



# **Wireless Communications In Effective Emergency Management**

***Tom Worden***

***Chief Technology Officer***

***Governor's Office of Emergency Services (OES)***

***Communications & Technology Development***



# OES Comm / Tech Vision

- Provide incidents with state-of-market communications and information sharing tools
- Develop an image of the Incident “Battlefield”
- Include Voice & Rich Data worlds
  - Mobile Voice + Broadband + Software
- OES Traditional Approach
  - Advisory and Technical Committees
  - Regional Coordination – George Lowry
- Communications & Technology Development



# OES Technology Services

- Voice:
  - Various “Push to Talk” Mutual Aid Radio Systems
    - Equipment Caches and Comm Vehicles
  - Interoperability Policy Committees
  - Emergency Public Information Systems (EAS)
  - OASIS – Statewide Satellite System
- Data:
  - OASIS – Statewide Satellite System
  - Emergency Public Information Systems (EDIS)
  - RIMS – Response Information Management System
  - ERMN – Emergency Response Management Network (Pilot Project)



# OASIS Deployable Broadband





# Technology Policy & Practice

- OES Evolving to Support New Technology
  - New Challenges & New Technology Opportunities
    - Partnering with other agencies
  - New OES Organization Reflects New Approach
    - Communications & Technology Development
    - Data and Voice Interoperability
    - Built on Proven OES Collaborative Approach
- New Technology Improves Emergency Planning
  - Capturing Information Improves After Action Reports
  - Sharing Information Improves Understanding of Event



# Emergency Response Management Network - ERMN

- Federal Department of Homeland Security CIO Sponsored Competitive Grant to Demonstrate
  - The use of State of the Market Technology to remove barriers to information sharing in support of emergency response
- Interoperable Wireless Data
  - WiFi in 2.4, 4.9, and 5.9 MHz, ITS Demonstration
- Redundant IP Data Paths
  - Commercial Internet, OASIS, CalTrans, CalREN
- Common Operating Picture
  - Integrating multiple data sources in a geographic user interface



# ERMN Team

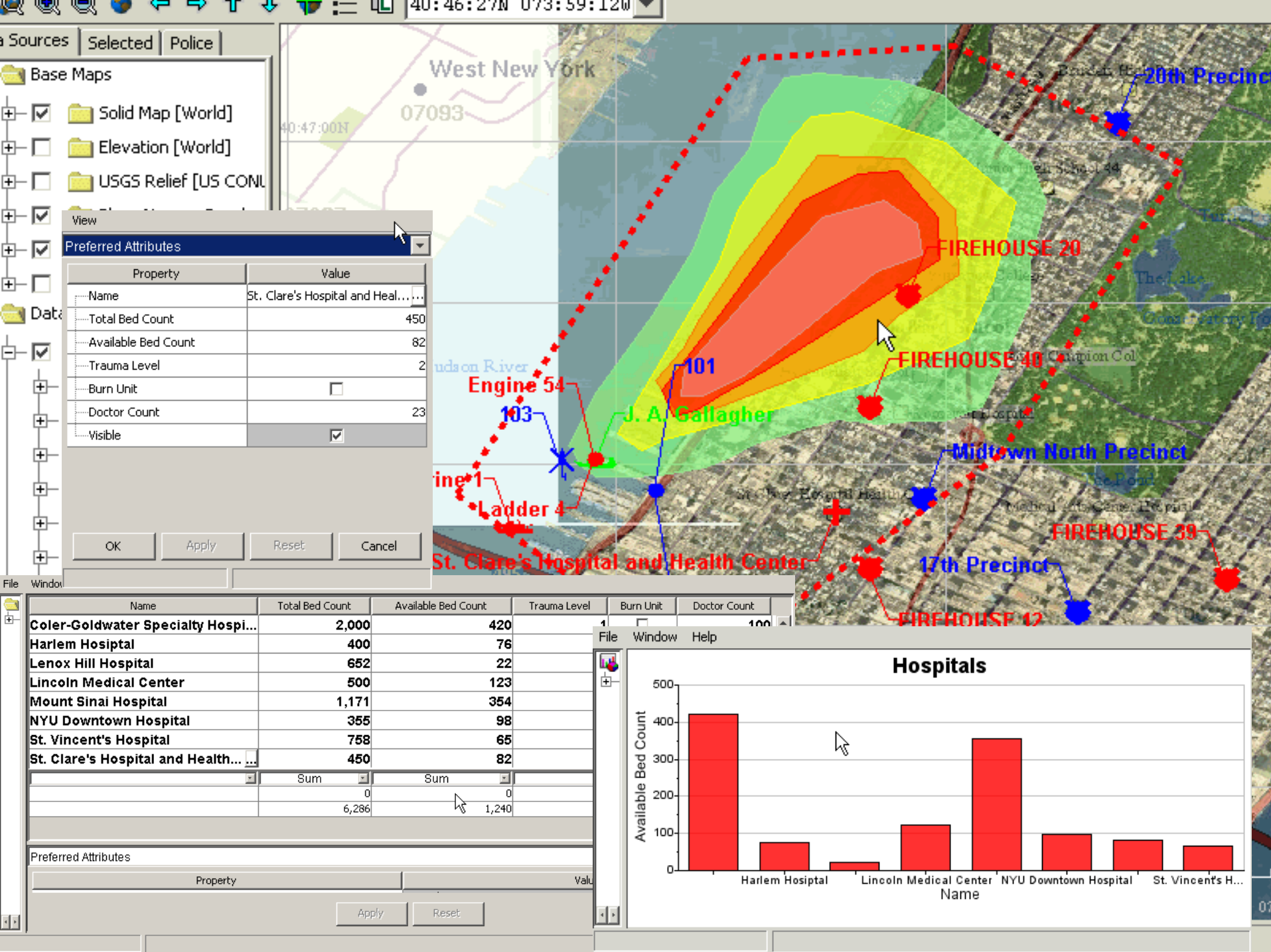
- **OES**
  - Lead Agency / Grantee
- **CalTrans**
  - Development & ITS Wireless Partner
- **CENIC** (Corporation for Education Networks in California)
  - Data Transmission Partner
- **ABAG / BAR/GC** (Bay Area Regional GIS Consortium)
  - Data Source Partner
- **Livermore / Pleasanton Fire Department**
  - Principal First Responder Partner
- **Others Agencies**
  - Naval Post Grad School, Lawrence-Livermore Labs



# ERMN Operation Concepts

- Pilot Project - Critical Incident Management
  - Multi-Jurisdiction, Multi-Discipline
- Multiple Information Modes
  - Sensors, Cameras, Vehicle Locators, Databases, GIS
- Common Operating Picture (COP)
  - Display information from many sources / databases
  - Geographic Primary User Interface
- Multiple Transport Paths
  - WiFi, ITS, Commercial Internet, Satellite (OASIS), Cellular, CalREN (California Research & Education Network)





- Base Maps
- Selected Police
- ✓ Solid Map [World]
- ✗ Elevation [World]
- ✗ USGS Relief [US CONL

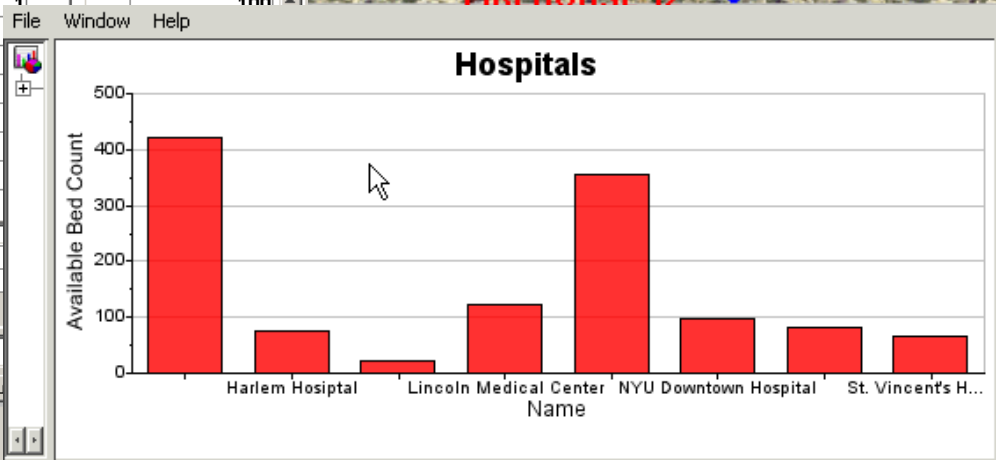
View

Preferred Attributes

Property	Value
Name	St. Clare's Hospital and Heal...
Total Bed Count	450
Available Bed Count	82
Trauma Level	2
Burn Unit	<input type="checkbox"/>
Doctor Count	23
Visible	<input checked="" type="checkbox"/>

OK Apply Reset Cancel

Name	Total Bed Count	Available Bed Count	Trauma Level	Burn Unit	Doctor Count
Coler-Goldwater Specialty Hospi...	2,000	420	1	<input type="checkbox"/>	100
Harlem Hospital	400	76			
Lenox Hill Hospital	652	22			
Lincoln Medical Center	500	123			
Mount Sinai Hospital	1,171	354			
NYU Downtown Hospital	355	98			
St. Vincent's Hospital	758	65			
St. Clare's Hospital and Health... ..	450	82			
	Sum	Sum			
	0	0			
	6,286	1,240			





# Field Operations





# ERMN Synergies

- Integrates Lessons Already Learned:
  - Military C4ISR becomes C5ISR
  - SAFECOM Interoperability Continuum
  - Emergency Management Cycle
- Addresses Federal DHS Initiatives:
  - Homeland Security Presidential Directives 5 & 8
  - National Incident Management System NIMS (SEMS) Compliant
  - Uses DHS Management and Planning COnccepts
    - National Planning Scenarios – NPS
    - Universal Task List – UTL
    - Target Capabilities List – TCL
  - Supports Homeland Security Exercise & Evaluation Program – HSEEP

# ERMN Demonstrates C<sup>5</sup>ISR Concepts

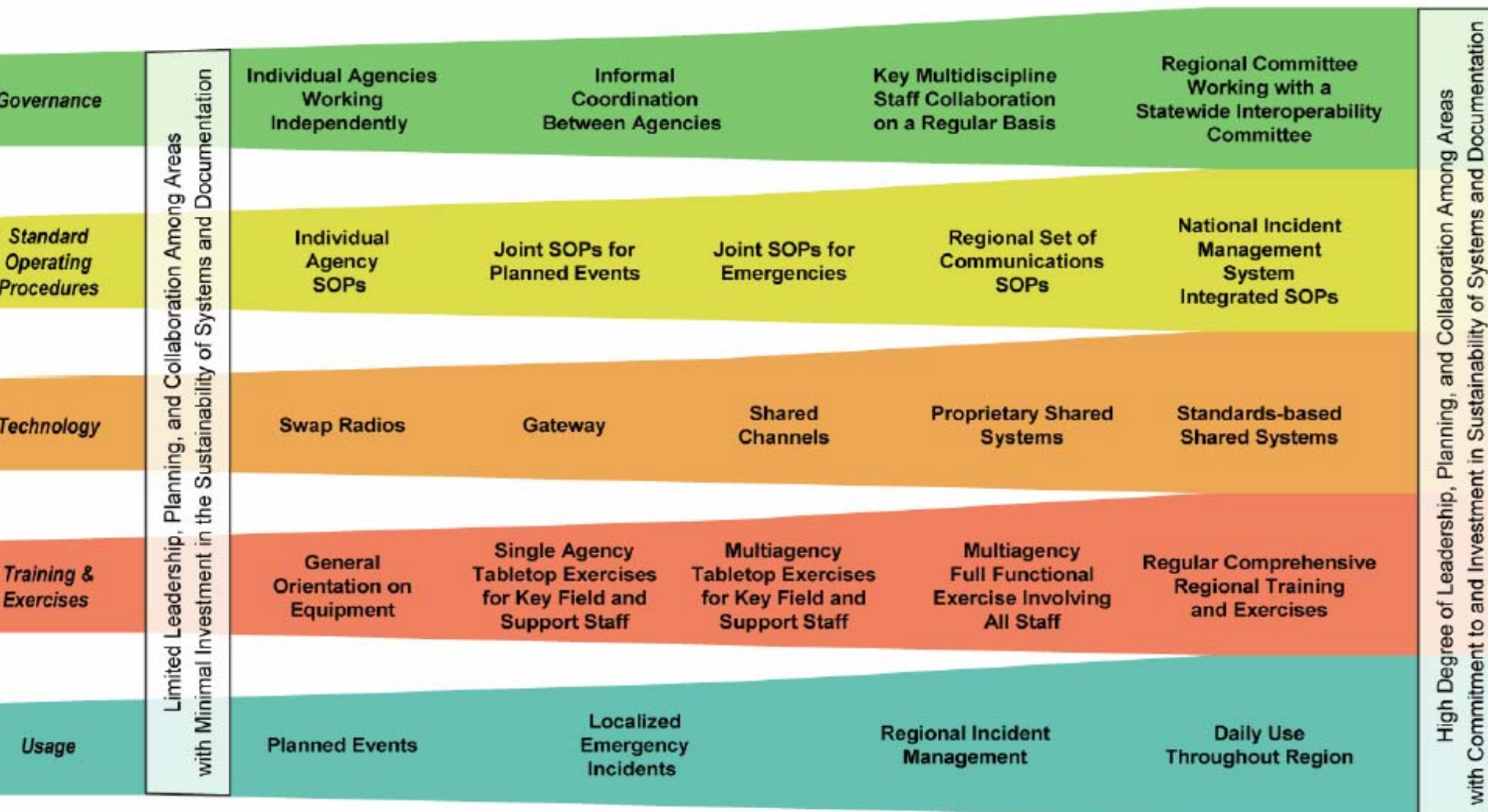
Civilian Command, Control, Communications, Computers,  
Intelligence, Surveillance, and Reconnaissance







# Interoperability Continuum

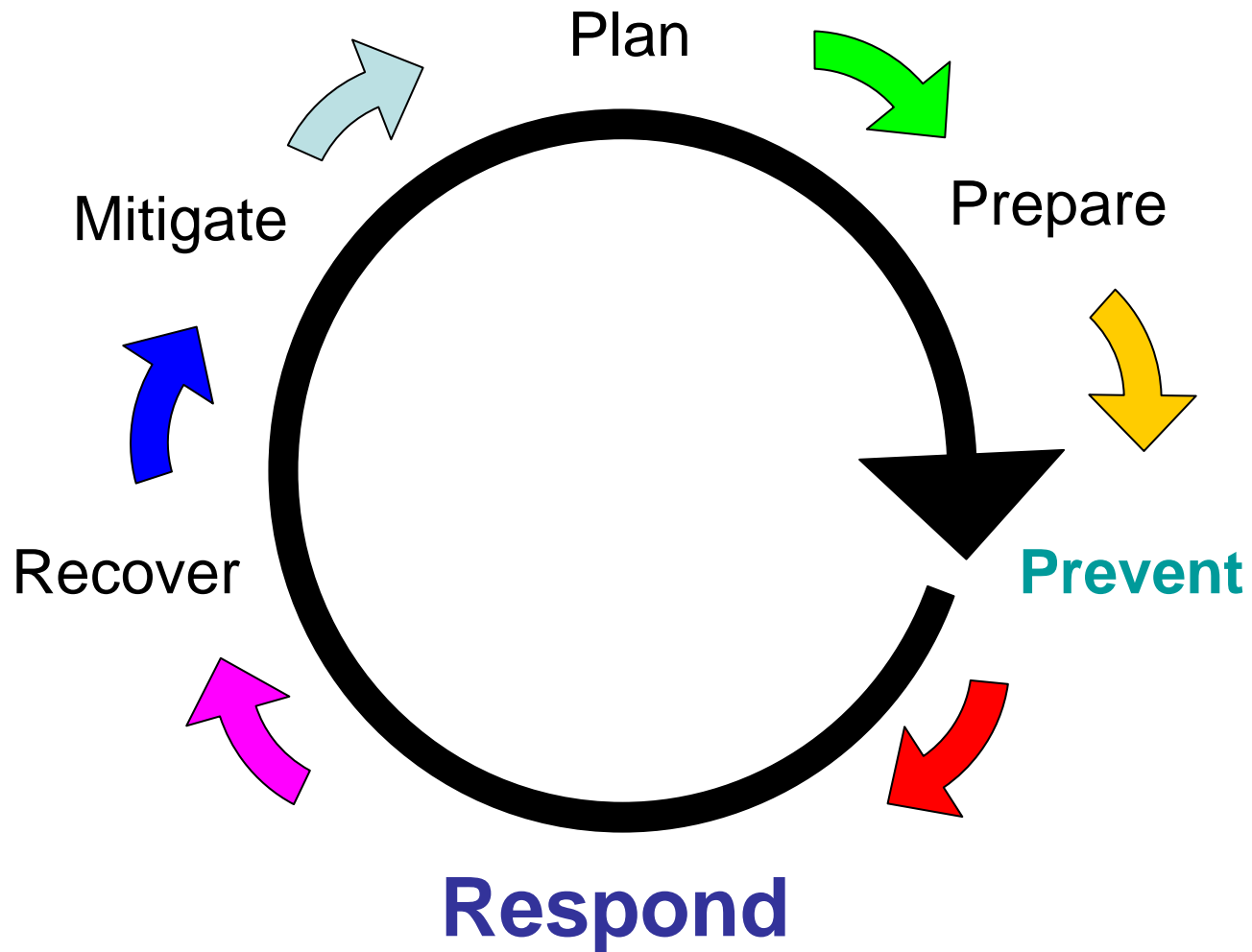


Minimal Level



Optimal Level

# Emergency Cycle





# ERMN Project Principles

- “Center of Excellence” Approach
  - Input & Collaboration CRITICAL !
- OES Sponsored - Not Led
- Partners Drive Outcomes
  - Interface to Meet Response Agency Needs
  - Common Information – Individual Experience
  - Technologists - Operators
- Continuous Improvement
  - Open Standards



# **Discussion**

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