

Michigan Section: American Water Works Association

Water Security Summit:
Drinking Water and Public Health
Preparedness

Henry Center: Michigan State University
Lansing, MI Monday 6/5/06

Thank You

- Michigan Section - American Water Works Association (AWWA) for their long term commitment to stewardship of the water environment
- The people of Michigan for supporting well planned emergency activities.



Michigan DEQ Water Security Program



A satellite view of Earth from space, showing a large body of water (likely the Great Lakes) and surrounding landmasses. The Earth's curvature is visible at the top. In the upper left, a portion of a satellite or space station is visible, including a large white thermal blanket and various instruments.

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Department of
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[Why water security?]

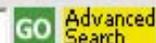


Water Security Summary

- 1. our greatest strength is our greatest weakness
- 2. more people...what kind
- 3. Bird flu
- 4. 9 elements of a security program
- 5. TTXs: tabletop exercises
- 6. use emergency response plan to train EOC, first responders – police, fire departments
- 7. 800 mhz radios in lieu of phones

Water Security Summary (cont'd)

- 8. isolate/contain/investigate/remediate if toxicity
- 9. reverse 911 to call public
- 10. civil support teams for WMD
- 11. FEMA NIMS 700 compliant
 - FLOPA acronym
- 12. MDEQ Water Bureau Initiatives
- 13. TANS: MDEQ Threat Email List



WATER

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Water and Wastewater Security

Due to terrorist attacks on September 11, 2001, and recent federal legislation and state authorizations, the Michigan Department of Environmental Quality (MDEQ), Water Bureau(WB), actively participates in numerous Infrastructure Security Program activities. The federal Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Bioterrorism Act) requires drinking water systems to comply with requirements by certain dates as a part of the nation's homeland security efforts.



Here is an introductory powerpoint presentation ([PPT 6MB](#) or [PDF 5MB](#)) outlining the major challenges of Water and Wastewater Security.

Here is a powerpoint presentation ([PPT 6MB](#) or [PDF 4MB](#)) outlining recent tabletop exercises at Water and Wastewater facilities around Michigan.

Here is a powerpoint presentation ([PPT 3MB](#) or [PDF 4MB](#)) outlining population growth in the world, the United States, and Michigan.

Announcements

- 21 Dec 05: DHS chemical plant regulation bill introduced. > [View Story](#)
- 14 Dec 05: Senator James Jeffords introduces federal wastewater security bill. > [Press Release](#)

Information

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Emergency Response for Releases to Water

Introduction to the Part 5 Rules - Spillage of Oil and Polluting Materials.



The Water Bureau is responsible for implementing the Part 5 Rules - Spillage of Oil and Polluting Materials. The revised Part 5 Rules were made effective August 31, 2001. The Part 5 Rules deal with the storage and release of oil, salt, and polluting materials. Such issues as threshold management quantities, Pollution Incident Prevention Plans (PIPPs), secondary containment, threshold reporting quantities, spill reporting, surveillance of manufacturing processes, treatment systems, and storage areas are described. The entire Part 5 Rules can be downloaded from this web page under "Laws and Rules".

Here is an introductory powerpoint presentation ([PPT 6MB](#) or [PDF 2MB](#)) about the Part 5 rules.

Information

- [Water Emergency Response to Releases](#)
- [Water Bureau Part 5 Rules/PIPP Staff](#)
- [Part 5 Rules Operational Guidance Index](#)
- [Emergency Response Photo Gallery](#)
- [Part 5 Rules Information Package: summary of changes, facilities](#)

- > [State Departments](#)
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[Todd Beamer]



“Let’s Roll!”

- Nobody knows the courage, importance and impact of the sacrifices made by Todd Beamer, Jeffery Glick, Thomas Burnett Jr., and others aboard United Airlines Flight 93, Sept 11th, 2001.
- The terrorists planned to crash the plane into the U.S. Capitol



Todd Beamer



[Water program]

- Our greatest strength is our greatest weakness

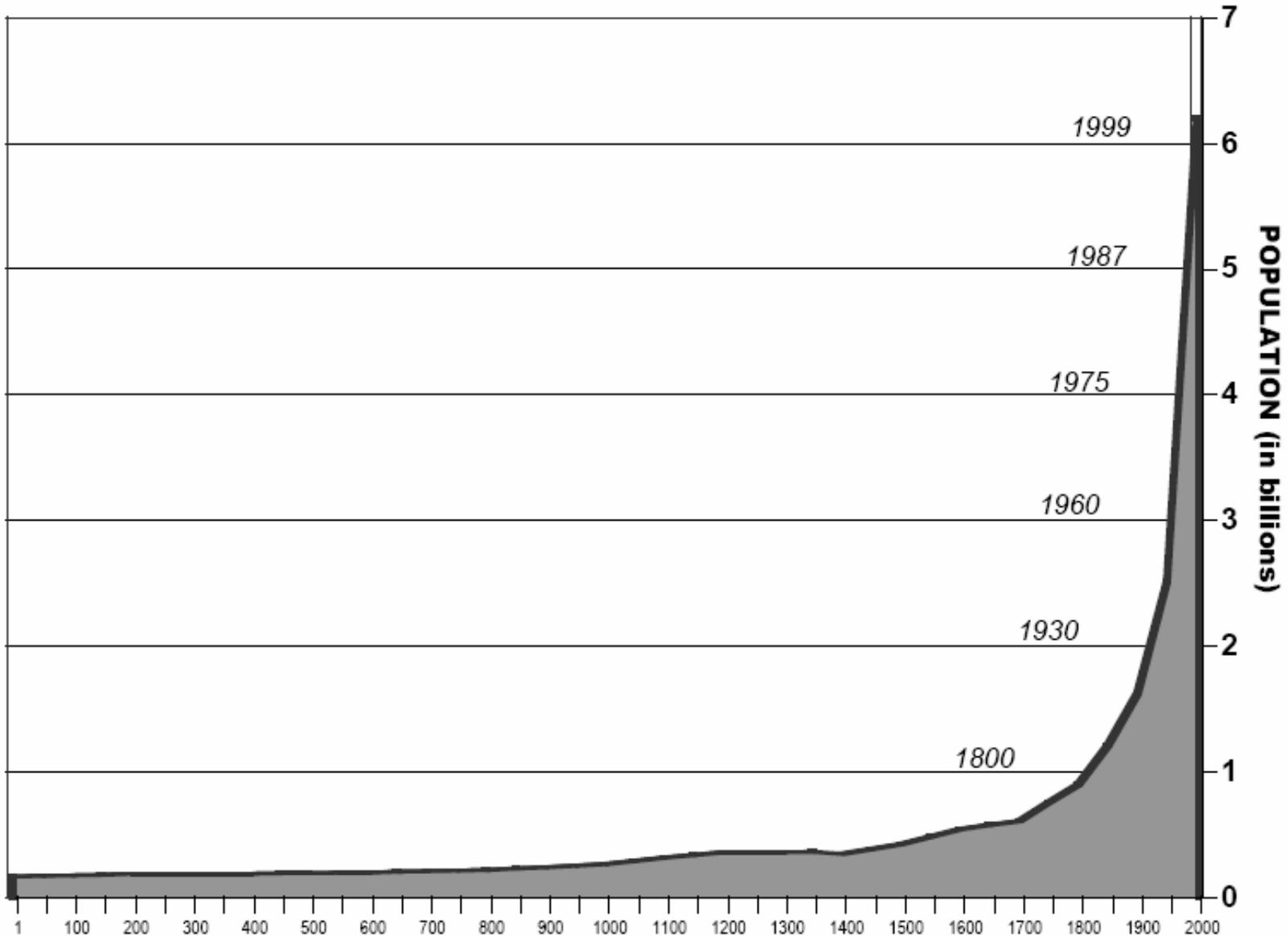
Hurricane Katrina: we can't
predict...but, we can prepare



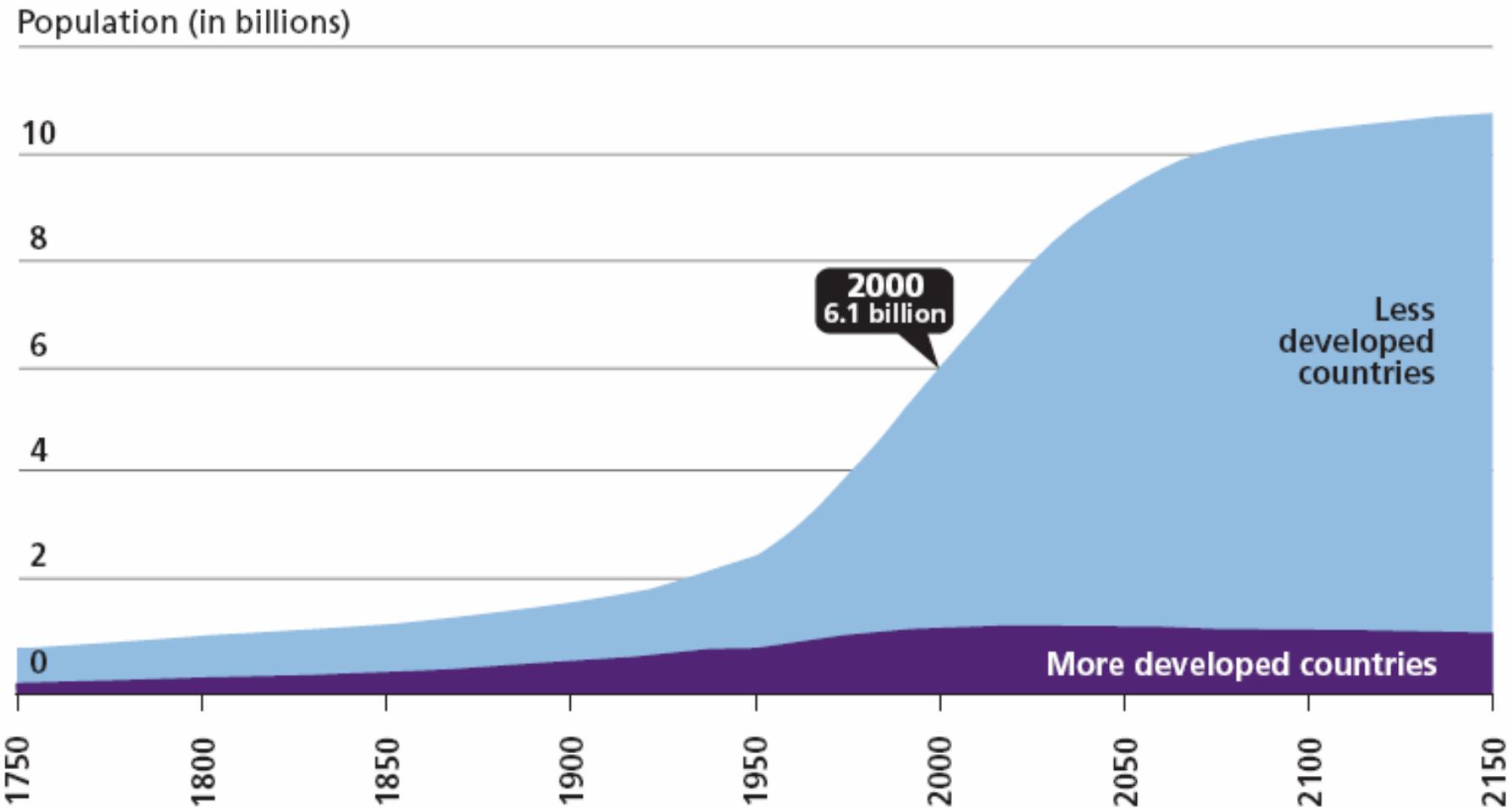
[Population]

- MORE PEOPLE
- WHAT KIND OF PEOPLE ?

Human Population Growth Since 1 A.D.



World population growth, 1750-2150



United Nations, *World Population Prospects, The 1998 Revision* (New York: UN, 1998); and estimates by the Population Reference Bureau.

[ALL HAZARDS APPROACH]

- Security should be pursued on an all hazards approach
- Malevolency, weather, juvenile delinquency, outages
- Dual use or purpose applications: e.g., SCADA / video / real time monitoring for operations and security

[Flu Pandemic]

- It may not be the bird flu, but due to the construct of the world, an influenza pandemic is likely at some point in the future.

Bird Flu: World Health Organization (WHO)

- Document cited:
- "Review of the latest available evidence on risks to human health through potential transmission of avian influenza (H5N1) through water and sewage" of March 24, 2006.

Bird Flu : World Health Organization (WHO)

- 1. "...water supplies receiving treatment as recommended in the WHO Guidelines for Drinking Water Quality¹ are unlikely to pose a significant risk of infection even if infected waterfowl are present in source waters."

Bird Flu: (cont'd)

- **2. Page 6: "...the virus may be excreted by infected humans and can enter sewage in this manner."**
- **3. Page 7: "...the virus is able to persist in water."**
- **4. Page 6: "...its detection in unconcentrated water and in small sample volumes suggests that levels are relatively high."**

[Bird Flu (cont'd)]

- **p. 6... "Avian influenza viruses can persist for extended periods of time in water, although quantitative information on the subtype H5N1 is lacking."**

Security = CIP 3

- Capital Improvement Plan
- Continuous Improvement Program
- Critical Infrastructure Protection

[Human Water Consumption]

- 64 ounces of water per day recommended
- body is approximately 65 % water

Water Security Elements

- (1) the purchase and installation of equipment for detection of intruders;
- (2) the purchase and installation of fencing, gating, lighting, or security cameras;
- (3) the tamper-proofing of manhole covers, pressure reducing valves, and remote facilities;
- (4) the re-keying of doors and locks;

Water Security Elements (cont'd)

- (5) improvements to electronic, computer, or other automated systems and remote security systems;
- (6) participation in training programs, and the purchase of training manuals and guidance materials, relating to security against terrorist attacks;
- (7) improvements in the use, storage, or handling of various chemicals; and
- (8) security screening of employees or contractor support services.

Most Important and least expensive security measure

- Change practices, policies and procedures that would enhance security.

Homeland Security Presidential Directive (HSPD) # 9...[1/30/04]

- “...This effort will include countermeasure research and development of new methods for detection, prevention technologies, agent characterization, and dose response relationships for high-consequence agents in the food and *the water supply*. (emphasis added)
”
...

What is a Vulnerability Assessment?

- Vulnerability Assessments evaluate water and wastewater systems' susceptibility to potential threats and identify corrective actions that can reduce or mitigate the risk of serious consequences from adversarial actions.

What is an Emergency Response Plan (ERP)

- An Emergency Response Plan is a process which describes actions, procedures and equipment which can prevent or significantly lessen the impact of terrorists' attacks or other malevolent acts on the wastewater system.



VA's and ERP's: So What!?

- Collecting dust, or, improving the system
- Local initiative as well as the national program need to be effecting change in order to improve the utility
- **CONTINUOUS CHANGE** is the price of vigilance



[Table Top Exercises]

- TTX's = table top exercises

TTX's/FTX's

- TTX's: Table top exercises
 - Put faces to names and develops local experience
- FTX's: Field training exercises
 - Equipment mobilized and used
 - Usually involves private stakeholder
- Suggest annual exercise
 - 'use it' or 'lose it' concept – commitment to emerg. response integrity



[TTX concept: Partnerships]

- It's important to have as many partners at the table who understand the importance of the water system and are useful to assisting your system meet its mission.

TTX concept: Uniforms

- First Responders, eg, Police and Fire Depts, will need to be used in the event of a terrorist act.
- Military, eg, the Michigan Army National Guard 51st Civil Support Team, are needed in the event of weapons of mass destruction (WMD) terrorist attack.

TTX's Lessons Learned

- 1. CP/ERP: use to train EOC, staff, PD, FD
- 2. 800 megahertz radios allow comms
- 3. isolation/containment/investigation
- 4. 51st CST
- 5. Reverse 911 using GIS



TTX's: lessons learned(cont'd)

- 6. public not as familiar w/ 'do not drink', 'do not use' notices as they are w/ 'boil water advisories'
- 7. The 'canary' is people on the distributed water

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WMD

Intelligence

Homeland Security

Space

Public Eye

Weapons of Mass Destruction Civil Support Teams



In a commencement address at the U.S. Naval Academy in May 1998, President Bill Clinton announced that the nation would do more to protect its citizens against the growing threat of chemical and biological terrorism. As part of this effort, he said, the Department of Defense would form 10 teams to support state and local authorities in the event of an incident involving weapons of mass destruction.

The WMD Civil Support Teams were established to deploy rapidly to assist a local incident commander in determining the nature and extent of an attack or incident; provide expert technical advice on WMD response operations; and help identify and support the arrival of follow-on state and federal military response assets. They are joint units and, as such, can consist of both Army National Guard and Air National Guard personnel, with some of these units commanded by Air National Guard lieutenant colonels.

The mission of Weapons of Mass Destruction Civil Support Teams (WMD-CST) is to support local and state authorities at domestic WMD/NBC incident sites by identifying agents and substances, assessing current and projected consequences, advising on response measures, and assisting with requests for additional military support.

The WMD civil support teams are able to deploy rapidly, assist local first-responders in determining the nature of an attack, provide medical and technical advice, and pave the way for the identification and arrival of follow-on state and federal military response assets. They provide initial advice on what the agent may be, assist first responders in that detection assessment process, and are the first military responders on the ground, so that if additional federal resources are called into the situation, they can serve as an advance party that can liaise with the Joint Task Force Civil Support.

The units provide critical protection to the force, from the pre-deployment phase of an operation at Home Station through redeployment. They ensure that strategic national interests are protected against any enemy, foreign or domestic, attempting to employ chemical, biological, or radiological weapons - regardless the level of WMD/NBC threat. They are a key element of the Department of Defense's overall program to provide support to civil authorities in the event of an incident involving weapons of mass destruction in the United States.

They maintain the capability to mitigate the consequences of any WMD/NBC event, whether natural or man-made. They are experts in WMD effects and NBC defense operations.

These National Guard teams provide DoD's unique expertise and capabilities to assist state governors in preparing for and responding to chemical, biological, radiological or nuclear (CBRN) incidents as part of a state's emergency response structure. Each team consists of 22 highly skilled, full-time National Guard members who are federally resourced, trained and exercised, and employs federally approved CBRN response doctrine.

These units derive their origins in guidance from the US Congress which stated the need to "establish and equip small organizations in each of the 44 states not receiving initial RMD (Rapid Assessment and Initial Detection) element in 1999 to provide limited chemical/biological response capability."

Units

- 1st WMD CST [MA NG] - Natick
- 2nd WMD CST [NY NG] - Scotia
- 3rd WMD CST [PA NG] - Annville
- [4th WMD CST](#) [GA DOD DJO]
- 5th WMD CST [IL NG] - Bartonville
- [6th WMD CST](#) [TX NG]
- [7th WMD CST](#) [MO NG]
- [8th WMD CST](#) [CO NG]
- [9th WMD CST](#) [CA NG]
- 10th WMD CST [WA NG] - Tacoma
- [11th WMD CST](#) [ME NG]
- [13th WMD CST](#) [RI NG]
- 14th WMD CST [CT NG]
- 15th WMD CST [VT NG]
- 21st WMD CST [NJ NG]
- 22nd WMD CST [PR NG] - San Juan
- 23rd WMD CST [VI NG] - St Croix
- 31st WMD CST [DE NG]
- 32nd WMD CST [MD NG]
- 33rd WMD CST [DC NG]
- 34th WMD CST [VA NG] - Blackstone
- 35th WMD CST [WV NG] - St. Albans
- 41st WMD CST [KY NG] - Louisville
- [42nd WMD CST](#) [NC NG]
- 43rd WMD CST [SC NG] - Eastover
- 44th WMD CST [FL NG] - Starke
- 45th WMD CST [TN NG] - Smyrna
- 46th WMD CST [AL NG] - Montgomery
- [47th WMD CST](#) [MS NG]
- [51st WMD CST](#) [MI NG] - Augusta
- [52nd WMD CST](#) [OH NG]
- 53rd WMD CST [IN NG]
- [54th WMD CST](#) [WI NG]
- 55th WMD CST [MN NG] - St Paul
- 61st WMD CST [AR NG] - Little Rock
- 62nd WMD CST [LA NG] - Carville
- [63rd WMD CST](#) [OK NG]
- 64th WMD CST [NM NG] - Santa Fe

Search globalsecurity.org for "Weapons of Mass Destruction Civil Support Teams"

TTX: Lessons Learned: 51st Civil Support Team (CST)

- Michigan Army National Guard
- Augusta, MI
- Fort Custer
- **ALL ERP's should have the 51st CST listed in event of terrorist attack**
- <http://www.globalsecurity.org/military/agency/army/wmd-cst.htm>

TTX: Lessons Learned: Michigan National Guard 51st WMD Civil Support Team

- Michigan National Guard
 - 51st Weapons of Mass Destruction (WMD) Civil Support Team
 - 2750 27th Street, Augusta, MI 49012 – 9205
 - Lt. Col. Clark D. Hinga, Commander
 - Cell: 269 420 3861 // direct line: 269 731 6531
fax: 269 731 6449
 - Unit: 269 731 6522
 - E mail: clark.hinga@mi.ngb.army.mil

FEMA: Federal Emergency Management Agency

- DHS grant money will be assigned by regions = 8 Mich. State Police districts
- Locality needs to have taken web based course for at least NIMS 700
- NIMS = National Incident Management System

[NIMS]

- National Incident Management System
- Applicable to all hazards
- In the event of an incident, you need a management system to assist appropriate response
- NIMS:
 - FLOPA: finance, logistics, operations, planning, administration

Initiatives

- MDEQ Water Bureau staff security training
- VA CIP follow – up
- TTX-TTT
- Gaseous chlorine reduction
- TANS: Threat Advisory Emails

Bath, Michigan Explosion

On May 18, 1927, Andrew Kehoe detonated 500 pound of dynamite at the Bath Community Consolidated Schools in mid-Michigan, *killing 37 children and 7 adults*. Fifty others were injured. *This was the worst act of terrorism in the United States until the Oklahoma City bombing.*



Oklahoma City Bombing

On April 19TH, 1995, Timothy McVeigh parked a rented Ryder truck with explosives in front of the Alfred P. Murrah Federal Building complex and, at 9:02am, a massive explosion occurred which sheared the entire north side of the building, ***killing 168 people.***



2005 Water Security Congress: Oklahoma City



Oklahoma City National Memorial
Site of Murrah Federal Building

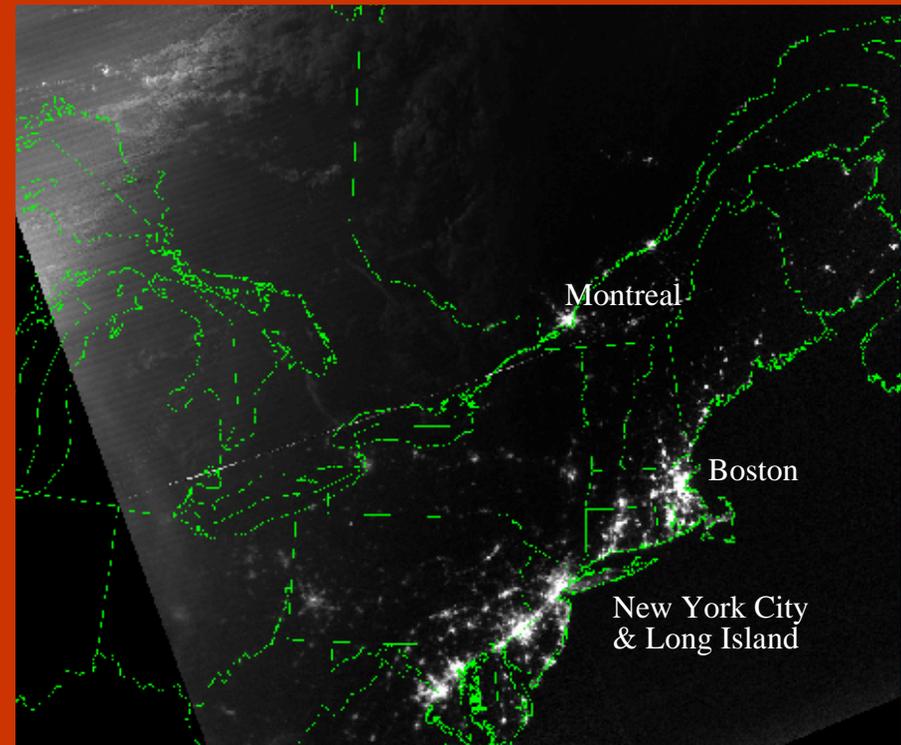
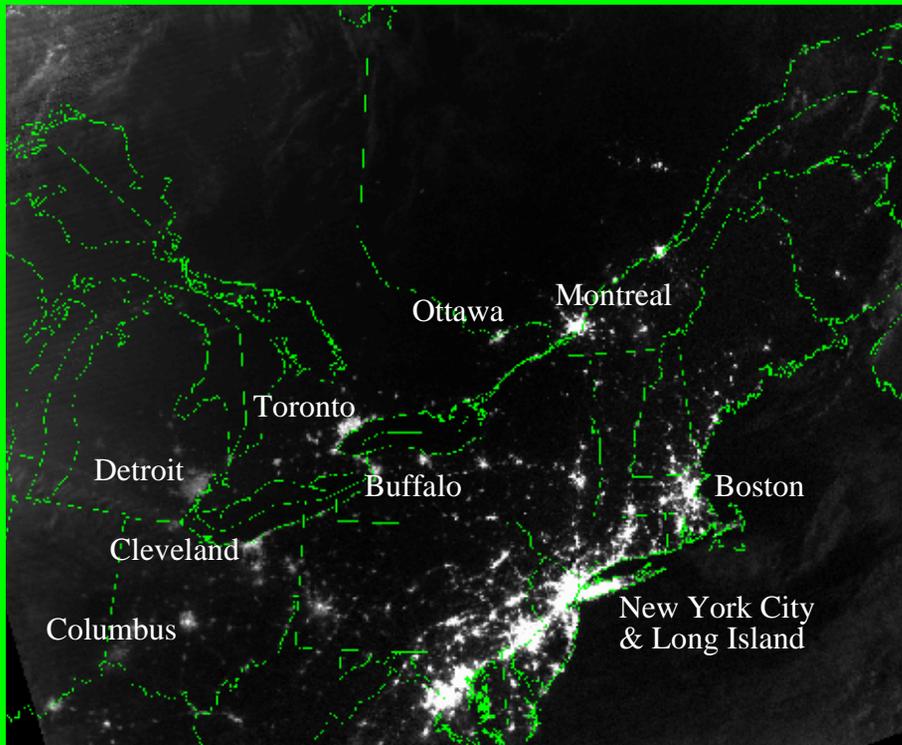
- Concepts at the conference
 - Canaries
 - Technology
 - Relationships
 - Evolving
 - Real-Time Monitoring



BLACKOUT 2003 – August 14 ~ 4:15 PM EDT

August 13 – 8:29 PM
~ 20 hours BEFORE

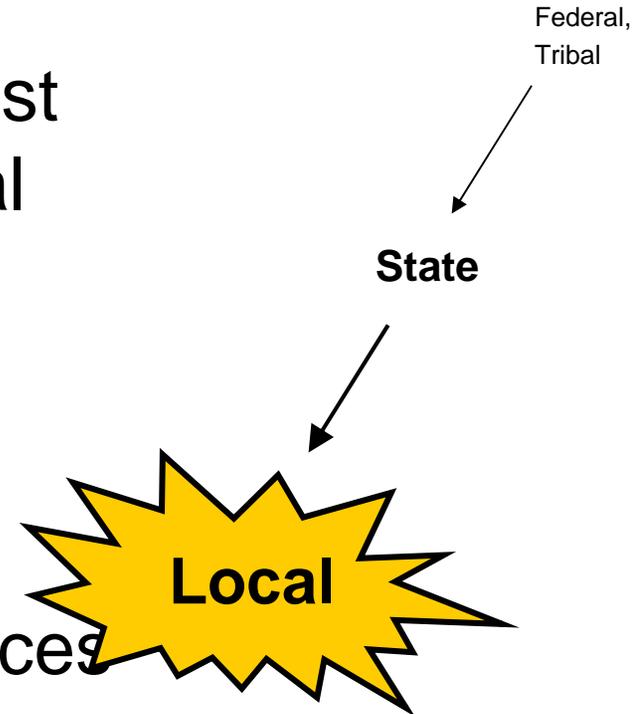
August 14 – 8:14 PM
~ 4 hours AFTER



Local actions are the most important

- During the power outage of August 2003, it wasn't the state or federal government that minimized the negative impact of the power outage...

It was the local utility and public safety officials who kept the services to the community going as best they could.





Ignorant men may sneer at the pretensions of sanitary science; weak and timorous men may hesitate to commit themselves to its principles, so large in their application; selfish men may shrink from the labor of change, which its recognition must entail; and wicked men may turn indifferently from considering that which concerns the health and happiness of millions of their fellow-creatures; but in the great objects which it proposes to itself, in the immense amelioration which it proffers to the physical, social, and indirectly, to the moral condition of an immense majority of our fellow-creatures, it transcends the importance of all other sciences; and in its beneficent operation, seems to embody the spirit, and to fulfil the intentions, of practical Christianity.”*

* "Report on the Sanitary Condition of the City of London," p.38 by Dr. John Simon, Officer of Health, presented Nov. 6, 1849.

