

All together now:

A case for enhanced thinking on interoperability
among response agencies in complex disasters

Dr Paul Barnes

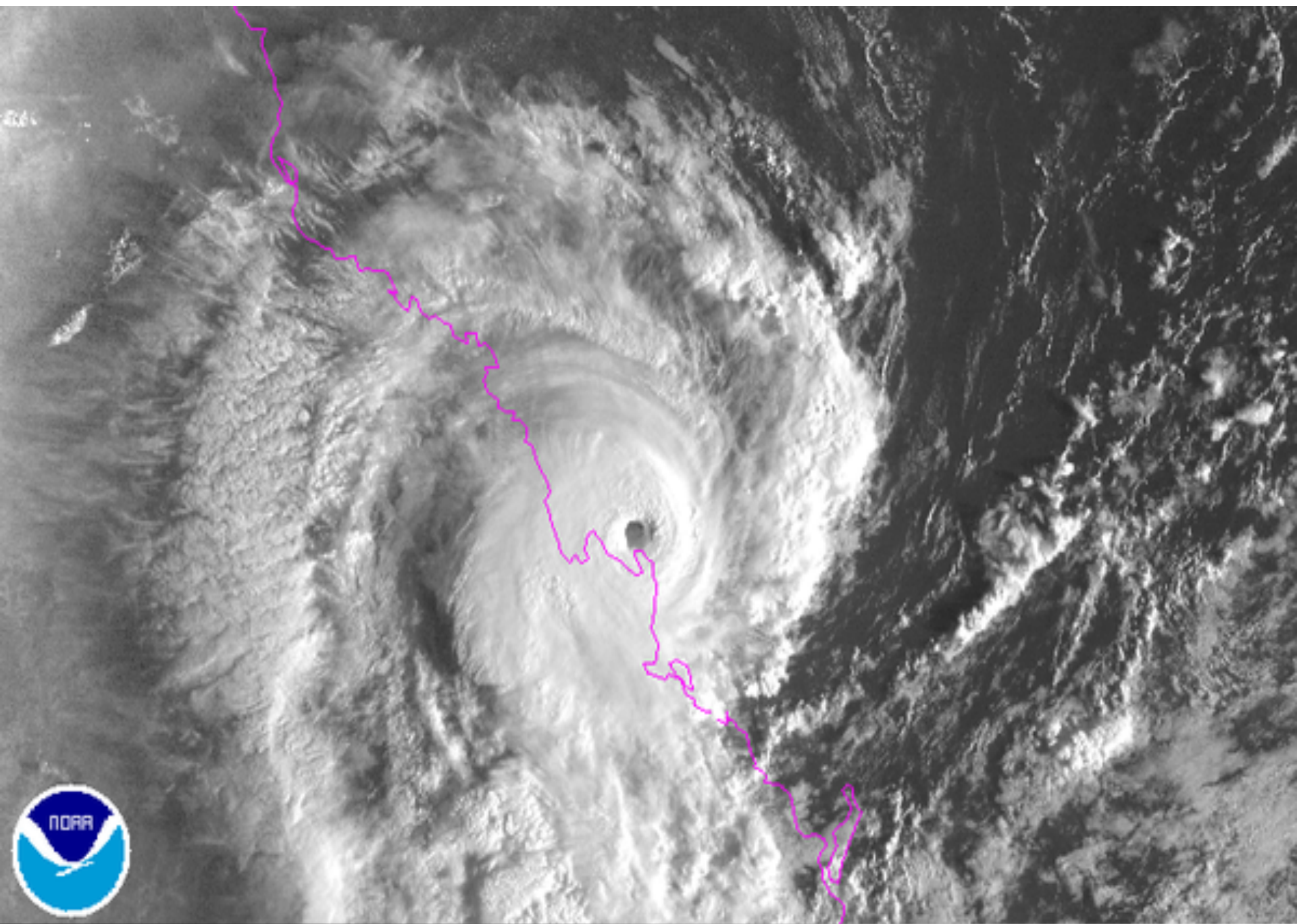
Head: Risk & Resilience

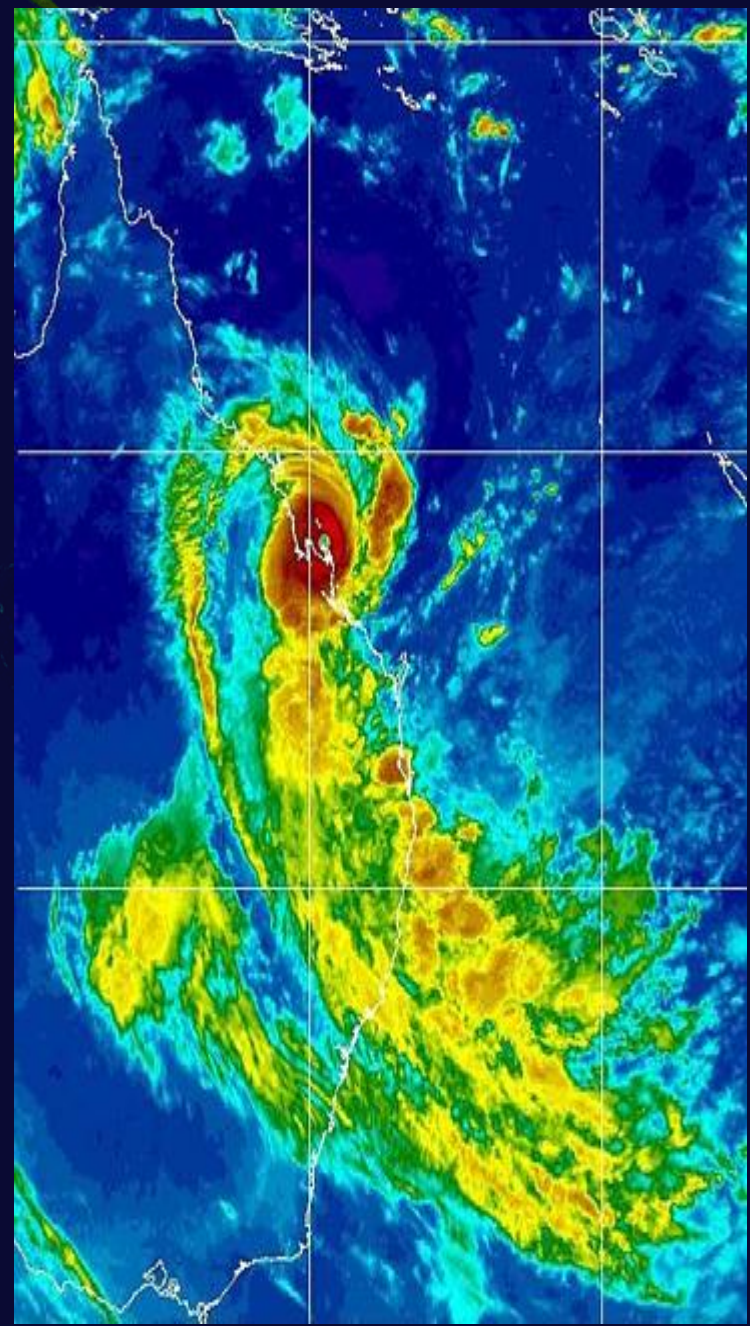
Australian Strategic Policy Institute

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An international forum: **Disaster and Emergency Management in the Health Care Sector**
Session V - Key Challenges for Disaster and Emergency Management in the Health Care Sector
Tuesday, Feb 23rd 2016, Griffith University, Southbank Campus, Australia

Establishing a Context









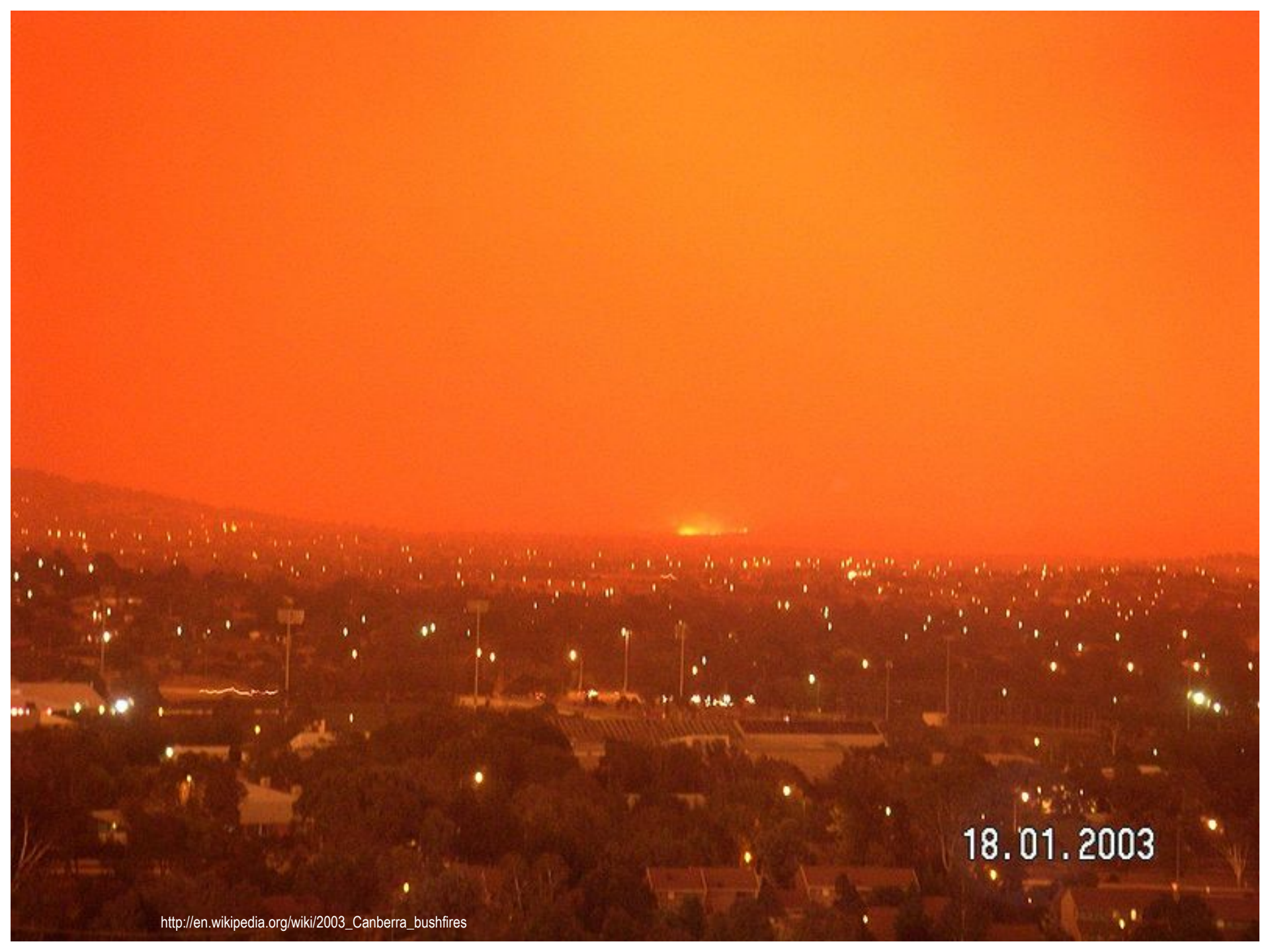








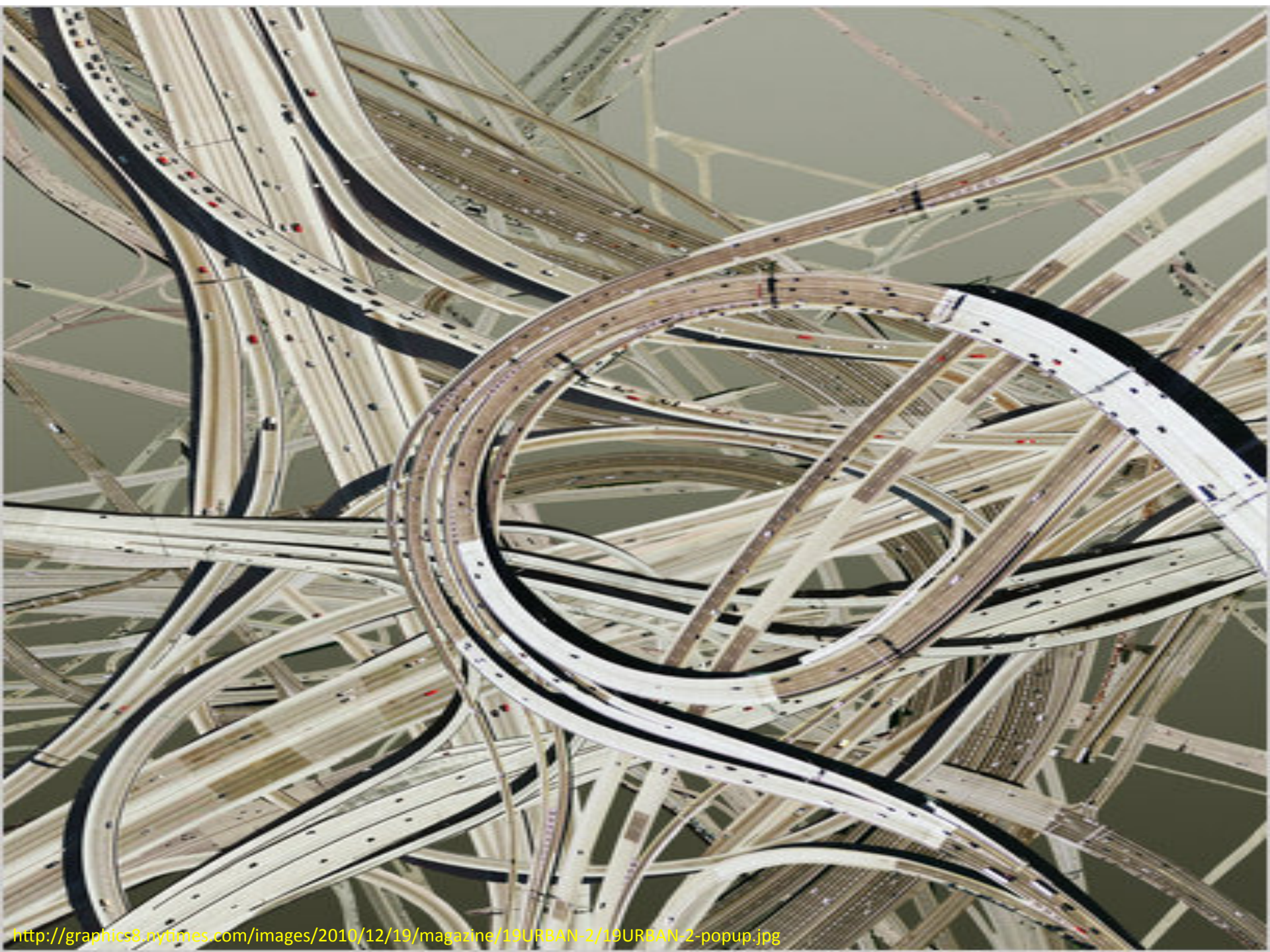




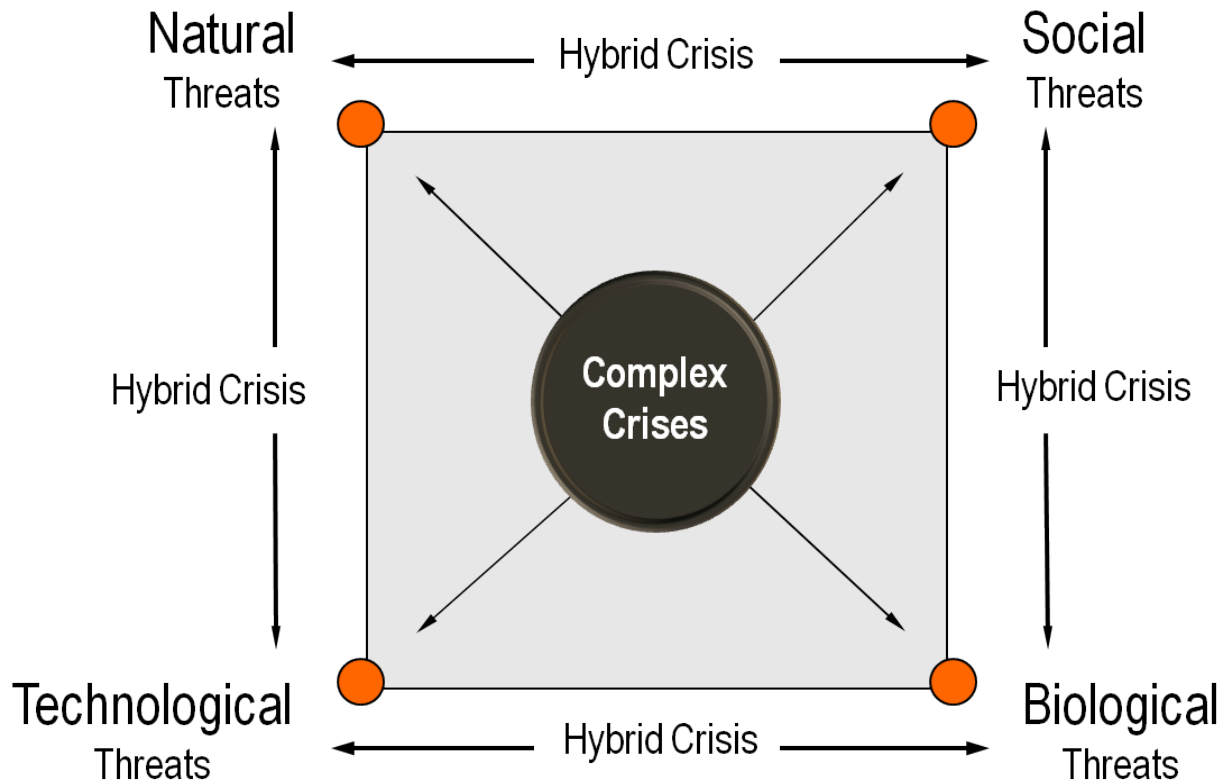
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Complexity & Cascading Impacts

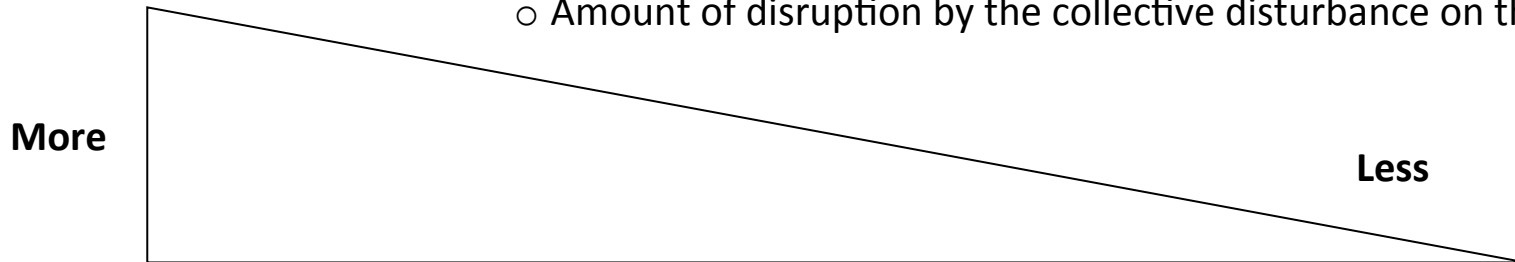


Dennis Parker, D & Tapsell, S. (1995) "Hazard transformation and hazard management issues in the London megalacity," in *GeoJournal*, 37 (3) pp. 313-328

Where to begin?

A Disaster Continuum

- Continuum Parameters:**
- Number of people impacted
 - Degree of involvement of population in the affected social space
 - Amount of disruption by the collective disturbance on the population



Disaster

- Widespread or near complete disruption of all social processes
- Widespread destruction of Infrastructure (building stock, telecom & social support networks)
- Affects; systems underlying Biological Survival, Order, Meaning & Motivation
- Overwhelms Crisis Management capabilities

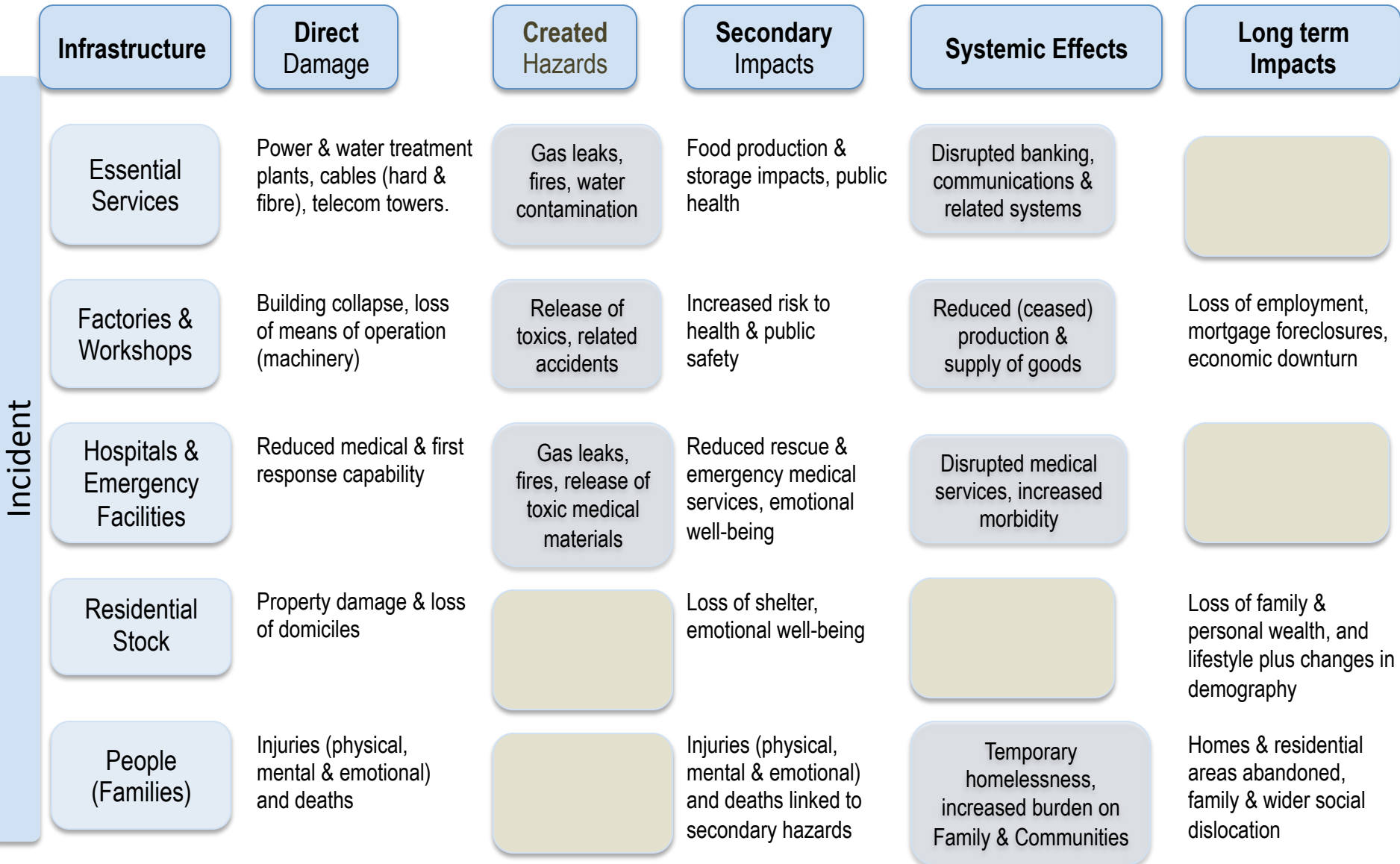
Emergency

- Focalised disruption interferes with specific social processes
- Disruption to specific persons (by chance, role or relationship)
- Notable time lapse between event and resolution.
- No disruption/destruction to overall social structure or social system processes but local impacts possible.

Accident

- Disruption of specific interest groups , victims and/or affiliates
- No disruption to wider society
- No disruption to societal infrastructure

Cascading Impacts



A Planning Frame for Complex Emergencies

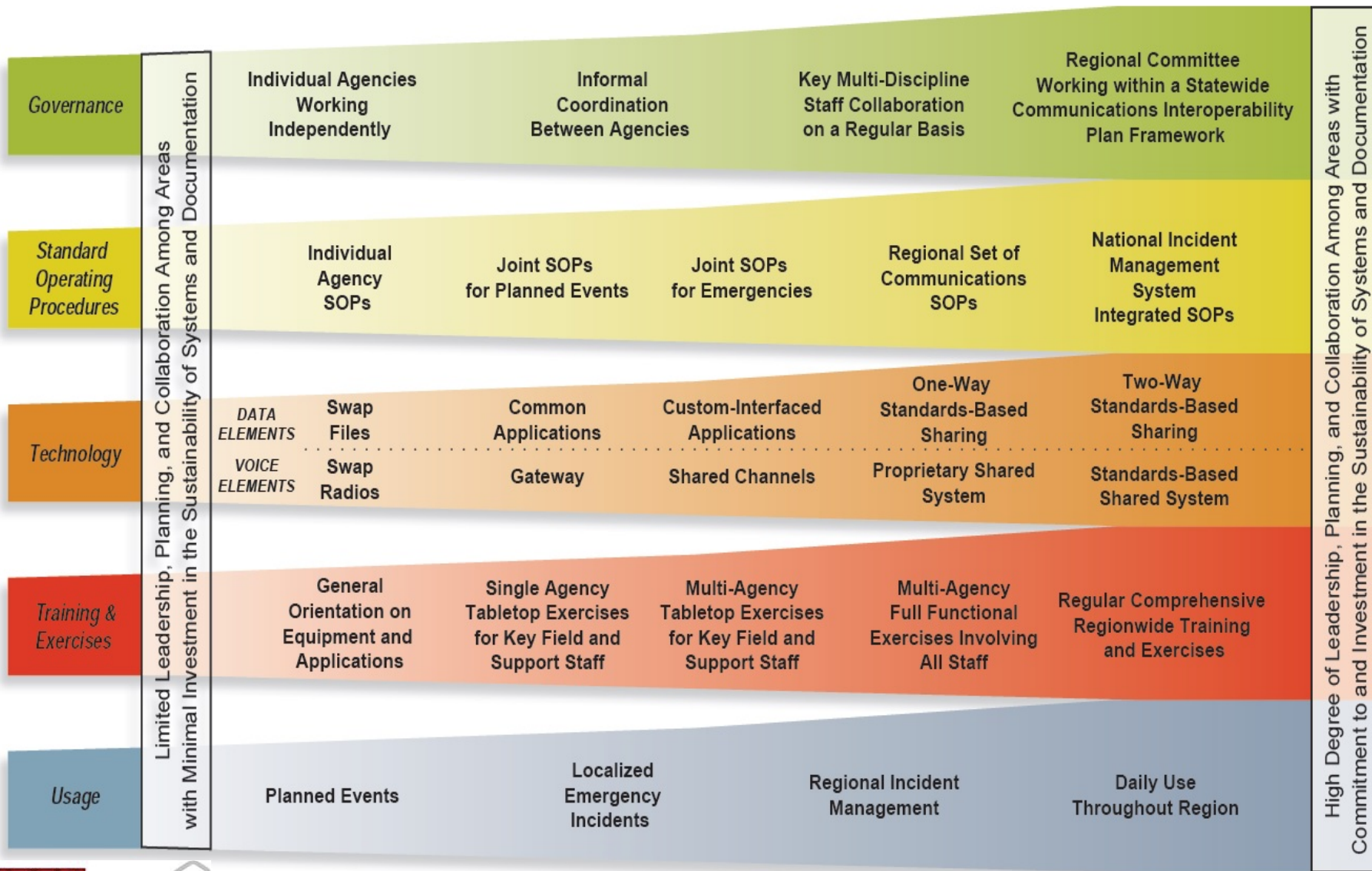
Preparedness Needs

		Preparedness Needs					
		General		Specific			
<i>Frequency of Event</i> (or resulting disturbance)	Frequent	<p>General Emergency Planning</p> <p>Ensure availability of standard personnel & equipment with sufficient capacity</p>		<p>Specific Emergency Planning</p> <p>Ensure availability of high-level personnel & equipment with sufficient capacity</p>	Days	<i>Time available to respond</i> (Should an event occur)	
	Rare	<p>General Emergency Planning</p> <p>Ensure availability of standard personnel & equipment for rapid response</p>		<p>Specific Emergency Planning</p> <p>Ensure availability of high-level personnel & equipment for rapid response</p>	Minutes		
		Low		Extreme			
		<i>Severity of Event</i>					

Interoperability has been defined as ...

*“the ability of disparate and diverse public safety agencies and their emergency response units to interact in emergency situations towards common goals, involving the sharing of information and knowledge between involved organizations and the public via defined or ad-hoc processes to achieve coordinated actions, **by means of the exchange of data between their respective information and communication systems**”*

Interoperability Continuum (Department of Homeland Security 2015)



Limited Leadership, Planning, and Collaboration Among Areas with Minimal Investment in the Sustainability of Systems and Documentation

High Degree of Leadership, Planning, and Collaboration Among Areas with Commitment to and Investment in the Sustainability of Systems and Documentation

Examples of broader usage of the term include:

- Interoperability put simply, is a measure of *the degree to which various organizations or individuals are able to operate together to achieve a common goal*.^a
- Operational interoperability is *the ability to work together effectively*.

Specifically, it is the *ability of different jurisdictions or disciplines to provide services to and accept services from other jurisdictions or disciplines, and to use those services to operate more effectively together* at an emergency.^b

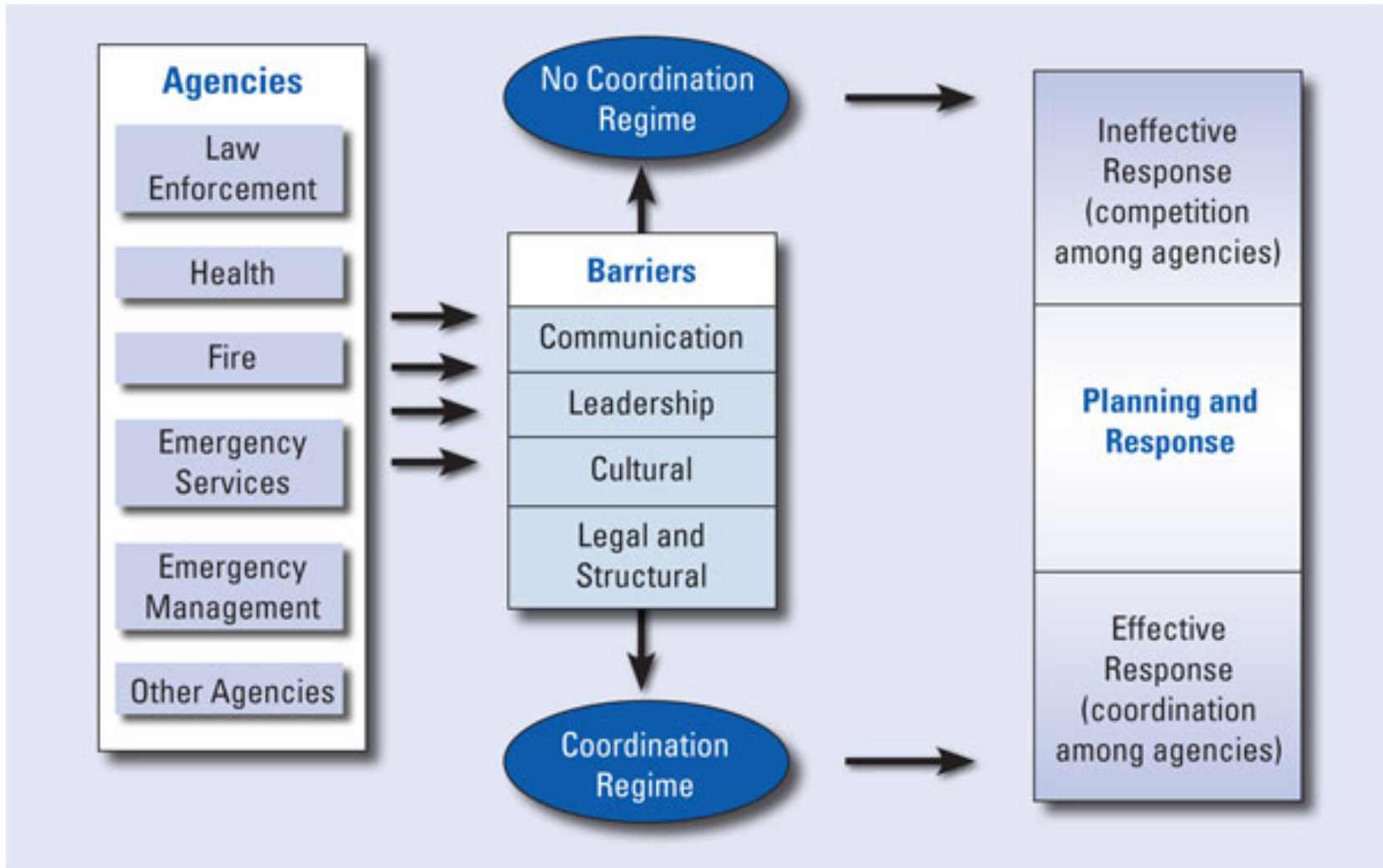
- The capability of organisations or discrete parts of the same organisation *to exchange operational information and to use it to inform their decision making*. Interoperability must be considered for incidents and events in the same service and across different services where *working to a common purpose within a unified framework* with a common command culture is critical to success. **This can be at the local, regional or national level.**^c

A: Hura, M. et al. (2000) Interoperability: A Continuing Challenge in Coalition Air Operations, Rand Monograph Report, <http://www.rand.org/content/dam/rand/pubs/monograph_reports/MR1235/MR1235.chap2.pdf>

B: Pessemier, W. (2005) *TOP PRIORITY: A Fire Service Guide to Interoperable Communications*, International Association of Fire Chiefs through a sponsorship from Nextel Communications <http://www.in.gov/ipsc/files/Fire_InteropHandbook.3.05.pdf>

C: Cole, J. (2010) Interoperability in a Crisis 2 (Human Factors and Organisational Processes), Occasional Paper, Royal United Services Institute: https://www.rusi.org/downloads/assets/Interoperability_2_web.pdf referencing National Policing Improvement Agency, 'Guidance on Multi-Agency Interoperability' (Wyboston: Specialist Operations Centre, 2009), <http://www.npia.police.uk/en/docs/Multi-agency_Interoperability_Secure_130609.pdf>

A General - agency - Coordination Model

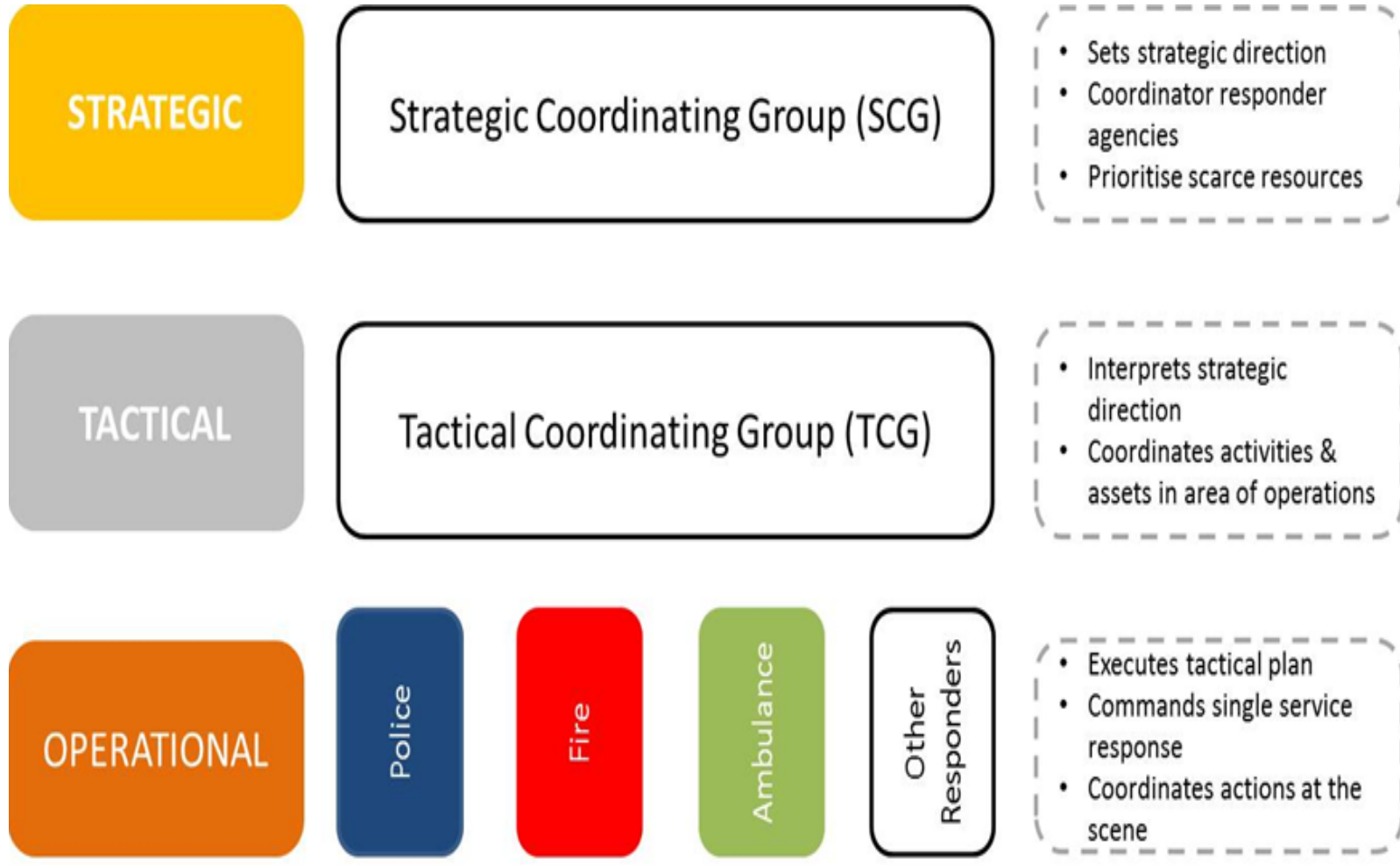


2012: Joint Emergency Services Interoperability Principles Programme (JESIP)

The key objectives of the Programme were to:

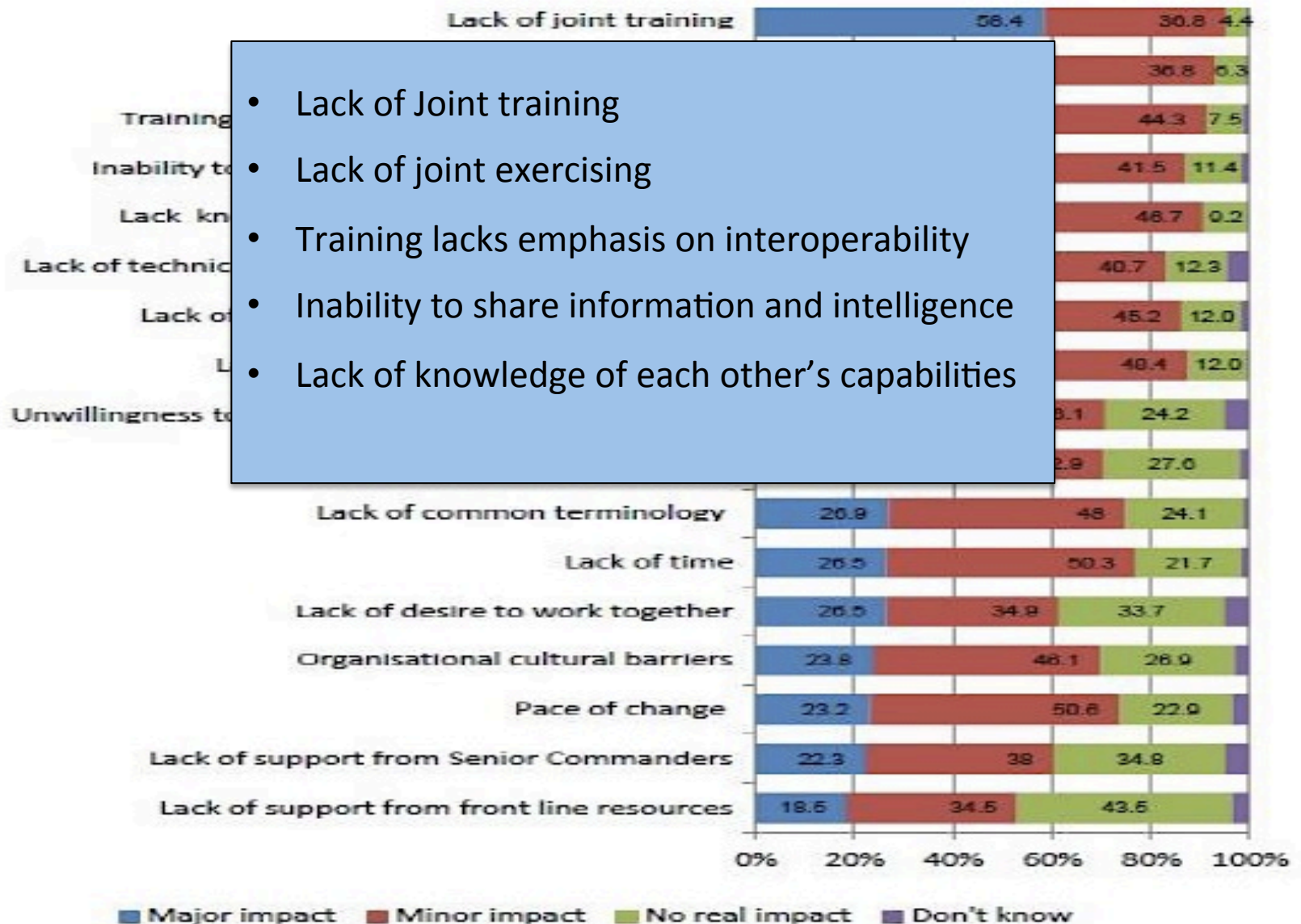
- Establish joint interoperability principles and ways of working (Joint Doctrine: The Interoperability Framework)
- Develop greater understanding of roles, responsibilities and capabilities amongst tri-service responders
- Improve communication, information sharing and mobilisation procedures between services including their control rooms
- Implement a training strategy for all levels of command
- Implement a joint testing and exercising strategy for all levels of command to ensure lessons identified progress into learning and procedural change.

Overarching response structure (JESIP)



Results of a UK first responder survey

(Joint Emergency Services Interoperability Principles Programme (JESIP) 2013)



- Lack of Joint training
- Lack of joint exercising
- Training lacks emphasis on interoperability
- Inability to share information and intelligence
- Lack of knowledge of each other's capabilities

What has changed

From

To

Threats Specific



All Hazards Scenarios linked to
(Tasks & Capabilities)

Departmental tasks



Whole-of-institution
(Joined up thinking)

Adhoc Assessment



Systematic Impact assessment
(Vulnerabilities)

Responsibilities



Functional requirements
(Continuity & Recovery)

Re-action



Pro-action
(Anticipation of impacts & collaboration needs)

Fit-for-Purpose

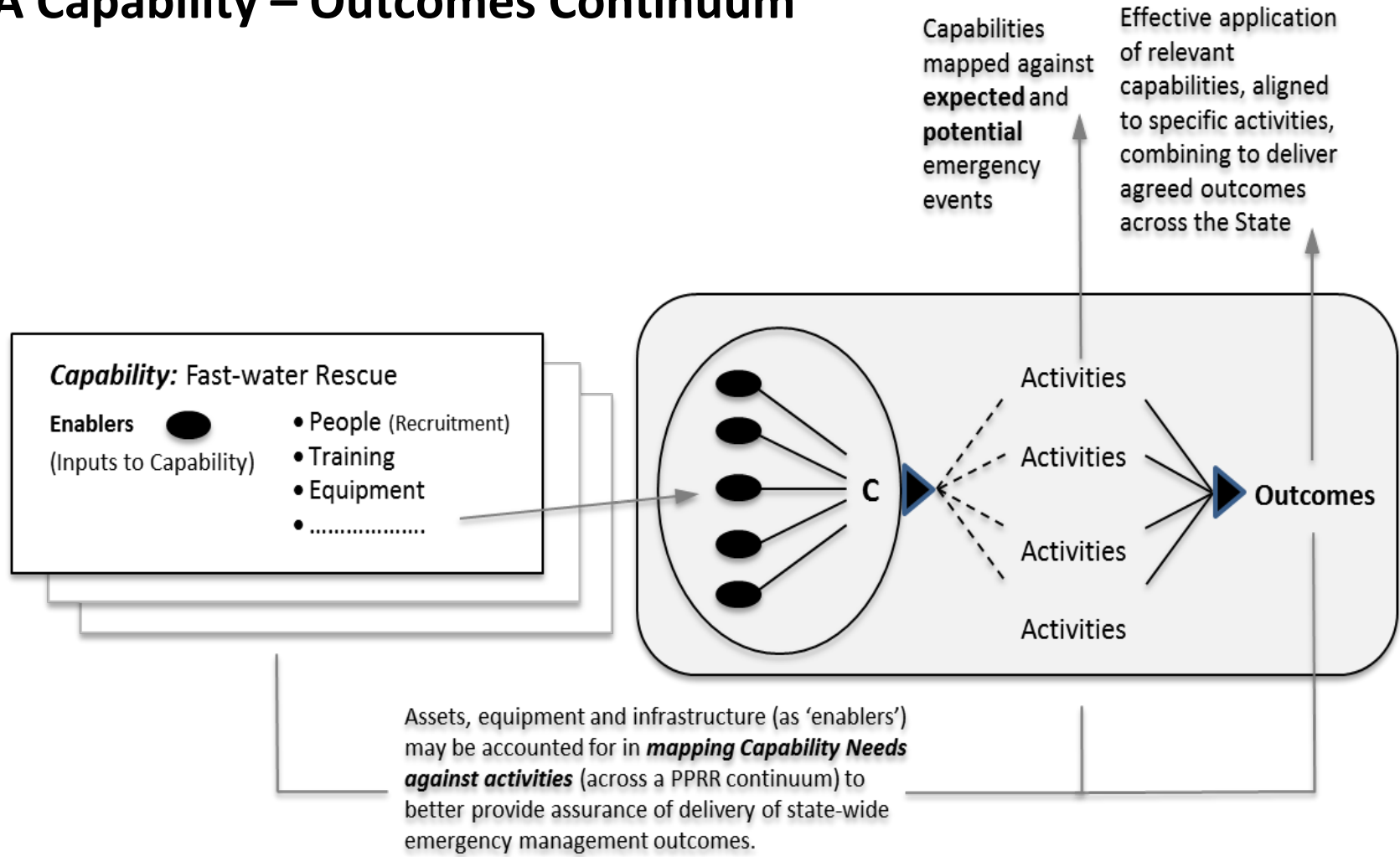


Flexibility

(Some) Challenges of Emergency Response Coordination

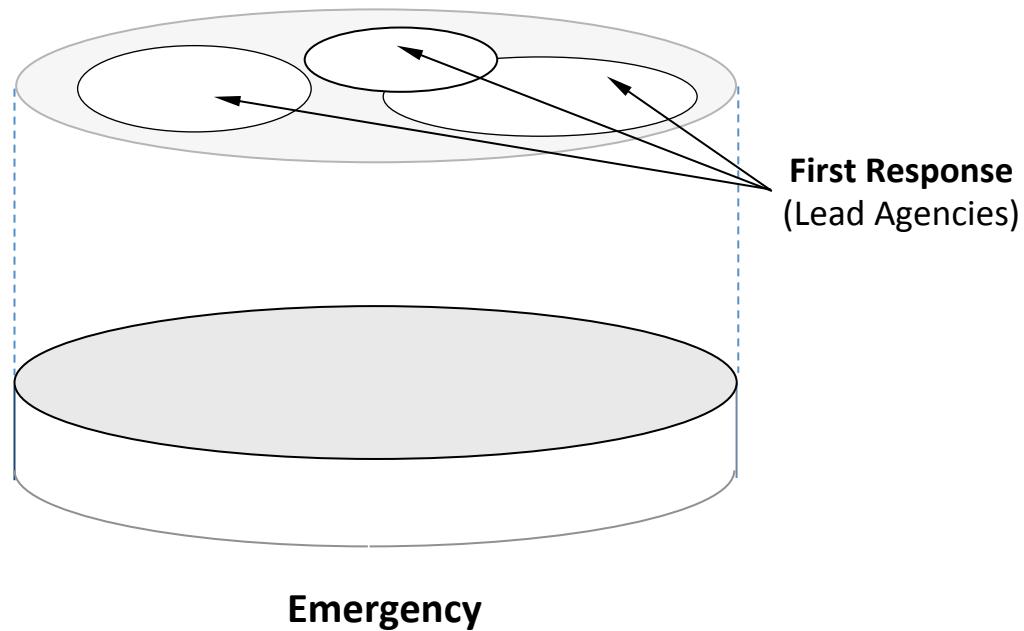
Challenge	<i>for each challenge, “ask what is the status [readiness] of our organisation regarding ...?”</i>
High uncertainty regarding sudden and unexpected effects	<ul style="list-style-type: none"> • Real-time monitoring and timely alert notification for situation awareness • Improvisation and rapid adaptation of predefined plans to real-time events • Periodic evaluation and update on existing coordination practices
Incomplete consideration of disaster risk-reduction needs	<ul style="list-style-type: none"> • Threat, vulnerability, and risk assessment and countermeasures • Risk-sharing policies among other response agencies • Operational sustainability management
Severe resource shortages	<ul style="list-style-type: none"> • Logistic management and resource-sharing network across local, national, and international levels • Self-equipped response teams
Uncertainty about scale of impacts and damage	<ul style="list-style-type: none"> • Coordination agreements: governmental, public, and private sectors across local, national, and international boundaries • Efficiency of information, intelligence, and resource-sharing networks • Efficiency and effectiveness of integrated communication networks to inform, guide, and reassure the general public
Complexity of multi-authority incidents	<ul style="list-style-type: none"> • Unified response command protocols for coordination • Real-time management of authority and regulatory conflict • Communication operability and interoperability

A Capability – Outcomes Continuum

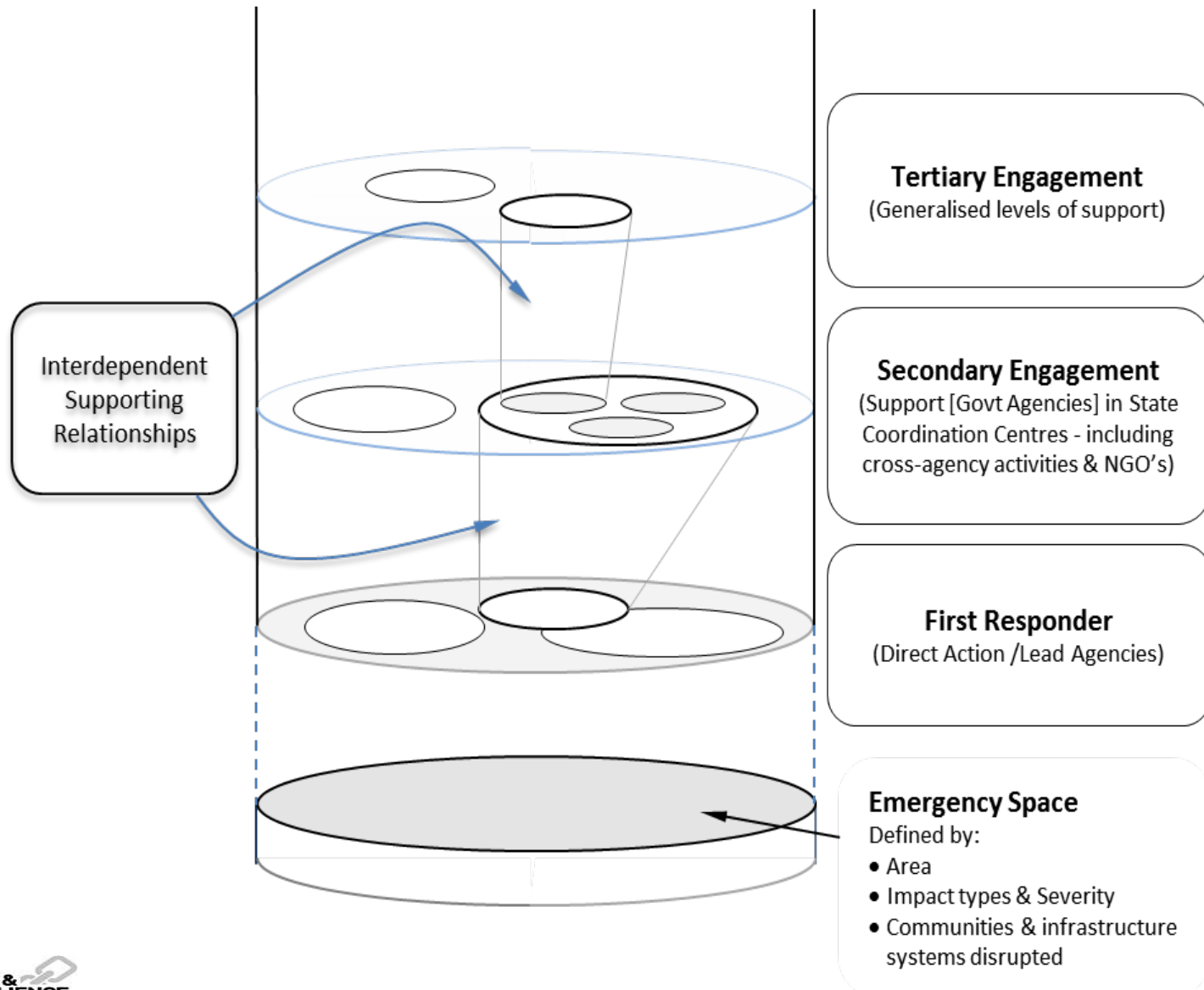


Barnes P (2015) Candidate interoperability needs amongst response and recovery groups, Bushfire and Natural Hazards CRC, Australia

Aligned Interoperability (First Responders)



Vertically Integrated Capabilities (All Agencies Focus)



Questions to consider.1

- ***Are dependencies within levels of responder groups considered and understood*** - are they horizontally integrated?
- ***Have Communication - Leadership - Cultural differences - Legal and Structural differences been examined and mapped?*** If not, what assumptions might be significant?
- ***What interdependencies exist between different (vertical) agencies?***
Do any such relationships impact an all-agencies ability to deliver the required response and recovery effect over time?
- ***Does emergency response planning assume that different scales of response with rapidly cascading impacts*** just require more units of capability?

Questions to consider.2

- ***Does emergency response and recovery planning assume that all required relationships among agencies are known*** - or that all agencies that might be involved in a protracted or unusual emergency response and recovery effort are known?
- ***Are legislative structures aligned*** – within horizontal layers and vertically? Have legal impediments been tested for different scales of coordination against different types and scales of events?
- ***When faced with a complex crisis***, how does your agency operate effectively (cooperate and collaborate) with others? ***Is engagement any different in an event thought to be less complex?***

International Network for Health Promoting Hospitals & Health Services

The Task Force on Health Promoting Hospitals and Environment

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Program BOOKLET



AN INTERNATIONAL FORUM ON

“DISASTER and EMERGENCY MANAGEMENT in the HEALTH CARE SECTOR”

TUESDAY, Feb 23rd 2016
Griffith University, Southbank Campus

Hosted by Centre for Environment and Population Health, Griffith University
and co-hosted by Tzu Chi Medical Foundation, Tzu Chi University

Venue: Griffith University South Bank Campus, Griffith Graduate Centre Building (S07) Room 1.23

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