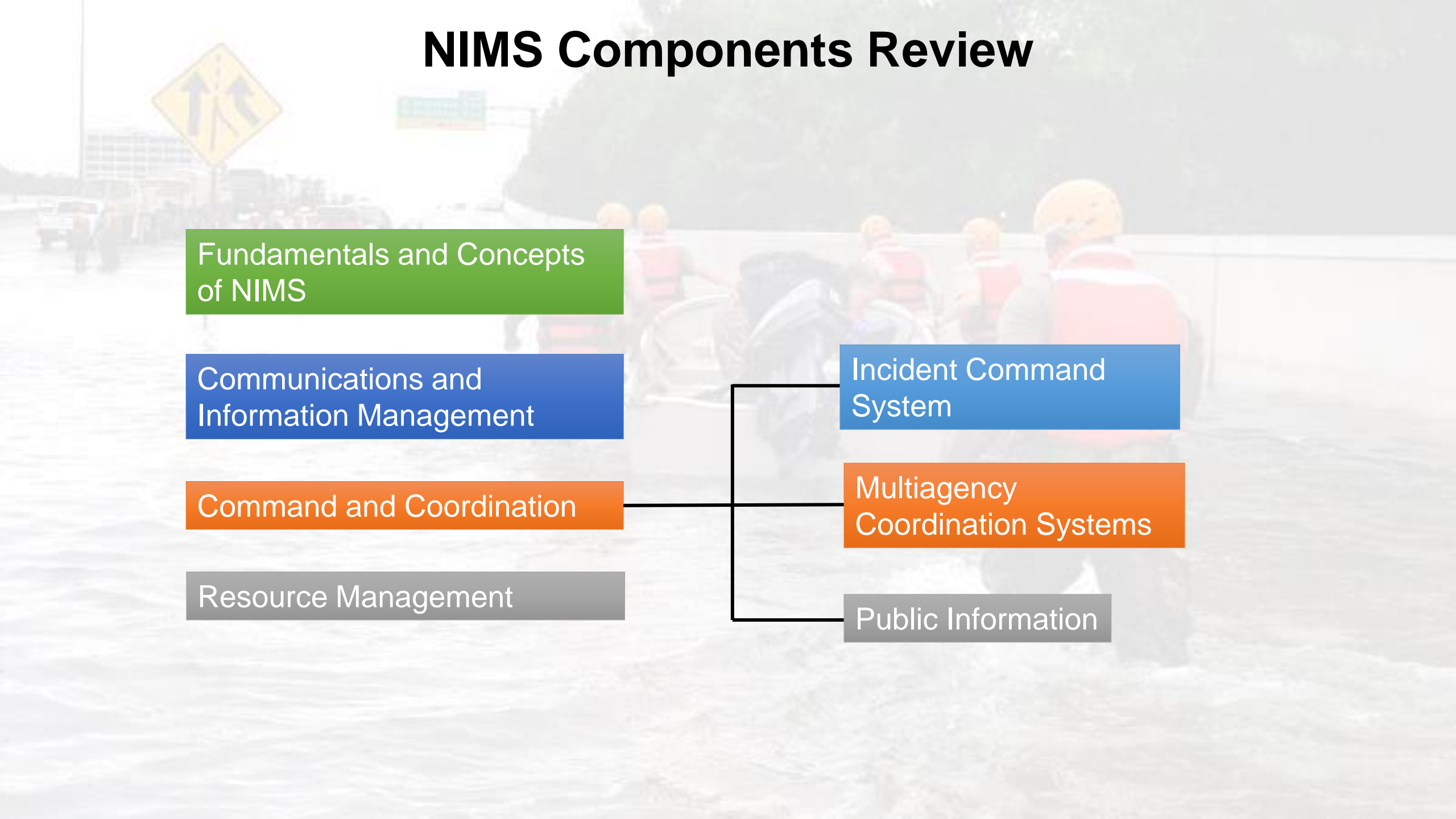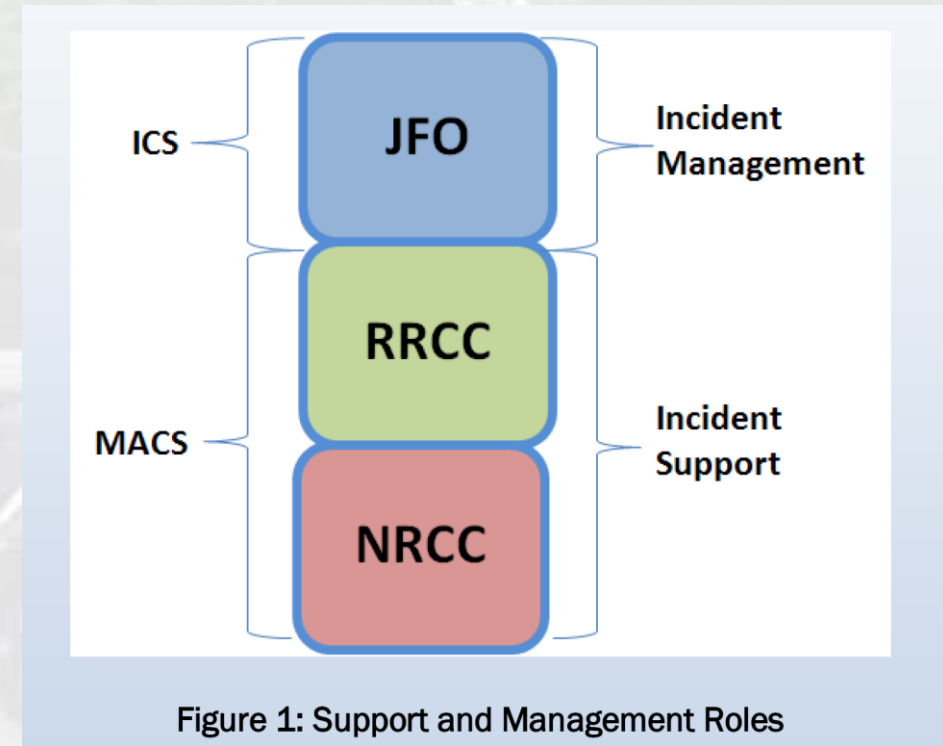| Type	Resistance to stabilization or mitigation	How long does it take for resources to meet incident objectives?	Effects on population immediately surrounding the incident	Length of incident effects	Evacuations necessary during mitigation	Adverse impact on CIKR	CIKR impact / mitigation measures	Coordination required with elected/ governing officials and stakeholder groups	Do conditions or actions that caused original incident persist?	Probability of cascading event or exacerbation of current incident
5	None	1-2 hours	Minimal	Minimal	Few or none	None	None	Minimal or none	No	None
4	Low	Several to 24 hours	Limited	Up to 24 hours	Few or none	Minimal	Uncomplicated within one operational period	Minimal or none	No	Low to none
3	Moderate	At least 24 hours	Moderate	Several days to over one week	Possible; may require shelter	Threatens, damages, or destroys property	Adverse; multiple operational periods	Some	Possibly	Medium
2	High	Several days	Significant	Several days to two weeks	Possible; may require shelter/ housing for several days to months	Threatens, damages, or destroys property	Destructive; requires coordination over multiple operational periods	Moderate, including political organizations	Possibly	High
1	High	Numerous operational periods	Significant	Two weeks to over a month	May require shelter/ housing for several days to months	Significantly threatens, damages, or destroys property	Highly destructive; requires long-term planning and extensive coordination over multiple operational periods	High, including political organizations	Yes	High

Table 1: National Response Coordination Center and Staff activation levels

Activation Level[2]	Conditions	Staffing Guidelines

Level I	• An incident of such magnitude that the available assets that were designed and put in place for the response are completely overwhelmed or broken at the local, regional, or national-level.
	• Due to its severity, size, location, actual or potential impact on public health, welfare, and infrastructure, the incident requires an *extreme* amount of direct Federal assistance for response and recovery efforts for which the capabilities to support it do not exist at any level of government.
	• A Level I disaster requires extraordinary coordination among Federal, State, tribal, and local entities due to massive levels and breadth of damage, severe impact or multi-State scope.
	• Major involvement of FEMA (full activation of RRCC and NRCC), other Federal agencies (all primary ESF agencies activated), and deployment of initial response resources are required to support requirements of the affected State.
		• Full staffing, including all or most Emergency Support Functions (ESFs) required
		  • Approximately 130 staff
		• Organized by
		  • Sections
		  • Branches
		  • Groups and units

Level II	• A disaster which, due to its severity, size, location, actual or potential impact on public health, welfare, and infrastructure requires a *high* amount of direct Federal assistance for response and recovery efforts.
	• A Level II disaster requires elevated coordination among Federal, State, tribal, and local entities due to moderate levels and breadth of damage.
	• Significant involvement of FEMA (RRCC activation, possible NRCC activation), other Federal agencies (some ESF primary agencies activated to support the RRCC), and possible deployment of initial response resources are required to support the requirements of the affected State.
		• Mid-level staffing required
		  • Approximately 65 staff
		• Organized by
		  • Sections
		  • Select branches
		  • Groups and units

Level III	• A disaster which, due to its severity, size, location, actual or potential impact on public health, welfare, and infrastructure requires a moderate amount of direct Federal assistance.
	• Typically this is primarily a recovery effort with minimal response requirements and existing Federal regional resources will meet requests.
	• A Level III disaster requires coordination among involved Federal, State, tribal, and local entities due to minor-to-average levels and breadth of damage. Federal assistance may be limited to activation of only one or two ESF primary agencies.
		• Minimal staff required
		  • Approximately 30 staff
		• Organized by
		  • Sections
		  • Select units
		  • Specialists

Watch Steady State	• No event or incident anticipated • National Watch maintains situation awareness	• Normal office staffing required

Figure 1: Support and Management Roles

Figure 2: Organization Chart for the National Response Coordination Staff

What Is a Multiagency Coordination System?

MAC Systems provide the architecture to support coordination for:

- Incident prioritization.

- Critical resource allocation.

- Communications systems integration.

- Information coordination.

The elements of MAC Systems include:
- Facilities.
- Equipment.
- Personnel.
- Procedures.
- Communications.

MAC System elements

- **Multiagency Coordination Groups**—Agencies, such as emergency management agencies, are used to facilitate incident management and policy coordination. MAC Groups are typically used when incidents cross disciplinary or jurisdictional boundaries or involve complex incident management scenarios. Examples include Emergency Operations Centers (EOCs), Multiagency Coordination (MAC) Groups, Departmental Emergency Operations Centers (DEOCs), and Joint Field Offices (JFOs).

- **Emergency Operations Centers**—EOCs are the physical locations at which the coordination of information and resources to support incident management activities normally takes place.

- **On-Scene Command Structures** (e.g., Single and Unified Command, Area Command, and Unified Area Command)—Multiagency coordination takes place at the incident scene through the organizational options of Unified Command and Unified Area Command and the Liaison Officer positions.
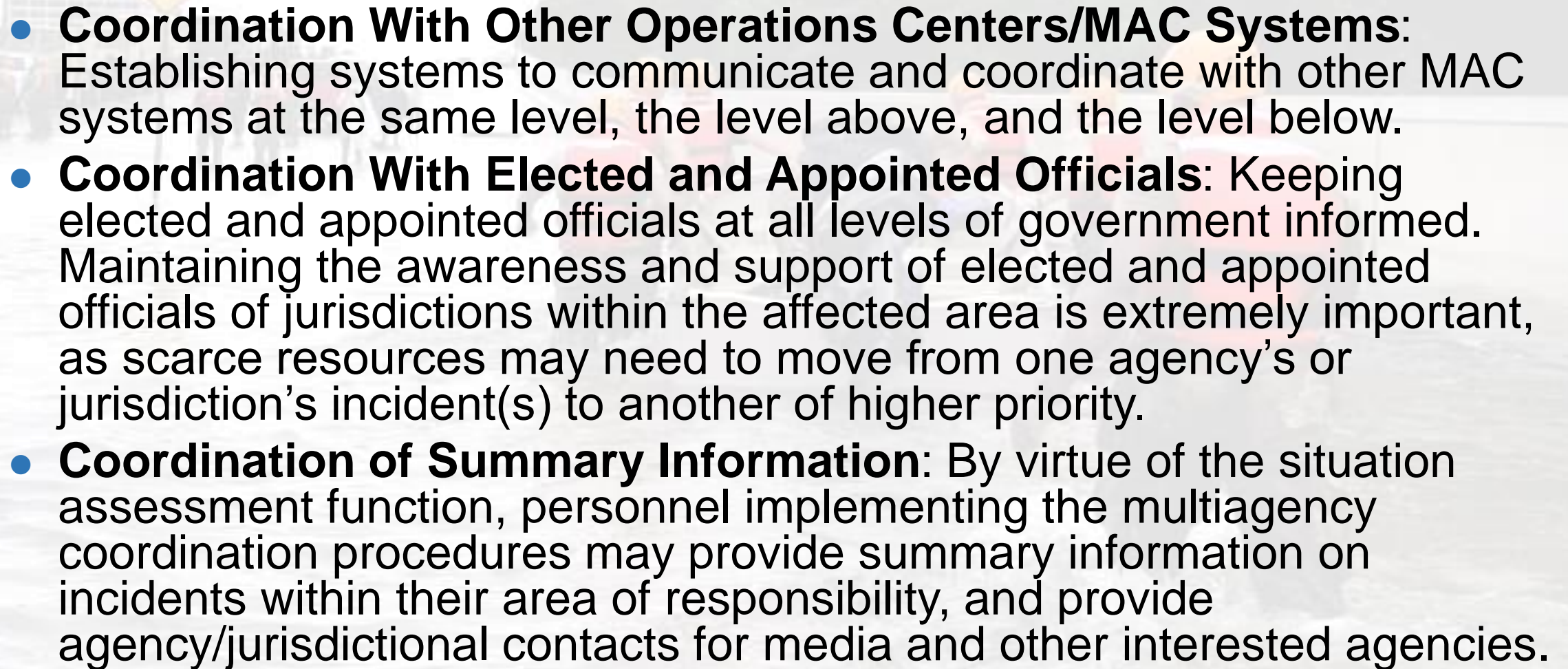
- **Resource Centers**—Resource centers at the State and Federal levels reach out to multiple agencies for resources to support incidents.

- **Dispatch Centers**—Dispatch centers have the authority to request resources from immediate mutual-aid agencies to support the concepts of dispatching the closest forces and total mobility.

Unity of Command & Unity of Effort

MAC Systems/EOCs Functions

- **Situation Assessment**: Collection, processing, and display of all information needed including consolidating agency/jurisdiction situation reports, obtaining supplemental information, and preparing maps and status boards.

- **Incident Priority Determination**: Establishing the priorities among ongoing incidents within the defined area of responsibility is another component of MAC system. Typically, a process or procedure is established to coordinate on-scene responders to prioritize the incident demands for critical resources.

- **Critical Resource Acquisition and Allocation**: Managing scarce resources, in line with incident priorities. Resource management includes identifying and acquiring needed resources in addition to allocating existing or known resources.

- **Support of Relevant Incident Management Policies and Interagency Activities**: Coordinating, supporting, and assisting with policy-level decisions and interagency activities relevant to incident management activities, policies, priorities, and strategies.

- **Coordination With Other Operations Centers/MAC Systems**: Establishing systems to communicate and coordinate with other MAC systems at the same level, the level above, and the level below.
- **Coordination With Elected and Appointed Officials**: Keeping elected and appointed officials at all levels of government informed. Maintaining the awareness and support of elected and appointed officials of jurisdictions within the affected area is extremely important, as scarce resources may need to move from one agency's or jurisdiction's incident(s) to another of higher priority.
- **Coordination of Summary Information**: By virtue of the situation assessment function, personnel implementing the multiagency coordination procedures may provide summary information on incidents within their area of responsibility, and provide agency/jurisdictional contacts for media and other interested agencies.

MAC System Operation Priorities

- Life safety
- Incident stabilization
- Property/environmental conservation

MAC System Components: Elements

Policy-Level Group (MAC Organization)
- Consists of agency representatives with decision-making authority.
- Prioritizes critical resource allocations.
- Provides policy direction.

Implementation Staff
- Consists of agency representatives with functional or jurisdictional authority.
- Implements multiagency coordination organization decisions

Coordination Center
- Serves as a location from which to operate.
- May consist of permanent or temporar facilities including dispatch center, EOCs, etc

Multiagency Coordination Centers

Organizational structures may be based on:

- Incident Command System principles.
- Management functions.
- Emergency support functions.
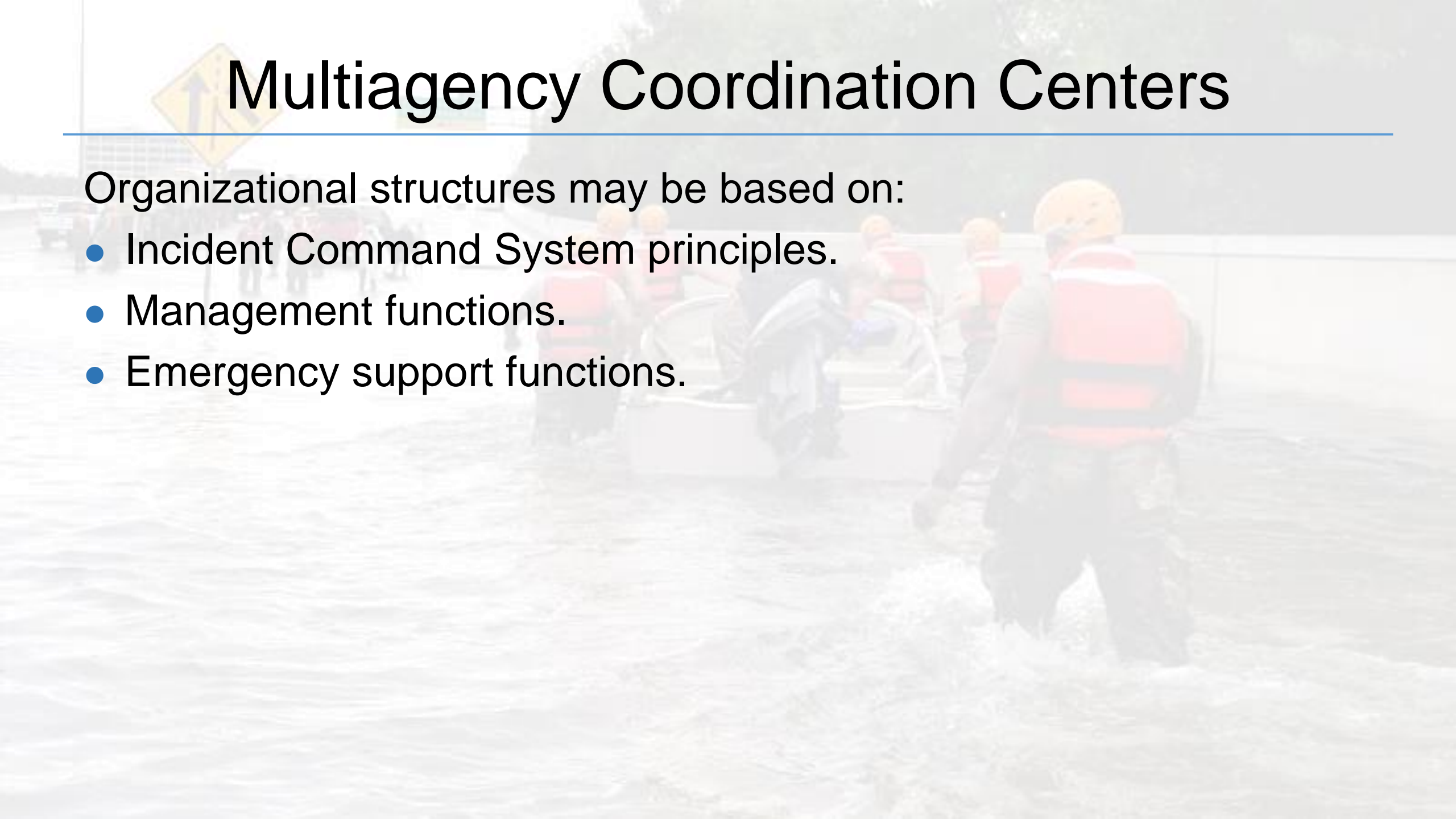
MAC Group Organization
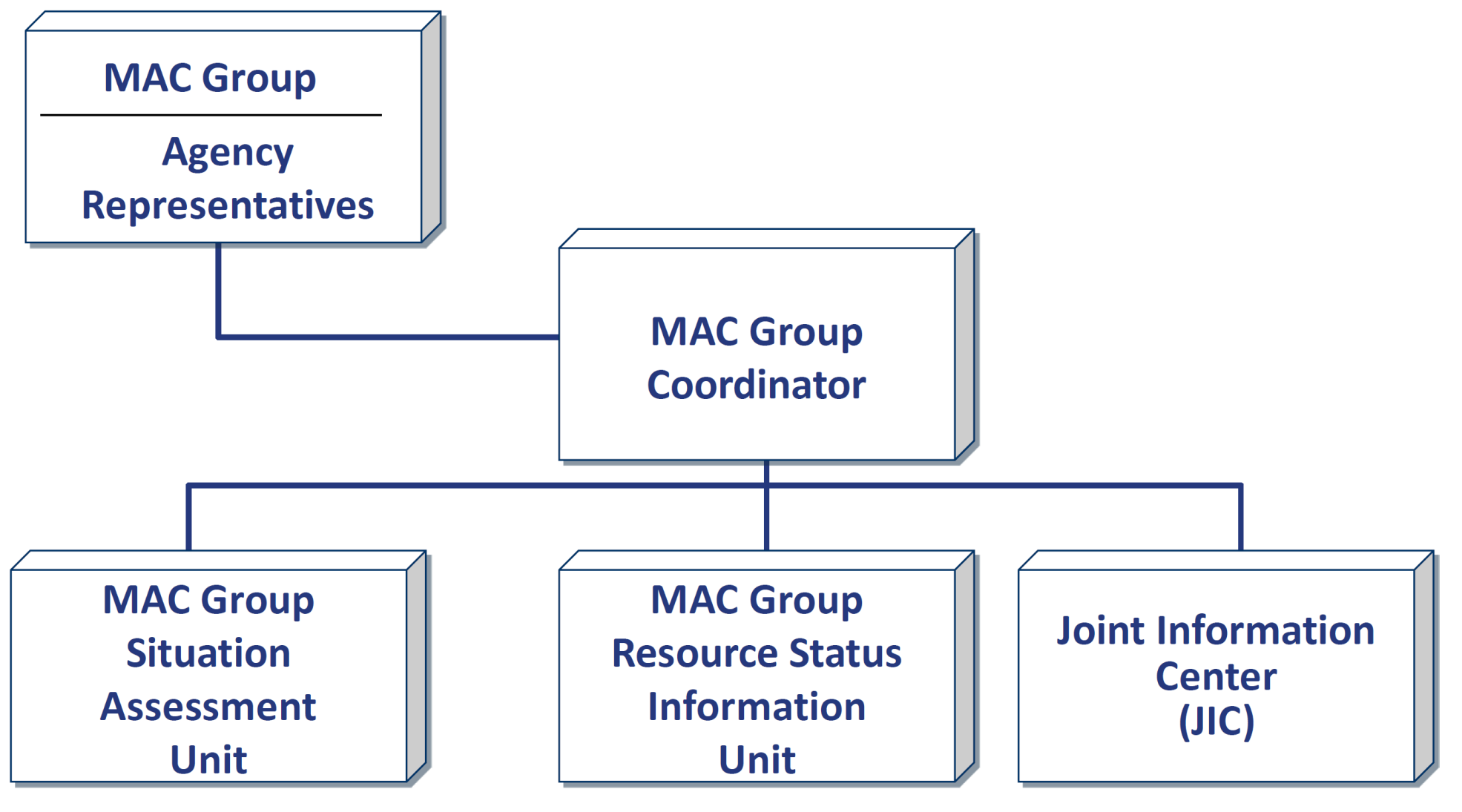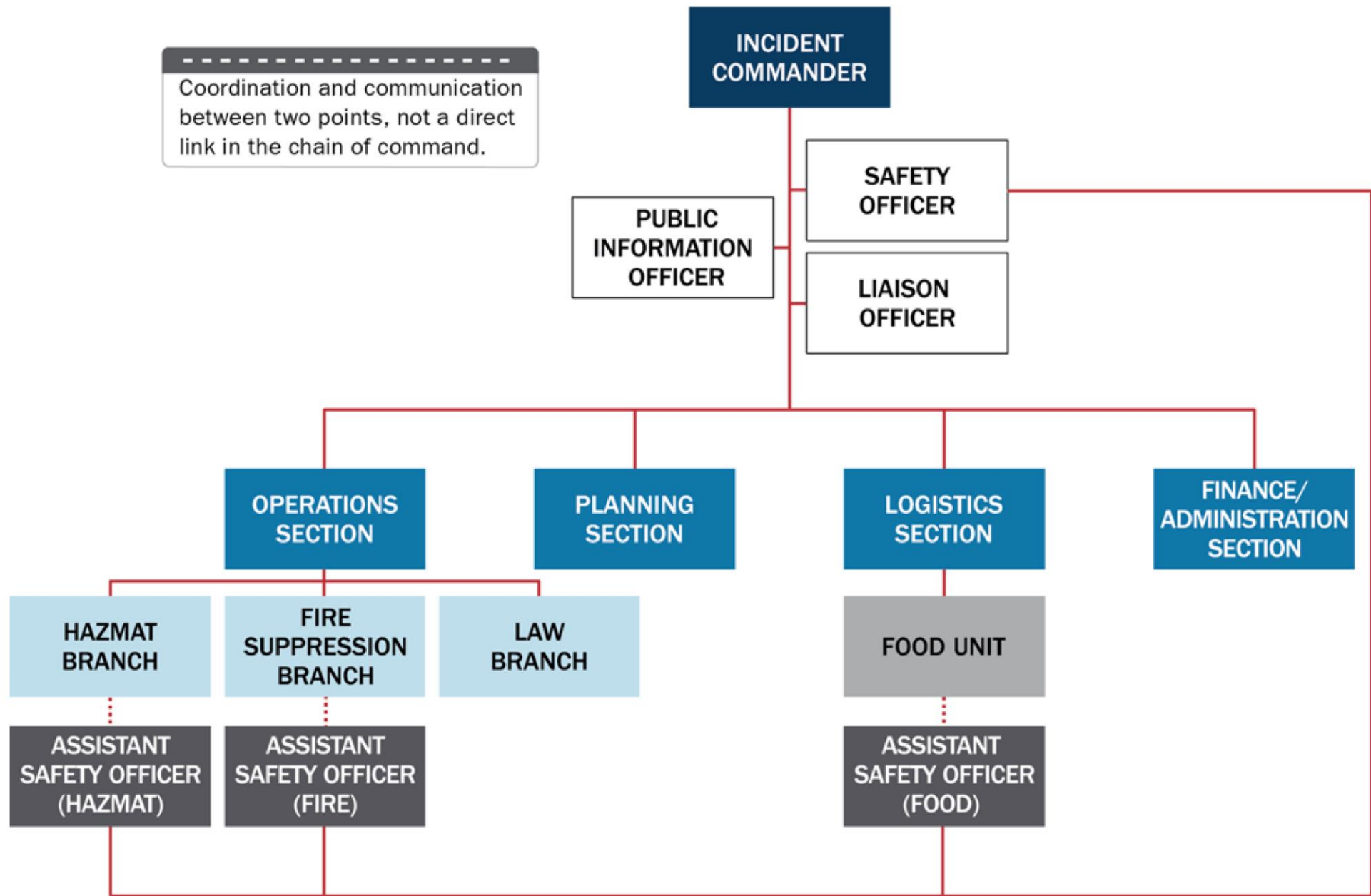
Figure A-1: Example of Assistant Safety Officers in ICS in an Incident with Multiple Branches

ICS觀念的釐清

- 事件指揮官必須負責所有未正式指派的角色任務
- 在意外事件當中並不是所有的部門都是必要的
- 一個工作成員可以賦予許多不同的角色
- 各個部門的主管的任派以功能取向，不預設資格限制
- ICS是由向下向上堆砌而成的，之後隨著任務的需要而擴編
- ICS就像是取之不竭的工具箱

Table 5.　FLL EM staff training matrix.

FLL Emergency Management Training Recommendations				
		LEVEL 1 TRAINING	LEVEL 2 TRAINING	LEVEL 3 TRAINING
COURSE NUMBER	COURSE NAME	AIRPORT COMMAND SECTION CHIEFS DEPUTY SECTION CHIEFS	BRANCH DIRECTORS UNIT LEADERS DIVISION SUPERVISORS GROUP LEADERS	SPECIALISTS MANAGERS STRIKE TEAMS TASK FORCES SINGLE RESOURCES
ICS-100	Introduction to ICS	✓	✓	✓
ICS-200	Basic ICS	✓	✓	✓
ICS-300	Intermediate ICS for Expanding Incidents	✓	✓	+
ICS-400	Advanced ICS for Complex Incidents	✓	✓	+
IS-700	NIMS: An Introduction	✓	✓	✓
IS-702	NIMS Public Information Systems	✓	+	
IS-706	NIMS Intrastate Mutual Aid, An Introduction	✓	+	
IS-775	EOC Management and Operations	✓		+
IS-800	NRF, An Introduction	✓	✓	
	EOC Familiarization	✓	✓	✓
	Position-Specific Training	✓	+	+
	AEP Familiarization	✓	✓	✓

✓ = required training; + = recommended/additional training.

A Look at ICS for Local Government:
Public Works in Action

JUSTICE INSTITUTE
of BRITISH COLUMBIA

Delta

0:02 / 9:09

Table 3: Examples of JIC Types

Type	Characteristics
Incident JIC	• Optimal physical location for local and Incident Commander, Unified Command, or EOC director-assigned PIOs to co-locate • Easy media access (paramount to success) • May be located at an EOC
Virtual JIC	• Established when physical co-location is not feasible • Incorporates technology and communication protocols
Satellite JIC	• Smaller in scale than other JICs • Established to support the primary JIC • Operates under the primary JIC's control
Area JIC	• Supports wide-area, multiple-incident ICS structures • Could be established locally or statewide • Media access is paramount
National JIC	• Typically established for long-duration incidents • Established to support Federal incident management • Staffed by numerous Federal departments and/or agencies • Media access is paramount

Coordination

- Multiagency coordination is process that allows all levels of government and all disciplines to work together more efficiently and effectively.

- An entity/individual may have "command and control" over resources and policies without being in command of the incident scene.

EOC Functions

- Coordination.
- Communications.
- Resource dispatching and tracking.
- Information collection, analysis, and dissemination.
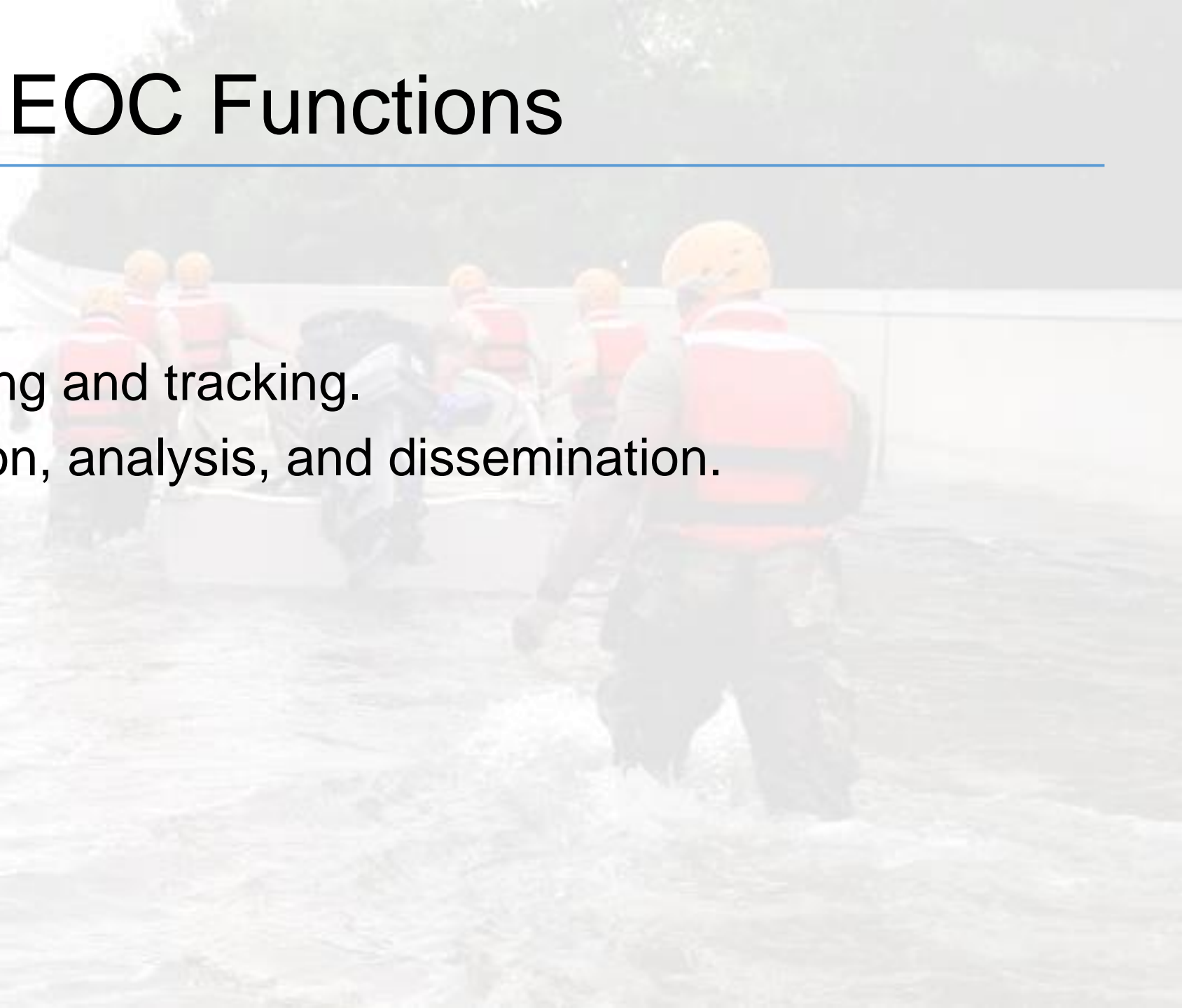
Four main ways to organize an EOC

- By major management activities. Includes separate groups for policy, coordination, operations, and resources.

- Using an ICS structure. Consists of sections for operations, planning, logistics, and finance/administration.

- Using an ESF structure. Assigns emergency support functions under the typical ICS staff positions.

- Using the "generic" MAC Group structure. Made up of organization, agency, or jurisdiction representatives who are authorized to commit agency resources and funds.

NIMS does not dictate a specific structure for Multiagency Coordination Entities such as EOCs.

EOC Organizational Structure in NIMS

Structure Type	Benefits
ICS or ICS-like Structure	The ICS organizational structure is familiar to those with ICS training. It most closely aligns with the structure used for on-scene incident management.
Incident Support Model	This structure puts the EOC director in direct contact with those conducting situational awareness and information management. It streamlines resource sourcing, ordering and tracking.
Departmental Structure	By operating in the context of their normal relationships, department/agency representatives can function in the EOC with minimal preparation and startup time.

NIMS並沒有要求EOC一定要用功能分組

NIMS does not dictate a specific structure for Multiagency Coordination Entities such as EOCs.

National Response Framework

Fourth Edition
October 28, 2019

Homeland Security

National Incident Management System

Third Edition
October 2017
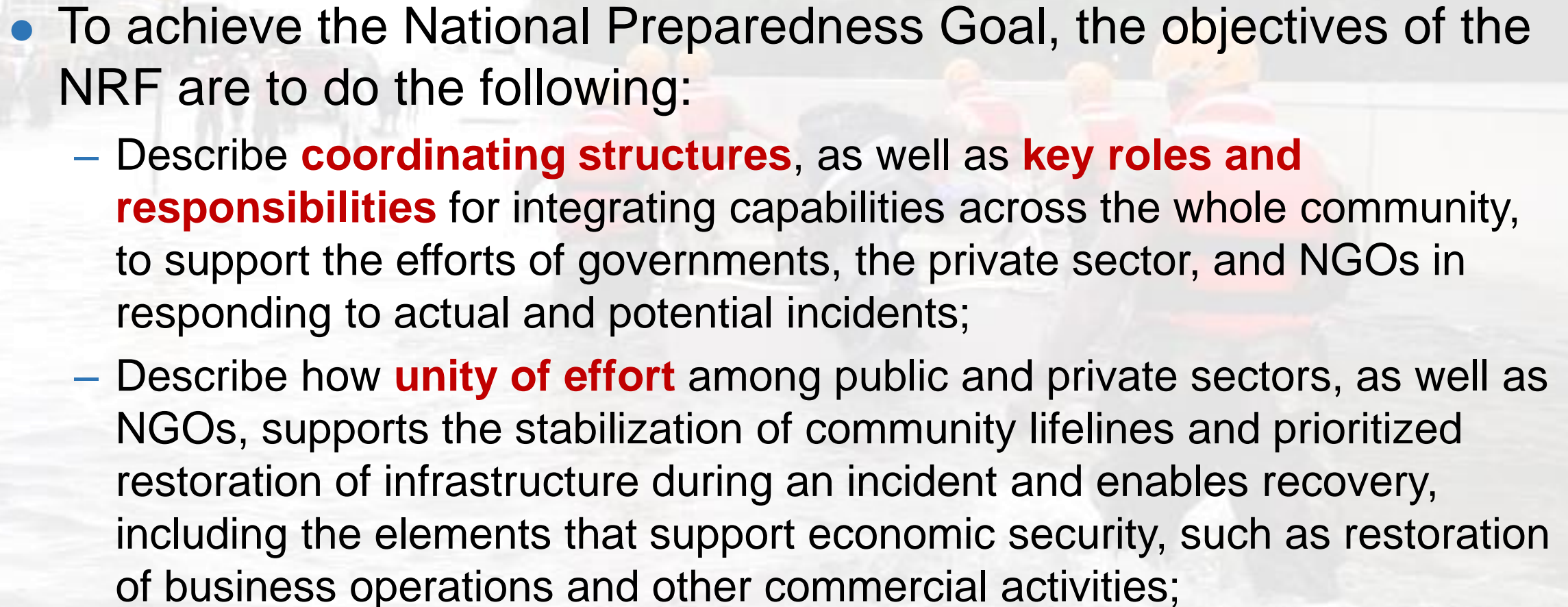
FEMA
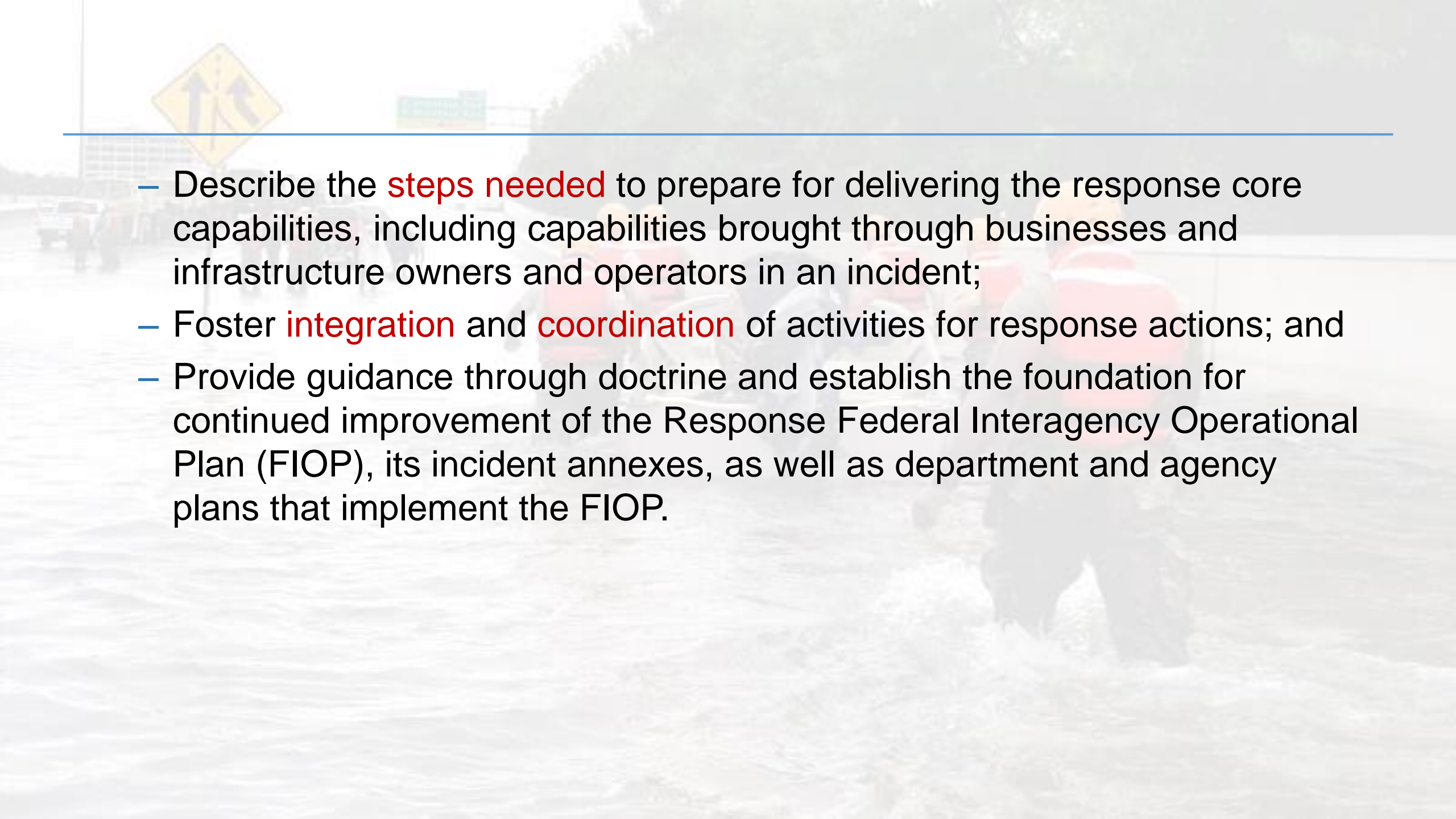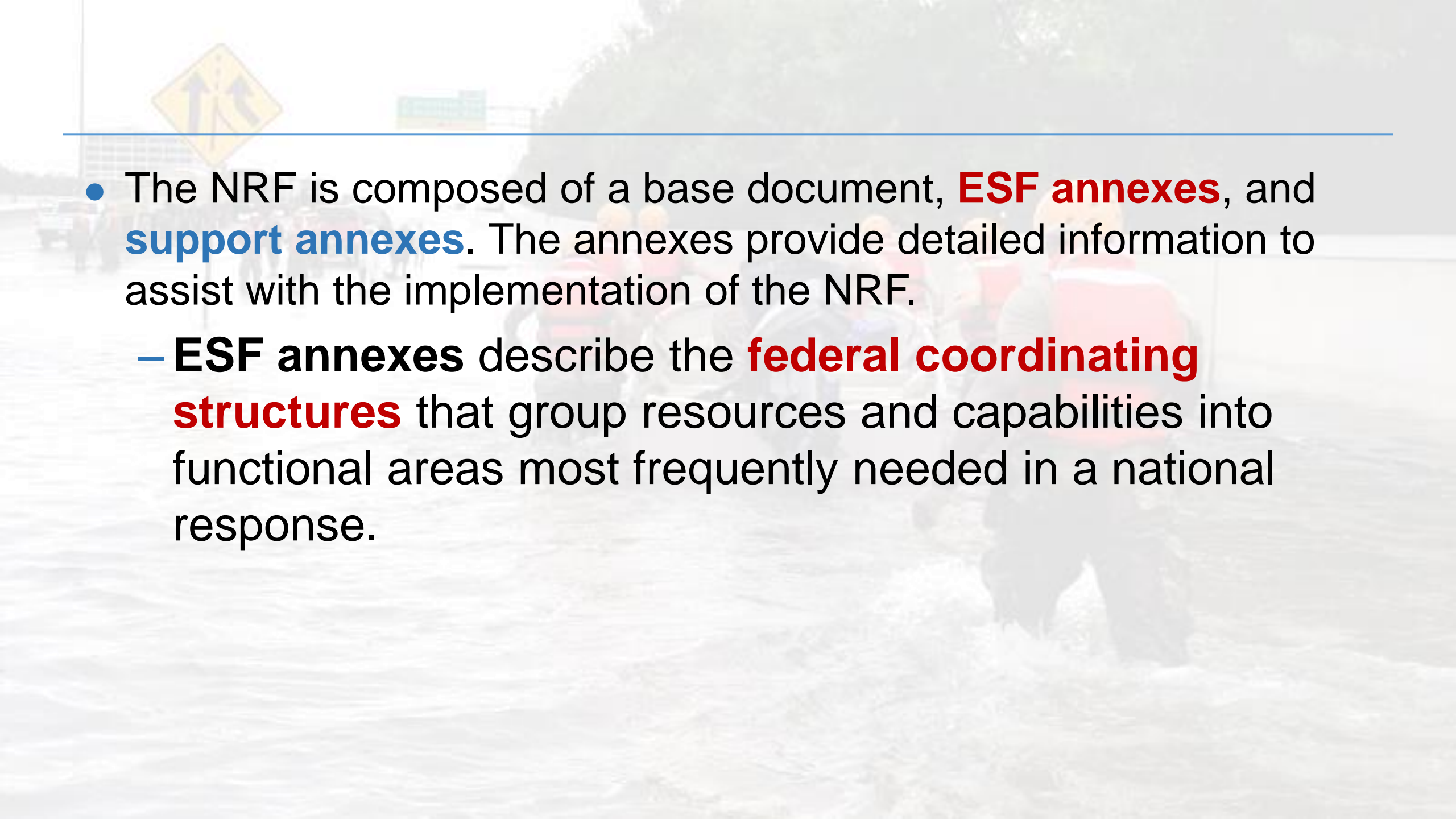
NRF Framework Purpose and Organization
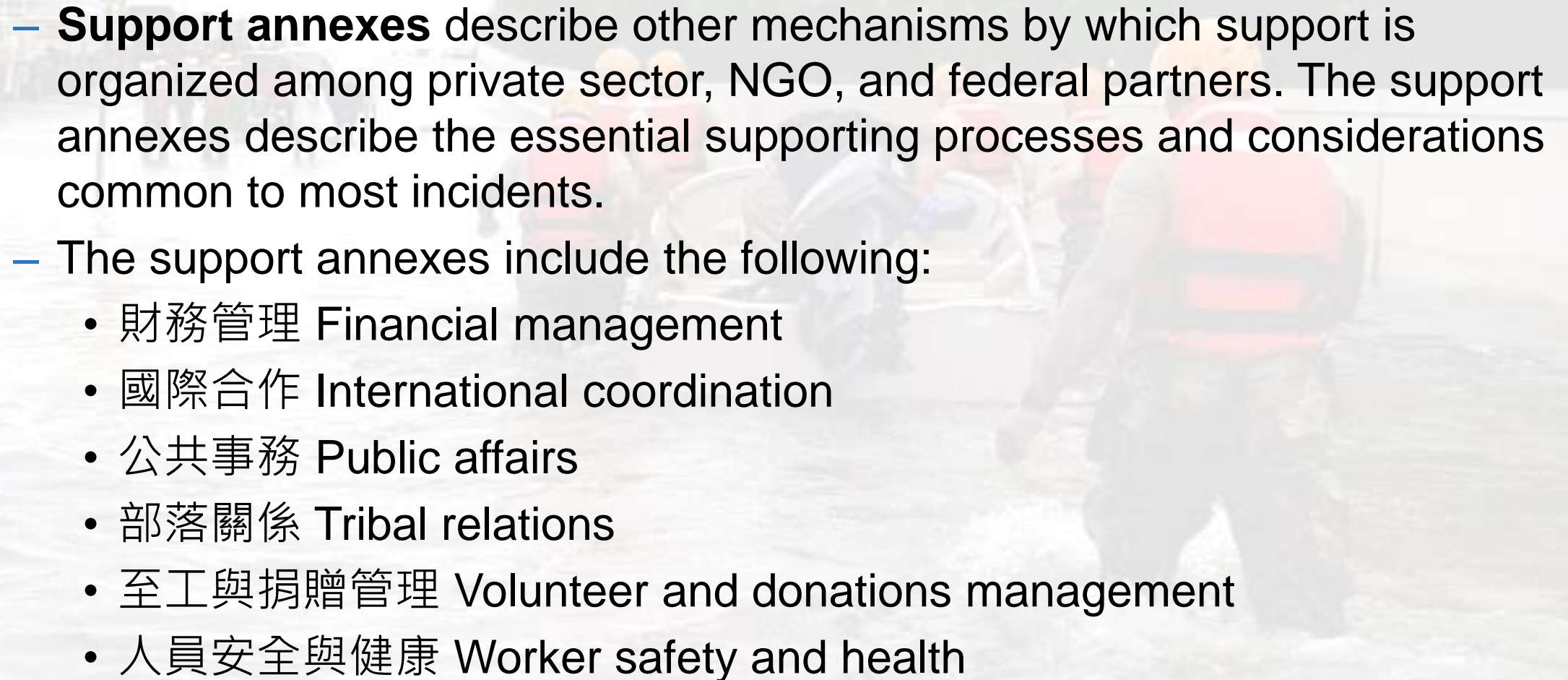
- The NRF is a guide to how the Nation responds to all types of disasters and emergencies. The NRF is built on **scalable, flexible, and adaptable** concepts identified in the National Incident Management System (NIMS) to **align key roles and responsibilities across the Nation**.

- The NRF describes specific authorities and best practices for managing incidents that range from the serious but purely local to those that are catastrophic and national in scope.

- To achieve the National Preparedness Goal, the objectives of the NRF are to do the following:
  - Describe **coordinating structures**, as well as **key roles and responsibilities** for integrating capabilities across the whole community, to support the efforts of governments, the private sector, and NGOs in responding to actual and potential incidents;
  - Describe how **unity of effort** among public and private sectors, as well as NGOs, supports the stabilization of community lifelines and prioritized restoration of infrastructure during an incident and enables recovery, including the elements that support economic security, such as restoration of business operations and other commercial activities;

– Describe the steps needed to prepare for delivering the response core capabilities, including capabilities brought through businesses and infrastructure owners and operators in an incident;

– Foster integration and coordination of activities for response actions; and

– Provide guidance through doctrine and establish the foundation for continued improvement of the Response Federal Interagency Operational Plan (FIOP), its incident annexes, as well as department and agency plans that implement the FIOP.

- The NRF is composed of a base document, **ESF annexes**, and **support annexes**. The annexes provide detailed information to assist with the implementation of the NRF.
  - **ESF annexes** describe the **federal coordinating structures** that group resources and capabilities into functional areas most frequently needed in a national response.

– **Support annexes** describe other mechanisms by which support is organized among private sector, NGO, and federal partners. The support annexes describe the essential supporting processes and considerations common to most incidents.

– The support annexes include the following:
  - 財務管理 Financial management
  - 國際合作 International coordination
  - 公共事務 Public affairs
  - 部落關係 Tribal relations
  - 至工與捐贈管理 Volunteer and donations management
  - 人員安全與健康 Worker safety and health

什麼是緊急應變支援功能 ESFs？

- ESFs are **resources** organized into 15 categories that are available under the NRF, such as oil and hazardous material response, transportation, and fire fighting.

- Emergency Support Functions (ESFs) is the **grouping of governmental and certain private sector capabilities into an organizational structure** to provide **support, resources, program implementation, and services** that are most likely needed to *save lives, protect property and the environment, restore essential services and critical infrastructure*, and help victims and communities return to normal following natural or man-made disasters or emergencies.

ESFs provide the structure for grouping functions most frequently used to provide Federal support to states and federal-to-federal support, both for declared disasters and emergencies under the Stafford Act as well as for non-Stafford Act incidents.

PRESIDENT

EXPRESS OR IMPLIED AGENCY AUTHORITY	PRESIDENTIAL DELEGATION	STAFFORD ACT

FEDERAL DEPARTMENTS AND AGENCIES

- Coordinate response activities under statutory authorities

Lead agency coordinates response if:

- Statutory authority exists
- The Secretary of Homeland Security is not exercising Presidentially delegated coordination responsibilities

The lead agency can request Federal-to-Federal support

DHS SECRETARY

- Coordinates Federal Government resources utilized in response, pursuant to Presidential delegation
- Coordinates Stafford Act activities as delegated by Executive Order 12148

The Secretary of Homeland Security coordinates Federal response if:

- Federal agency requests Federal-to-Federal support
- Two or more agencies are substantially involved
- Directed by the President
- Resources of local and State authorities are overwhelmed and Federal assistance has been requested

FEMA ADMINISTRATOR*

- Coordinates Stafford Act activities as delegated by DHS Delegation 9001.1

FCOs** and FEMA Administrator coordinate using:

- Stafford Act and Inherent Agency authorities
- Disaster Relief Fund
- Authority to task other Federal agencies with or without reimbursement

* The FEMA Administrator has additional standing authority for response under the Homeland Security Act and Title VI of the Stafford Act. Per the Homeland Security Act, the FEMA Administrator serves as the principal advisor to the President, Homeland Security Council, and Secretary of Homeland Security.

** The Federal Coordinating Officer (FCO) is appointed under Section 302 of the Stafford Act.

Figure 5: Incident Management and Response Authorities for the Federal Government

- However, ESFs are **not solely attributed to any single organization**, nor are they mechanisms for executing an agency's statutory authorities. The federal ESFs **bring together the capabilities and resources** of federal departments, agencies, and other national-level assets.

- Along with other stakeholders, ESF resources are assigned according to their **capabilities, taskings, and requirements** to support all levels of a federal response, such as the Joint Field Office (JFO), Regional Response Coordination Center (RRCC), or National Response Coordination Center (NRCC).

- At the federal level, ESFs are **groups of organizations** that work together to deliver core capabilities to stabilize community lifelines in support of an adequate response. See the table below to view the ESFs and example actions that each ESF may take to support an incident.

為何需要ESFs？

災害地域廣

需要資源多

災害規模大

救災時間長

救災單位多

社區維生系統 Community Lifeline

Community Lifeline	Description
Safety and Security	Law enforcement and government services, as well as the associated assets that maintain communal security, provide search and rescue, evacuations, and firefighting capabilities, and promote responder safety.
Food, Water, Shelter	Support systems that enable the sustainment of life, such as water treatment, transmission, and distribution systems; food retail and distribution networks; wastewater collection and treatment systems; as well as sheltering, and agriculture.
Health and Medical	Infrastructure and service providers for medical care, public health, patient movement, fatality management, behavioral health, veterinary support, and health or medical supply chains.
Energy	Service providers for electric power infrastructure, composed of generation, transmission, and distribution systems, as well as gas and liquid fuel processing, transportation, and delivery systems. Disruptions can have a limiting effect on the functionality of other community lifelines.

社區維生系統 Community Lifeline

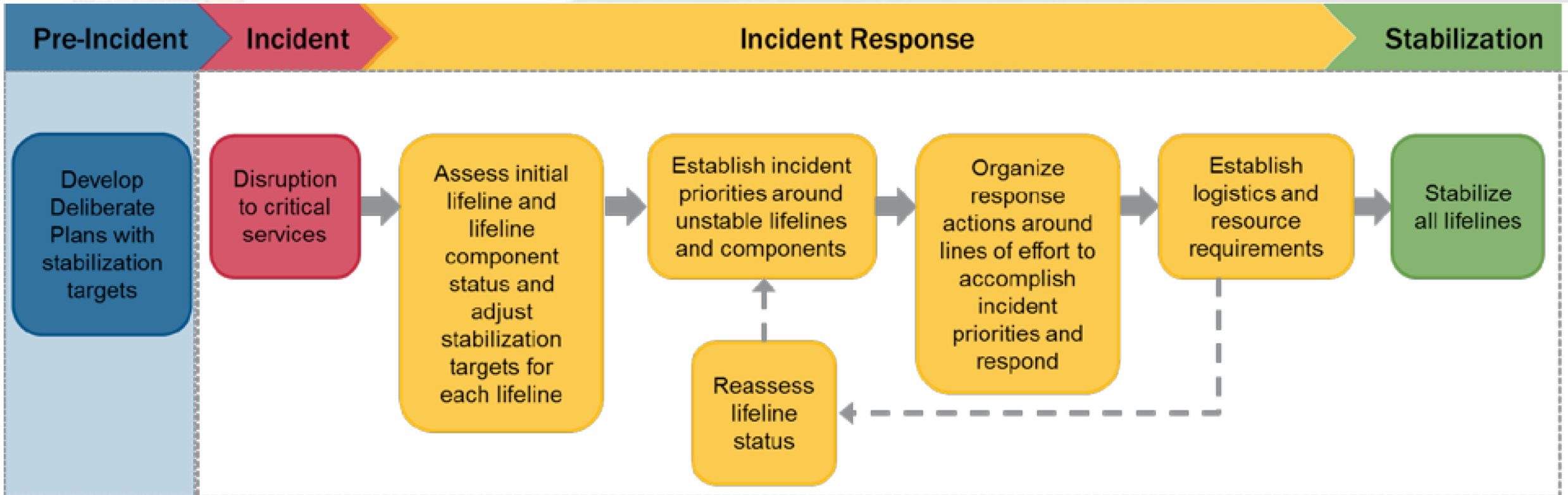| Community Lifeline	Description
Communications	Infrastructure owners and operators of broadband Internet, cellular networks, landline telephony, cable services (to include undersea cable), satellite communications services, and broadcast networks (radio and television). Communication systems encompass a large set of diverse modes of delivery and technologies, often intertwined but largely operating independently. Services include elements such as alerts, warnings, and messages, as well as 911 and dispatch. Also includes accessibility of financial services.
Transportation	Multiple modes of transportation that often serve complementary functions and create redundancy, adding to the inherent resilience in overall transportation networks. Transportation infrastructure generally includes highway/roadways, mass transit, railway, aviation, maritime, pipeline, and intermodal systems.
Hazardous Material	Systems that mitigate threats to public health/welfare and the environment. This includes assessment of facilities that use, generate, and store hazardous substances, as well as specialized conveyance assets and efforts to identify, contain, and remove incident debris, pollution, contaminants, oil or other hazardous substances.

Figure 2: The Application of Community Lifelines to Support Emergency Management

ESFs的主要目的：恢復社區的維生系統，使社區能儘快復原

Table 2: Examples of a Steady-State Relationship Between Community Lifelines and Response Core Capabilities

Community Lifeline*	Related Response Core Capabilities**	Infrastructure Systems	Situational Assessment	Operational Coordination	Public Information and Warning	Planning
Safety and Security	• On-scene Security, Protection, and Law Enforcement • Fire Management and Suppression • Mass Search and Rescue Operations • Public Health, Healthcare, and Emergency Medical Services • Environmental Response/Health and Safety					
Food, Water, Shelter	• Mass Care Services • Logistics and Supply Chain Management					
Health and Medical	• Public Health, Healthcare, and Emergency Medical Services • Fatality Management Services • Environmental Response/Health and Safety • Logistics and Supply Chain Management • Mass Care Services					
Energy (Power & Fuel)	• Logistics and Supply Chain Management					
Communications	• Operational Communications • Public Information and Warning					
Transportation	• Critical Transportation					
Hazardous Material	• Environmental Response/Health and Safety					

* Community Lifelines: How emergency managers assess and prioritize employment of capabilities for stabilization.

** Core Capabilities: An interoperable means to characterize capabilities that may be assessed, built, or validated during preparedness or applied to response operations.

美國聯邦對州、地方政府的支援體系（請求與提供）
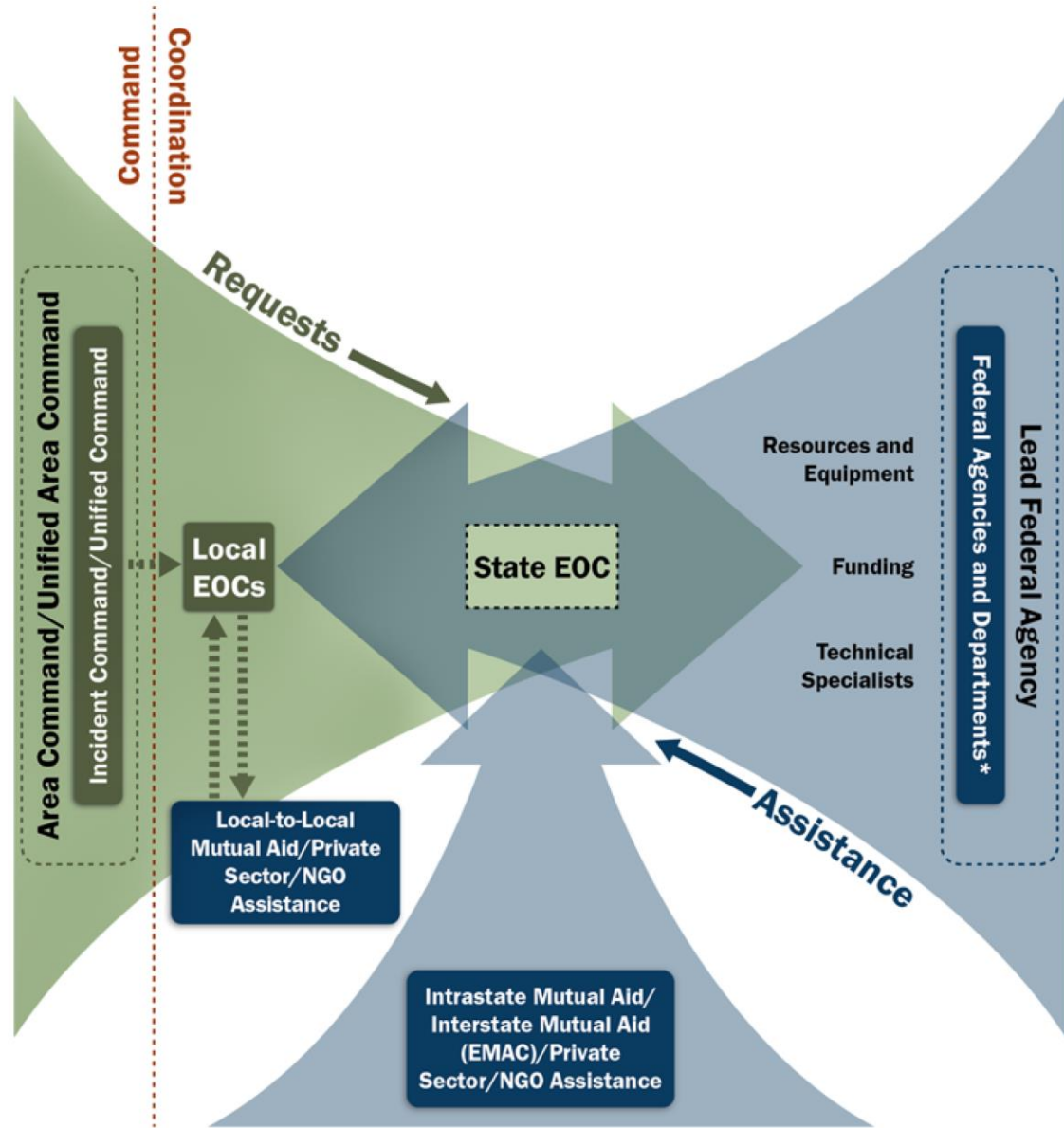
*Some Federal agencies (U.S. Coast Guard, Environmental Protection Agency, etc.) have statutory responsibility for response and may coordinate and/or integrate directly with affected jurisdictions. During responses conducted under Stafford Act declarations, FEMA establishes a Joint Field Office (JFO) to coordinate Federal response activities.

Figure 10: Federal Support to Response Activities

FEMA Emergency Support Functions

- ESF #1: Transportation 運輸
- ESF #2: Communications 通訊
- ESF #3: Public Works and Engineering 工務與工程
- ESF #4: Firefighting 消防
- ESF #5: Information and Planning 情報與計畫
- ESF #6: Mass Care, Emergency Assistance, Temporary Housing, and Human Services 照護、緊急協助、收容安置、人道服務
- ESF #7: Logistics 後勤
- ESF #8: Public Health and Medical Services 公共衛生與醫療

- ESF #9: Search and Rescue 搜救
- ESF #10: Oil and Hazardous Materials Response 油品與危害物質應變
- ESF #11: Agriculture and Natural Resources 農業與天然資源
- ESF #12: Energy 能源
- ESF #13: Public Safety and Security 公安與保全
- ESF #14: Cross-Sector Business and Infrastructure 跨部門事務與基礎設施
- ESF #15: External Affairs 對外事務

緊急支援功能 ESFs

ESFs are:

- The primary **operational-level mechanism** to provide assistance. 作業層級機制

- Organized around **functional capabilities** (e.g., emergency management, transportation, search and rescue, etc.)

The ESFs:
- Are coordinated by the Federal Emergency Management Agency (FEMA) through the National Response Coordination Center (NRCC), Regional Response Coordination Centers (RRCCs), and Joint Field Offices (JFOs).
- Are a critical mechanism to coordinate functional capabilities and resources provided by Federal departments and agencies, along with certain private-sector and nongovernmental organizations.

* Note that some States also have organized an ESF structure along this approach.

ESF General Duties 主要任務

- 投入機關資產 Commit agency assets.
- 同意並執行任務 Approve and implement mission assignments.
- 維持狀況意識並回報ESF作業 Maintain situational awareness and report on ESF operations.
- 代表機關參與任務小組和隨機群組 Represent agency on task forces and ad hoc groups.
- 擔任技術專家 Serve as technical experts.

ESF Member Roles and Responsibilities

- The federal government and many state governments organize their response resources and capabilities under the ESF construct.

- Each ESF is composed of a **federal department or agency** that has been designated as the ESF **coordinator**, along with a number of **primary and support agencies**.
每個ESF由一個聯邦政府單位主責，指定協調官
其他聯邦單位擔任支援角色

ESF Structure
ESF結構

Primary Agencies

ESF primary agencies are Federal agencies with significant authorities, resources, or capabilities for a particular function within an ESF. A Federal agency designated as an ESF primary agency serves as a Federal executive agent under the Federal Coordinating Officer (or Federal Resource Coordinator for non-Stafford Act incidents) to accomplish the ESF mission.

ESF Coordinator

The entity assigned to manage oversight for a particular ESF.

Support Agencies

Support Agencies. Support agencies are those entities with specific capabilities or resources that support the primary agencies in executing the mission of the ESF.

ESFs provide support to other ESFs. For example: ESF #3 – Public Works and Engineering may support rural ESF #5 – Emergency Management forces to obtain heavy equipment and/or demolition services as needed to suppress incident-related fires.

ESF Coordinator 協調官

- The ESF coordinator has **management oversight** for that particular ESF 協調官負責管理與監督

- Pre-incident planning and coordination
事前規劃與協調

- Ongoing contact with primary and support agencies
與各單位接觸

- Coordination with private-sector organizations
與私部門和民間組織協調

- Preparedness planning and exercise
整備規劃與演習

Primary and Support Agencies
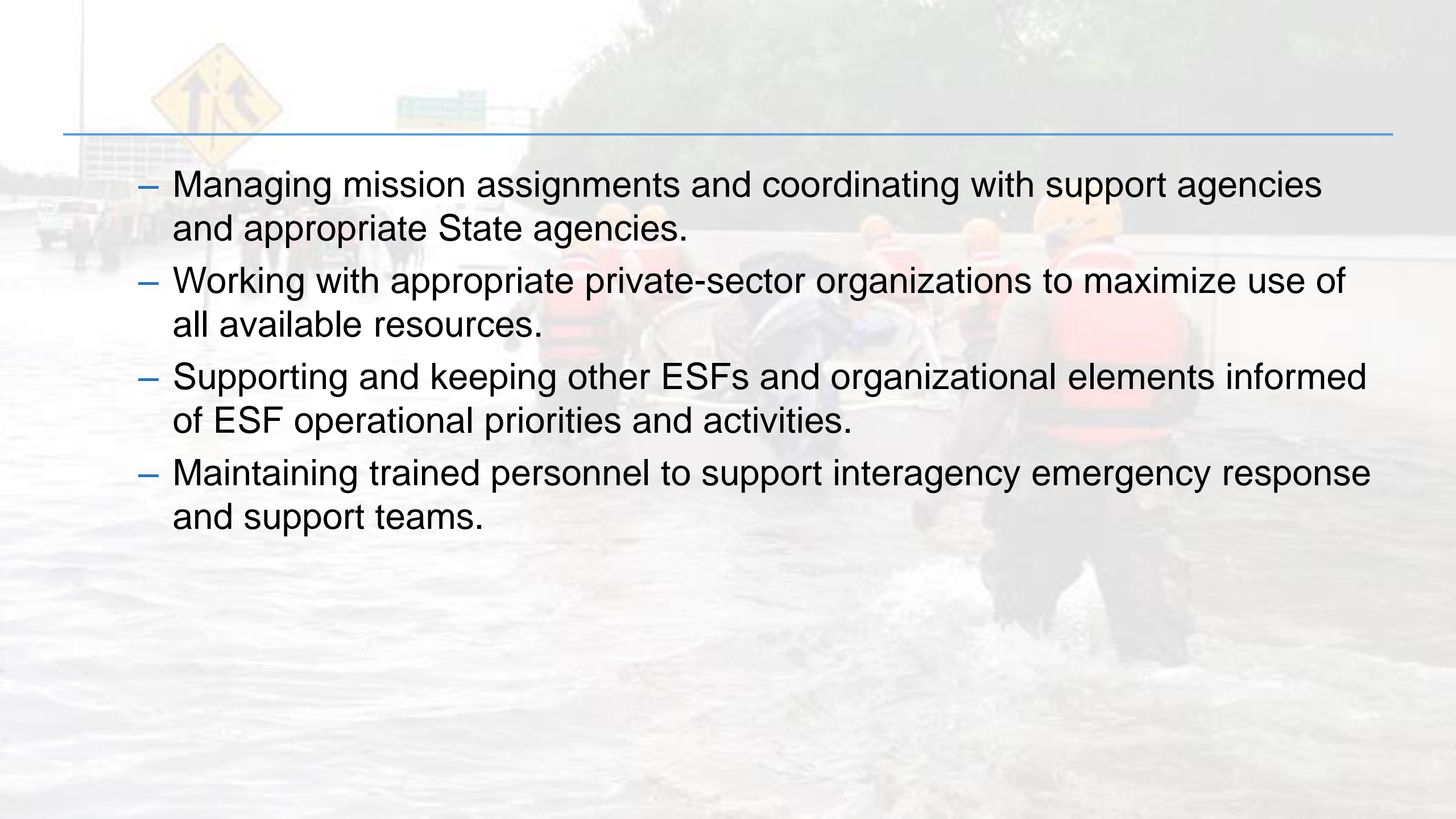
- 主責機關 Primary Agency: **Federal agency** with significant authorities, resources, or capabilities for a particular function within an ESF.

- 支援機關 Support Agency: Assists the primary agency by providing resources and capabilities in a given functional area.
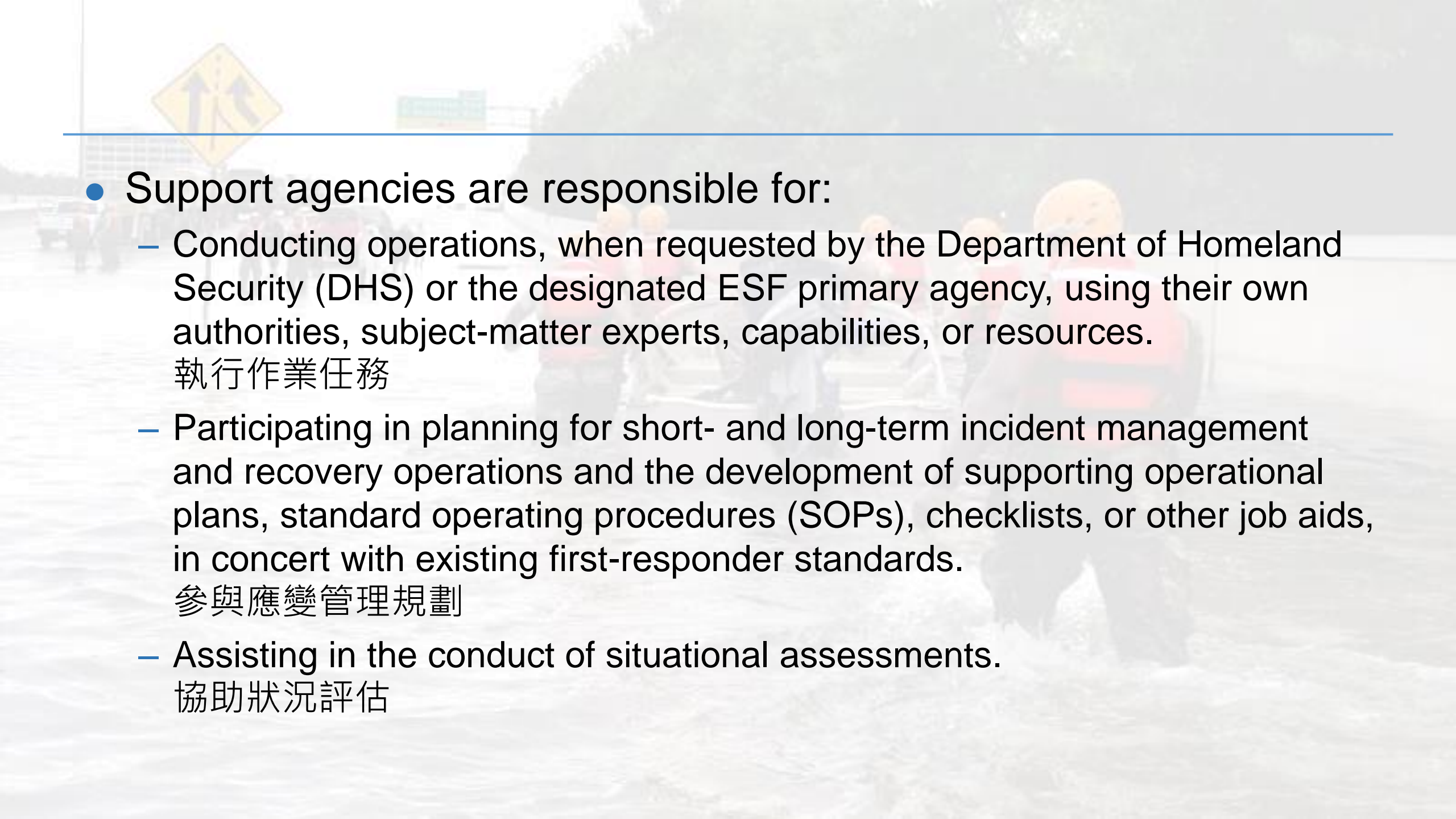
When an ESF is activated in response to an incident

- The primary agency is responsible for:
  - Serving as a **Federal executive agent** under the Federal Coordinating Officer (or Federal Resource Coordinator for non-Stafford Act incidents) to accomplish the ESF mission.
    擔任聯邦執行單位

  - Orchestrating Federal support within its functional area for an affected State.
    指揮聯邦支援

  - Providing staff for the operations functions at fixed and field facilities.
    提供執行人力

  - Notifying and requesting assistance from support agencies.

– Managing mission assignments and coordinating with support agencies and appropriate State agencies.

– Working with appropriate private-sector organizations to maximize use of all available resources.

– Supporting and keeping other ESFs and organizational elements informed of ESF operational priorities and activities.

– Maintaining trained personnel to support interagency emergency response and support teams.

- Support agencies are responsible for:
  - Conducting operations, when requested by the Department of Homeland Security (DHS) or the designated ESF primary agency, using their own authorities, subject-matter experts, capabilities, or resources.
    執行作業任務
  - Participating in planning for short- and long-term incident management and recovery operations and the development of supporting operational plans, standard operating procedures (SOPs), checklists, or other job aids, in concert with existing first-responder standards.
    參與應變管理規劃
  - Assisting in the conduct of situational assessments.
    協助狀況評估
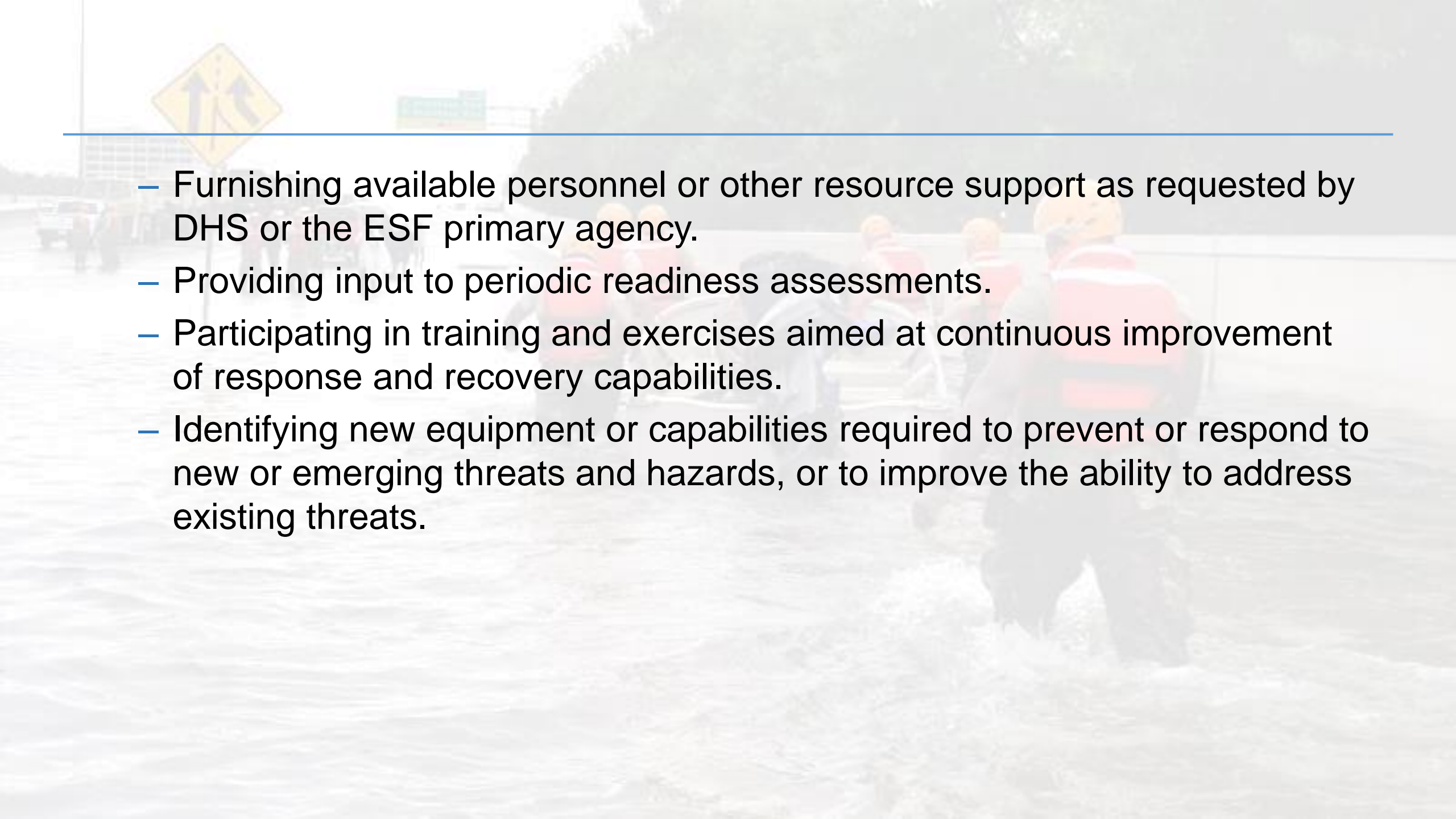
– Furnishing available personnel or other resource support as requested by DHS or the ESF primary agency.

– Providing input to periodic readiness assessments.

– Participating in training and exercises aimed at continuous improvement of response and recovery capabilities.

– Identifying new equipment or capabilities required to prevent or respond to new or emerging threats and hazards, or to improve the ability to address existing threats.

Why are ESFs important?
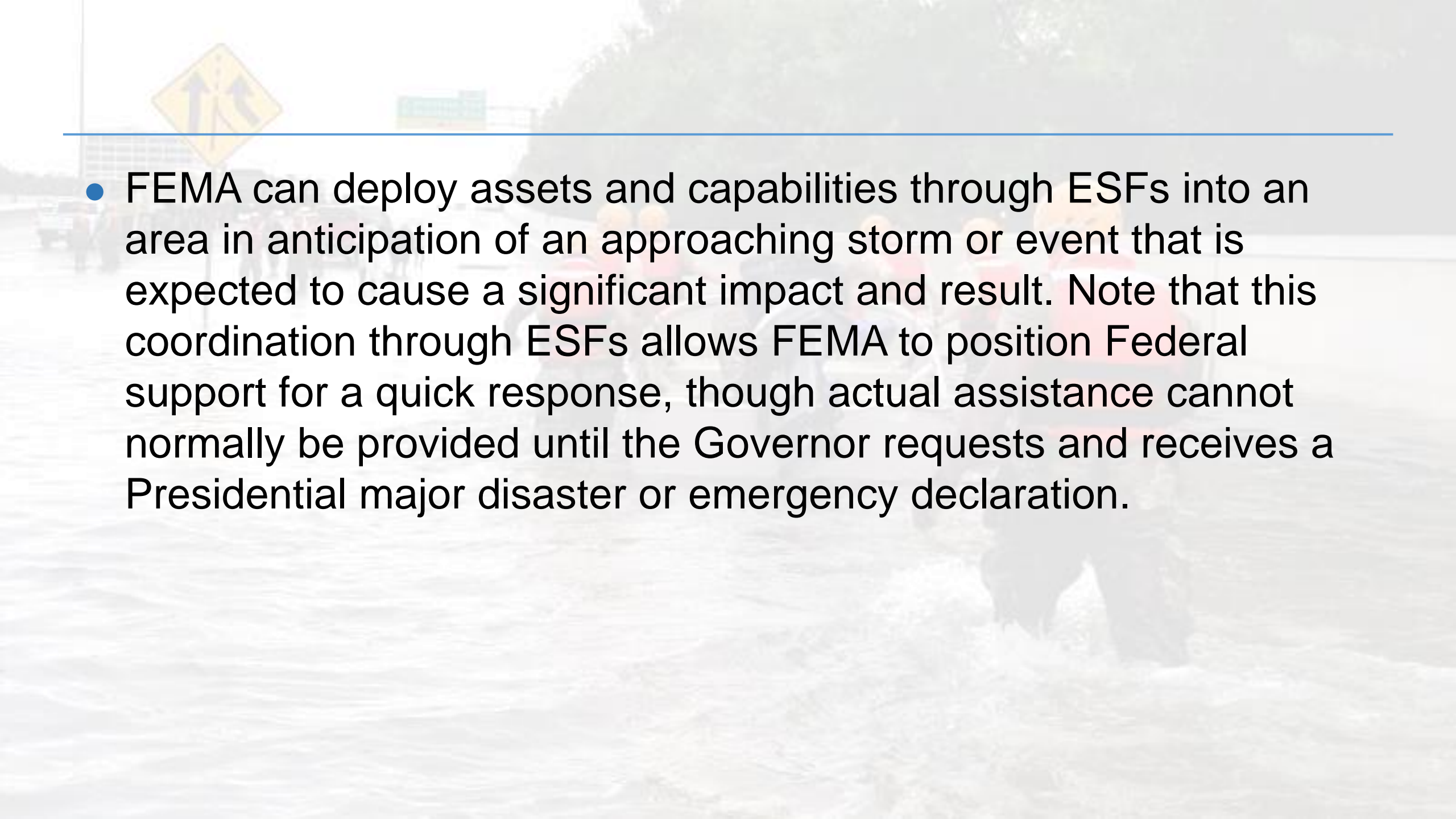
- ESFs have proven to be an effective way to organize and manage resources to deliver core capabilities.
證明是組織和管理資源以提供核心能力的有效方式

- ESFs, prove that when agencies and organizations come together to provide resources and expertise, the collective group can better manage the disaster damages and ultimately put the community back to its original state much faster.
集體合作比個別單位分工單獨執行任務更有效率、效果更好

Activation of ESFs

- Not every incident requires the activation of ESFs. 並非每個事件都要啟動每一個ESF

- ESFs may be selectively activated for:
  - Stafford Act Emergency and Major Disaster Declarations.
  - Non-Stafford Act incidents as specified in Homeland Security Presidential Directive 5 (HSPD-5).

ESF deployment must be coordinated, even if under the agency's own authority!

- FEMA can deploy assets and capabilities through ESFs into an area in anticipation of an approaching storm or event that is expected to cause a significant impact and result. Note that this coordination through ESFs allows FEMA to position Federal support for a quick response, though actual assistance cannot normally be provided until the Governor requests and receives a Presidential major disaster or emergency declaration.

ESF目的與主責機關

Emergency Support Function	Purpose 目的	Lead Agency(s) 主導機關
ESF #1 – Transportation 運輸	Provides support by assisting local, state, tribal, territorial, insular area, and federal governmental entities, voluntary organizations, non-governmental organizations (NGOs), and the private sector in the management of transportation systems and infrastructure during domestic threats or in response to actual or potential incidents. 管理運輸系統與基礎設施	Department of Transportation ESF #1 is not responsible for the movement of goods, equipment, animals, or people.
ESF #2 – Communications 通訊	Supports the restoration of communications infrastructure, coordinates communications support to response efforts, facilitates the delivery of information to emergency management decision makers, and assists in the stabilization and reestablishment of systems and applications during incidents. 支援通訊系統恢復以利緊急應變資訊傳遞	Department of Homeland Security/National Protection and Programs Directorate and Federal Emergency Management Agency
ESF #3 – Public Works and Engineering 工務與工程	Coordinates and organizes the resources of the Federal Government to facilitate the delivery of multiple core capabilities. 工程支援	Department of Defense/U.S. Army Corps of Engineers
ESF #4 – Firefighting 消防	Provides federal support for the detection and suppression of wildland, rural, and urban fires resulting from, or occurring coincidentally with, an all-hazards incident requiring a coordinated national response for assistance. 火災、爆炸與支援其他災害搶救	Department of Agriculture/Forest Service

ESF目的與主責機關

Emergency Support Function	Purpose 目的	Lead Agency(s) 主導機關
ESF #5 – Information and Planning 情報與計畫	Collects, analyzes, processes, and disseminates information about a potential or actual incident, and conducts deliberate and crisis action planning activities to facilitate the overall activities in providing assistance to the whole community. **蒐集與分析潛在或已經發生之事件相關情報，研擬行動計畫**	Department of Homeland Security/Federal Emergency Management Agency
ESF #6 – Mass Care, Emergency Assistance, Housing, and Human Services 照護、緊急協助、收容安置、人道服務	Coordinates and provides life-sustaining resources, essential services, and statutory programs when the needs of disaster survivors exceed local, state, tribal, territorial, and insular area government capabilities. **協調維繫生命的資源和必要服務**	Department of Homeland Security/Federal Emergency Management Agency American Red Cross
ESF #7 – Logistics 後勤	Integrates whole community logistics incident planning and support for timely and efficient delivery of supplies, equipment, services, and facilities. Facilitates comprehensive logistics planning, technical assistance, training, education, exercise, incident response, and sustainment that leverage the capability and resources of federal logistics partners, public and private stakeholders, and non-governmental organizations (NGOs) in support of both responders and disaster survivors. **整合所有單位的後勤計畫以支援及時的救災作業行動**	General Services Administration Department of Homeland Security/Federal Emergency Management Agency

ESF目的與主責機關

Emergency Support Function	Purpose 目的	Lead Agency(s) 主導機關
ESF #8 – Public Health and Medical Services 公共衛生與醫療	Provides the mechanism for federal assistance to supplement local, state, tribal, territorial, and insular area resources in response to a disaster, emergency, or incident that may lead to a public health, medical, behavioral, or human service emergency, including those that have international implications. **提供各層級政府緊急應變中的醫療救護支援機制**	Department of Health and Human Services
ESF #9 – Search and Rescue (SAR) 搜救	Deploys federal SAR resources to provide lifesaving assistance to local, state, tribal, territorial, and insular area authorities, including local SAR Coordinators and Mission Coordinators, when there is an actual or anticipated request for federal SAR assistance. **派遣與部署搜救資源**	Department of Homeland Security/Federal Emergency Management Agency and U.S. Coast Guard Department of the Interior/National Park Service Department of Defense
ESF #10 – Oil and Hazardous Materials Response 油品與危害物質應變	Provides federal support in response to an actual or potential discharge and/or release of oil or hazardous materials. **油品與其他危害物質洩漏應變支援**	Environmental Protection Agency Department of Homeland Security/U.S. Coast Guard

ESF目的與主責機關

Emergency Support Function	Purpose 目的	Lead Agency(s) 主導機關
ESF #11 – Agriculture and Natural Resources 農業與天然資源	Organizes and coordinates federal support for the protection of the nation's agricultural and natural and cultural resources during national emergencies. Works during actual and potential incidents to provide nutrition assistance; respond to animal and agricultural health issues; provide technical expertise, coordination and support of animal and agricultural emergency management; ensure the safety and defense of the nation's supply of meat, poultry, and processed egg products; and ensure the protection of natural and cultural resources and historic properties. **組織協調農業、天然資源、文化資源的保護行動**	Department of Agriculture Department of the Interior
ESF #12 – Energy 能源	Provides support to the Department of Homeland Security (DHS) by assisting local, state, tribal, territorial, and federal government entities, non-governmental organizations (NGOs), and the private sector by coordinating government capabilities, services, technical assistance, and engineering expertise during disasters and incidents that require a coordinated federal response. The term "energy" includes producing, storing, refining, transporting, generating, transmitting, conserving, building, distributing, maintaining, and controlling energy systems and system components. **提供能源的儲存、傳輸、分配、維持等功能**	Department of Energy

ESF目的與主責機關

Emergency Support Function	Purpose 目的	Lead Agency(s) 主導機關
ESF #13 – Public Safety and Security 公安與保全	Provides federal public safety and security assistance to local, state, tribal, territorial, and federal organizations overwhelmed by the results of an actual or anticipated natural/manmade disaster or an act of terrorism. **提供公共安全與保全支援**	Department of Justice/Bureau of Alcohol, Tobacco, Firearms and Explosives
ESF #14 – Cross-Sector Business and Infrastructure 跨部門事務與基礎設施	Supports the coordination of cross-sector operations, including stabilization of key supply chains and community lifelines, among infrastructure owners and operators, businesses, and their government partners. **跨部門（公、私）協調確保關鍵供應鏈與社區維生系統運作**	Department of Homeland Security/Cybersecurity and Infrastructure Security and Federal Emergency Management Agency
ESF #15 – External Affairs 對外事務	Provides accurate, coordinated, timely, and accessible information to affected audiences, including governments, media, the private sector, and the local populace, including vulnerable populations such as children, those with disabilities, individuals with limited English proficiency, etc. **對受影響的對象提供準確、及時的情報（包括資訊弱勢族群）**	Department of Homeland Security/Federal Emergency Management Agency

ESF主責機關與支援行動或能力

ESF	ESF Coordinator	Support Actions or Capabilities
ESF #1 Transportation	Department of Transportation	Coordinate the opening of roads and manage aviation airspace for access to health and medical facilities or services.
ESF #2 Communications	DHS/ Cybersecurity and Infrastructure Security Agency	Provide and enable contingency communications required at health and medical facilities.
ESF #3 Public Works & Engineering	DOD/U.S. Army Corps of Engineers	Install generators and provide other temporary emergency power sources for health and medical facilities.
ESF #4 Firefighting	USDA/U.S. Forest Service and DHS/FEMA/U.S. Fire Administration	Coordinates federal firefighting activities and supports resource requests for public health and medical facilities and teams.
ESF #5 Information & Planning	DHS/FEMA	Develop coordinated interagency crisis action plans addressing health and medical issues.
ESF #6 Mass Care, Emergency Assistance, Temporary Housing, & Human Assistance	DHS/FEMA	Integrate voluntary agency and other partner support, including other federal agencies and the private sector, to resource health and medical services and supplies.
ESF #7 Logistics	General Services Administration and DHS/FEMA	Provide logistics support for moving meals, water, or other commodities.

ESF主責機關與支援行動或能力

ESF	ESF Coordinator	Support Actions or Capabilities
ESF #8 Public Health & Medical Services	Department of Health and Human Services (HHS)	Provide health and medical support to communities, and coordinate across capabilities of partner agencies.
ESF #9 Search & Rescue	DHS/FEMA	Conduct initial health and medical needs assessments.
ESF #10 Oil & Hazardous Materials Response	Environmental Protection Agency	Monitor air quality near health and medical facilities close to the incident area.
ESF #11 Agriculture & Natural Resources	Department of Agriculture	Coordinate with health and medical entities to address incidents of zoonotic disease.
ESF #12 Energy	Department of Energy	Coordinate power restoration efforts for health and medical facilities or power-dependent medical populations.
ESF #13 Public Safety & Security	Department of Justice/Bureau of Alcohol, Tobacco, Firearms, and Explosives	Provide public safety needed security at health and medical facilities or mobile teams delivering services.
ESF #14 Cross-Sector Business and Infrastructure	DHS/Cybersecurity and Infrastructure Security Agency	Be informed of and assess cascading impacts of health or medical infrastructure or service disruptions, and de-conflict or prioritize cross-sector requirements.
ESF #15 External Affairs	DHS	Conduct public messaging on the status of available health and medical services or public health risks.

FEMA Emergency Support Functions

- ESF #1: Transportation 運輸
- ESF #2: Communications 通訊
- ESF #3: Public Works and Engineering 工務與工程
- ESF #4: Firefighting 消防
- ESF #5: Information and Planning 情報與計畫
- ESF #6: Mass Care, Emergency Assistance, Temporary Housing, and Human Services 照護、緊急協助、收容安置、人道服務
- ESF #7: Logistics 後勤
- ESF #8: Public Health and Medical Services 公共衛生與醫療

- ESF #9: Search and Rescue 搜救
- ESF #10: Oil and Hazardous Materials Response 油品與危害物質應變
- ESF #11: Agriculture and Natural Resources 農業與天然資源
- ESF #12: Energy 能源
- ESF #13: Public Safety and Security 公安與保全
- ESF #14: Cross-Sector Business and Infrastructure 跨部門事務與基礎設施
- ESF #15: External Affairs 對外事務

ESF#1 Transportation - Scope

- Monitoring and reporting status of and damage to **the transportation system and infrastructure** as a result of the incident. 災損狀況掌握
- **Identifying temporary alternative transportation solutions** that can be implemented by others when systems or infrastructure are damaged, unavailable, or overwhelmed. 提出替代方案
- Performing activities conducted under the direct authority of DOT elements as these relate to aviation, maritime, surface, railroad, and pipeline transportation.
- Coordinating the **restoration and recovery of the transportation system and infrastructure**. 協調搶修復原作業
- Coordinating and supporting prevention, preparedness, response, recovery, and mitigation activities among transportation stakeholders within the authorities and resource limitations of ESF #1 agencies.

- ESF #1 is **not responsible for movement of people, goods, equipment, or animals**. 不負責人員、機具、物資運送

- ESF #6 – Mass Care, Emergency Assistance, Housing, and Human Services may provide staff to support local, tribal, and State authorities with mass evacuation.

- ESF #6 mass evacuation activities and requirements are identified and addressed in the Mass Evacuation Incident Annex to the National Response Framework.

ESF#1 Primary Agency DOT

DOT helps to:

- Assess transportation infrastructure damage and its impact.
- Determine the most viable transportation networks.
- Restore the transportation infrastructure through ESF#3 and the Stafford Act program.

Concept of Operations 行動概念

Initial activities include:

- 報告運輸系統與基礎設施狀況 Reporting the status of the transportation system and infrastructure.
- 協調運輸解決方案 Coordinating transportation solutions.
- 執行空中交通管理措施 Implementing appropriate air traffic and airspace management measures.

Initial Actions 即刻行動

- Monitor and report the status of transportation systems and infrastructure. 掌握運輸系統與基礎設施狀況

- Coordinate temporary alternative transportation solutions.

- Perform activities under the direct authority of DOT elements.
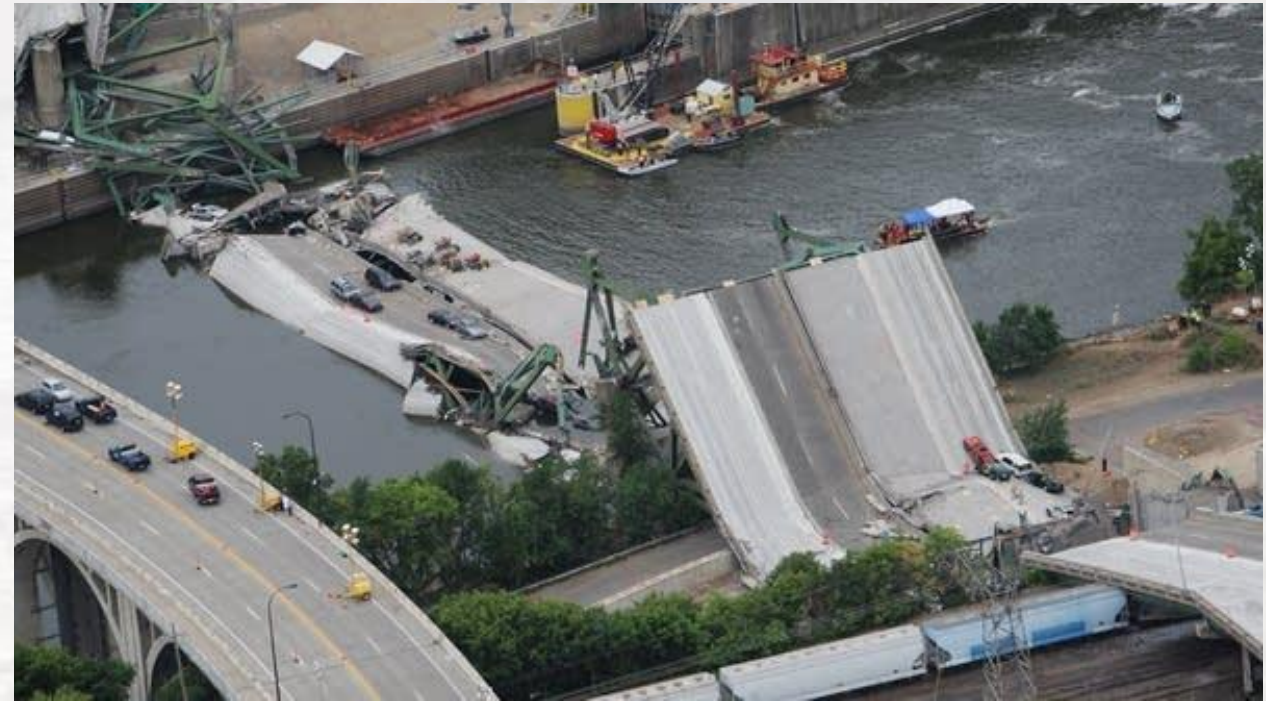
ESF#2 Communication - Scope

- Help industry **restore the public communications infrastructure**. 恢復通訊基礎設施

- Help state, tribal, and local governments with **emergency communications** and **restoration of public safety communications systems and first responder networks**, including:
  - Supporting Federal departments and agencies in procuring and coordinating National Security and Emergency Preparedness (NS/EP) communications services.
  - Providing communications support to the JFO and any JFO field teams.

- ESF #2 also addresses **cyber security** issues that result from or occur in conjunction with incidents.

ESF #2 Primary Agency NCS

- Exercises primary responsibility for **restoration of telecommunications** in an incident area.
- Establishes, in consultation with FEMA and other NCS member agencies, a cadre of qualified and appropriately trained personnel certified to serve as Federal Emergency Communications Coordinators (FECCs)/Communications Branch Directors.
- Designates an FECC to lead ESF #2 when it is activated. Normally the NCS will confer with FEMA and the ESF #2 support agencies regarding the selection of the FECC.
- Certifies personnel for inclusion in the FECC cadre.
- Designates a team lead for a component responsible for communications infrastructure restoration functions.

ESF #2 Primary Agency FEMA

- Acts as the ESF #2 primary agency for support of public safety disaster emergency communications.
- Consults with and advises the NCS on the selection, training, and certification of a cadre of personnel eligible to serve as FECCs.
- Activates ESF #2 under the Stafford Act as required by the event, including the need for State, tribal, and local government support for tactical communications or as requested by the NCS for infrastructure restoration.
- In the event an FECC is required, may provide a recommendation to the NCS regarding the selection of an FECC for a specific incident.
- Provides short-term restoration support to State, tribal, and local government emergency communications in the event of a failure.

ESF#2 National-Level Actions

- ESF #2 actions to supplement State, tribal, and local resources are provided by the National Coordinating Center (NCC) and Emergency Communications Team – National (ECT-N), and include:
  - Damage assessments. 災損評估
  - Cyber security. 資安
  - Communications industry support. 產業支援通訊
  - Identification of available communications assets. 找出可用通訊資產（系統、設備）

ESF#2 Field-Level Actions
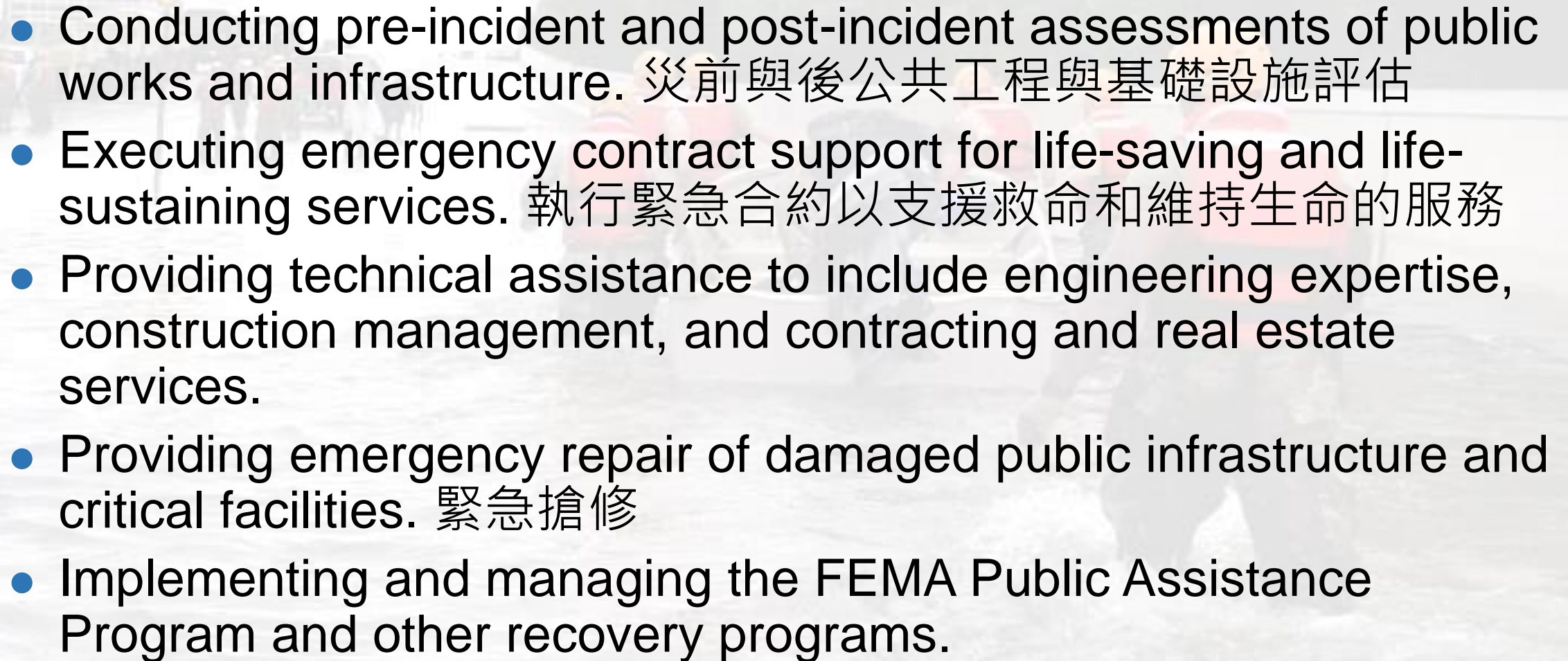
- At the field level, the Disaster Emergency Communications Branch Director/Emergency Communications Team – Field (ECT-F):
  - Deploys to the Regional Response Coordination Center, JFO, or other facility as required.
  - Coordinates with the NCC and FEMA to fill ECT-F duty positions.

ESF#3 Public Works and Engineering - Scope

- Public works and infrastructure assessment 公共工程與基礎設施評估

- Engineering expertise 工程專業

- Construction management 營建管理

- Repairs public infrastructure and critical facilities 修復基礎設施與關鍵設施

- Management of the FEMA Public Assistance Program

- Contracting support and real estate services

- Conducting pre-incident and post-incident assessments of public works and infrastructure. 災前與後公共工程與基礎設施評估
- Executing emergency contract support for life-saving and life-sustaining services. 執行緊急合約以支援救命和維持生命的服務
- Providing technical assistance to include engineering expertise, construction management, and contracting and real estate services.
- Providing emergency repair of damaged public infrastructure and critical facilities. 緊急搶修
- Implementing and managing the FEMA Public Assistance Program and other recovery programs.

Coordinator and Primary Agency - USACE

The U.S. Army Corps of Engineers (USACE) serves as:

- ESF#3 coordinator
- ESF#3 primary agency for Response, directing such activities as:
  - Debris removal
  - Provision of drinking water

ESF#3 Pre-incident Actions

- Inspecting flood control works.
- Implementing structural and nonstructural mitigation measures.
- Pre-positioning assessment teams and contractors.
- Deploying advance support elements.
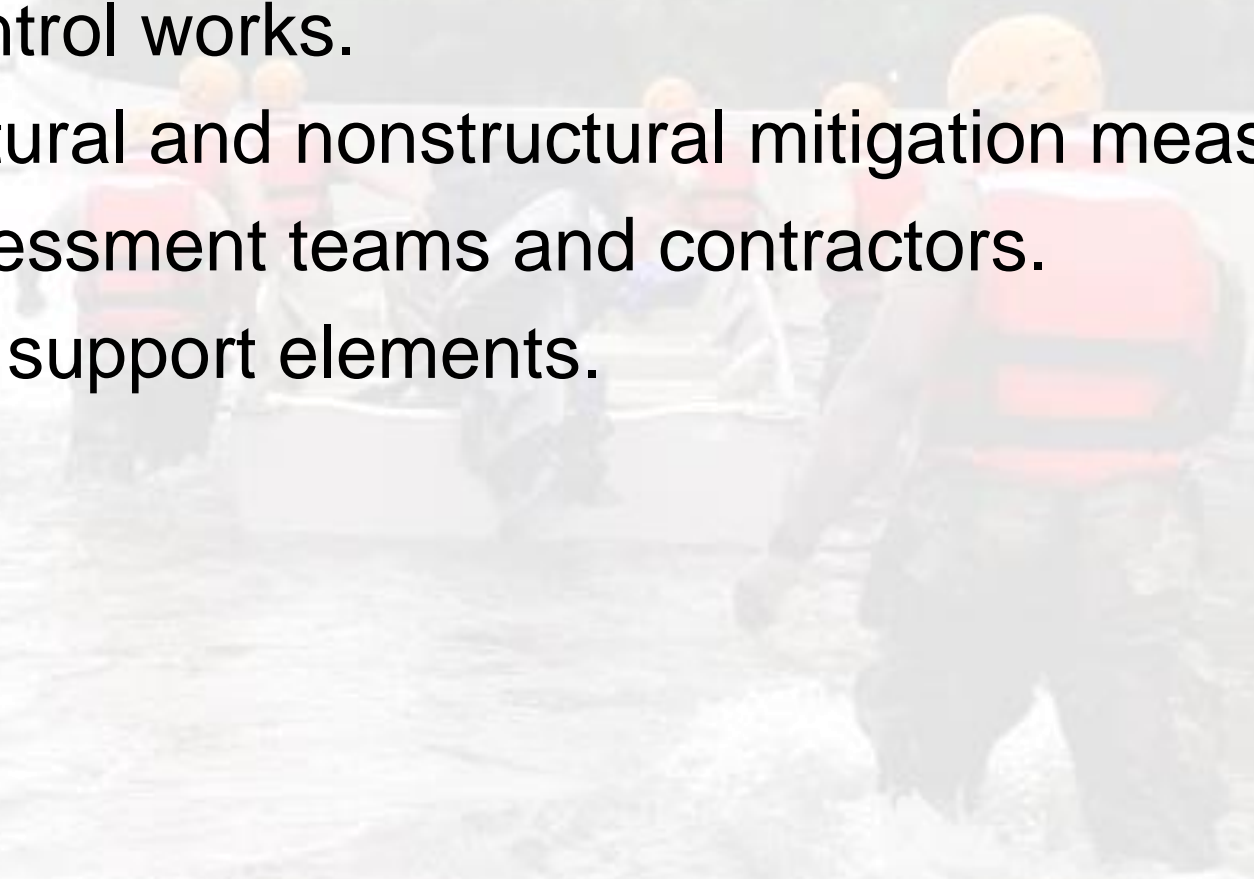
ESF#3 Post-incident Actions

- Providing **temporary emergency power** to critical facilities and providing **potable water and sanitation**. 關鍵設施緊急供電與給水和衛生

- **Stabilizing or demolishing structures** designated as immediate hazards. 危險建物臨時穩定或拆除

- Restoring critical infrastructure and water navigation systems.

- Managing the clearance, removal, and disposal of debris. 廢棄物清除與處理

- Conducting post-incident assessments of damage to help determine critical needs and potential workloads.

- Managing public assistance programs for infrastructure repairs.

USACE Planning and Response Teams

- Are deployable within 6 hours

- Can expand rapidly for 24-hour operation and extended deployments

- Are responsible for specific tasks, including:

  – Ice and water

  – Emergency power

  – Debris removal

  – Temporary housing and roofing

  – Structural safety assessment

USACE Deployable Tactical Operating Systems

- Includes mobile command, control, and communications unit
- Provide for operations and communications in the disaster environment
- Can deploy within 18 hours

Primary Agency – Recovery: DHS/FEMA

Program provides funding for:

- Debris clearing, removal, and disposal

- Emergency protective measures

- Permanent work

Debris removal guidelines

In efforts to expedite the debris removal process, please follow these rules

Placing debris **near or on trees, poles or other structures** makes removal difficult. This includes fire hydrants and meters.

Debris separation

Please separate debris into the **six categories,** shown below.

NO PICKUP

NO PICKUP

Do not leave doors **unsealed or unsecured**

Debris should be placed curbside

10 feet

Debris should not **block roadway**

Electronics
Television, computer, stereo, phone, DVD player

Large Appliances
Refrigerator, washer/dryer, air conditioner, stove, water heater, dishwasher

Hazardous waste
Oil, battery, pesticide, paint, cleaning supplies, compressed gas

Vegetative debris
Tree branches, leaves, logs, plants

Construction debris
Building materials, drywall, lumber, carpet, furniture, plumbing

Household garbage
Bagged garbage, discarded food, paper, packaging.

U.S. DEPARTMENT OF HOMELAND SECURITY

FEMA
www.fema.gov

US Army Corps of Engineers ®

Debris Clearing, Removal, and Disposal

Funding is available for work that:

- Eliminates an immediate threat to lives, public health, and safety
- Eliminates immediate threats of significant damage to property
- Ensure economic recovery
- Mitigate the risk to life and property by removing substantially damaged structures

ESF#6 Mass Care, Emergency Assistance, Temporary Housing, and Human Services - Scope

- Mass Care 大量民眾照護
- Emergency Assistance 緊急支援
- Housing 臨時居住
- Human Services 人道服務

ESF#6 Coordinator and Primary Agency FEMA

FEMA coordinates:

- Federal planning and information-sharing activities

- Activation and deployment of Federal resources

- The use of special assets

- Overall staffing of Federal Mass Care, Emergency Assistance, Housing, and Human Services activities

ESF #6 Support Agencies

- Department of Health and Human Services
- Department of Homeland Security
- Department of Housing and Urban Development
- Department of Veterans Affairs
- General Services Administration
- Small Business Administration
- Social Security Administration
- U.S. Army Corps of Engineers
- U.S. Postal Service

Voluntary Agency Partners

National Voluntary Organizations Active in Disaster (National VOAD) partner agencies support the ESF #6 mission by:

- Offering food and shelter.

- Distributing donated goods.

- Caring for household pets and service animals.

- Making temporary home repairs.

Mass Care

- 收容安置 Shelter
- 提供食物 Feeding
- 緊急救護 Emergency first aid
- 緊急必需品分配 Bulk distribution of emergency items
- 災害救助資訊 Disaster welfare information

Emergency Assistance

- 疏散與重聚 Evacuation and reunification
- 寵物與家畜疏散/收容安置 Evacuation/shelter of household pets and service animals
- 特殊需求人口協助 Aid to special needs populations
- 捐贈物資與服務協調 Coordination of donated goods and services
- 志工協調 Coordination of voluntary efforts
- 各類型態避難收容支援 Support to general, specialized, medical, and nonconventional shelters

Housing

- Identify factors that could affect incident-related housing needs.
- Plan to provide housing assistance in the most effective, expedited, and efficient manner available.

The ESF #6 housing function includes options such as:

- 房屋財務補助 Financial assistance for rent.
- 房屋修繕補助 Financial assistance for repairs.
- 貸款協助 Loan assistance.
- 異地安置財務協助 Financial assistance for replacement.
- 臨時住宅 Direct housing, usually factory-built housing.
- 半永久、永久住宅 Semipermanent and permanent construction.
- 住宅資源轉介 Housing resource referrals.
- 可用住宅尋找與提供 Identification and provision of accessible housing.
- 其他住宅協助來源提供 Access to other sources of housing assistance.

Human Services

- 危機諮商與訓練 Crisis counseling and training
- 災害法律服務 Disaster legal services
- 災害個案管理 Disaster case management
- 災害失業協助 Disaster unemployment assistance
- 其他需要協助 Other needs assistance

Disaster Recovery Centers (DRC)

- Is a readily accessible facility or mobile office staffed by representatives of Federal, State, tribal, local, and voluntary agencies.

- Provide information about State, FEMA, or other disaster assistance programs.

The National Processing Service Centers (NPSCs)

- Process applications (online or via Tele-registration).

- Process requests for housing assistance.

- Refer applicants to the SBA loan program.

- Record needed data to order and process inspections.

- Answer questions from applicants via the "helpline."

- Provide information about State and local disaster assistance.

ESF#7 Logistics - Scope

Logistics Management

- Material management
- Transportation management
- Facility management
- Personal property management
- Management of electronic data interchange
- Planning and coordination
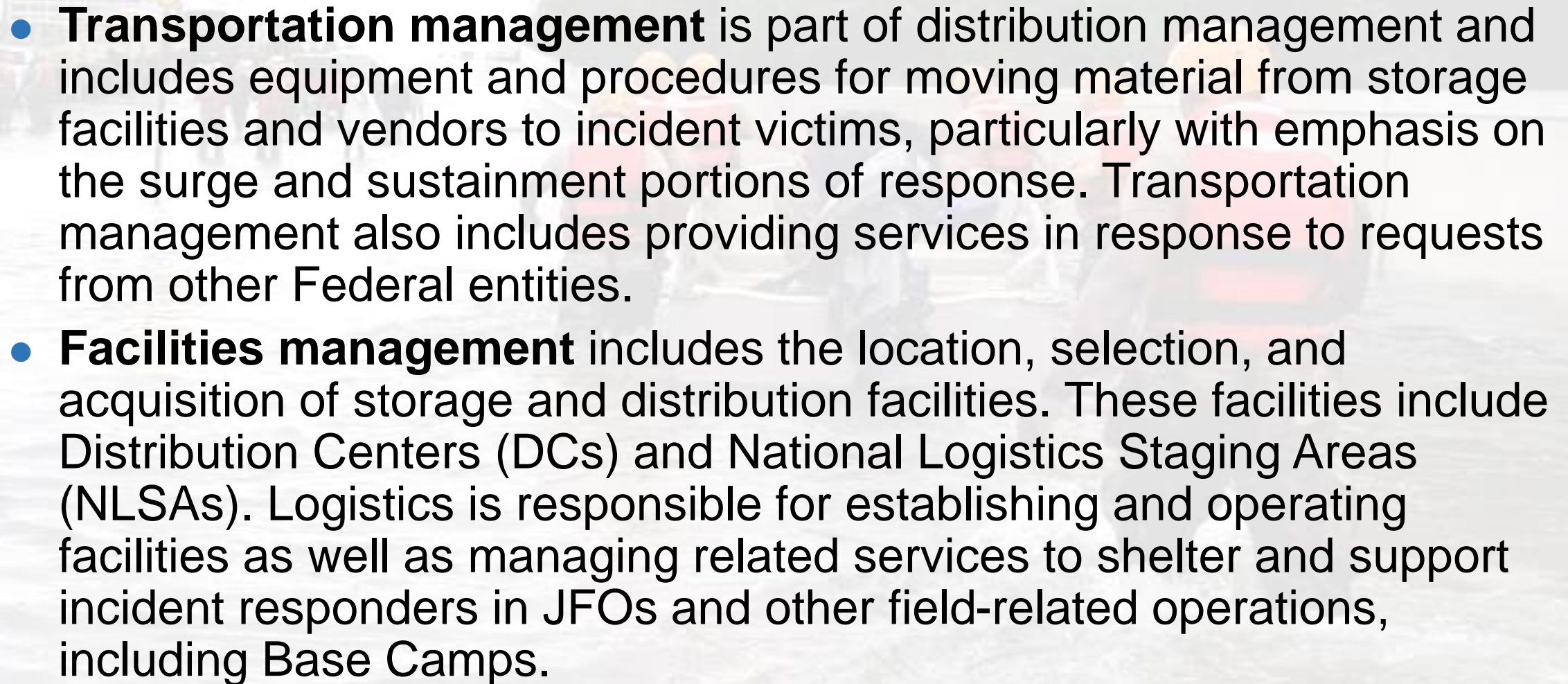
Resource Support
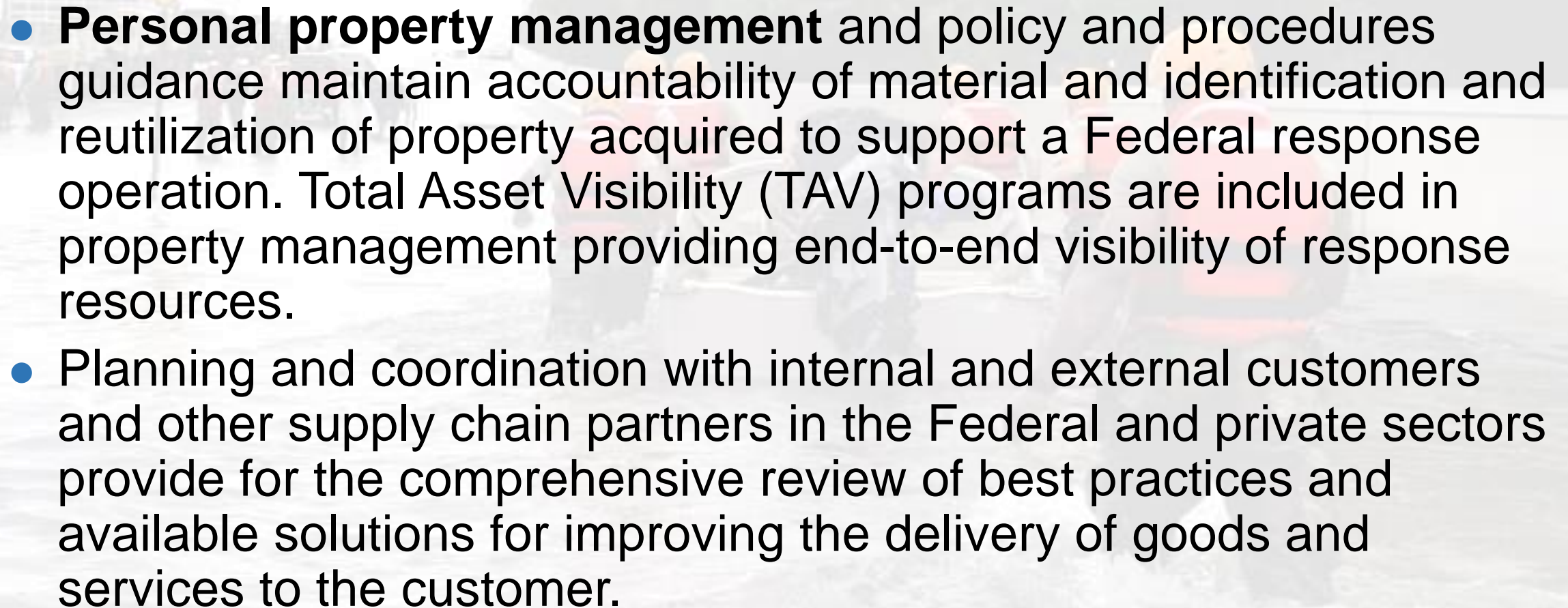
- Emergency relief supplies
- Facility space
- Office equipment
- Office supplies.
- Telecommunications
- Contracting services
- Transportation services
- Support personnel

Logistics Management Primary Agency: FEMA

- Integration of Federal disaster logistics partners
- Collaboration between public- and private-section partners and NGS stakeholders
- Communication between all elements involved in the process from planning through execution, sustainment, and demoblilzation of response resources
- **Material management** includes determining requirements, sourcing, ordering and replenishment, storage, and issuing of supplies and equipment. This includes network, computer, and communications equipment required to support Joint Field Office (JFO) and other field operations.

- **Transportation management** is part of distribution management and includes equipment and procedures for moving material from storage facilities and vendors to incident victims, particularly with emphasis on the surge and sustainment portions of response. Transportation management also includes providing services in response to requests from other Federal entities.

- **Facilities management** includes the location, selection, and acquisition of storage and distribution facilities. These facilities include Distribution Centers (DCs) and National Logistics Staging Areas (NLSAs). Logistics is responsible for establishing and operating facilities as well as managing related services to shelter and support incident responders in JFOs and other field-related operations, including Base Camps.

- **Personal property management** and policy and procedures guidance maintain accountability of material and identification and reutilization of property acquired to support a Federal response operation. Total Asset Visibility (TAV) programs are included in property management providing end-to-end visibility of response resources.

- Planning and coordination with internal and external customers and other supply chain partners in the Federal and private sectors provide for the comprehensive review of best practices and available solutions for improving the delivery of goods and services to the customer.

Logistics Management Partners

- Department of Agriculture
- Department of Commerce
- Department of Defense
- Department of Defense/U.S. Army Corps of Engineers
- Department of Energy

- Department of Health and Human Services
- Department of the Interior
- Department of Transportation
- Department of Veterans Affairs
- General Services Administration
- National Aeronautic and Space Administration

Logistics Preparedness Actions

- Identify logistics requirements

- Identify logistics resources

- Balance logistics resources with logistics requirements

- Establish and communicate logistics policies, procedures, and plans

Logistics Response and Recovery Actions

- In the response phase, ESF #7 provides logistics response to the incident with:
  - Initial surge (push)
  - Ongoing sustainment (pull)
- After an incident, ESF #7 provides for logistics recovery.

National Logistics Staging Areas (NLSAs)

- Are temporary facilities at the site of an incident

- Allow for pre-positioning of commodities, equipment, and personnel

- Hold approximately 3 days' worth of supplies, which can be distributed to multiple States

ESF#7 Resource Support Partners

- Department of Commerce
- Department of Energy
- Department of Homeland Security
- National Cyber Security Division/National Communications System
- Department of Labor
- Department of Transportation
- Department of Veterans Affairs
- National Aeronautics and Space Administration
- Office of Personnel Management

Initial Resources Support Actions: GSA HQ

- The GSA Emergency Coordinator (EC) or an authorized representative alerts the Headquarters and regional ESF points of contact as required.

- GSA EC alerts supporting agencies as required.

- GSA EC provides support to Federal agencies engaged in the response as requirements are identified.

Initial Resources Support Actions: GSA Region

- Deploys representatives to the Regional Response Coordination Center (RRCC) and the State emergency operations center.

- Ensures that a suitable JFO facility is acquired and ready to occupy within 72 hours of receiving DHS requirements.

- Provides support in acquiring communications, office furniture, equipment, and supplies to equip the JFO.

Continuing Resources Support Actions

ESF #7 provides goods and services during incident response:

- **Space** in federally owned or leased buildings
- **Communications support**
- **Office furniture, equipment, and supplies**
- Provides **motor equipment** from Federal agencies, Federal supply schedule contractors, and other commercial sources
- Makes available **technical advisors** in connection with damage surveys, appraisals, and building demolitions or repairs

GSA's Office of Emergency Response and Recovery

- 緊急採購支援 Emergency acquisition support
- 緊急不動產管理 Emergency real property management
- GSA前線組織與總部間聯絡 On-the-ground liaison between GSA field organizations and Headquarters

GSA's Public Building Service (PBS)

- 不動產專家服務 Realty specialist services
- 空間租賃 Space leasing
- 建築服務 Construction services
- 建築物維護服務 Building maintenance services
- 多餘和不動產服務 Excess and real property services

GSA's Federal Acquisition Service (FAS)

- 合約官員服務 Contracting officers services
- 差旅與運輸服務 Travel and transportation services
- 財產管理與剩餘個人裝備處理 Property management disposition of excess and surplus personal property
- 車隊管理 Fleet management
- 後勤 Logistics
- 通訊 Telecommunications

ESF#10 Oil and HAZMAT Response - Scope

Incidents involving intentional or accidental release of:

- Oil

- Hazardous materials include:
  - Chemical
  - Biological
  - Radiological

Response to oil and hazardous materials incidents is generally carried out in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300.

ESF#10 Coordinator and Primary Agency, EPA

- Leads the Federal response to actual or potential oil and hazardous materials incidents.
- Takes appropriate actions to prepare for, prevent, minimize, or mitigate a threat posed by hazardous materials.

ESF#10 primary agency, DHS/USCG

- Leads the Federal response to actual or potential oil and hazardous materials incidents in coastal areas.

- Takes appropriate actions to prepare for, prevent, minimize, or mitigate a threat posed by hazardous materials.

ESF#10 Actions

- 評估污染範圍 Assess extent of contamination
- 圍堵、穩定、處理、棄置油污或危險物品 Contain, stabilize, treat, and dispose of oil or hazmats
- 移除油桶、容器 Remove drums, barrels, and containers
- 建築物和結構物除污 Decontaminate buildings and structures
- 集中家戶的危險物質 Collect household hazardous waste
- 廢棄物棄置許可製發與監測 Issue permits for and monitor debris disposal
- 水質監測 Monitor water quality
- 空氣採樣 Sample air quality
- 自然資源影響減輕 Mitigate damage to natural resources

Federal On-Scene Coordinators

- Act as the key ESF #10 representative of the NRS at the on-site Incident Command Post (ICP)

- Interface with local and State officials at the ICP level

- Coordinate and integrate ESF #10 resources on site

Environmental Response Team (ERT)

- Air surveillance
- Analytical laboratory support
- Environmental risk assessment
- Oil and hazmat assessment
- Freight and transport
- Dive team for underwater investigations
- Cleanup and remediation techniques

USCG's National Strike Force (NSF)

- Provides highly trained, experienced personnel and specialized equipment

- Facilitate preparedness for and response to oil and hazardous substance pollution incidents

- Help protect public health and the environment

ESF#13 Public Safety and Security - Scope
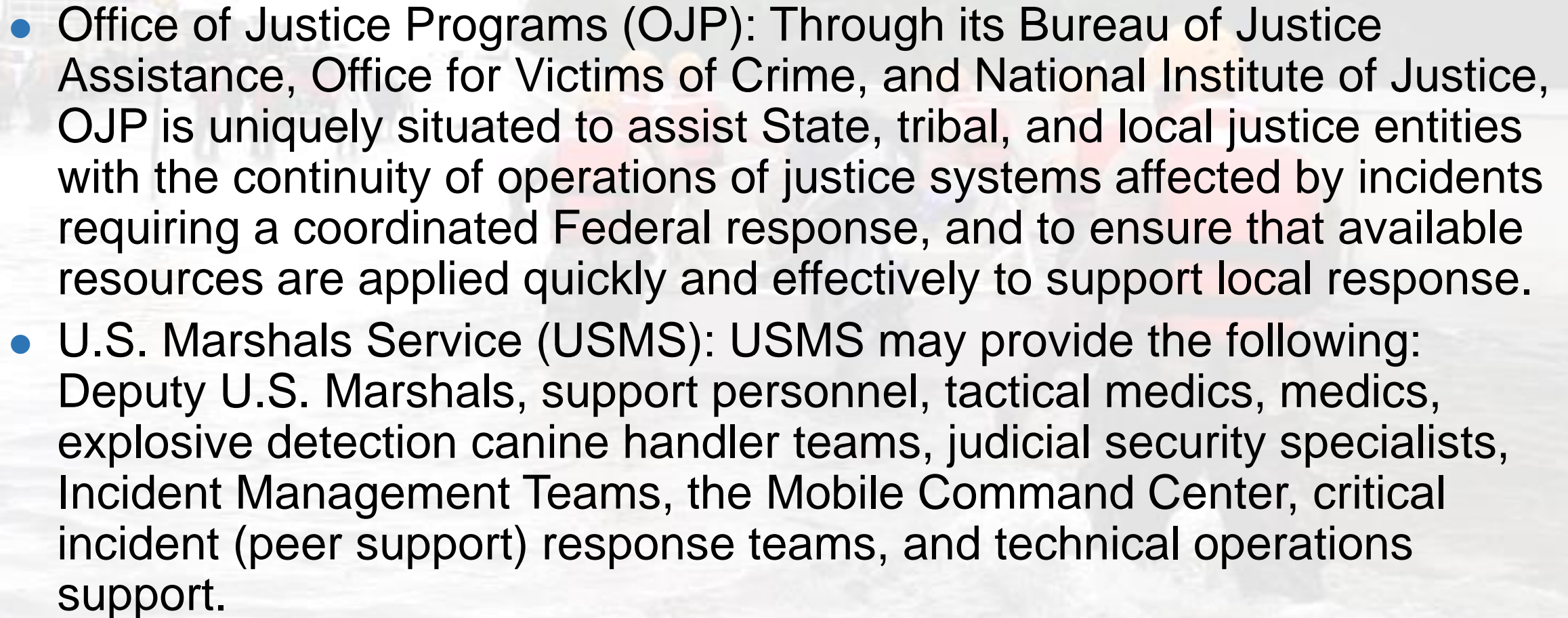
- 保安與關鍵基礎設施保護 Force and critical infrastructure protection
- 保安規劃與技術支援 Security planning and technical assistance
- 科技支援 Technology support
- 災害前與災害後執法協助 General law enforcement assistance to both pre-incident and post-incident situations

ESF #13 Coordinator and Primary Agency: Department of Justice (DOJ)

- Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF): DOJ has designated ATF as the ESF #13 lead agency.

- Drug Enforcement Administration (DEA): DEA may provide available manpower and resources at the discretion of the DEA Continuity of Operations Plan Coordinator and in compliance with DOJ mandates.

- Federal Bureau of Investigation (FBI): FBI may provide specialized resources and capabilities, consistent with Federal laws, regulations, and mission priorities.

- Office of Justice Programs (OJP): Through its Bureau of Justice Assistance, Office for Victims of Crime, and National Institute of Justice, OJP is uniquely situated to assist State, tribal, and local justice entities with the continuity of operations of justice systems affected by incidents requiring a coordinated Federal response, and to ensure that available resources are applied quickly and effectively to support local response.

- U.S. Marshals Service (USMS): USMS may provide the following: Deputy U.S. Marshals, support personnel, tactical medics, medics, explosive detection canine handler teams, judicial security specialists, Incident Management Teams, the Mobile Command Center, critical incident (peer support) response teams, and technical operations support.

ESF#13 Lead Agency: ATF

- Provides expertise on public safety and security issues

- Manages ESF #13 preparedness activities and conducts evaluations of operational readiness

- Maintains close coordination during operations between the affected regional office(s), other response organizations, and other agency operations centers, as required

- Ensures that all activities performed relate to the mission of ESF #13

ATF may also provide the following:
- Special agents
- Special agent-certified explosives specialists, fire investigators, explosives detection, and accelerant detection
- Canine handler teams
- Medics
- Crisis negotiators
- Intelligence officers
- Explosives enforcement officers
- Industry operations investigator
- Fire research engineers
- Forensic chemists and auditors

ESF#13 Support Agencies

- The Department of Commerce, which provides environmental information and forecast models
- The Environmental Protection Agency, which provides specialized hazardous materials evidence response teams
- The Department of Energy, which provides nuclear/radiological incident response
- The National Aeronautics and Space Administration provides geospatial modeling and decision-support systems
- The Forest Service and the Department of the Interior provide for safety and security within agency lands
- The National Center for Missing and Exploited Children provides information about missing and exploited children

Pre-incident Coordination

- Developing operational and tactical public safety and security plans

- Conducting technical security and/or vulnerability assessments

- Deploying Federal public safety and security resources in response to specific threats or potential incidents

ESF#13 Actions

- Technical assistance
- Specialized public safety and security assessment
- General law enforcement assistance
- Specialized security resources
- Badging and credentialing
- Site security
- Traffic and crowd control
- Force protection

Concept of Operations

- Assesses and responds to requests for Federal public safety and security resources.

- May provide personnel to staff response organizations.

- Mobilizes Federal security resources and technologies and other assistance to support response operations.

- Coordinates with all levels of government to determine and prioritize resource requirements.

- Maintains communication with supporting agencies to determine capabilities, assess the availability of resources, and track resources.

Coordination with Operation Centers

- **Emergency Operations Centers (EOCs) and Fusion Centers.** Local, State, tribal, and Federal EOCs coordinate information and resources to support incident management activities. Fusion Centers blend law enforcement and intelligence information analysis and coordinate security measures.

- **National Operations Center (NOC).** The DHS NOC serves as the primary national hub for situational awareness and operations coordination across the Federal Government for incident management.

- **National Counterterrorism Center (NCTC).** The NCTC serves as the primary Federal organization for integrating all intelligence pertaining to terrorism and counterterrorism.

- **Strategic Information and Operations Center (SIOC).** The FBI SIOC is the focal point and operational control center for all Federal intelligence, law enforcement, and investigative law enforcement activities related to domestic terrorist incidents or credible threats.

Specialized ATF Resources

- **Special Response Teams** that conduct high-risk enforcement operations.
- **National Response Teams (NRTs)** that assist Federal, State, tribal, and local investigators at the scene of significant explosives and fire incidents. A fleet of NRT trucks allow the NRT to be fully equipped for the forensic examination of explosives and fire scenes.
- **Mobile Laboratories and Command and Control vehicles** that deploy when necessary to provide the appropriate response to an ESF #13 activation.

中程：強化群組功能

市級EOC ▶

16組 功能分組

指揮官 ▶ 市長 副市長

副指揮官 ▶ 執行長 消防局長 相關局處首長

協調官 ▶ 副秘書長

新聞官 ▶ 新聞局長

計畫群組
- #2 資通訊/災情通報
- #4 分析研判
- #5 參謀/計畫
- #14 公共資訊

後勤群組
- #7 後勤支援
- #15 軍事支援

財務行政群組
- #16 行政庶務

（作業群組）

緊急服務群組
- #9 消防/搜救
- #10 核生化應變
- #13 治安維持

人道服務群組
- #6 避難/安置
- #8 醫療/公共衛生
- #11 民生物資/農糧資源

工程處置群組
- #1 交通運輸
- #3 公共工程/環境資源
- #12 水電、能源

105年度臺北市重大災害應變運作
協調作業機制之研究
計畫主持人 / 王价巨 教授
協同主持人 / 單信瑜 副教授
協同主持人 / 方潤強 執行總監

00. 討論重點

研究緣起與流程方法

研究緣起與工作項目

[緣起]

臺中市打破災因導向，以全災害概念建構全市災害防救體系，使用TESF。

功能分組**運作模式**與**傳統**運作模式有極大**差異**，EOC需要更細緻**運作流程**。

[工作項目]

→ 文獻回顧：美國、中央、臺北

→ **分析**臺中市EOC實際開設狀況

→ **研擬**臺中市EOC運作流程

→ **市、區級座談會**（4場）

→ **專家座談會**（2場）

→ **應變中心進駐**（瑪莉亞颱風）

→ **修正**各級EOC及前進指揮所要點

市級災害應變中心運作架構

[災時]

由技監、參事、參議等成員擔任6大群組之召集人，或擔任重要功能分組之負責人

指揮官　市長　副市長

副指揮官　執行長　消防局長　相關局處首長

新聞官　新聞局長

協調官　副秘書長

計畫群組
#2 資通訊/災情通報
#4 分析研判
#5 參謀/計畫
#14 公共資訊

後勤群組
#7 後勤支援
#15 軍事支援

財務行政群組
#16 行政庶務

緊急服務群組
#9 消防/搜救
#10 核生化應變
#13 治安維持

人道服務群組
#6 避難/安置
#8 醫療/公共衛生
#11 民生物資/農糧資源

工程處置群組
#1 交通運輸
#3 公共工程/環境資源
#12 水電、能源

[權責定義確立]

功能群組運作規劃

指揮官
下達決策，負責政治行政責任
彈性啟動功能分組

副指揮官
提供決策建議
代理指揮官執行決策指事

執行長
指導應變、掌握災況
召開並主導功能群組會議

群長
流通掌握群組資訊
向上通報，向下指揮

功能分組
專業手段完成任務
支援其他功能分組

[任務分工明確]

功能分組任務分工（緊急服務群 TESF#9消防與搜救組 為例）	
任務	**項目說明**
事故現場消防和搜救工作進行管理與協調	▶ 救災器材儲備供應事項（消防局） ▶ 前進指揮所之規劃及開設（消防局） ▶ 負責災區現場警戒、秩序維持等相關事項（警察局） ▶ 協調原住民族地區重大災害搶救及善後處理（原民會） ▶ 其他有關原住民族地區防救災協調事項（原民會） ▶ 協調客家地區重大災害搶救及善後處理（客委會） ▶ 其他有關客家地區防救災協調事項（客委會）

*各功能分組分工內容，詳見報告書 [表32]

區級功能群組運作規劃

功能分組任務分工（TESF#6疏散撤離組 舉例說明）	
課室	任務內容
主政： 民政課 支援： 里長、里幹事、消防分隊、轄區派出所、臺中市後指部、陸軍第十軍團第五作戰區各救災責任分區	▶ 應變警戒事項。 ▶ 依指揮官劃定警戒區域執行勸導、限制或禁止人民進入或命其離去等事宜。 ▶ 負責災區現場警戒、治安維護、交通秩序維持事宜。 ▶ 災區交通運輸之維護事項。 ▶ 洽請軍方支援事項。 ▶ 其他有關業務權責事項。

*詳細功能分組任務內容，請見報告書 [表33]

[階段啟動]

共 **3** 階段、 **49** 式情境分類。

功能分組啟動情境化

情境分類	功能分組（TESF）	情境定義
災前整備階段		
災情監控	TESF#2 資通訊與災情通報組	因應災情快速變化，根據防災資訊系統監控可能災情（如氣象、雨量、災害潛勢、警戒、崩塌等資訊），並綜整、掌握最新災情進度。
災中應變階段		
人命搜救	TESF#9 消防與搜救組	災區現場僅需執行人命搶救，不須動員其他工程機具等資源協助。
災後復原階段		
遺體處理	TESF#13 治安維持組	因災害而造成的死亡事件，所必須提供的遺體安置、冷藏、相驗等措施。

*各項啟動情境，詳見報告書 [表34]
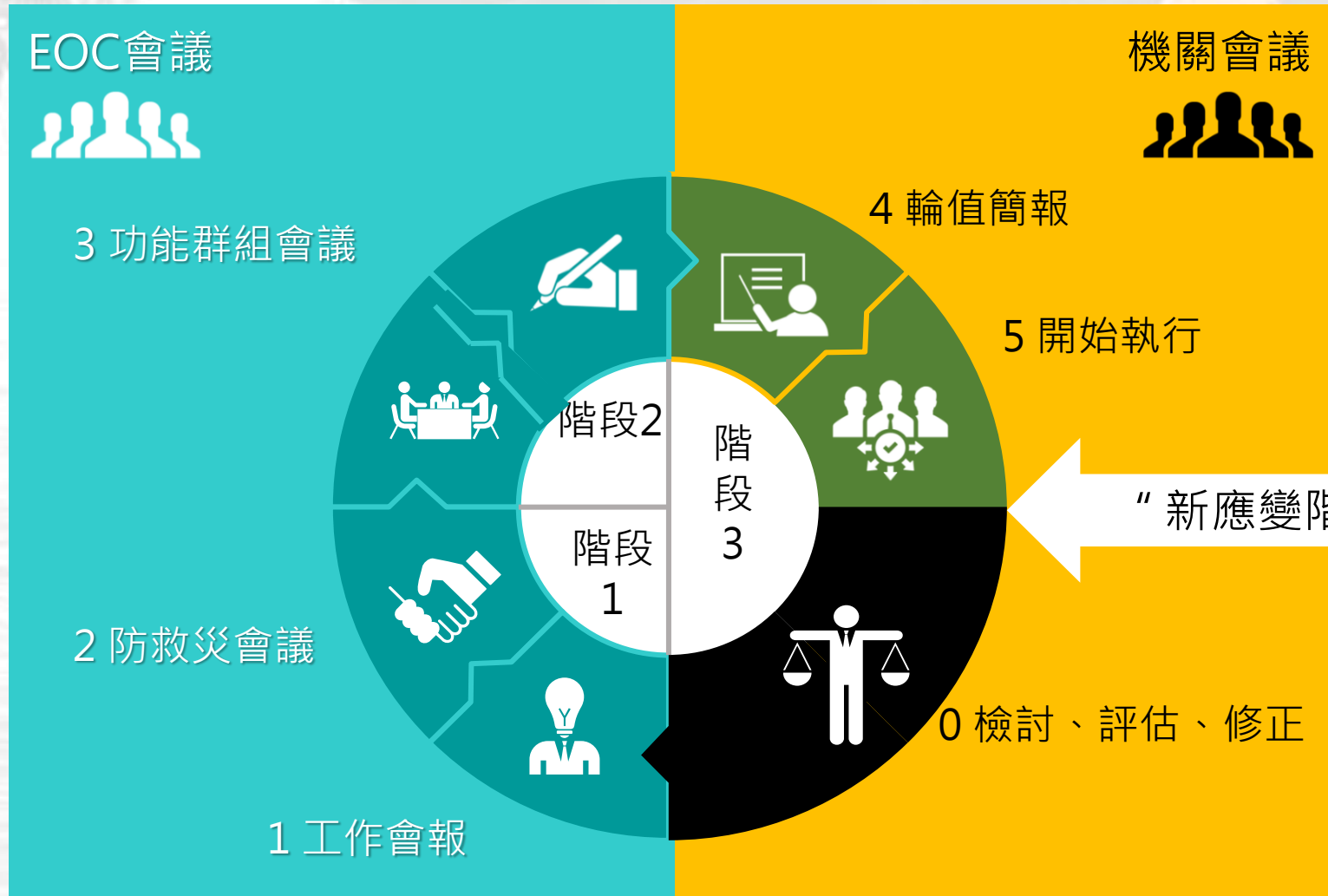
各討論階段會議規劃

討論階段	會議名稱	內容
EOC會議		
第1階段	目標會議	EOC成立，了解資訊，由指揮幕僚層級決定整體應變方向。
	策略會議	依目標擬定策略，考量資源、安全或法律等層面選用合適策略（可與目標會議合併）。
第2階段	技術會議	根據目標及策略列實際執行事項，並討論各技術可行性及優劣。
	計畫會議	將技術會議所列須使用技術操作和步驟、執行所需資源及人員進行先後緩急排定等討論事項，重點於擬定事故現場行動計畫。
機關內部會議		
第3階段	輪值簡報	事故現場行動計畫交由各機關帶回其緊急應變小組，並向其他內部成員簡報後續應執行之作為及討論。
	開始執行	開始執行操作。
-	檢討、評估、修正	執行應變時，持續檢討、評估及修正執行狀況，若遇災害改變，從新應變階段開始，重新循環第1階段。

臺中市災害應變中心作業要點 - 修正建議

臺中市災害應變中心作業要點尚以災因管理為主，建議應以全災害概念進行修正，

建議修正包含：

→ 職責任務明確化

→ 階段式會議機制

→ 以災害預警性區分功能
   分組進駐時機

可預警災害

不可預警災害

整備	本中心開設即啟動 ▸ 計畫群組 ▸ 財務行政群組	
應變	依災害發生狀況（情境）啟動分組 ① 危機監控小組或災防會情勢分析組研判開設必要，災防會應變動員組通知進駐 ② 群長研判開設必要，啟動分組 ③ 各局處監測可能災害，自主進駐	① 本中心開設即啟動：計畫群組、財務行政群組、必要性分組（如#9 消防/搜救、#13 治安維持、#8 醫療/公共衛生） ② 依災害狀況需要，危機監控小組或災防會情勢分析組研判開設必要，災防會應變動員組通知進駐
復原	依災害發展情勢縮小編組，回復平時運作	依災害發展情勢縮小編組，回復平時運作

詳細作業要點修正對照說明及開設時機，詳見報告書 [表44、45、46]

臺中市災害應變中心作業要點 - 修正建議

臺中市災害應變中心當前組織架構以納入全事故功能分組概念，共分6群16功能組。

建議修正包含：

→ 調整為全事故功能分組架構

→ 明確各組任務內容

指揮官 市長 / 副市長

新聞官 新聞局長

副指揮官 執行長 / 消防局長 / 相關局處首長

協調官 副秘書長

計畫群組
- #2 資通訊/災情通報
- #4 分析研判
- #5 參謀/計畫
- #14 公共資訊

後勤群組
- #7 後勤支援
- #15 軍事支援

財務行政群組
- #16 行政庶務

緊急服務群組
- #9 消防/搜救
- #10 核生化應變
- #13 治安維持

人道服務群組
- #6 避難/安置
- #8 醫療/公共衛生
- #11 民生物資/農糧資源

工程處置群組
- #1 交通運輸
- #3 公共工程/環境資源
- #12 水電、能源

詳細作業要點修正對照說明，詳見報告書 [表47]

臺中市區級災害應變中心作業要點 - 修正建議

臺中市區級災害應變中心設立於區公所，考量災害實際情形及人力需求，

建議修正包含：

→ 確立各角色人數

→ **彈性**化開設**時機**

→ **彈性**調整進駐**人力**

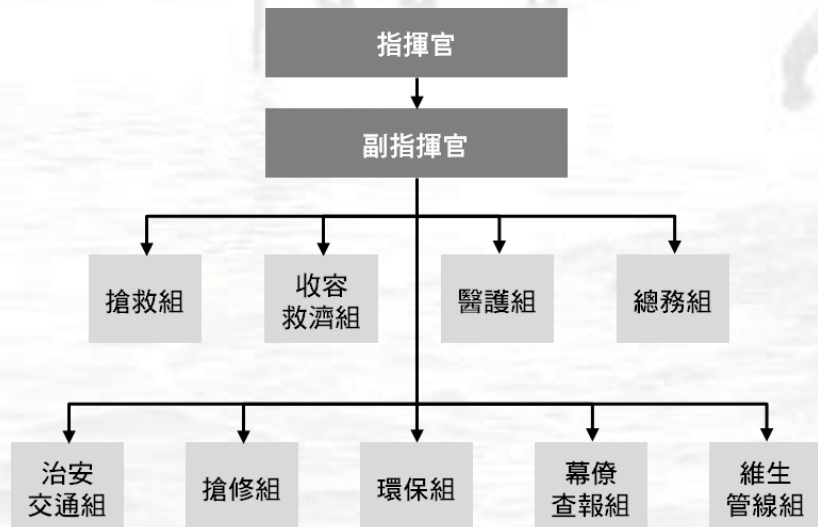| 條號	現行規定	修正建議
第三條	本中心係一臨時成立之任務編組，區級災害應變中心原則設於區公所，由區長兼任指揮官，副區長（無副區長由主任秘書擔任）兼任副指揮官，受市級災害應變中心之指揮...（下略）。	本中心係一臨時成立之任務編組，區級災害應變中心原則設於區公所。設置指揮官1人及副指揮官1人，並由區長兼任指揮官，副區長（無副區長由主任秘書擔任）兼任副指揮官...（下略）。

詳細作業要點修正對照說明，詳見報告書 [表48]

臺中市區級災害應變中心作業要點 – 修正建議

現行組織架構

指揮官
↓
副指揮官

- 搶救組
- 收容救濟組
- 醫護組
- 總務組
- 治安交通組
- 搶修組
- 環保組
- 幕僚查報組
- 維生管線組

改繪自《臺中市區級災害應變中心作業要點》（101.08.17修正）

建議組織架構

指揮官 — 區長
↓
副指揮官 — 副區長 主任秘書

- #2 災情查報組
- #6 疏散撤離組
- #6 收容安置組
- #16 財務行政組
- #3 環境復原組
- #3 工程搶修組*

工程搶修組任務僅限於災害初期簡易工程搶修

▶ 以全災害概念進行分組

▶ 簡化任務編組，提高救災效能

▶ 各功能分組權責明確界定

詳細作業要點修正對照說明，詳見報告書 [表49]

臺中市政府災害應變前進指揮所開設作業要點－修正建議

前進指揮所為災害現場最高搶救單位，考量實際救災進度情形，

建議修正包含：

➡ **新增**副指揮官**角色**及**任務**

➡ 明確**規範**開設**時機**

➡ 明確規範開設作業項目及對象

➡ 修正獎懲辦法

➡ 增列縱向**連繫機制**

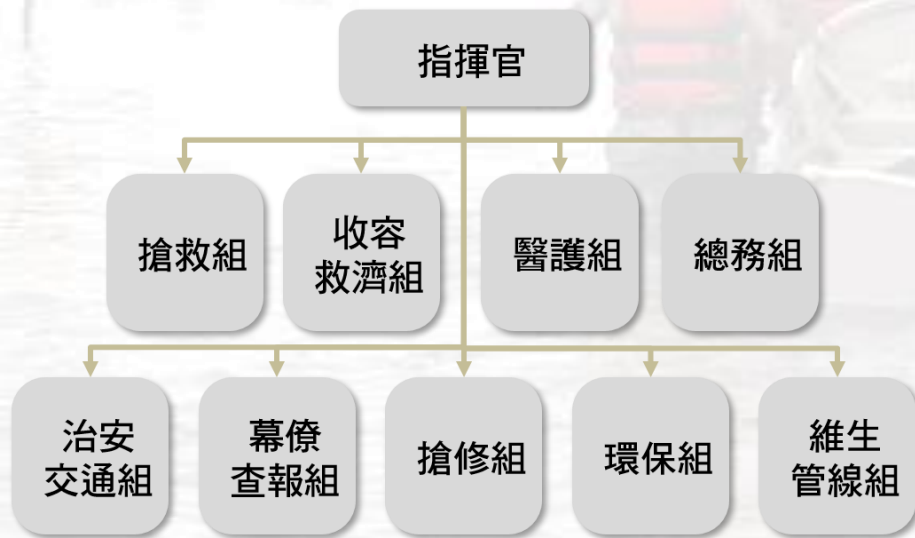| 條號	現行規定	修正建議
第二條	本府各災害防救業務主管機關或各區公所，認災害發生有設前進指揮所統籌指揮必要時，得陳報臺中市災害應變中心（以下簡稱本中心）指揮官同意後設立，並由本中心通報相關機關進駐。	本府各災害防救業務主管機關、災害防救委員會或消防局，評估災害如有下列情形者，得陳報臺中市災害應變中心（以下簡稱本中心）指揮官同意後設立，並由本中心通報相關機關進駐：1.有大量人員死傷之虞，或需進行搜救時。2.災害情可能持續擴大，短時間內無法處置時。3.範圍涉及其他行政區，需整合多單位能量，或需市府進行協調時。

詳細作業要點修正對照說明，詳見報告書 [表50]

臺中市政府災害應變前進指揮所開設作業要點 – 修正建議

現行組織架構

指揮官

- 搶救組
- 收容救濟組
- 醫護組
- 總務組
- 治安交通組
- 幕僚查報組
- 搶修組
- 環保組
- 維生管線組

▶ 與市級分組類似，提升溝通流暢度。

▶ 依現場狀況彈性增減開設群組。

▶ 進駐人數、任務權責確立。

*詳細作業要點修正對照說明，詳見報告書［表51］

建議組織架構

現場指揮官
由市長指定人員

現場副指揮官 （1至2名）
現場指揮官指定人員

後勤群組
- #7 後勤支援
- #15 軍事支援

計畫群組
- #2 資通訊/災情通報
- #4 分析研判
- #5 參謀/計畫
- #14 公共資訊

財務行政群組
- #16 行政庶務

緊急服務群組
- #9 消防/搜救
- #10 核生化應變
- #13 治安維持

人道服務群組
- #6 避難/安置
- #8 醫療/公共衛生
- #11 民生物資/農糧資源

工程處置群組
- #1 交通運輸
- #3 公共工程/環境資源
- #12 水電、能源

研究成果與未來建議

研究成果

✔ 辦理完成二次市、區級機關座談會議

✔ 辦理完成二次專家座談會議

✔ 透過會議結論，修正EOC作業要點與運作機制規劃

✔ 分析完成國內外重要城市EOC運作機制

✔ 進駐臺中市各級EOC，並分析完成執行現況、問題

✔ 研擬完成臺中市EOC細部運作流程

✔ 研擬完成各級EOC作業要點修正建議

✔ 研擬完成臺中市政府前進指揮所作業要點修正建議

未來建議

✓ **立即可行建議**
1. 依實際運作狀況，持續調整EOC運作模式
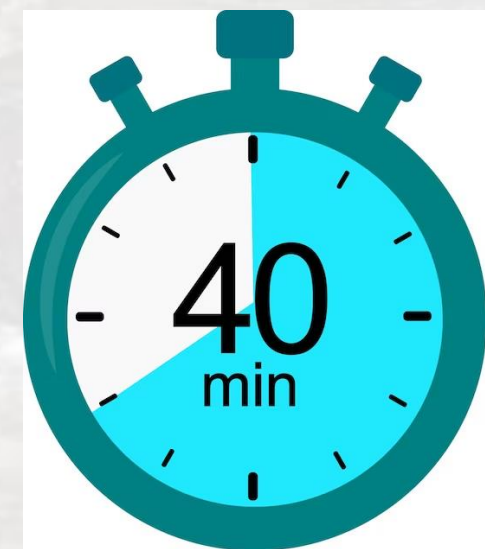2. 持續修訂EOC會議辦理流程、各功能群組資訊傳遞、進駐單位資訊共享操作機制
3. 規劃演練測試及人員專業**訓練**

✓ **中長期建議**
1. 正式成立臺中市災害防救委員會
2. 滾動式修正災害應變相關法規
3. 提升災害管理人員專業能力

實做課題 – ESF編組與工作內容討論

1. 以大規模地震為例，討論特定ESF應有之應變工作內容

2. 討論前述ESF的各個角色：協調官、主責單位、支援單位

實做發表時具體說明如此規劃之依據或理由

- ESF #2: Communications 通訊
- ESF #3: Public Works and Engineering 工務與工程
- ESF #6: Mass Care, Emergency Assistance, Temporary Housing, and Human Services 照護、緊急協助、收容安置、人道服務
- ESF #10: Oil and Hazardous Materials Response 油品與危害物質應變
- ESF #12: Energy 能源
- ESF #13: Public Safety and Security 公安與保全

40 min

FEMA Emergency Support Functions

- ESF #1: Transportation 運輸
- ESF #2: Communications 通訊
- ESF #3: Public Works and Engineering 工務與工程
- ESF #4: Firefighting 消防
- ESF #5: Information and Planning 情報與計畫
- ESF #6: Mass Care, Emergency Assistance, Temporary Housing, and Human Services 照護、緊急協助、收容安置、人道服務
- ESF #7: Logistics 後勤
- ESF #8: Public Health and Medical Services 公共衛生與醫療

- ESF #9: Search and Rescue 搜救
- ESF #10: Oil and Hazardous Materials Response 油品與危害物質應變
- ESF #11: Agriculture and Natural Resources 農業與天然資源
- ESF #12: Energy 能源
- ESF #13: Public Safety and Security 公安與保全
- ESF #14: Cross-Sector Business and Infrastructure 跨部門事務與基礎設施
- ESF #15: External Affairs 對外事務