

“CONNECTED, PROTECTED, EDUCATED COMMUNITIES”

Schools & WireLess BroadBand Internet Protocol Networks
W/LBBIP...via **eCLIC** and LINC

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- *Board Director, Wireless Communications Alliance (WCA)*

1868 ALLIANCE MEETING

29JULY2008

OAKLAND, CA

eCLIC and LINC

- **eCLIC** = *emergency Communications Leadership & Innovation Center*, a “Center of Excellence” for emergency communications innovation (goal: “Point and Click” Wireless Broad Band Internet Protocol operations)
- **LINC** = *Livermore Info Net Collaborative*, a survivable wireless Broadband IP network that leverages technology, strategically deployed assets, and unique collaborations
 - Schools as reliable W/LBBIP Comms Hubs).

WCA Supports eCLIC & LINC

-WCA-

Wireless Communications Alliance

Northern California Wireless Non-Profit (founded 1993)

- eCLIC -

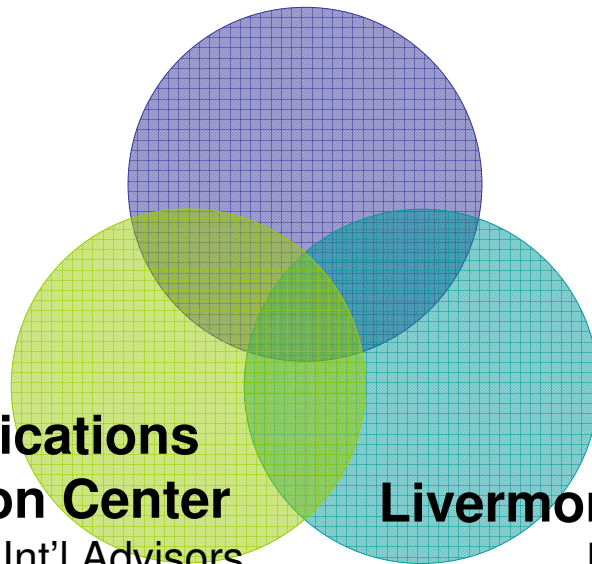
emergency Communications Leadership & Innovation Center

25yrs W/L, 15 major inputs, 25 Int'l Advisors
"Point & CLIC" W/L BB IP for Emergencies,
via Visionary Leadership, Skills
& Democratized Innovation

- LINC -

Livermore Info Net Collaborative

Pilot with Collaborators:
LLNL, LVJUSD, LPD, LPFD,
CalOES, Trapeze, NPS, eCLIC, WCA



eCLIC Vision

- Create a “**CENTER OF EXCELLENCE**” for emergency communications, leveraging the shift to **WireLess Broad Band Internet Protocol** networks ... **W/LBBIP** enables the Internet...anywhere
- *“The future of Wireless is Broadband...the future of Broadband is Wireless”*
- *“Communications is the key. Schools will serve as emergency communications hubs”*

eCLIC Questions

- **Two years from now (2010), will the average bay area teenager have more experience with W/LBBIP than the average first responder ?**
- **Now (2008), does any major business enterprise not use W/LBBIP ? What about Emergency Responders?**

Context : the New Economy

The New Economy has 4 aspects:

- 1. Fast, 2. Global, 3. Networked & 4. Knowledge Worker Based*

**(Collaborating to Compete in the New Economy - California Economic Strategy Panel)*

Communications (W/LBBIP) impacts all 4 aspects

- Big Shift to **Internet Protocol** = Huge Impacts for Excellent Emergency Communications
- Shift to IP = Great Expectations, Opportunities & **USER INNOVATION**
From voice-only to : **voice + visuals + data**)
- **Unprecedented capabilities** for emergency svcs, safety, security, health, education, commerce)
- Wireless personal, Local, Wide Area & Satellite nets

OASIS Deployable Broadband “IP in the California Sky”



Innovation: Key to Excellence, Key to New Economy Success

- Stimulate & support Innovation
- “Democratize” Innovation*
- **(Democratizing Innovation – Dr. Eric von Hippel, MIT Innovation Center)*
- Become a “Lead User” of “COTS”
(Commercial Off The Shelf) IP Technology
- Be a Policy + Practices “Thought Leader”
- Link back to New Economy Vitality –
“Connect to Compete, Connect to Serve”

Collaborate & Test, Test, Test: the ERMN example

- **ERMN : Emergency Response Management Network >>> Leads to eCLIC and LINC**
- \$1M DHS/CalOES Pilot - Incident Management
- Multiple Information Modes – Rich Data Focus
- Multiple Data Transport Paths
 - WiFi, Internet, Satellites (OASIS, Other), Cellular, CalREN (California Research & Education Network)
- Common Operating Picture (COP), a “Picture of the Battlefield” ...see next slide
 - Display information from many sources / databases

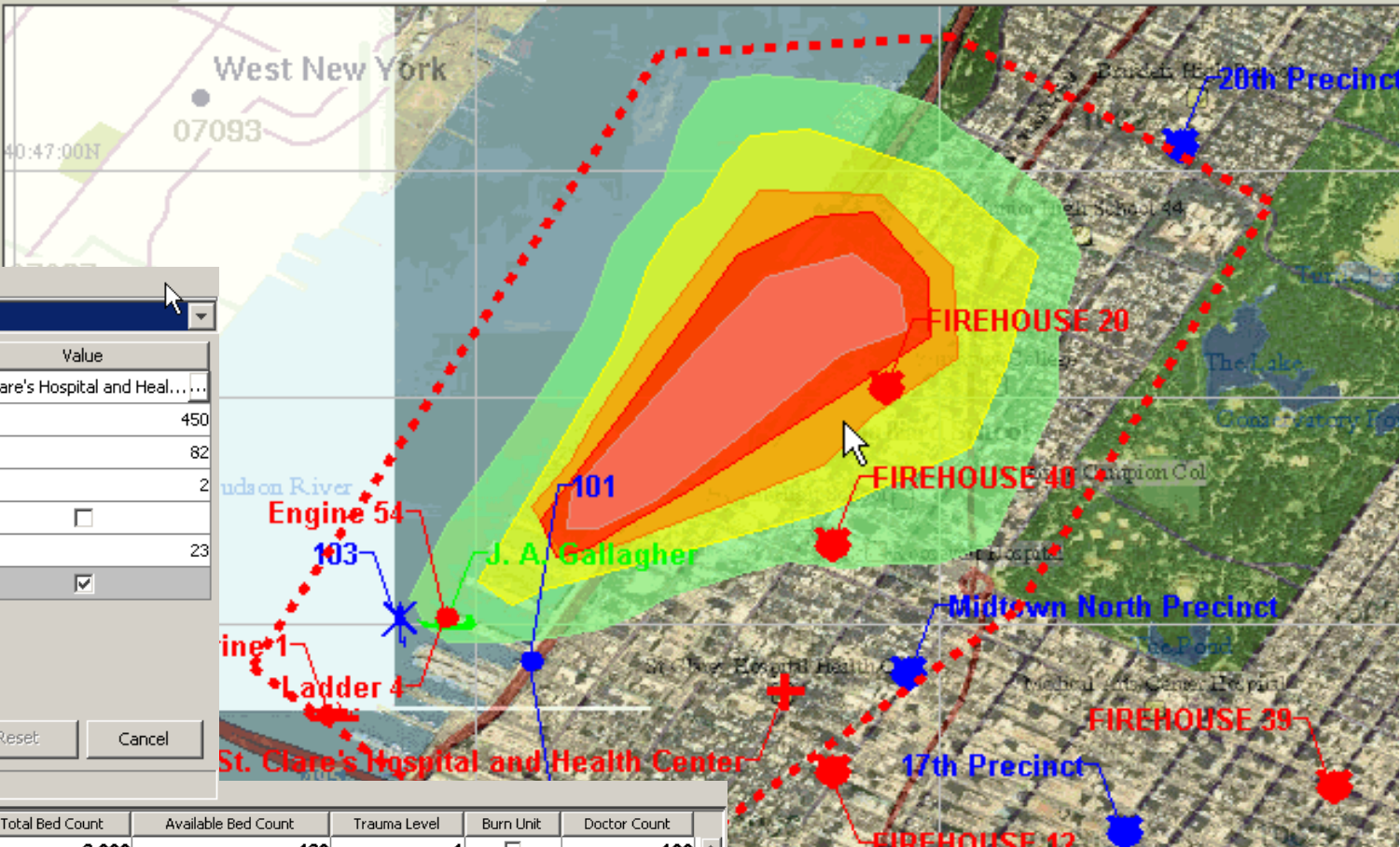
Sources Selected Police

- Base Maps
 - Solid Map [World]
 - Elevation [World]
 - USGS Relief [US CONL]

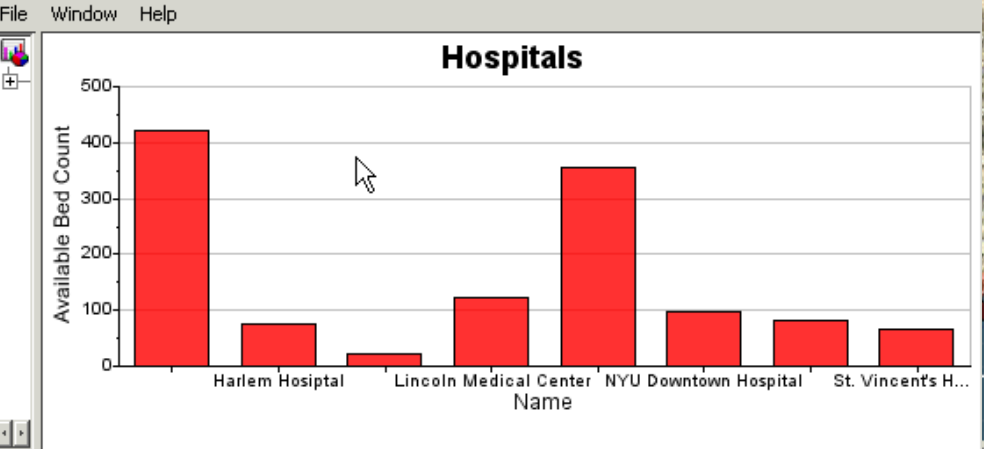
View Preferred Attributes

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 Hosiptal	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	6,286	1,240			



Preferred Attributes

Property	Value

Apply Reset

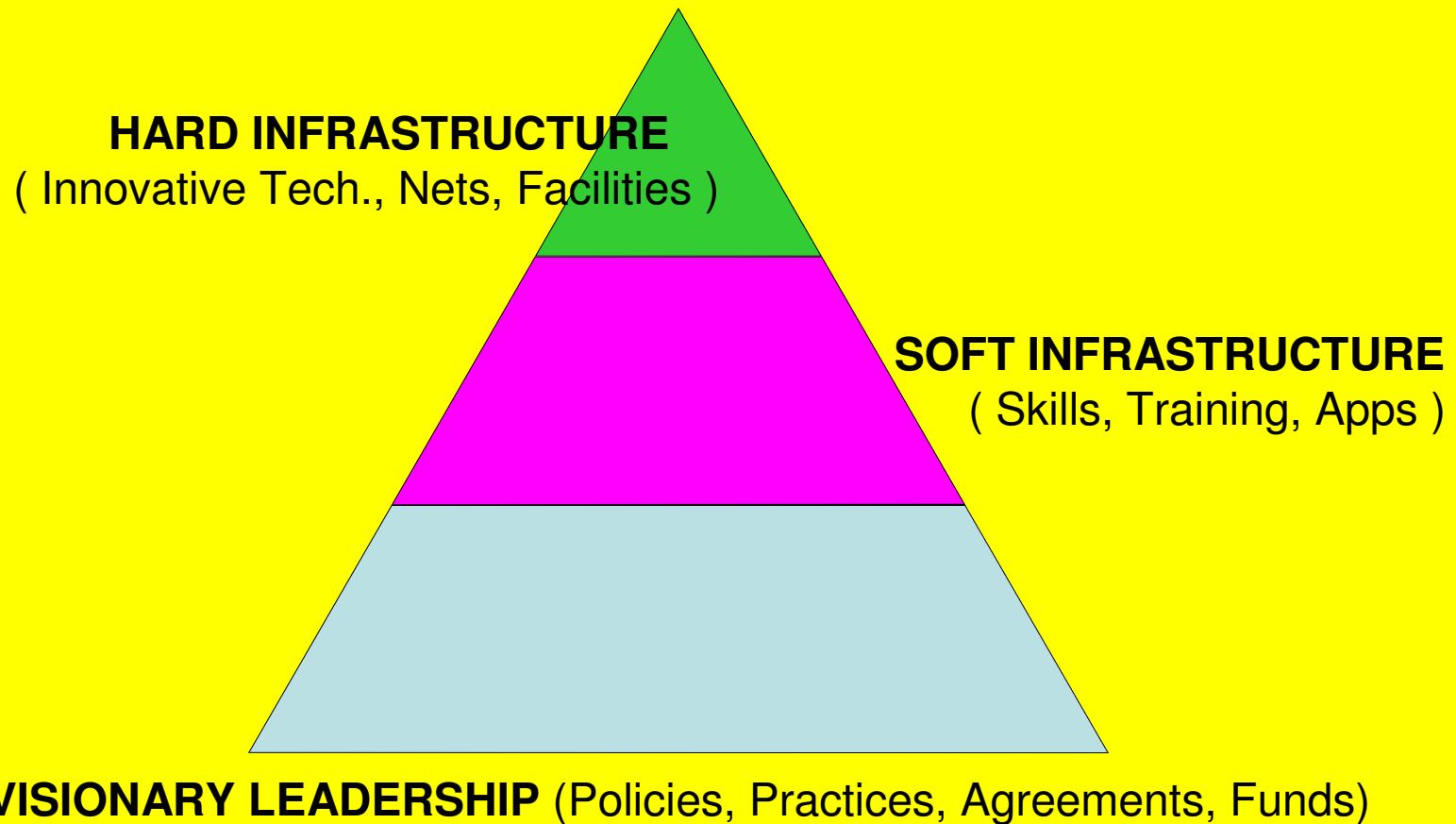
Holistic ERMN, eCLIC, LINC

- **Builds From Lessons Already Learned:**
 - Military C4ISR becomes C5ISR
 - SAFECOM Interoperability Continuum
 - Emergency Management Cycle
 - University of Bremen, Germany: “Wear IT @ Work”
 - Post Tsunami, Katrina, etc.
- **Builds From Federal DHS/CalOES Initiatives:**
 - Homeland Security Presidential Directives
 - National Incident Management System NIMS + SEMS (California)
 - DHS Management and Planning Concepts
 - National Planning Scenarios, Universal Task & Target Capabilities List
 - Homeland Security Exercise & Eval Program – HSEEP

MORE THAN TECH: The holistic “Success Triad” works –
1. Hard Infrastructure (tech), 2. Soft Infrastructure (Apps, skills,)
3. Visionary Leadership

eCLIC / LINC “Success Triad”

Holistic...Not just Technology

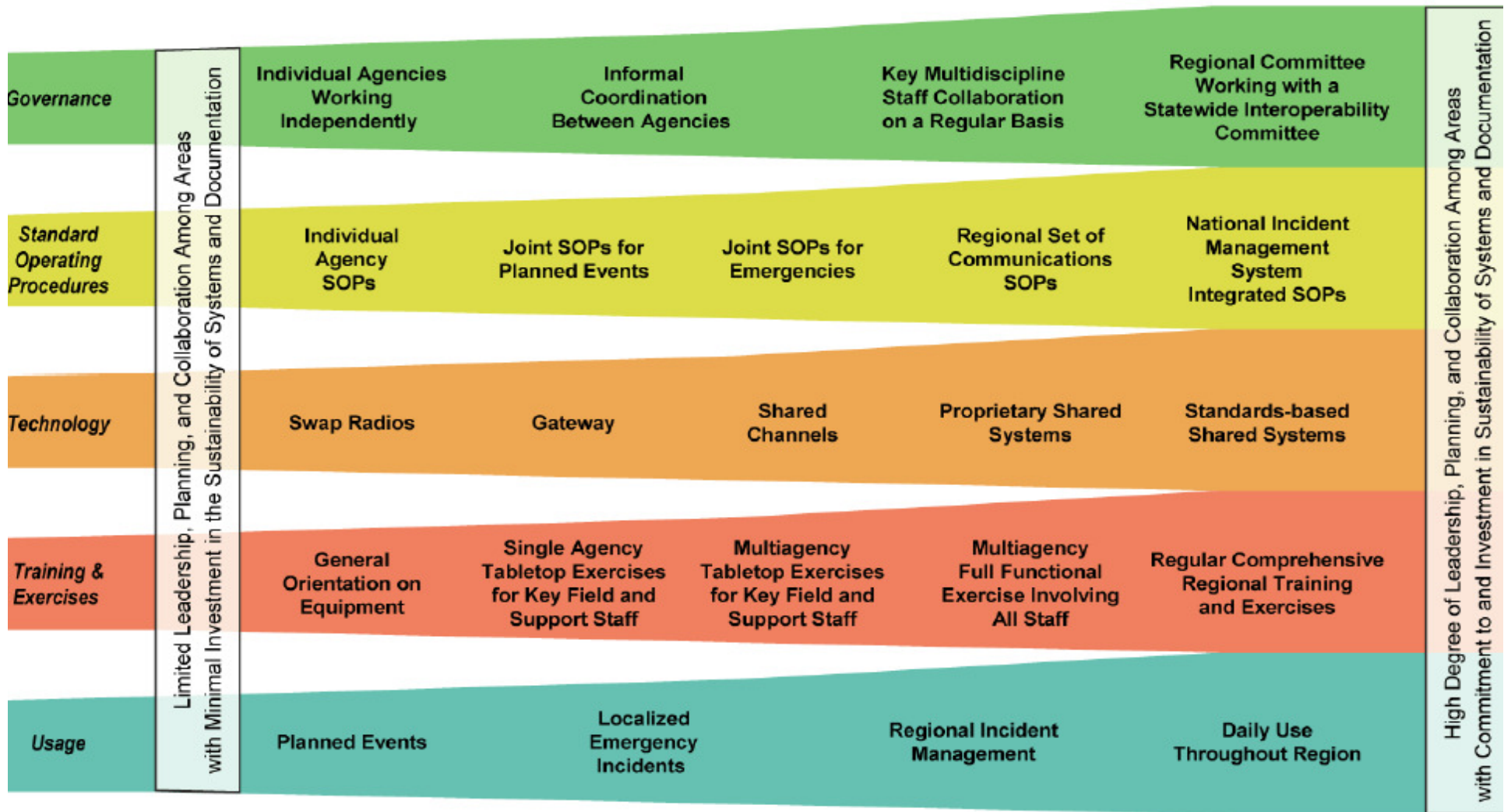


ERMN, **eCLIC**, & LINC Use C⁵ISR, SAFECOM, Concepts

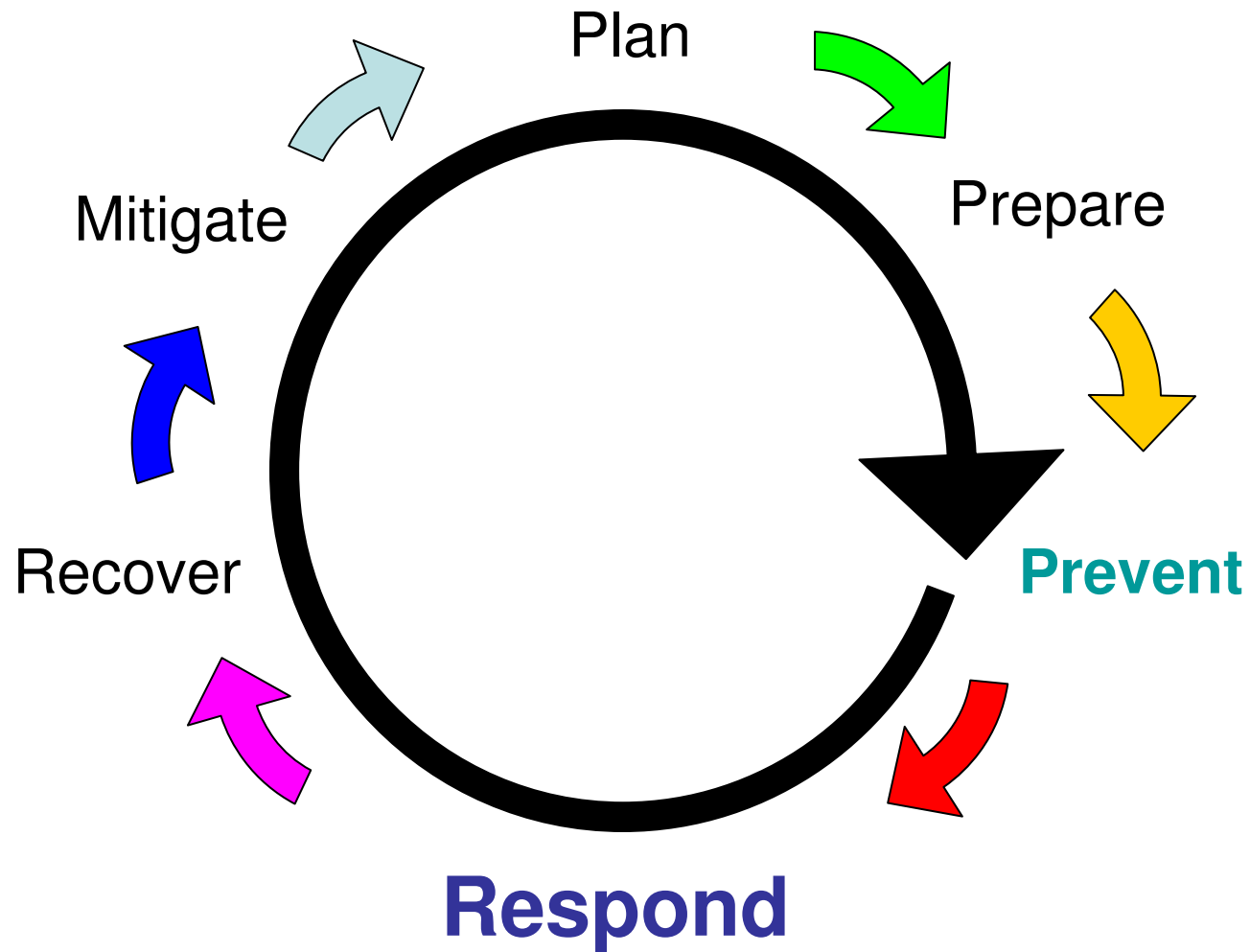
Civilian Command, Control, Communications, Computers,
Intelligence, Surveillance, and Reconnaissance



Interoperability Continuum



Emergency Management Cycle



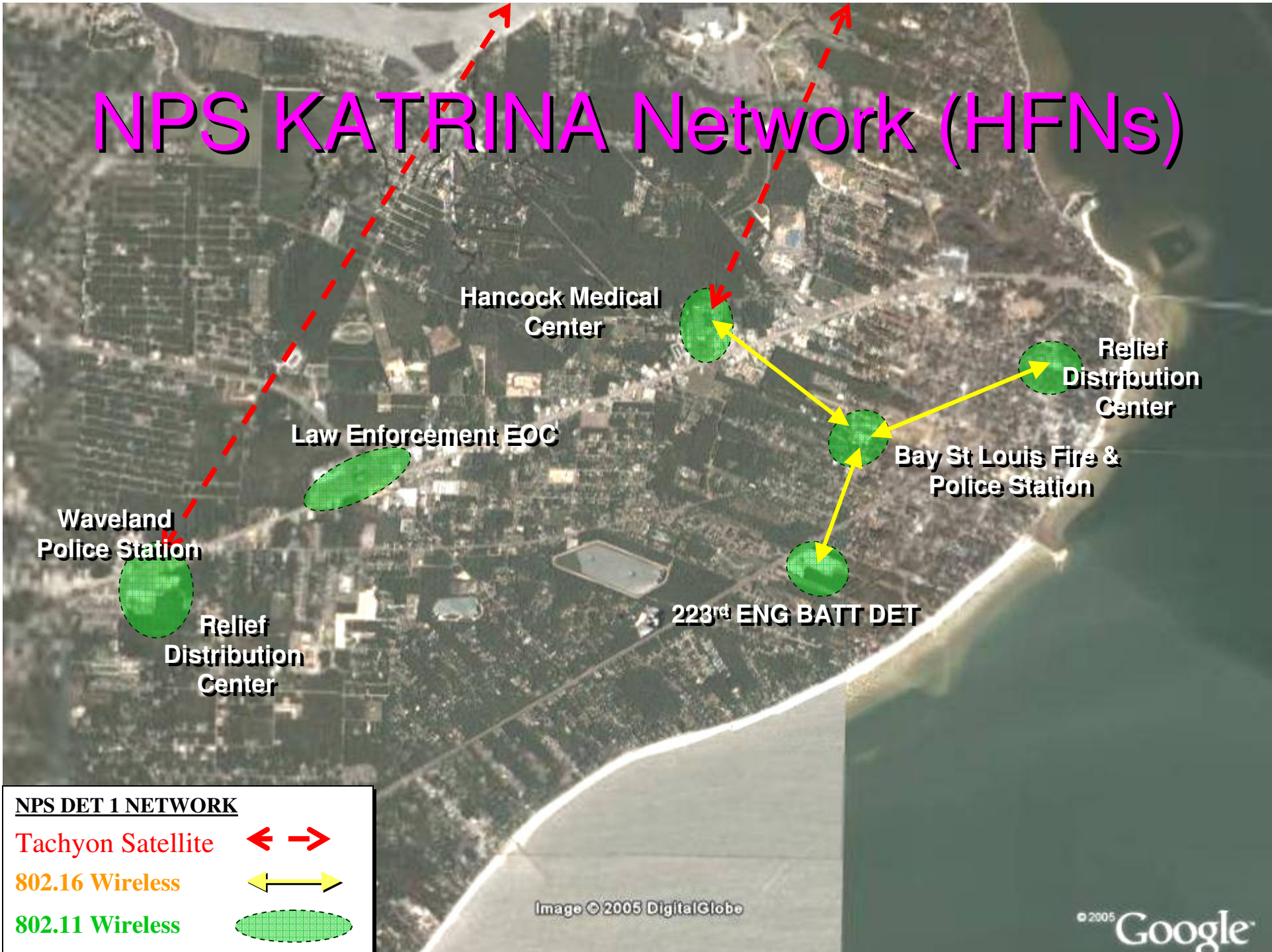
ERMN, eCLIC & LINC Principles

- “Center of Excellence” Approach
 - Multiple Inputs & Collaboration CRITICAL !
- “Democratized” Innovation
 - Lead users + Developers
 - Leverage Wireless Broadband IP
- Continuous Improvement via “Success Triad” – Hard & Soft Infra, Leadership
 - Standards, “Skunkworks”, Apps, Skills

ERMN network (Sat + WiFi) tests: GGSN: Golden Gate Safety Network



NPS KATRINA Network (HFNs)



NPS DET 1 NETWORK

Tachyon Satellite ← →

802.16 Wireless ↔

802.11 Wireless ○

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Wireless Broadband IP = Excellent Emergency Communications

Many inputs...and more...

- **Emergency Response Management Network (ERMN)**
- **Asia and Katrina “Hastily Formed Nets” (HFN) (NPS)**
- **MobileComm Hub (GGSN) (UNISYS) U.S. DHS ITEP, SAFECOM, LLNL/NPS TNTs, STRONG ANGEL, etc.**
- **Wireless Access to Virtual Economy Solutions (WAVES)(GVC)**
- **Mother Lode eXpress**
- **San Mateo Information & Learning Enterprise (SMILE)**
- **Bremen, Germany : EU Program “Wear IT @ Work”**
- **More...Commerce, Education, Health nets... 25 Int’l Advisors**

NOW...

- **eCommunications Leadership & Information Center (eCLIC)**
- **Livermore Information Network Collaborative (LINC)**

ERMN > eCLIC > LINC >> next?
>> LINCTEST

- \$1.1M National Science Foundation proposal
- LINCTEST = “LINC Technology Experiences for Students & Teachers” ... STEM focus, via H1B fees
- Leverage deployed LINC net & collaborations, extend to underrepresented STEM students
- Deliver Open Textbooks, video, etc., etc.
- Partners: LLNL, UC Davis ETEC, NPS, WCA, CFY, Pocketsnet-telework, many other supporters
- “CONNECTED, PROTECTED, EDUCATED”

**Input ?, Help us serve - Contact: Pat Lanthier,
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