#### **Contetion 1 is the status quo**

Status quo geospatial data is disorganized and uncoordinated between federal, state, and local governments, making effective response to emergencies impossible

National Research Council ’07

(National Research Council, Working arm of the National Academies of the United States, Committee on Planning for Catastrophe: A Blueprint for Improving Geospatial Data, Tools, and Infrastructure, 2007, “Successful Response Starts with a Map:

Improving Geospatial Support for Disaster Management”, http://www.nap.edu/openbook.php?record\_id=11793&page=R1)

Data on the ownership of land parcels, or cadastral data, provide a particular and in some ways extreme example of the problems that currently pervade the use of geospatial data in emergency management. Vast amounts of such data exist, but they are distributed among tens of thousands of local governments, many of which have not invested in digital systems and instead maintain their land-parcel data in paper form. As with many other data types, it is not so much the existence of data that is the problem, as it is the issues associated with rapid access. In their report Parcel Data and Wildland Fire Management, Stage et al. (2005) argue that cadastral data can provide the most current and accurate information in support of emergency management, but note that access to such information can be limited by a number of factors including the following: Data distribution agreements. In some cases, local units charge for the data or have data licensing agreements that constrict access to the information. Data format. The data might be in a format that is not recognized or usable by responding agencies. These and other issues identified in Chapters [2](http://www.nap.edu/openbook.php?record_id=11793&page=25#p20010fa99970025001) and [3](http://www.nap.edu/openbook.php?record_id=11793&page=47#p20010fa99970047001) are explored in depth in subsequent sections of this chapter. Local emergency responders generally have vast personal knowledge of their communities, and as a result the use of geospatial information may sometimes be seen as superfluous to their immediate needs. However, when disasters extend far beyond the boundaries of a community, when local responders are unable to respond adequately and professionals without knowledge of the area must be brought in from elsewhere, or when impacts extend to infrastructure such as underground pipes about which local responders have little personal knowledge, then geospatial data and tools become absolutely indispensable to an effective, coordinated response.

And interagency data is a disaster too, setting the stage for yet another perfect storm

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In this era of heightened requirements for prompt and effective response, rapid access to disparate geospatial information sources is essential. As shown in Chapters [2](http://www.nap.edu/openbook.php?record_id=11793&page=25#p20010fa99970025001) and [3](http://www.nap.edu/openbook.php?record_id=11793&page=47#p20010fa99970047001), the emergency management community relies heavily on the ability to discover and use accurate up-to-date information in order to respond to disasters and other emergency events. However, the necessary data are scattered among numerous agencies, there are many impediments to rapid access, the skilled personnel needed to work with the data and tools are often not available in sufficient quantity, and the technological environment is changing constantly, causing endless confusion. This chapter explores these and other related issues in greater depth. Each section of the chapter takes one issue, describes the problem in detail, elaborates on its significance, describes possible solutions, and where appropriate, offers recommendations. This overview and the first three sections deal with issues that require policy changes; the next three focus on operational changes that could be made to enhance the use of geospatial data and tools; the next two sections on tools and training discuss changes that will produce better utilization in the future; and the final section addresses funding. It is important to note that this study deals with the intersection of two distinct communities—the emergency response community and the geospatial community. The issues discussed may have their roots in one community or the other, but the resolution of these challenges will require both communities to work together, as reflected in the recommendations. The fact that both of these are professions in their own right, with the emergency management community often seen as conservative with regard to the adoption of new technologies, presents a challenge. Without the support—and preferably the leadership—of the emergency management community, the geospatial data community’s own efforts will have little benefit. The committee heard from many federal, state, and local emergency management professionals during its deliberations and during the study’s workshop, as well as from several representatives of the private sector and nongovernmental organizations (NGOs). All testified to the central importance of geospatial information.

#### **Contention two is Terror**

#### **Two Scenarios:**

#### **Scenario 1 is nuclear terrorism**

#### **Current transportation infrastructure data is disorganized and fragmented only aggressive efforts at organization and interoperability prevent multiple scenarios for terrorist attack on infrastructure**

Budge & Williamson 5 Ray A., Research Professor of International Affairs and Space Policy in the Space Policy Institute of The George Washington University; & Amelia, Clearinghouse Manager Earth Data Analysis Center University of New Mexico; “Improving Surface Transportation Security: The Role of Geospatial Technologies in Intermodal Freight and Hazardous Materials Transport” *Imaging Notes* vol. 20 no.3; Fall 2005; <http://www.imagingnotes.com/go/article_free.php?mp_id=20>

The effects of the frightening terrorist attacks on the United States on Sept. 11, 2001, reached far and deep into American society and beyond. Since then, virtually every organization throughout the world has confronted the question of how it can improve security and resilience to terrorist attack. The recent social disruption and extreme damage from hurricanes Katrina and Rita raise related questions for planning for and response to natural disasters.¶ Transportation security is, of course, of highest concern not only because breaches in airline security allowed the Sept. 11 terrorists to use civil aircraft as high-energy weapons, but also because vulnerabilities throughout the surface transportation system make many elements of the transportation infrastructure potential targets of terrorist activity. Intermodal freight transport and the surface transport of hazardous materials are of particular concern to transportation officials.¶ The safety and security of surface transportation (including subway transit) have gained additional salience since the coordinated July 7 bombing of three subway trains and one bus in London. U.S. transportation offi- cials and policymakers are specifically addressing the important question of what needs to be done to strengthen security for the country’s surface transportation systems, systems that are particularly vulnerable to attack.¶ Remote sensing, geographic information systems (GIS), position, navigation, and timing (PNT) and other geospatial technologies provide powerful tools for dealing with these important security concerns. To aid in focusing research and development efforts, the R&D community needs to hear from state and local officials about their specific needs and concerns. This article summarizes the efforts of the Consortium for Safety, Hazards, and Disaster Assessment of the National Consortia for Remote Sensing in Transportation (NCRST-H) to develop a workable agenda for research, development, testing, and implementation of geospatial tools to improve transportation security. Although its recommendations are targeted specifically for implementation in the United States, most of them can be applied throughout the world.¶ THE TRANSPORTATION SECURITY CHALLENGE¶ Protecting America’s many different transportation components from attack or from being used to attack other elements of U.S. critical infrastructure is a daunting task. Included are: 4 million miles of roads, 500,000 bridges, 150,000 rail track miles, 5,500 public use airports, 25,000 miles of waterways, 1.6 million pipeline miles, and 5 million containers traveling through U.S. ports per year.¶ Intermodal transport poses a special challenge to transportation security because freight containers generally travel long distances and may change transportation mode several times in passing from supplier to customer, allowing intervention from terrorist elements. Some five million containerized freight shipments move through America’s ports each year, creating a signifi- cant challenge to security personnel at all levels. After arriving on U.S. shores from myriad other countries, the containers are loaded onto trucks and rail cars and shipped throughout the U.S.¶ Hazardous materials pose their own challenges. Some of the more common and familiar transport items that move through thousands of urban centers daily pose extraordinary risks to security, including:¶ Chlorine (45,000 rail shipments of chlorine annually)¶ anhydrous ammonia¶ Gasoline (50,000 truck shipments of gasoline daily)¶ Propane Gas¶ Explosives (125,000 truck shipments of explosives annually)¶ Radioactive Materials¶ Geospatial experts can take information developed by experts in terrorist methods and use geospatial technologies to explore a variety of possible terrorist scenarios. Modern analytic and display software allows rapid processing of possible geographic approaches in three dimensions and helps analysts discover infrastructure vulnerabilities that may not be immediately apparent to the eye, even to individuals familiar with an area.¶ Remotely sensed imagery, especially that from high resolution commercial satellites and digital sensors aboard aircraft, can assist in surveying and monitoring conditions around critical infrastructure. In combination with other geospatial tools, imagery can then be used to assist in mitigating the effects of any possible future terrorist incident. Recent research by Imagecat, Inc. has shown that for hurricanes and earthquake damage, high resolution imagery delivered immediately after a natural disaster may be crucial in assessing damage and mapping areas most in need of ameliorative response. One need only have watched any news broadcast to see the utility of aerial and satellite imagery for assessing damage following the devastating Hurricane Katrina in the U.S. Gulf Coast region. Similar assessment tools can be used in case of a successful attack to guide response teams in the field. Indeed, the experience of the country’s uncoordinated response to this damaging natural event should prove extremely helpful in designing and implementing improved planning and response methods.¶ IMPROVING INTERMODAL AND HAZARDOUS MATERIALS TRANSPORT SECURITY¶ Intermodal and hazardous materials transport are closely interlinked, and many of the security issues faced in each are similar or overlapping. For example, hazardous materials often travel by the same or similar intermodal routes required for the transport of nonhazardous materials. Nevertheless, the security issues for each also differ. For intermodal transport in general, security concerns tend to focus on whether or not terrorists are bringing destructive chemical, biological, or nuclear materials into the country covertly. In the case of commonly transported hazardous materials, security interests tend to focus on keeping close track of the materials along their routes.¶ INTERMODAL TRANSPORT¶ The logistical complexities of intermodal or multimodal transport make this sprawling component of the transportation industry extremely difficult to secure. It will be imperative to integrate information management tools, such as databases and statistical analyses, with geospatial technologies to increase the overall effectiveness of protection strategies. Needed is a suite of tools, including: advanced cargo shipping information, automated manifest interface, advanced profiling, and vulnerability and risk assessment tools. Systems for automated identification and communication of high-risk cargo are also needed.¶ Figure 1 << Infrastructure elements in the Port of Savannah, Ga. Oblique digital imagery with embedded GPS positions make possible a new level of remote sensing analysis, including the capability to see under bridges. The images are captured from opposite sides of the bridge and displayed at different scales. The red crosses in each image mark the same point along the rail section. Image courtesy of Pictometry, Inc.¶ Figure 2 << Attack scenario of the Port of Savannah, Ga. with digital oblique imagery and embedded GPS positions. This is a model of a chemical plume released by an attack, incorporating wind patterns.¶ Multispectral and SAR imagery can be used to monitor and analyze the areas around ports, rail facilities, and trucking terminals to assure that they remain as secure as possible from attack. Active multispectral sensors capable of monitoring the local atmosphere around these facilities can test for chemical and biological agents. Digital video from near-ground platforms (e.g., towers, tethered balloons) and aircraft can be used in real-time to assure that an area remains secure, particularly while loading and unloading container ships. Information from these digital video images can be merged with other information to form extremely powerful analytic tools both for real-time and historical analysis.¶ SECURING HAZARDOUS MATERIALS TRANSPORT¶ The transport of hazardous materials requires special attention because the materials themselves pose particular health and safety hazards, regardless of terrorist concerns. The sheer volume of hazardous materials transported every day through towns and cities increases the difficulty of tracking them. Geospatial tools, combined with advanced communications technologies, can ease this burden and provide better quality information for security officials.¶ Among other things, geospatial tools such as mobile mapping and temporal change detection allow users to speed up the production and even automate many tasks now carried out by hand. If properly developed and tested, these tools can provide precise position information and more details about the environs of the transported material. For example, if a shipment is attacked or communication is lost, highly detailed, image-based maps of the route can help authorities answer such questions as: What is the physical environment in the area of last communication? What is the quickest route to reach the area?¶ INTEGRATING GEOSPATIAL TECHNOLOGIES INTO TRANSPORTATION SECURITY SYSTEMS¶ Geospatial technologies can assist in improving the security of roads and highways, rail transportation, and ports for both intermodal and hazardous materials transport.¶ ROADS AND HIGHWAYS¶ Geospatial technologies are particularly powerful in analyzing vulnerabilities in highway infrastructure elements and reducing their exposure to attack, or to congestion in rapid area evacuations. For example, they offer a vast improvement in speed, accuracy, and repeatability over manual methods such as “windshield surveys” in which two individuals drive the route taking notes on the factors that could affect route security.¶ Combining such manual methods with modeling software would enable the development of a hierarchical set of decision support tools capable of assisting transportation managers to select routes and risk-reduction strategies for route segments that carry unavoidably high risk. These “virtual surveys” can be updated quickly and cost effectively using remote sensing methods and mobile mapping.¶ If geospatial information about critical transportation assets is kept up-to-date and available in searchable databases, these same technologies can assist first responders in case of an attack by providing detailed routing and terrain information. Such information will improve the speed and quality of the response while at the same time improving safety and reducing casualties.¶ RAIL¶ For rail security, one of the primary needs is to develop “intelligent railroad systems” that employ digital data communication, data, and on-board sensors for improving safety and security of the trains and their cargos.¶ Ultimately, intelligent railroad systems allow operators to respond to unexpected events virtually anywhere in their systems. Taken together these benefits provide broad incentives for rail operators to institute such improvements as the use of digital data link communications, positive train control, nationwide differential GPS, automatic equipment identification, electronically controlled pneumatic train brakes, and intelligent grade crossings.¶ Positive train control systems are digitally linked communication systems that provide safety benefits by preventing collisions, preventing over-speed accidents, and protecting roadway workers. They can enhance rail security by monitoring location and speed of all trains, and by monitoring the status of all rail switches. Such systems can make excellent use of the National Digital GPS (NDGPS) system that is currently operational throughout most of the United States.¶ These technologies, which provide continuous, realtime information, enhance security through prevention, detection, and notification of rail accidents and other incidents. They also assist in the recovery from incidents. Because the security of information provided by intelligent railroad systems is itself of great concern, systems to provide information security must be designed into them from the beginning.¶ Remotely sensed data provide an excellent, unbiased source of information for determining rail transportation vulnerabilities. When combined with intelligent railroad systems in a GIS framework, such data provide an additional margin of safety for the transport of hazardous materials.¶ PORTS¶ Ports constitute a significant element in the nation’s transportation infrastructure, for they serve as primary transportation nodes for transferring cargo to and from ships to rail and highway transportation. Port security and the ability to respond quickly and efficiently to attacks can be increased substantially through the use of geospatial technologies.¶ Aerial and satellite imagery are particularly valuable for viewing and analyzing vulnerabilities within and around ports. A variety of geospatial tools is available for creating these. Pictometry, Inc., for example, employs a unique aerial system of oblique digital imagery acquired from many different angles. This technique enables the firm to explore a variety of scenarios to identify and test potential vulnerabilities of transportation routes into and out of the port (Figure 1). Note that in many situations, oblique imagery allows the camera to view under bridges and other structures to illuminate details that would be missed in most overhead imagery.¶ The system is also capable of undertaking threat and response analysis of potential attacks (Figure 2), helping port managers to identify the most important infrastructure on which to spend limited security budgets. Further, this tool, combined with other geospatial tools and risk models, can be used to support real-time decision making in case of attack. Figure 2 illustrates the ability of the system to allow modeling of a chemical plume released by an attack, using models of prevailing wind patterns. Note that in this case, the port’s command center and main entrance lie in the path of the chemical plume. In the case of an actual attack, imagery acquired in advance can be retrieved and merged with real-time local environmental data in a model to estimate the spread of potential chemical plumes across an area. Such information can reduce the loss of lives of responders and those directly affected by the attack, and aid in rapid recovery.¶ MEETING THE NEEDS OF THE SECURITY MISSION¶ State and local agencies and officials are on the front line in the effort to meet terrorist threats. The following issues need to be addressed in the quest to develop adequate local transportation security:¶ ACCESS TO IMAGERY AND DATA FUSION¶ Remotely sensed data serve as decision-making tools for all levels of officials. There need to be clear policies for access to various types of geospatial information across and within political and geographical jurisdictional boundaries. First responders need access to critical information about pre-attack conditions of transportation links and the related infrastructure in order to establish an accurate baseline from which to work in providing succor to the injured and in clearing routes in and out of the affected areas. Such data would allow first responders to find street intersections and building foundations even when the surrounding areas are badly damaged or covered with debris as they were in the aftermath of the Sept. 11, 2001 attack.¶ Improvements in transportation security will require the fusion of many different kinds of data. Geographic information systems (GISs) generally serve as the integrative foundation and platform for fusing different forms of geospatial data with other forms of data, such as still and video imagery, street addresses, and structural types.¶ DATA INTEROPERABILITY, FORMATTING, AND ACCESS PROTOCOLS FOR MULTI-AGENCY USE¶ To reach the greatest effectiveness across institutional boundaries, data need to have sufficient commonality to allow sharing among different software platforms. At a minimum, geospatial data should conform to the standards of the Federal Geographic Data Committee (FGDC). Geospatial data and software should have additional characteristics in order to make them broadly useable, including multi-machine compatibility (desktop, laptop, handheld), commonality (of format, metadata, georeferencing) and connectivity.¶ EMPLOYING THE FULL RANGE OF REMOTE SENSING TECHNOLOGY AND DATA PRODUCTS¶ Many security needs can be met by existing technologies and by data products that have been developed for other purposes. Remote sensing methodologies exist to anticipate, plan for, and mitigate the effects of natural disasters. These methods include many that involve transportation in and out of the affected area.¶ SOURCES OF REMOTELY SENSED DATA¶ For U.S. transportation needs, numerous sources of remotely sensed data exist from both aircraft and space sensors. The choice of data source to use for transportation purposes depends on a variety of factors, including cost, ease of use, spectral characteristics, spatial coverage, and temporal characteristics. Potential aerial platforms range from single and twin engine fixed wing (propeller and jet), to helicopters and unpiloted air vehicles (UAVs) and even tethered balloons.¶ UAVs, although they are still very much under development, offer especially interesting possibilities for transportation security applications. The use of these systems in Afghanistan and Iraq to assist in peacekeeping, and in the U.S. Gulf Coast region following Hurricane Katrina will provide lessons for future applications of such systems. Further, the international community, especially Europe, is investing heavily in UAV R&D.¶ AWARENESS, EDUCATION, AND TRAINING¶ Outreach, education, and training have important roles in the effort to develop state, regional, and local capacities to secure and protect transportation infrastructure. One of the major barriers lies in the lack of understanding among responsible officials of how geospatial tools and data can assist transportation security. Agency of- ficials need to understand that remotely sensed images are multilayered information sources that can dramatically change the way in which officials can carry out the mandates of their agencies. Training for using geospatial information also needs to be extended to first responder teams in order to improve their efficiency in understanding and using image data.¶ CRAFTING A RESEARCH AND IMPLEMENTATION AGENDA¶ Developing a clearly articulated implementation agenda is an important first step in the process of improving the nation’s transportation security. Geospatial systems can enable the crafting and implementation of a new vision for homeland security, but the R&D community must continue to think and act creatively in order to make such a vision possible. NCRST-H created proposed research and implementation agendas for intermodal freight and for hazardous materials transport for consideration by policy makers and the research community (see Boxes H and I).¶ CONCLUSIONS¶ Remote sensing and other geospatial technologies provide many useful tools for improving and expanding U.S. transportation security. The introduction of such tools or their expanded use will also assist overall transportation safety. Nevertheless, geospatial technologies cannot provide the total solution. They must be integrated with other information and incorporated within appropriate institutional structures.¶ The research community needs to focus its efforts and funding on providing detailed geospatial information in useable forms that respond to the users’ specific needs. Therefore, researchers need to collaborate with the local communities that will need geospatial tools to help them identify transportation vulnerabilities and imminent threats and to respond quickly and efficiently in case of attack. First responders are critical to preliminary planning, and in case of attack, to minimizing loss of life and damage to transportation infrastructure.¶ When integrated with other geospatial data, remote sensing provides an important tool in preparing the nation to meet the terrorist challenge. It is especially useful for developing the necessary background maps and analyzing various attack scenarios to assist in preparing for attacks on vulnerable facilities, and for increasing the possibility that attacks can be deterred.

#### **Extinction from accidental US-Russia war**

Robert Ayson, Professor of Strategic Studies and Director of the Centre for Strategic Studies: New Zealand at the Victoria University of Wellington, 2010 (“After a Terrorist Nuclear Attack: Envisaging Catalytic Effects,” Studies in Conflict & Terrorism, Volume 33, Issue 7, July, Available Online to Subscribing Institutions via InformaWorld)

A terrorist nuclear attack, and even the use of nuclear weapons in response by the country attacked in the first place, would not necessarily represent the worst of the nuclear worlds imaginable. Indeed, there are reasons to wonder whether nuclear terrorism should ever be regarded as belonging in the category of truly existential threats. A contrast can be drawn here with the global catastrophe that would come from a massive nuclear exchange between two or more of the sovereign states that possess these weapons in significant numbers. Even the worst terrorism that the twenty-first century might bring would fade into insignificance alongside considerations of what a general nuclear war would have wrought in the Cold War period. And it must be admitted that as long as the major nuclear weapons states have hundreds and even thousands of nuclear weapons at their disposal, there is always the possibility of a truly awful nuclear exchange taking place precipitated entirely by state possessors themselves. But these two nuclear worlds—a non-state actor nuclear attack and a catastrophic interstate nuclear exchange—are not necessarily separable. It is just possible that some sort of terrorist attack, and especially an act of nuclear terrorism, could precipitate a chain of events leading to a massive exchange of nuclear weapons between two or more of the states that possess them. In this context, today’s and tomorrow’s terrorist groups might assume the place allotted during the early Cold War years to new state possessors of small nuclear arsenals who were seen as raising the risks of a catalytic nuclear war between the superpowers started by third parties. These risks were considered in the late 1950s and early 1960s as concerns grew about nuclear proliferation, the so-called n+1 problem. It may require a considerable amount of imagination to depict an especially plausible situation where an act of nuclear terrorism could lead to such a massive inter-state nuclear war. For example, in the event of a terrorist nuclear attack on the United States, it might well be wondered just how Russia and/or China could plausibly be brought into the picture, not least because they seem unlikely to be fingered as the most obvious state sponsors or encouragers of terrorist groups. They would seem far too responsible to be involved in supporting that sort of terrorist behavior that could just as easily threaten them as well. Some possibilities, however remote, do suggest themselves. For example, how might the United States react if it was thought or discovered that the fissile material used in the act of nuclear terrorism had come from Russian stocks,40 and if for some reason Moscow denied any responsibility for nuclear laxity? The correct attribution of that nuclear material to a particular country might not be a case of science fiction given the observation by Michael May et al. that while the debris resulting from a nuclear explosion would be “spread over a wide area in tiny fragments, its radioactivity makes it detectable, identifiable and collectable, and a wealth of information can be obtained from its analysis: the efficiency of the explosion, the materials used and, most important … some indication of where the nuclear material came from.”41 Alternatively, if the act of nuclear terrorism came as a complete surprise, and American officials refused to believe that a terrorist group was fully responsible (or responsible at all) suspicion would shift immediately to state possessors. Ruling out Western ally countries like the United Kingdom and France, and probably Israel and India as well, authorities in Washington would be left with a very short list consisting of North Korea, perhaps Iran if its program continues, and possibly Pakistan. But at what stage would Russia and China be definitely ruled out in this high stakes game of nuclear Cluedo? In particular, if the act of nuclear terrorism occurred against a backdrop of existing tension in Washington’s relations with Russia and/or China, and at a time when threats had already been traded between these major powers, would officials and political leaders not be tempted to assume the worst? Of course, the chances of this occurring would only seem to increase if the United States was already involved in some sort of limited armed conflict with Russia and/or China, or if they were confronting each other from a distance in a proxy war, as unlikely as these developments may seem at the present time. The reverse might well apply too: should a nuclear terrorist attack occur in Russia or China during a period of heightened tension or even limited conflict with the United States, could Moscow and Beijing resist the pressures that might rise domestically to consider the United States as a possible perpetrator or encourager of the attack? Washington’s early response to a terrorist nuclear attack on its own soil might also raise the possibility of an unwanted (and nuclear aided) confrontation with Russia and/or China. For example, in the noise and confusion during the immediate aftermath of the terrorist nuclear attack, the U.S. president might be expected to place the country’s armed forces, including its nuclear arsenal, on a higher stage of alert. In such a tense environment, when careful planning runs up against the friction of reality, it is just possible that Moscow and/or China might mistakenly read this as a sign of U.S. intentions to use force (and possibly nuclear force) against them. In that situation, the temptations to preempt such actions might grow, although it must be admitted that any preemption would probably still meet with a devastating response. As part of its initial response to the act of nuclear terrorism (as discussed earlier) Washington might decide to order a significant conventional (or nuclear) retaliatory or disarming attack against the leadership of the terrorist group and/or states seen to support that group. Depending on the identity and especially the location of these targets, Russia and/or China might interpret such action as being far too close for their comfort, and potentially as an infringement on their spheres of influence and even on their sovereignty. One far-fetched but perhaps not impossible scenario might stem from a judgment in Washington that some of the main aiders and abetters of the terrorist action resided somewhere such as Chechnya, perhaps in connection with what Allison claims is the “Chechen insurgents’ … long-standing interest in all things nuclear.”42 American pressure on that part of the world would almost certainly raise alarms in Moscow that might require a degree of advanced consultation from Washington that the latter found itself unable or unwilling to provide. There is also the question of how other nuclear-armed states respond to the act of nuclear terrorism on another member of that special club. It could reasonably be expected that following a nuclear terrorist attack on the United States, both Russia and China would extend immediate sympathy and support to Washington and would work alongside the United States in the Security Council. But there is just a chance, albeit a slim one, where the support of Russia and/or China is less automatic in some cases than in others. For example, what would happen if the United States wished to discuss its right to retaliate against groups based in their territory? If, for some reason, Washington found the responses of Russia and China deeply underwhelming, (neither “for us or against us”) might it also suspect that they secretly were in cahoots with the group, increasing (again perhaps ever so slightly) the chances of a major exchange. If the terrorist group had some connections to groups in Russia and China, or existed in areas of the world over which Russia and China held sway, and if Washington felt that Moscow or Beijing were placing a curiously modest level of pressure on them, what conclusions might it then draw about their culpability? If Washington decided to use, or decided to threaten the use of, nuclear weapons, the responses of Russia and China would be crucial to the chances of avoiding a more serious nuclear exchange. They might surmise, for example, that while the act of nuclear terrorism was especially heinous and demanded a strong response, the response simply had to remain below the nuclear threshold. It would be one thing for a non-state actor to have broken the nuclear use taboo, but an entirely different thing for a state actor, and indeed the leading state in the international system, to do so. If Russia and China felt sufficiently strongly about that prospect, there is then the question of what options would lie open to them to dissuade the United States from such action: and as has been seen over the last several decades, the central dissuader of the use of nuclear weapons by states has been the threat of nuclear retaliation. If some readers find this simply too fanciful, and perhaps even offensive to contemplate, it may be informative to reverse the tables. Russia, which possesses an arsenal of thousands of nuclear warheads and that has been one of the two most important trustees of the non-use taboo, is subjected to an attack of nuclear terrorism. In response, Moscow places its nuclear forces very visibly on a higher state of alert and declares that it is considering the use of nuclear retaliation against the group and any of its state supporters. How would Washington view such a possibility? Would it really be keen to support Russia’s use of nuclear weapons, including outside Russia’s traditional sphere of influence? And if not, which seems quite plausible, what options would Washington have to communicate that displeasure? If China had been the victim of the nuclear terrorism and seemed likely to retaliate in kind, would the United States and Russia be happy to sit back and let this occur? In the charged atmosphere immediately after a nuclear terrorist attack, how would the attacked country respond to pressure from other major nuclear powers not to respond in kind? The phrase “how dare they tell us what to do” immediately springs to mind. Some might even go so far as to interpret this concern as a tacit form of sympathy or support for the terrorists. This might not help the chances of nuclear restraint.

#### **Scenario two is bioterror:**

Remote sensing solves CBW attack

Yang 02 (2002 Chaowei Phil Yang Professor of GIScience, George Mason University “UTILIZING REMOTE SENSED DATA IN A QUICK RESPONSE SYSTEM” Menas Kafatos, Ruixin Yang, Chaowei Yang, Richard Gomez, & Zafer Boybeyi)

Hyperspectral imaging is an emerging, enabling technology -- useful to both DoD and civil organizations in areas including: remote sensing of chemical and biological agents to combat terrorism; locating mobile rocket launchers, detecting fuel leaks at our nation’s pipeline systems, discriminating missiles by plume spectra, controlling urban development, detecting narcotic-related agents; and detecting pollution sources. Hyperspectral and other modern imaging systems such as radar and laser systems are becoming increasingly available to perform quantitative measurements that will yield information not available from more conventional sources. Unique literal and non-literal measurements made with these systems from ground, airborne, and spaceborne platforms can help with many applications. However, for this capability to be exploitable, it is essential that a well-populated spectral library information system exists and be accessible in a user-friendly way by the user of this technology. This will also require the development of faster processing algorithms, better search methods, improved spectral matching techniques, data fusion, availability of digital elevation data, and cost-effective data handling and management structures, all of which need to be addressed. Modern ground, airborne and spaceborne modern systems are currently demonstrating that the very high efficiencies and extreme flexibility of these sensors provide a powerful measurement technology.

Bioterror attack coming now

**Graham and Talent, 10** [Bob, senator, chair of the Graham-Talent WMD Commission, James, senator, vice chair of the Graham-Talent WMD Commission, “Prevention of WMD Proliferation and Terrorism Report Card, An Assessment of the U.S. Government’s Progress in Protecting the United States from Weapons of Mass Destruction Proliferation and Terrorism,” <http://www.preventwmd.gov/publications/>]

 In December 2008, the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism released a unanimous threat assessment: Unless the world community acts decisively and with great urgency, it is more likely than not that a weapon of mass destruction (WMD) will be used in a terrorist attack somewhere in the world by the end of 2013. That weapon is more likely to be biological than nuclear. Less than a month after this assessment, then Director of National Intelligence Mike McConnell publicly endorsed it. The assessment was based on four factors. First, there is direct evidence that terrorists are trying to acquire weapons of mass destruction. Second, acquiring WMD fits the tactical profile of terrorists. They understand the unique vulnerability of first-world countries to asymmetric weapons—weapons that have a far greater destructive impact than the power it takes to acquire and deploy them. The airplanes that al Qaeda flew into the World Trade Center were asymmetric weapons. Third, terrorists have demonstrated global reach and the organizational sophistication to obtain and use WMD. As recent actions by al Qaeda in the Arabian Peninsula demonstrate, the al Qaeda network is expanding through international partnerships. In particular, it is well within their present capabilities to develop and use bioweapons. As the Commission’s report, World at Risk, found, if al Qaeda recruits skilled bioscientists, it will acquire the capability to develop and use biological weapons. Fourth, the opportunity to acquire and use such weapons is growing exponentially because of the global proliferation of nuclear material andbiological technologies. Almost fourteen months have passed since the Commission issued its World at Risk. That means nearly a quarter of the five-year margin of shrinking safety has passed. During that time, the risk has continued to grow. This is not meant to question the good faith or deny the dedication of anyone in the government. The fact is that first-world democracies are particulary vulnerable to asymmetric attack, especially from organizations that have no national base and therefore, are undeterred by the threat of retaliation. So although everyone wants to prevent such attacks, and the government made progress toward that end in certain areas, the forces and factors that imperil the country have been outracing defensive efforts and overwhelming good intentions. It is possible that fortuitous circumstances may reduce the anticipated risk. Outside forces may change and render more benign the groups that are working against us, or as in the case of the Detroit-bound flight on Christmas Day, an attack may occur but fail in execution to the point that the destructive impact is minimal. But the United States cannot count on such good fortune. Plans must be based on the assumption that what is likely to occur, given the current trajectory of risk, WILL occur, unless the trajectory is reversed. And on the current course, what is likely to occur within a very few years is an attack using weapons of mass destruction—probably a bioweapon—that will fundamentally change the character of life for the world’s democracies. In reaction to the Christmas Day attack, President Barack Obama stated that he would do everything in his power to support the men and women in intelligence, law enforcement and homeland security to ensure they have the tools and resources to keep America safe. He promised to “leave no stone unturned in seeking better ways to protect the American people.” It is in this spirit of protecting America that the Commission made its recommendations, and it is in this spirit that the report card was developed. The assessment is not a good one, particularly in the area of biological threats. While the government has made progress on preventing such attacks, it is simply not paying consistent and urgent attention to the means of responding quickly and effectively so that they no longer constitute a threat of mass destruction. The failures did not begin with the current group of leaders. Each of the last three Administrations has been slow to recognize and respond to the biothreat. The difference is that the danger has grown to the point that we no longer have the luxury of a slow learning curve. The clock is ticking, and time is running out.

Bioweapons will cause extinction – Outweighs nuclear war.

Ochs 02 Richard, "BIOLOGICAL WEAPONS MUST BE ABOLISHED IMMEDIATELY" June 9 http://www.freefromterror.net/other\_articles/abolish.html

Of all the weapons of mass destruction, the genetically engineered biological weapons, many without a known cure or vaccine, are an extreme danger to the continued survival of life on earth. Any perceived military value or deterrence pales in comparison to the great risk these weapons pose just sitting in vials in laboratories. While a "nuclear winter," resulting from a massive exchange of nuclear weapons, could also kill off most of life on earth and severely compromise the health of future generations, they are easier to control. Biological weapons, on the other hand, can get out of control very easily, as the recent anthrax attacks has demonstrated. There is no way to guarantee the security of these doomsday weapons because very tiny amounts can be stolen or accidentally released and then grow or be grown to horrendous proportions. The Black Death of the Middle Ages would be small in comparison to the potential damage bioweapons could cause. Abolition of chemical weapons is less of a priority because, while they can also kill millions of people outright, their persistence in the environment would be less than nuclear or biological agents or more localized. Hence, chemical weapons would have a lesser effect on future generations of innocent people and the natural environment. Like the Holocaust, once a localized chemical extermination is over, it is over. With nuclear and biological weapons, the killing will probably never end. Radioactive elements last tens of thousands of years and will keep causing cancers virtually forever. Potentially worse than that, bio-engineered agents by the hundreds with no known cure could wreck even greater calamity on the human race than could persistent radiation. AIDS and ebola viruses are just a small example of recently emerging plagues with no known cure or vaccine. Can we imagine hundreds of such plagues? HUMAN EXTINCTION IS NOW POSSIBLE.

Acquisition of bio-agents is feasible even without scientific capacity—ubiquitous nature of toxins ensure theft or trafficking

**CSIS, 6** (“STRATEGIC STUDY ON BIOTERRORISM, <http://csis.org/files/media/csis/pubs/061016_bioterrorism.pdf>)

Bio-agents are readily available in the modern world and are relatively inexpensive to produce, store and transport from one country to another. At the same time, they can be toxic, transmissible and lethal. Some have a long period of incubation, and many items involved in biotechnology are dual use, thus difficult to ban. The physical security of biological agents is very poor in a number of facilities, with dangerous pathogens stored in unlocked kitchen refrigerators and simple fences without alarm systems surrounding the facilities. Lax border controls make illicit trafficking of drugs, arms and materials of weapons of mass destruction a possibility in regions such as Central Asia and the Caucusus, which is an area also traveled by terrorist groups. This report focuses on bio agents that may be available to terrorists rather than terrorism in general. How can we secure, collect or destroy strains that may pose a serious threat and prevent them from falling into the hands of terrorists? How can we channel the knowledge and experience of unemployed former Soviet bioscientists into benefits for the international community? It is almost impossible to detect and deter the movement and/or transfer of a small quantity of dangerous infectious agents. It is very difficult to forecast consequences of a bioterrorist attack. For example, in the case of a sudden appearance of an epidemic type of avian flu H5N1, the epidemic will travel the globe quickly, while the development, testing and production of the necessary quantities of a vaccine against the avian flu will take at least 4 to 5 months; this will provide protection for 50% of the world population. Therefore, the protection of the population from epidemics and pandemics of dangerous diseases caused by natural outbreaks, man-made accidents or bioterrorist attacks is an issue of national and international concern. Given their proximity, Russia and other European countries are well placed to cooperate on improving communications and surveillance systems to reach hospitals and doctors, including in isolated areas. There is no common definition of bioterrorism. A modified FBI definition refers to it as the “unlawful use of viruses, bacteria, fungi, toxins or other pathogenic material against a government, the civilian population, livestock, crops or any segment thereof, in furtherance of political, social and/or economic objectives.”13 An unofficial Russian definition states, “Bioterrorism is the use of dangerous biological agents for inflicting damage to the life and health of people in order to reach goals of a political and materialistic nature.” The possibilities for bioterrorism exist in water, land, food, air, and the human being itself. Much has been written about possible scenarios of pathogens in the major water reserves, the food supply, animal husbandry, the subway, sport arenas, railway stations, and places where large numbers of people congregate. The sources of water supplies are generally considered protected in the cities, though they are not failsafe. Certain safeguards are in place for food protection, though a number of experts have expressed concern in particular about possible contamination of milk.14 The experts in this Study agreed that the highest risk was that of air contamination, and they recognized that it is close to impossible to protect the population from being contaminated. The method of dissemination of bio agents depends on the kinds of diseases. Non-contagious diseases require complex dissemination equipment such as a spray system or an explosive device to create a large-scale effect. The anthrax letters delivered in the United States Senate Office Building showed that widespread psychological effects could be inflicted via a simple means of delivery and a small number of actual victims.                      Various organizations have compiled lists of agents that are based on parameters such as lethality, toxicity, morbidity, and mortality. The United States Centers for Disease Control and Prevention has defined three categories of bioterrorism agents/diseases. Category A comprises high priority agents that “include organisms that pose a risk to national security because they can be easily disseminated or transmitted from person to person; result in high mortality rates and have the potential for major public health impact; might cause public panic and social disruption; and require special action for public health preparedness.” The CDC lists the following under Category A: Anthrax (bacillus anthracis), Botulism (Clostridium botulinum toxin), plague (Yersinia pestis), Smallpox (variola major), Tularemia (Francisella tularensis) and Viral hemorrhagic fevers (filoviruses [e.g. Ebola, Marburg] and arenaviruses [e.g. Lassa, Machupo]). Category B diseases/agents are defined as those that “are moderately easy to disseminate; result in moderate morbidity rates and low mortality rates; and require specific enhancements of CDC’s diagnostic capacity and enhanced disease surveillance.” Category B includes: Brucellosis (Brucella species); Epsilon toxin of Clostridium perfringens; Food safety threats (e.g. Salmonella species, Escherichia coli 0157:H7, Shigella); Glanders (Burkholderia mallei); Melioidosis (Burkholderia pseudomallei); Psittacosis (Chlamydia psittaci); Q fever (Coxiella burnetii); Ricin toxin from Ricinus communis (castor beans); Staphylococcal enterotoxin B; Typhus fever (Rickettsia prowazekii); Viral encephalitis (alphaviruses [e.g. Venezuelan equine encephalitis, eastern equine encephalitis, western equine encephalitis]); Water safety threats (e.g. Vibrio cholerae, Cryptosporidium parvum). The third highest priority agents, Category C, are defined as “emerging pathogens that could be engineered for mass dissemination in the future because of availability; ease of production and dissemination; and potential for high morbidity and mortality rates and major health impact.” The CDC list mentions emerging infectious diseases such as Nipah virus and hanta virus.15          Similar lists of pathogens exist for plants and animals. Recent examples of diseases that have caused economic as well as psychological distress include foot and mouth disease in the United Kingdom in 2001, which cost an estimated $12 billion, SARS, which cost Canadian tourism almost $1 billion in lost revenue,16 and avian flu. Even the process of finding a disease capable of causing bioterrorism costs a great deal in research and development, money that could be spent on other activities such as treating tuberculosis, dengue fever or other severe diseases. During the Soviet era the country had very strong scientific and engineering capabilities, with a high level of university training. President Yeltsin acknowledged in 1992 that the Soviet Union had violated the Biological Weapons Convention, which entered into force in 1975. The legacy of suspicion and mistrust between the former Soviet Union and the United States that persisted during the cold war has continued to this day. The economic decline that set in after the Soviet era resulted in poor physical security systems in facilities housing large collections of dangerous pathogens and a drop in salaries foran estimated 10,000 former Soviet biological scientists possessing relevant bioweapons expertise. 17 Many either changed careers or sought work in other countries, causing concern over the possibility of terrorists acquiring knowledge from them. Many Russian officials now talk about the “lost generation” of scientists: at the Russian Academy of Medical Sciences, for example, more than half the researchers are older than 45, and only 15 percent are between the age of 30 and 45.18

#### **Contention 3 is FEMA**

#### **Hurricane Katrina soiled American credibility and another failed response would devastate it. Our coordinated response allows FEMA to prove itself to the world.**

Walters 10 (Jonathan Walters is the Executive Editor of GOVERNING. He has been covering state and local public policy and administration for more than 30 years. August 2010. “FEMA: Making a Comeback” http://www.governing.com/topics/public-justice-safety/homeland-security-disasters/fema-making-comeback.html)

And during Hurricane Ike in 2008, which killed more than 100 people and triggered the largest evacuation in Texas history, the agency's response was considered uneven, but not hapless. The simple question now is whether FEMA is working to complete its comeback as a respected, competent federal agency. Is it capable of responding nimbly to disasters and working well with state and local partners? For many state and local officials in the emergency-response trenches, Fugate's appointment is a positive sign. "We couldn't be more pleased with the senior leadership team at FEMA," says Mike Womack, director of the Mississippi Emergency Management Agency. "It would have been very difficult to find someone more capable or a better fit than Craig Fugate." But the quick answer is that it might be too soon to tell whether FEMA is coming back strong. "They really haven't been whacked yet," says Peter Beering, an Indianapolis-based consultant on terrorism and emergency management and response. "They really haven't been tested." One fundamental issue that undergirds FEMA's comeback is the federalization of an emergency management response -- and the public's expectations of who should be in charge. In an ideal world, an effective emergency management structure's foundation is a combination of well developed local response capacity -- with some help from the state -- along with long-range efforts to mitigate each disaster's impact. This includes looking at local zoning, planning and building codes to ensure that they feed into and enhance emergency needs and mitigation. Over the past two decades, however, there has been a growing sense that the federal government is the chief fixer-upper in a disaster's aftermath. "The general public thinks the federal government will ride in like the cavalry," Beering says, "and that's not how it works." The BP Gulf of Mexico oil spill, he points out, is a stark example of that impression. "Everyone has this expectation that the president is going to come in there and fix the thing. Well, he's a community organizer, not a plumber." Yet it is becoming increasingly clear that the public -- and many public officials -- actually do regard the president as "plumber in chief," and FEMA as his handy tool kit.

Federal government role in network with states crucial to disaster response

Roberts 10 (Patrick S. Roberts is an Assistant Professor at the Center for Public Administration and Policy in School of Public and International Affairs in Virginia Tech. 2010. “Private Choices, Public Harms | The Evolution of National Disaster Organizations in the United States” http://www.blogs.spia.vt.edu/proberts/wp-content/blogs.dir/8/files/2012/04/robertschapter\_ssrc.pdf)

Further privatizing government services and allowing citizens to assume greater risk as individuals offers another alternative already common in other policy areas, including health care and retirement insurance.3 Nevertheless, a democratic majority has reached a rough consensus that preparing for disaster is a shared national responsibility. In the 2008 presidential campaign, candidates from both major parties assumed that disaster response was an issue for the president and the federal government and therefore a public responsibility. Actually governing disaster preparation and response, however, requires a networked form of government that links federal, state, and local levels of government as well as private organizations. These agencies and organizations share common goals but are not subject to direct command. Despite modest capacity and authority, at its best a national disaster agency has been an important node for establishing agreement about the broad missions and purposes of emergency management. FEMA was best able to manage risk when it enjoyed the support of the president, key members of Congress, and networks of emergency managers at various levels of government and in the private sector. Successful disaster preparation and response occurs not through command from above — reorganizations like the creation of the Department of Homeland Security breed chaos4 — but through loose networks of formal organizations and informal professions that maintain broad agreement about shared goals and responsibilities.

#### **Remote sensing is the key internal link to effective disaster preparedness**

**NASA and US DOT ’03** (NASA and Department of Transportation Collaborative. May 2003. “Remote Sensing and Geospatial Information Technologies Application to Multimodal Transportation”. <http://www.ncgia.ucsb.edu/ncrst/synthesis/SynthRep2003/6pager-2003.pdf>)

Remote sensing and geospatial information technologies provide tools for enhancing the security of transportation systems. Real-time information on the transportation network through imagery allows agencies to effectively manage traffic and to plan community evacuation and relief operations in case of transportation lifeline emergencies. Rapid Evacuation Planning and Disaster Preparedness for Communities. During the Oakland Hills fires of 1991, 25 people perished in their cars while evacuating their neighborhood due to a lack of preparedness. The relatively large emergency fire evacuations that occurred in Colorado, New Mexico, and Oregon in the summer of 2002 point out the growing need for hazard preparedness at the community level. Remotely sensed imagery helps to identify the most fire-prone areas and to develop fire propagation models. Detailed neighborhood maps with microsimulation models allow emergency evacuation to be modeled at the level of the individual vehicle for avoiding congestion during evacuation. Evacuation Tool Kits Assist Local Planners in Emergency Response Preparedness Evacuation simulations using road networks and population estimations derived from remotely sensed imagery and GIS databases support evacuation planning analysis for a nuclear power plant site in Hamilton County, Tennessee. Local emergency planners can use the evacuation model for enhancing community preparedness. Robust and Integrated Emergency Response Planning Tools for Rural Areas. In a collaborative work with McKinley County, New Mexico, the New Mexico State Highway and Transportation Department, and the Hopi Reservation produced tool sets for developing robust emergency response and preparedness plans.

Bungling disasters tanks US Cred

Gaines-Ross 12 (Dr. Leslie Gaines-Ross is a chief reputation strategist and leads public relations firm Weber Shandwick’s global reputation consulting services and proprietary thought leadership development. Dr. Gaines-Ross is also the author of two books, CEO Capital: A Guide to Building CEO Reputation and Company Success (2003) and Corporate Reputation: 12 Steps to Safeguarding and Recovering Reputation (2008). 2012. “Reputation Matters” <http://www.europeanbusinessreview.com/?p=356>)

On August 29, 2005, America suffered its biggest disaster since September 11, 2001. Hurricane Katrina hit the north-central Gulf Coast of the United States at 6:10 a.m. with a particularly catastrophic blow to New Orleans. Levees were soon breached, and the South would never be the same. Thousands of homes were destroyed, leaving tens of thousands of people instantly homeless. As the waters overwhelmed coastal communities, television stations broadcasted dramatic, heart-wrenching images-citizens stranded on roofs waving in desperation to search helicopters, living rooms filled with shattered remains of what were once their homes, and families standing on highways searching for missing loved ones. Distressing media coverage continued day in and day out, for weeks, and then for months. Even after the waters had long since receded, personal, emotional stories continued to make news. Media accounts of unredeemable flood insurance, undelivered trailers for the homeless, and mounting tales of emotional and physical distress seemed to be never ending. The government response at city, state, and federal levels was considered grossly inadequate from the start. Evacuation before and after the hurricane hit was poorly planned and sluggish. Little thought was given to the special needs of the infirm and helpless. Some policemen failed to show up for work. Corpses floated unclaimed amidst the debris in the Lower Ninth Ward. As evacuees squeezed into the Superdome and reports of looting increased at an alarming rate, then U.S. President George W. Bush miscalculated the urgency of the crisis and remained vacationing at his Texas ranch. Several days later, the president visited the suffering port city in a flyover on Air Force One. At an impromptu press conference at the New Orleans airport runway after the flyover, the president praised the head of the Federal Emergency Management Agency (FEMA), Michael Brown. However, Brown would ultimately be the target of more criticism in the coming months than perhaps anyone else involved in Katrina’s aftermath. Only as it became increasingly clear that FEMA was unable to provide adequate transportation, food, and shelter did President Bush fire Brown and replace him with an experienced emergency disaster relief admiral. Three years later, the hard-hit Gulf Coast is still getting back on its feet. Although after-effects of Katrina continue to linger, signs of progress are now visible. Permits and licenses for New Orleans vendors for the 2007 Mardi Gras were up 310 percent from 2006. A Kaiser Family Foundation study based on New Orleans residents found that some progress was being made in restoring basic services, reopening schools, launching new businesses, and growing its population. Hurricane Katrina will forever stand as an example of how the American government failed to address one of the country’s most serious modern-day catastrophes. Most every American agreed that assistance for Hurricane Katrina victims was received too little, too late. The majority of Americans (58 percent) in a CBS News poll disapproved of the government’s handling of relief efforts one week after the hurricane hit. Response to Katrina by the federal government, FEMA, and state and local government was regarded by most Americans as poor (77, 70, and 70 percent, respectively). Equally disturbing, Americans believed that the disaster’s response had worsened the already battered overseas image of the United States. Worse still, the American public was left with the impression that the administration’s response to the deadly hurricane reflected a lack of compassion and management ability. Hurricane Katrina had a powerfully negative impact on perceptions of President Bush and his cabinet. The government’s missteps served as a negative tipping point for the Bush administration’s reputation. Its poor handling of the disaster took on epic proportions and was viewed as intrinsic to the core of the administration’s character. Each mistake generated a whole new set of problems. It was not just the administration’s failure to anticipate and react in time to the deadly hurricane, but also the magnitude of this failure that led to a material loss in the president’s and his administration’s reputation. The traditional rally of support for a president during the aftermath of a national emergency such as the September 11 terrorist attacks was nowhere to be found. Coupled with growing dissatisfaction with the war in Iraq, popular support for the administration reached a point of no return. Unfortunately for President Bush, the administration’s past and future actions would thereafter be viewed through the lens of another devastating event. With no appropriate and effective reputation recovery program for the handling of Hurricane Katrina and the continuing violence in Iraq, the November 2006 midterm Senate, House, and gubernatorial elections were all but preordained. Both houses of Congress gained Democratic majorities, thereby demonstrating just how irreparably damaged the administration’s reputation, and that of the political party it represented, had become. This is not to say that local political issues did not play a role in Hurricane Katrina’s devastation. New Orleans Mayor Ray Nagin and Louisiana Governor Kathleen Blanco were both heavily criticized for not ordering New Orleans residents to evacuate early enough. Emergency evacuation plans were implemented less than one day before the hurricane hit, and many people were unable to find safe routes out of the city. Reputation Advantage As the Hurricane Katrina episode shows, reputation matters. Reputation means how positively, or negatively, a company or similar institution is perceived by its key stakeholders-the people or entities that the company or institution relies on for its success. For many for-profit companies, typical stakeholders might include customers, employees, suppliers, or financial analysts. For governments or political entities such as the Bush and now President Obama administrations, stakeholders are, above all, the electorate.

Empirically failed response to Hurricane Katrina devastated US global image

Hartford Courant 6 (Hartford Courant is a Tribune Newspaper website for the Connecticut area. 8/27/6 “In New Orleans, Yes They Can” http://articles.courant.com/2006-08-27/news/0608270084\_1\_disaster-response-natural-disaster-victims)

FEMA's inept performance immediately after the storm, President Bush's failure to convey the urgency of the moment, and poor decisions made on the local and state levels exposed a lack of preparedness that is not easily forgiven, especially after so much time and money have been pumped into beefing up domestic security. Failure to get food and water promptly to survivors, to keep the peace and to provide basic medical services for stranded victims cost lives. Played out on television news worldwide, the inability of the government to respond to a predicted natural disaster eroded the nation's trust in its leaders to keep them safe and harmed America's image abroad.

**Soft power is key to multilateral cooperation -- solves climate, disease, crime, and terrorism**

**Nye, Professor of International Relations, Harvard, ‘04**

**[Joseph S., “Soft Power and American Foreign Policy,” Summer 2004, Political Science Quarterly, Volume 119,**

**Issue 2; page 255, proquest, download date: 9-21-07]**

Power depends on context, and the distribution of power differs greatly in different domains. In the global information age, power is distributed among ¶ countries in a pattern that resembles a complex three-dimensional chess game. On the top chessboard of political-military issues, military power is largely ¶ unipolar, but on the economic board, the United States is not a hegemon or an empire, and it must bargain as an equal when Europe acts in a unified way. ¶ And on the bottom chessboard of transnational relations, power is chaotically dispersed, and it makes no sense to use traditional terms such as unipolarity, ¶ hegemony, or American empire. Those who recommend an imperial American foreign policy based on traditional military descriptions of American power ¶ are relying on woefully inadequate analysis. If you are in a three-dimensional game, you will lose if you focus only on one board and fail to notice the other ¶ boards and the vertical connections among them-witness the connections in the war on terrorism between military actions on the top board, where we ¶ removed a dangerous tyrant in Iraq, but simultaneously increased the ability of the al Qaeda network to gain new recruits on the bottom, transnational ¶ board. Because of its leading edge in the information revolution and its past investment in military power, the United States will likely remain the world's ¶ single most powerful country well into the twenty-first century. French dreams of a multipolar military world are unlikely to be realized anytime soon, and ¶ the German Foreign Minister, Joschka Fischer, has explicitly eschewed such a goal. But not all the important types of power come out of the ¶ barrel of a gun. Hard power is relevant to getting the outcomes we want on all three chessboards, but many of the transnational ¶ issues, such as climate change, the spread of infectious diseases, international crime, and terrorism, cannot be resolved by ¶ military force alone. Representing the dark side of globalization, these issues are inherently multilateral and require ¶ cooperation for their solution. Soft power is particularly important in dealing with the issues that arise from the bottom ¶ chessboard of transnational relations. To describe such a world as an American empire fails to capture the real nature of the¶ foreign policy tasks that we face.

#### **Thus the plan: The United States federal government should substantially increase its investment in commonality, compatibility, and interoperability of geospatial data for transportation infrastructure in the United States.**

#### **Contention 4 is solvency**

#### **The plan achieves information interoperability crucial for preparedness**

Williamson 2

(Ray A. Williamson, Research Professor of International Affairs and Space Policy in the Space Policy Institute of The George Washington University http://www.isprs.org/proceedings/XXXIV/part1/paper/00082.pdf)

Finding One: Local, state, and federal responses to the events of September 11, 2001, illustrate the need to develop more effective coordination among emergency response agencies in their use of geospatial data and information. Many geospatial tools already exist but cannot be used effectively because of weak or nonexistent mechanisms for sharing critical information. Workshop participants concluded that although many of the necessary geospatial tools were already in place, their utility was limited in large part because of structural or institutional barriers. Accordingly, the nation needs new institutional policies to support improved transportation security and coordinated emergency response. Meaningful progress toward preparing the nation for both prevention and response to attacks on elements of the nation’s transportation networks requires the harmonized effort of agencies across the federal government: among federal, state and local governments, as well as among government and private sector geospatial data providers and analysts. One of the strengths of a geospatial information systems approach is that one comprehensive database for a region can support many different applications. As a result, the geospatial data and information developed for other uses can also support improvements in transportation security. Finding Two: Remote sensing technologies would be a major asset in identifying and mitigating transportation security weaknesses throughout the United States. The U.S. transportation system as it now exists possesses many vulnerabilities that could have been avoided with careful advanced planning and attention to security. Remote sensing can assist both retrospective analysis and future planning. Future planning should emphasize the decentralization of facilities and the redundancy of their functions. In this way individual facilities, whether pipeline corridors or roadway conurbations, are reduced in their critical role in the network and their attractiveness as targets. Finding Three: The United States needs to develop an accessible geospatial infrastructure corresponding to, and compatible with, the nation’s transportation infrastructure. The resulting geospatial information infrastructure should reflect all elements of the transportation infrastructure, and include detailed information on location, structure, and condition. This information should be broadly accessible to transportation and security professionals. Improving the interoperability of transportation geospatial databases should be a high level priority. Currently, in attempting to use transportation databases, users often experience limitations on availability, integration, and use of geospatial data and technologies for transportation security. Information regarding the nation’s transportation infrastructure is widely dispersed in a variety of databases, in a multiplicity of formats and software. Many of these databases are not readily interoperable, making the task of using them especially difficult in times of crisis. Compounding this concern is a lack of suitably interoperable technical standards, both for data sharing and for operating hardware and software. The Federal Geographic Data Committee (FGDC) has published standards that, if adopted by state and local users, would resolve concerns regarding technical interoperability. However, policy restrictions on access to critical data and information in time of emergency can be more serious impediments to interoperability. Finding Four: Research, development, testing, and evaluation should focus on creating products specifically designed to fit transportation security needs for all aspects of the terrorist challenge. All elements of the terrorist threat to the nation’s critical transportation infrastructure need to be met; remote sensing and other geospatial tools should be developed to the fullest extent of their potential. In addition, first responders and transportation planners need to be much more aware of the capabilities of remote sensing imagery products to supply critical information necessary for managing emergencies of all types. Sensor data, whether from imaging or non-imaging sensors, should be integrated with existing geospatial databases. *RECOMMENDATIONS 1. The Federal Emergency Management Agency, working with the U.S. Department of Transportation, the U.S. Geological Survey, and the U.S. Army Corps of Engineers should develop guidelines for federal, state, and local entities to share transportation-related geospatial information in support of coordinated planning and response to terrorist threats*. Effective planning for, and response to, terrorist attacks will require the various affected agencies at all levels of government to be able to share critical information quickly and efficiently. Current data sharing policies at all levels often impede effective information sharing. 2. The U.S. Department of Transportation should lead an effort to develop an accessible geospatial transportation information infrastructure corresponding to, and compatible with, the nation’s transportation infrastructure. Each element of the transportation infrastructure can be characterized in a geospatial database. The totality of such databases would constitute a geospatial information infrastructure reflective of the nation’s transportation infrastructure. The Department of Transportation should join the efforts of the FGDC and other organizations to establish interoperability standards for geospatial transportation information. Such standards should be promulgated throughout federal, state, and local transportation entities. REMOTE SENSING AND TRANSPORTATION SECURITY Pecora 15/Land Satellite Information IV/ISPRS Commission I/FIEOS 2002 Conference Proceedings 3. Remote sensing experts should look for ways to apply geospatial information methodologies developed for other uses to strengthen the nation’s ability to protect its critical transportation infrastructure. For example, both geospatial analysis of urban infrastructure and evacuation plans for natural disasters can assist in the developing methods to strengthen critical transportation infrastructure. These and other sources of knowledge should be mined for their potential contribution to protecting transportation infrastructure. 4. The U.S. Department of Transportation, working in conjunction with other federal agencies, state and local transportation authorities, the universities, and the private sector, should develop new methods of remote sensing analysis in support of critical transportation infrastructure. The workshop fully endorsed the utility of remote sensing technologies in the effort to improve transportation security. However, it also noted that much more should be done to support the necessary research. Future progress will require not only additional funding for research, but also a coordinated approach to reduce duplication and redundancies.

#### **Our federal signal is key**

National Space Society ‘11

(National Space Society, The National Space Society (NSS) is an independent, educational, grassroots, non-profit organization dedicated to the creation of a spacefaring civilization. Founded as the National Space Institute (1974) and L5 Society (1975), which merged to form NSS in 1987 (see merger proclamation), NSS is widely acknowledged as the preeminent citizen's voice on space. NSS has over 12 thousand members (and more supporters) and over 50 chapters in the United States and around the world. The society also publishes Ad Astra magazine, an award-winning periodical chronicling the most important developments in space. , 2011, http://www.nss.org/legislative/positions/spacedevelopment.htm)

Unfortunately, it seems that we simply are not sufficiently attending to these great opportunities. Some badly needed capabilities are not being developed. National leaders aren't calling attention to these potential industries. And scant attention is being paid to developing innovative policies that will promote the next generation of such revolutionary space applications. The nation's response to Sputnik was not just Project Apollo and the human spaceflight program, but was also the development of civil, commercial, and military uses of space that are now major contributors to our nation's and the world's safety and well-being. Nurtured by federal investments and sound policy decisions, we have developed space industries worth hundreds of billions of dollars each year that have provided significant value to the nation. But this is only the beginning. We must recognize that our nation's role in the opening of the space frontier must not be limited by lack of foresight and imagination. We have only begun to emerge as a space-faring civilization. There is truly an entire universe out there for us to develop for the common good. The U.S. is the leader in the practical applications of space to meet the needs of Earth, but we will soon lose that role if we do not address the apparent lack of focus and policy innovation. We must as a nation come together, and embrace the great opportunity that waits in space for those who build on what prior generations gave us. By taking these relatively simple and efficient steps (visible endorsement, appropriate policies, and focused investment), the federal government can help create new products and services for the people of the world and improve the effectiveness of many government functions that use space. In the process, we will create new industries, develop jobs of tomorrow and help ensure U.S. leadership in this critical segment of the global economy.

#### **The aff allows federal agents to train and coordinate state and local officials**

National Research Council ‘03

(National Research Council, Steering Committee on Space Applications and Commercialization

Using Remote Sensing in State and Local Government: Information for Management and Decision Making, 2003,

http://www.nap.edu/openbook.php?record\_id=10648&page=50)

The Federal Government as a Consumer of Data Because of its constitutional and legislative responsibilities for broad national and regional policy, the federal government imposes many types of data requirements on state and local government to help it meet these responsibilities. The 1990s saw an increasing number of data mandates issued by the federal government. Federal agencies required data from state and local governments for a wide array of projects, including mapping wetlands and floodplains and conducting inventories of vacant lands and natural resources. These data requirements can often be met most effectively through the use of remote sensing and other geospatial data and information technologies. However since federal data mandates are not often accompanied by appropriate funding, local governments tend to view them as an added staffing and budgetary burden. Workshop participants gave examples of how federal data mandates can drive local governments to develop new data and information capabilities such as the mapping of urban forests in Baltimore. These new capabilities can in principle contribute to the overall development and advancement of technical skills in the public sector. According to workshop participants, however, competing demands on local government are so great and the budget limitations so severe that the next step, using newly acquired remote sensing technical skills for other public sector management and decision making purposes, is often not taken. Instead, the local government response to federal data mandates may be isolated in a single local agency, and neither the technical capabilities required to meet the federal requirements nor the data obtained for this purpose are transferred to other agencies of the local government. Participants in the workshop said that federal data requirements are often passed down to lower levels of government without much consultation or even understanding of state and local capabilities. As a result, local government officials are forced to respond to requirements that are set without their input. Although they recognize that these requirements are the result of legitimate federal policy priorities and needs, local officials said that small alterations in federal information needs could, in many instances, make it easier for them to meet these needs with less budgetary stress. Local officials also told the steering committee at the workshop that it would be helpful if federal government agencies would provide technical training to meet data mandates. Economies of scale in training might permit federal agencies to do this at less cost than if each local government unit on its own were to devise or identify the training necessary to meet federal requirements.

Geospatial information services key to access infrastructure

Vijayaragavan et. al 12

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Abstract - During the past five decades, natural hazards such as floods, earthquakes, severe storms and tropical cyclones, droughts, wild land fires, and also manmade disasters such as Nuclear disaster, oil spills, and terrorist attacks have caused major loss of human lives and livelihoods, the destruction of economic and social infrastructure, as well as environmental damages. Disaster reduction is both an issue for consideration in sustainable development agenda and a cross cutting issue relating to social, economic, environmental and humanitarian sectors. These important features have to analyze and there is a need to study. Though, in recent years the Open GIS technology standards have been developed by several agencies, which provide the basis for utilization of geographic information services, also gives an opportunity for data interoperability, data integration and data sharing between different emergency management agencies, However finding suitable services and visualization of geospatial information for decision makers is still a crucial task. Objective of this paper is to assess the state of art literature review in different methodologies of utilizing geospatial technology in managing both natural and manmade disasters dedicated by different authors and also to find new direction in this important area.