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*Securing Multi-User Hazardous Chemical Information
in a 5-9's Availability Web Accessible Environment*

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1995 the QuEST Forum Beginning

- Quest Forum is a Global Telecommunications Consortium of Telecom Service Providers and Suppliers; they founded of the organization
- Goal was to reduce 100's of unevenly applied standards by service providers for suppliers across the industry to a vital few consistent standards.
 - They believed that gathering telecom performance metric data was key to success
 - They understood the necessity for data security
 - They agreed on a neutral 3rd party for data collection and storage (i.e., a university)

1998 the UT Dallas QuEST Forum Beginning

- A founding member from the Quest Forum Suppliers community (Alcatel) visited UT Dallas and asked if we were interested in submitting a proposal to the QuEST Forum.
- In November of 1998 UT Dallas held a dinner on campus and made a proposal to the QuEST Forum to build their performance metrics database system.

Secure Systems History at UT Dallas

In January of 1999 the QuEST Forum contracted with UT Dallas to build and operate their secure Performance Metrics Database.

Key Elements of QuEST Forum Data Security

- Confidentiality of Data Source (Submitter)
- Confidentiality of Data (no competitor access)
- Security of Data (physical and electronic)
- Integrity of Data (data analysis upon receipt)
- Reliability of Data (maintain original integrity)
- Availability of Processed Data (when needed)

Measurement Repository System (MRS)

- In the fall of 1999 UT Dallas beta tested the MRS and it passed all tests with minor exceptions.
- On Monday, January 3, 2000 UT Dallas opened the MRS to all QuEST Forum members for data submission
- In January of 2000 UT Dallas was the first organization in the U.S. to be awarded the prestigious BS 7799 Information Security certification from the British Standards Institute.
- No data has ever been compromised

National Center of Academic Excellence

The National Security Agency (NSA) and the
Department of Homeland Security (DHS)
has designated UT Dallas a

**Center of Academic Excellence in
Information Assurance Research**

&

**Center of Academic Excellence in
Information Assurance Education**

E-Plan – A Highly Secure Web-Based System

- UT Dallas success with the QuEST Forum MRS system attracted the EPA Region 6 in their quest to develop a web-based hazardous chemical database.

Desired system requirements for E-Plan were;

- Meet first responders needs for hazardous chemical accidents or terrorist incidents at hazmat facilities and transportation accidents
- Be highly secure, highly available (goal of 5-9's), and web-based

White House Recommendations

1. DHS, in coordination with EPA/ DOL/OSHA, HHS, DOC/NOAA and DOD/USACE should ***“enhance the Emergency Response Team (ERT) capability to conduct initial environmental assessments and communicate warning to the general public and emergency responders”***
- DHS, in coordination with EPA, HHS, OSHA, and DOE should develop an integrated plan to ***“quickly gather environmental data and provide the public and emergency responders the most accurate information available to decide whether it is safe to operate in a disaster environment or return after evacuation”***

E-PLAN ~ *Where every second does count ...*

E-Plan was designed and developed through a cooperative agreement between the USA Environmental Protection Agency (EPA) and the University of Texas at Dallas

-- with input from local, state, and federal agencies of the EPA Region 6 Response Team

In hazmat or terrorism disasters, every second should count. With E-Plan, every second does.



A federally-sponsored, highly secure system designed to make hazardous material information immediately available online.

E-Plan – A Highly Secure Web-Based System

- E-Plan started on 10/2/2000 through a contract agreement between EPA, TCEQ, and UT Dallas to develop an Emergency Management Information System for emergency management and preparedness
 - In December of 2001 the initial program development was successfully completed and beta testing started in the Corpus Christi, TX Fire Department by District Chief Michael Hernandez.
- E-Plan is – The Nation's Largest Database of Facility Based Hazardous Chemical Information

E-Plan can access critical facility hazardous chemical data from the internet where needed most during an emergency; on-site.

- E-Plan is a web based system that is very secure, easy to use, extremely fast and highly available. It delivers the hazmat information anywhere that wired or wireless internet access is available.
- E-Plan database contains fixed facility hazardous chemical information with an individual chemical search capability that can be used in transportation accidents.

- EMERGENCY!
- [E-PLAN](#)
- [EPA Home](#)
- [Chemical Treatment](#)
- [US Fire Administration](#)
- [US National Response Team](#)
- [US EPA Region 6 Regional Response Team](#)
- [US EPA Chemical Emergency Preparedness & Prevention Office](#)
- [US EPA CAMEO](#)
- [US EPA Envirofacts](#)
- [US EPA List of Hazardous Substances](#)
- [State Tier II Data](#)
- [DOT HazMat Placards](#)
- [Maps](#)
- [Weather](#)

Emergency Contact Information (Primary)

Name	CARL HUCKABY
Title	EMERGENCY RESPONSE SUPERVISOR
Phone	(281) 470-4901 (409) 723-3349
24-Hr Phone	(281) 470-4901 (409) 723-3349

Emergency Contact Information (Alternate)

Name	H. L. BUNDICK
Title	Plant Manager
Phone	(409) 723-3349
24-Hr Phone	(409) 723-3349

Chemical Inventory Information

Chemical (Click for ERG link)	Max. Qty.	UN/DOT#	NFPA Code & Diamond				MSDS	Profile
			H	F	R	S/N		
Flammable Mixture	84,000,000 lbs.	CAS = 00-11-11	4	4	0	N	NA	NA
1-3-Butadiene	2,100,000 lbs.	UN 1010 (CAS = 106-99-0)	2	4	2	N	MSDS	Profile
1-3-Pentadiene	320,000 lbs.	UN 2461 (CAS = 504-60-9)	2	3	0	N	NA	NA
1-Butene	460,000 lbs.	UN 1012 (CAS = 106-98-9)	1	4	0	N	MSDS	Profile
1-Pentene	150,000 lbs.	UN 1108 (CAS = 109-67-1)	2	4	0	N	MSDS	Profile
Butane	2,900,000 lbs.	UN 1011 (CAS = 106-97-8)	1	4	0	N	MSDS	Profile

Why E-Plan Is Needed

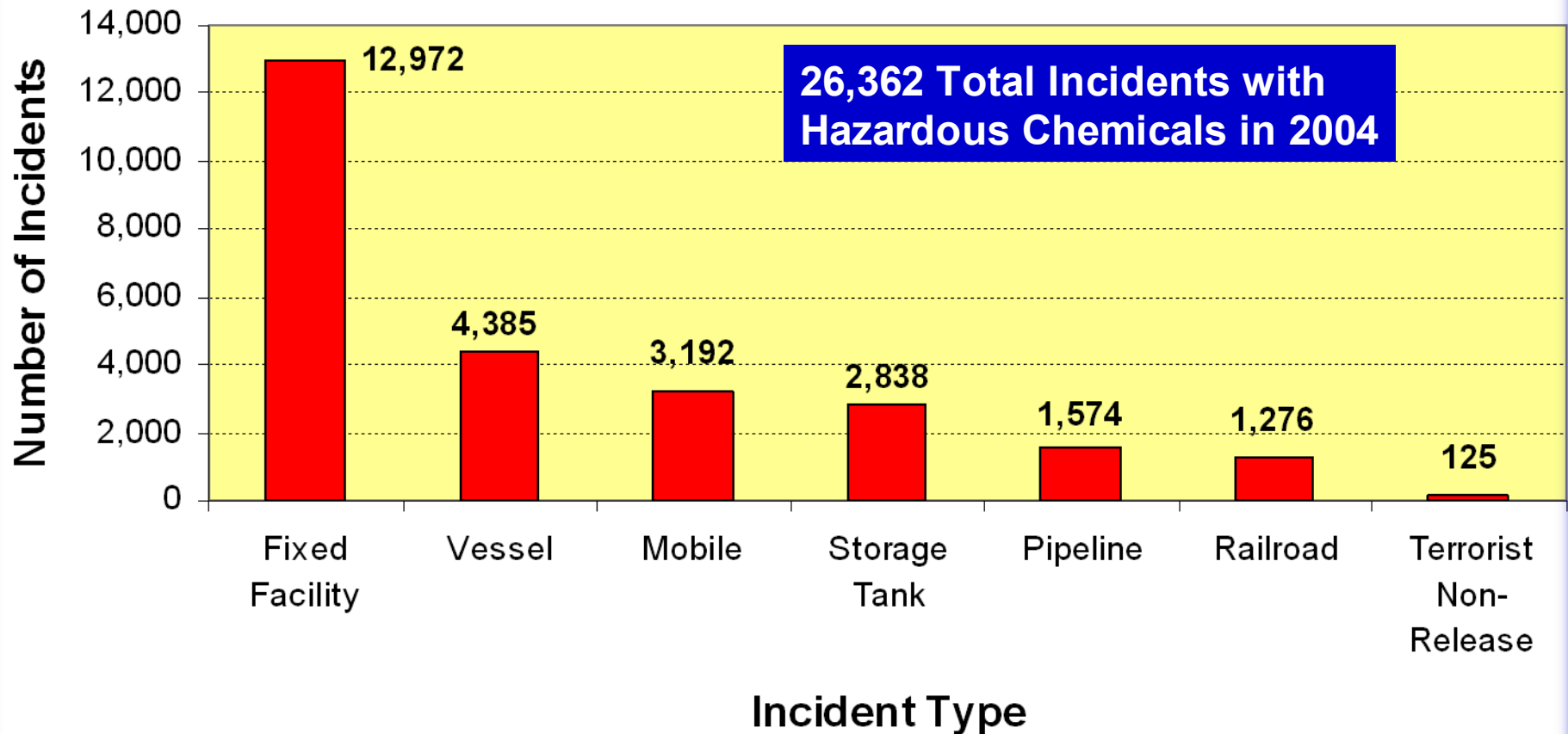


Chemical Accidents can happen anywhere!

- v BPS Chemical, Helena, AR.
- v Fire and explosion involving toxic pesticide
- v Three firefighters killed, area evacuated for four days

Hazmat Incident Type in 2004

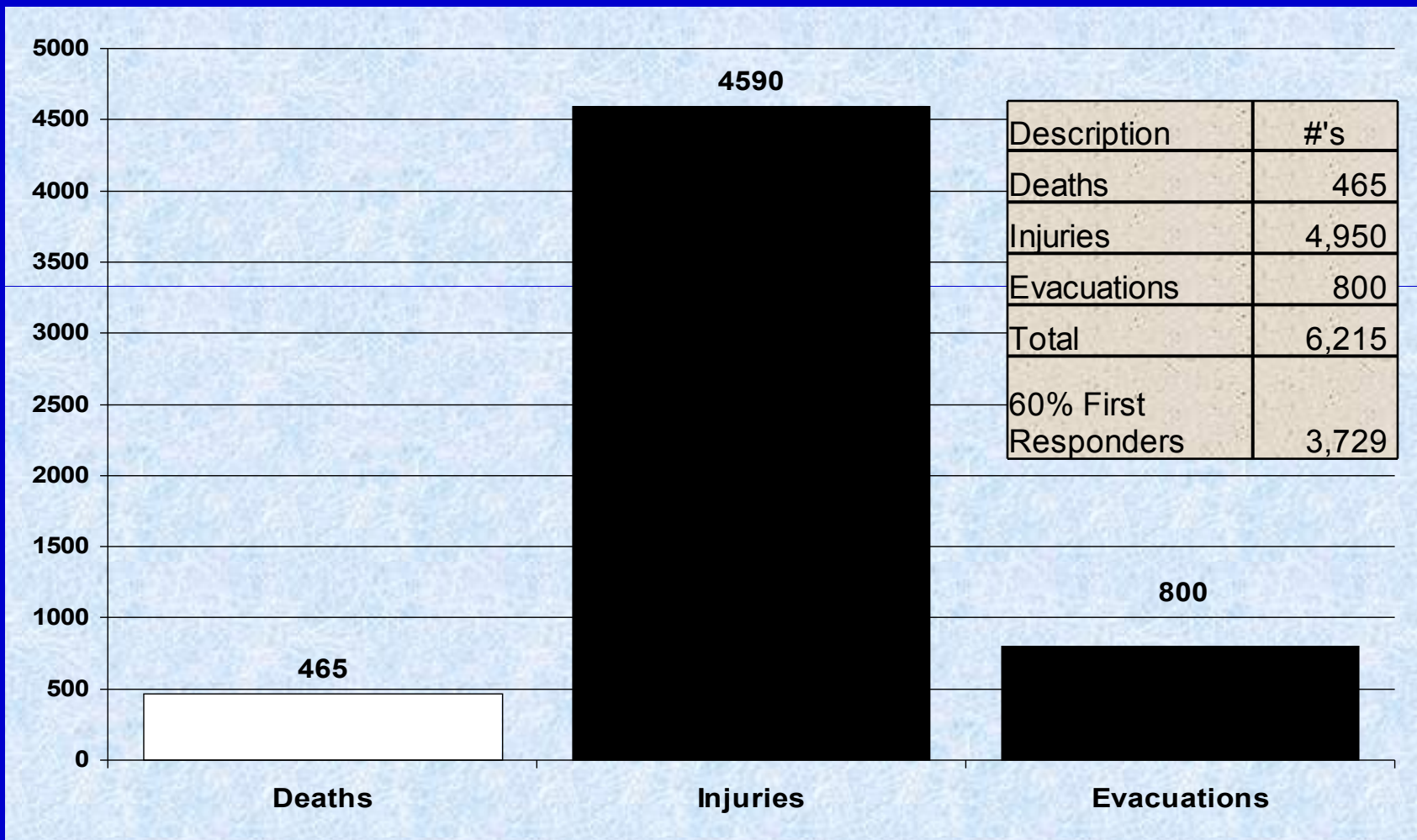
Incident Type in 2004 Reported and Tracked by NRC



Consequences of Chemical Releases

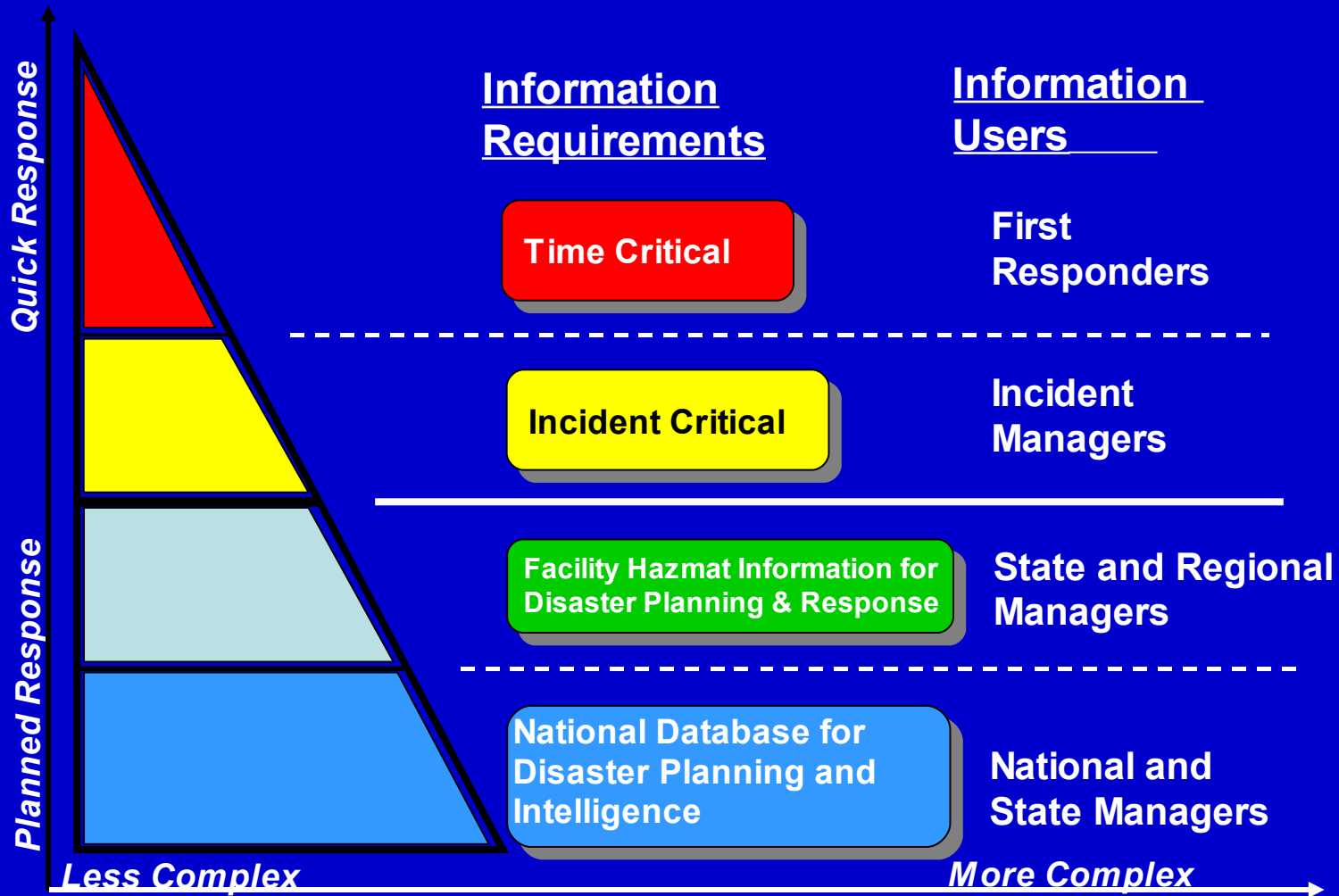
Over 30% of these victims are firefighters

Another 30% are police and medical personnel



Consequences of Releases -- reported at time of release (1987 - 1999)

Information Hierarchy and Security Concerns



E-Plan Securely Provides RMP & Tier II Data

E-Plan provides Risk Management Plan (RMP) sites and Tier II data sites. Number of sites on 5/31/2009.

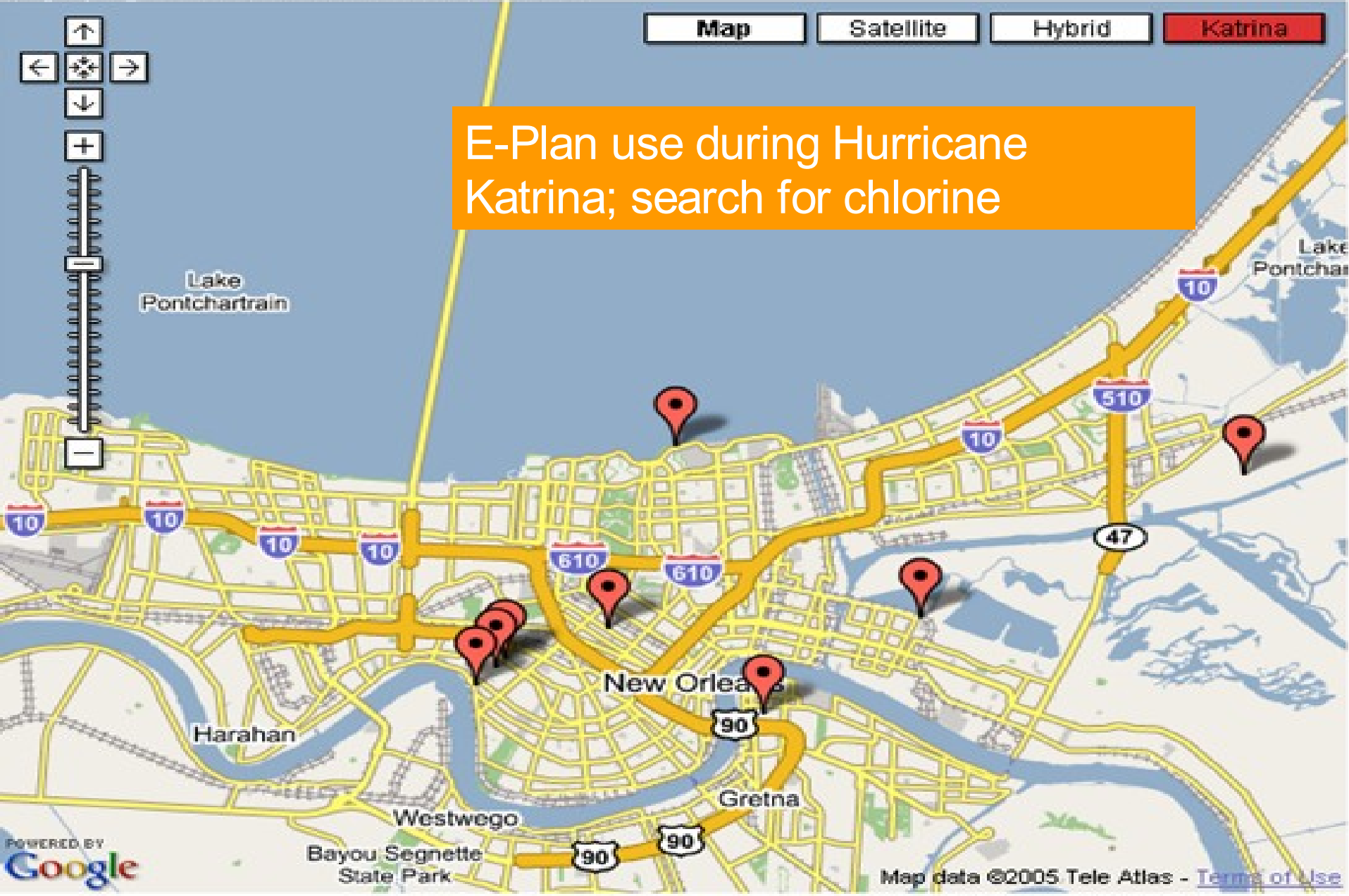
RMP	Tier2	Total
17,798	262,538	280,336

In addition, the program can provide:

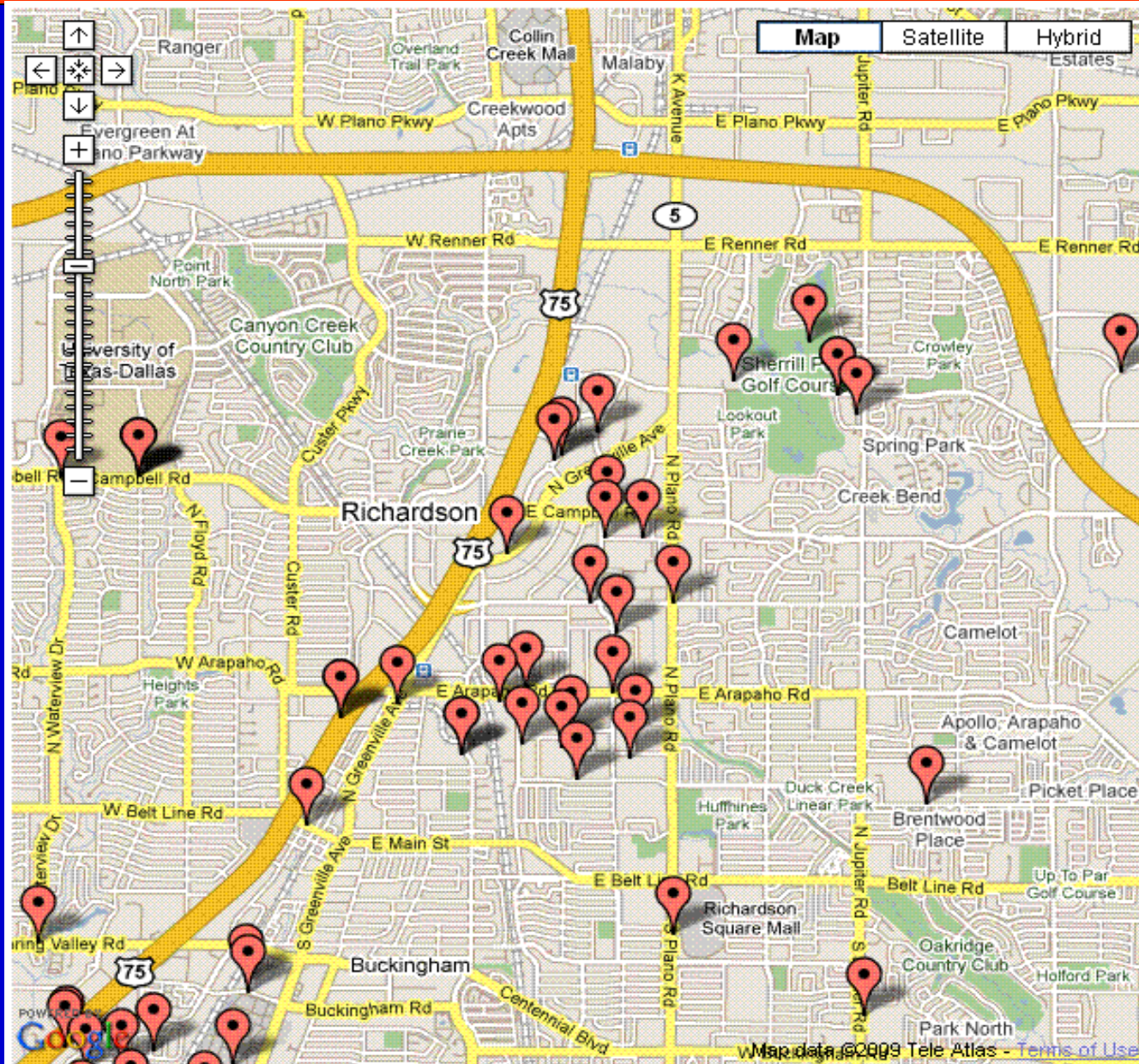
- **Maps of the areas surrounding a fixed facility showing schools and hospitals,**
- **Maps of all facilities with a specified hazardous material in specific areas, (Hurricane Katrina - New Orleans Example on Next Slide)**

E-Plan Facility Search by Chemical

Displaying facilities with chemical : **chlorine**

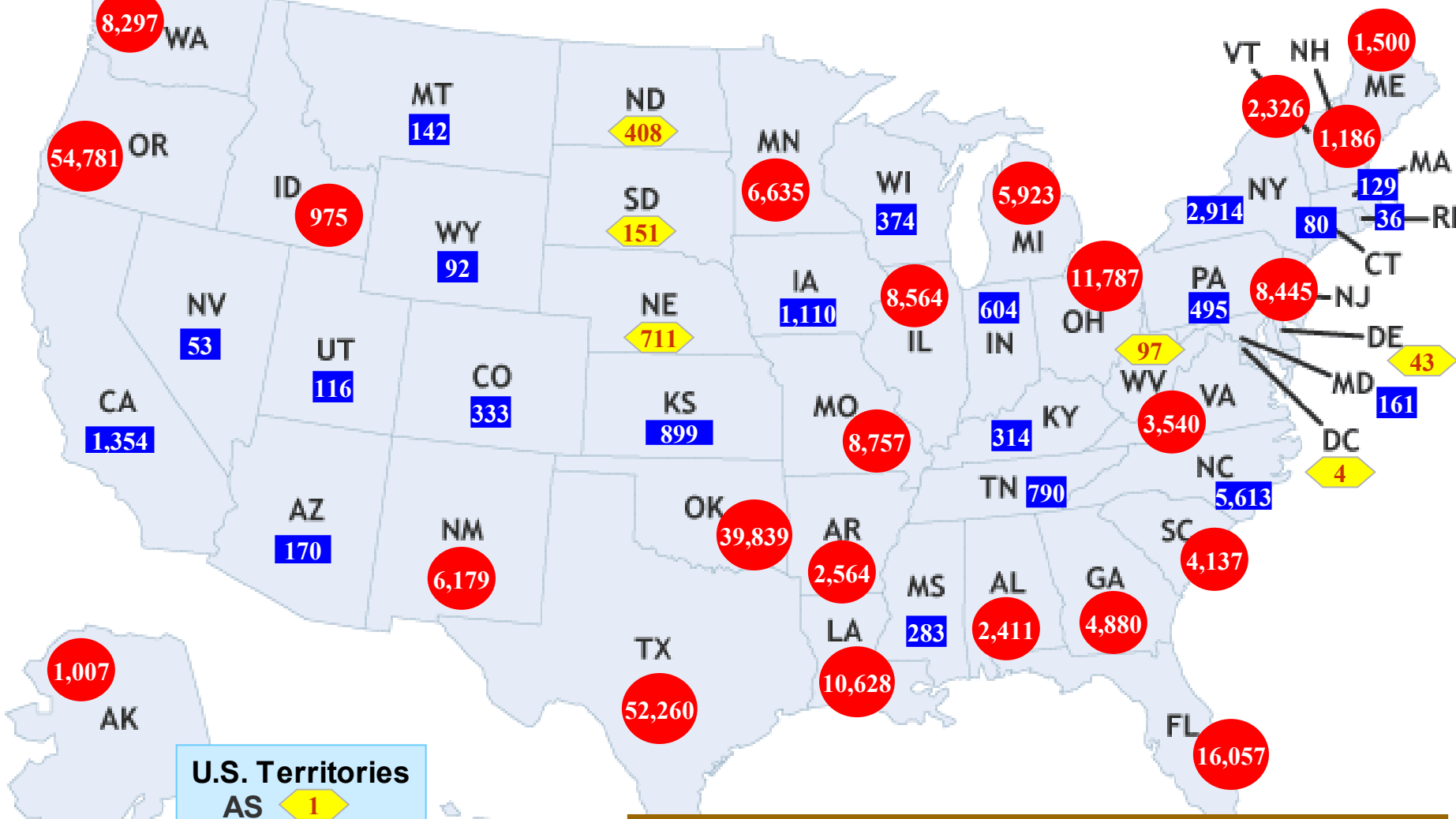


Hazardous Chemical Sites Near the Hyatt Hotel



Nationwide Hazardous Facility Distribution

Total Chemical/Hazmat Facilities = 280,336 (updated 5/31/2009)



U.S. Territories

AS	1
GU	4
PR	144
VI	1

- Complete State Hazmat Data – RMP's and all Tier II facilities
- Partial Hazmat Information – RMP's and some Tier II facilities
- ◇ RMP's only

SAIAL Laboratory

**\$2 million
cost of
laboratory**

**Testing Area 2
(19.5' x 29')**



1200 sq ft Lab

**3 rooms all
fully TEMPEST
rated**

**Testing Area 1
(22' x 31.5')**



**Testing
Area 3
(8' x 19')**



Attenuation levels of radiated signals as tested to MIL-STD-285

Magnetic Mode 60 dB at 10KHz to 100KHz at 100dB

Electric Mode 100 dB from 1 KHz to 1 GHz

Plane Wave and Microwave 100 dB from 1 GHz to 10 GHz

Thanks for your kind
attention; however



***It's time to Gallop
on out of here***