

**Key Policy Issues**  
**NASI Policy Research Symposium**

# Preparing for Catastrophes in the Workplace

James W. Macdonald  
Navigant Consulting, Inc.  
National Press Club, Washington DC  
October 12 2006



# Overview

## **Risk Management Goals & Options**

## **Quake & Terrorism Threat Assessment**

## **Commercial Private Sector Progress Since 9/11**

## **Conclusions**

Note: The opinions expressed in this presentation are the personal opinions of the presenter and do not express or imply the opinions of Navigant Consulting, Inc.

# Risk Management Goals



## Pre-Loss

- Efficiency
- “Tolerable Uncertainty”
- Legal Requirements
- Ethical Conduct

## Post-Loss

- Survival
- Operations Continuity
- Earnings Stability
- Ethical Conduct
- Growth

***What is “tolerable uncertainty” in the aftermath of 9/11?***

Source: CPCU/IIA, Foundations of Risk Management and Insurance,  
Eric A. Wienig, First Edition September 2005, p. 3.4-3.7

# Risk Management Options



- Exposure Avoidance
- Loss Prevention
- Loss Reduction
- Separation
- Duplication
- Diversification
- Risk Transfer

Source: Wiening, *ibid*: p.3.20-22

# Overview

**Risk Management Goals & Options**

**Quake & Terrorism Threat Assessment**

**Commercial Private Sector Progress Since 9/11**










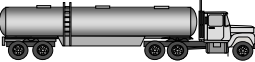
**Conclusions**

# What are the Threats? - RMS: Likelihood of Macro Attack Modes

## Macro Attacks Only, Worldwide

Worldwide  
Observed  
Apr 02-Jun 06

RMS Model  
for U.S.

	2 ton or larger Truck Bomb	2%	2%
	Truck Bomb	6%	8%
	<b>Car Bomb</b>	<b>37%</b>	<b>37%</b>
	Package Bomb	30%	10%
	<b>Total Bombs</b>	<b>75%</b>	<b>57%</b>
	<b>CBRN</b>	<b>0%</b>	<b>5%</b>
	<b>SAM missiles/RPG or standoff weapons</b>	<b>6%</b>	<b>17%</b>
	Aircraft Impact Attack	0%	6%
	Armed Attack/Assassinations	2%	2%
	Sabotage of Infrastructure/industrial plants	2%	3%
	Conflagration Attack	1%	2%
	Other	14%	10%

Source: Risk Management Solutions, Inc. (RMS)

# Where? - Is terrorism a “big city problem”?

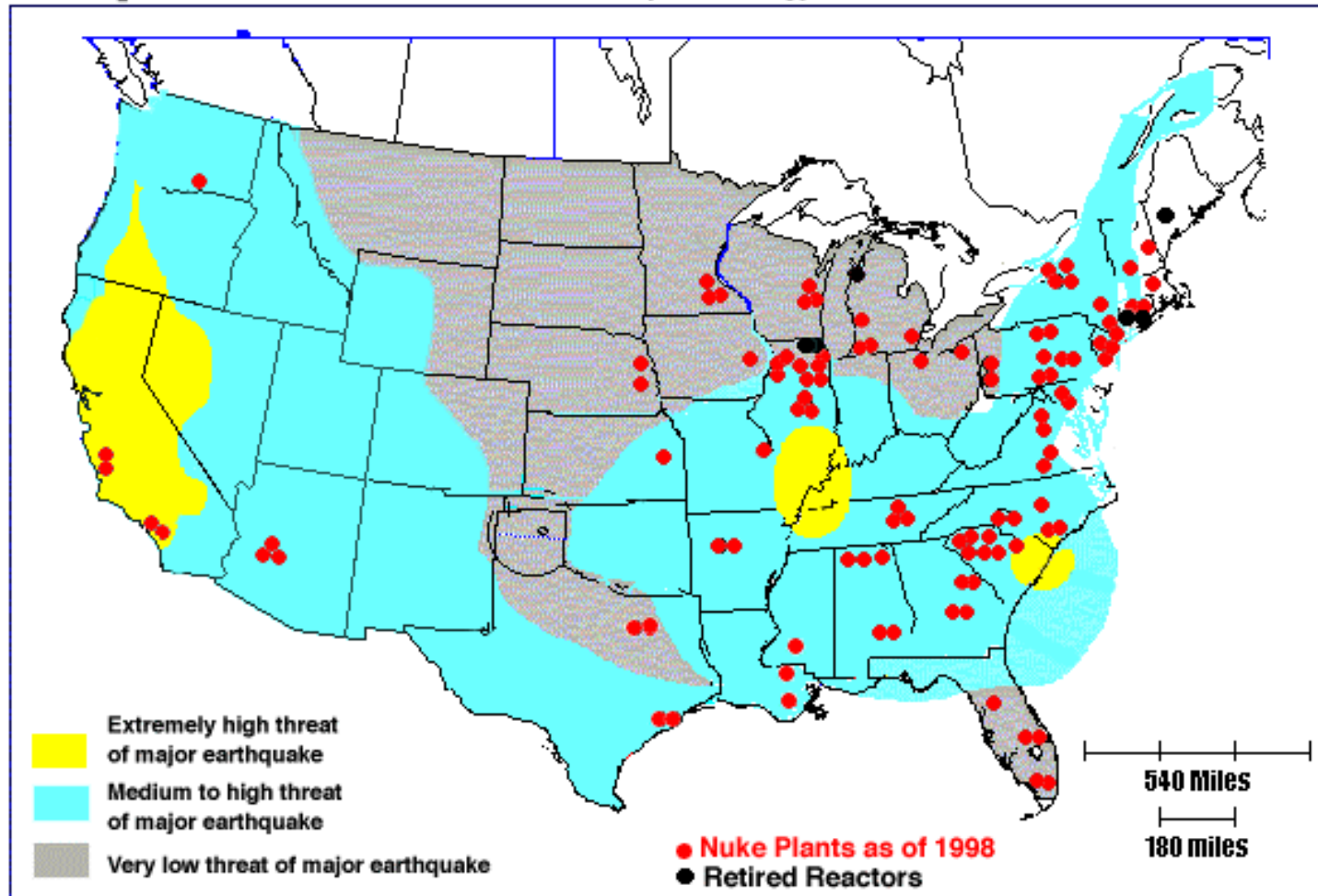
County	Relative Risk
New York County (Manhattan)	13.02
Cook County (Chicago)	4.12
Los Angeles County (LA)	3.01
San Francisco County (SF)	1.24
Washington DC	1.00
Harris County (Houston)	.65
Suffolk County (Boston)	.41
King County (Seattle)	.40
Philadelphia County (Philadelphia)	.30
Dallas County (Dallas)	.30

Source: Partnership for NYC, *New York City and Terrorism Insurance in a Post 9/11 World*, Schwabish & Chang September 2004: Based on a report from AIR Worldwide, p. 9.

# Earthquakes & Nuclear Accidents or Attacks: Almost every state is exposed...

## Map B

Earthquake Zones with Nuclear Reactor Locations  
Source: USGS and Dept. of Energy





# What are the Workers Compensation lessons learned from 9/11?

WC 9/11 Claims as of Mid-2004 (NYC)



Source: GAO, September 11: Federal Assistance for New York Workers' Compensation Costs, GAO-04-1013T September 8 2004, p. 12. Excludes claims by volunteer workers.

## On-going Concerns:

- **Post-Loss Victims:** An estimated 40,000 rescue workers were exposed to caustic dust and airborne toxic pollutants
- **Physical:** Almost 70% of WTC first responders now “showing new or worsened respiratory symptoms” developed from exposures at ground zero.
- **Psychological:** Stress / Depression (PTSD) – new claims emerging.
- **Compensation:** No assurance than another Victim's Compensation Fund will be authorized.

[Source: Mt. Sinai Study, September 2006, See: “Large Study of WTC Responmders Finds Persistent Health Problems in Many” at http://fusion.mssm.edu/media/content.cfm?story\\_num=298](http://fusion.mssm.edu/media/content.cfm?story_num=298)

## How Much? Workers Compensation losses from a Manhattan attack dwarf the estimated \$1.8 billion 9/11 WC loss...

Attack mode	WC Loss	Fatalities
Sarin gas (1,000 kg ground dispersal)	\$ 7 bn	7,000
Dirty Bomb (15,000 curries of cesium 137)	\$200 m	Few
Anthrax (1 kg anthrax slurry)	\$26 bn	40,000
Anthrax (75 kg anthrax slurry)	\$74 bn	120,000
Nuclear Power Plant Sabotage	\$15 bn	1,000
Nuclear bomb (tactical 5 kt)	\$200 bn	300,000

Sources: Risk Management Solutions, Inc. Quoted from *Seeds of Disaster, Roots of Response, How Private Action Can Reduce Public Vulnerability*, Cambridge University Press, September 2006, p.318

**RMS estimates that a synchronized multiple truck bomb attack in Chicago could produce a Workers Compensation, Life, & Health total loss of \$6 billion...**



Alfred P. Murrah Building,  
Oklahoma City 1995

<b>Losses from a Hypothetical Terrorist Attack</b>	
<b>Type of Loss</b>	<b>Est. Insured Losses</b>
Property & infrastructure damage	\$8 bn
Workers Compensation, Life & Health	\$6 bn
Direct Costs of Business Interruption	\$10 b
<b>Total Direct Costs</b>	<b>\$24 bn</b>
Fatalities	5,000
Total treated at outpatient clinics	70,000
Hospitalized with serious injuries	4,500

Source: RMS, Risk & Insurance: Top Ten Risks – Terrorism, April 2004

# Overview

**Risk Management Goals & Options**

**Quake & Terrorism Threat Assessment**

**Commercial Private Sector Progress Since 9/11**

**Conclusions**

# Progress Since 9/11: Pre-Loss & Post-Loss Improvements

## **Pre-Loss:**

- Improved perimeter security, e.g., Concrete set-off blocks (mainly in public sector)
- New terrorism specific construction standards.
- At some locations, improved visitor screening
- Deployment of physical and human assets to multiple sites, reduced travel, increased “virtual” workplaces (work-from-home)
- Enhanced IT Firewalls and Network Security
- DHS “Anti-Terrorist Technology” certification (and liability limitation) encouraging private sector development of new services and products

## **Post-Loss (applicable to any extreme event):**

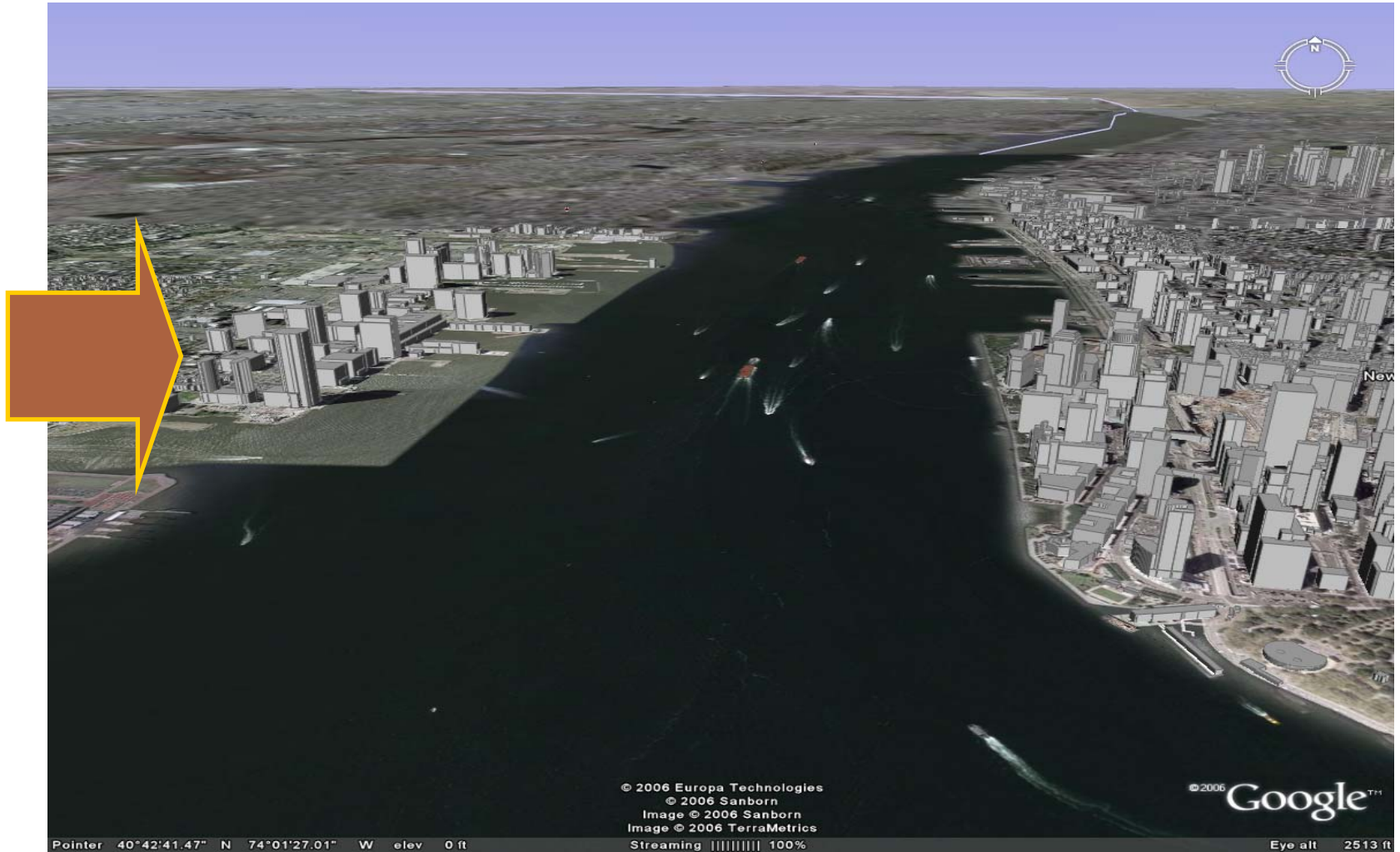
- Emergency Action Plans & Egress Drills
- Employee Disaster Kits
- Improved Business Continuity Planning (“BCCM”)

# Exposure Avoidance & Separation: New Locations of former WTC Tenants

New Location	Total New Square Ft.	Representative Tenant
Midtown Manhattan	3,642,500	Empire Blue Cross Blue Shield
New Jersey	481,451	Citigroup / Solomon Smith Barney
NYC, Outer Boroughs	414,430	Verizon
Other than NY, NJ, CT	149,000	Cantor Fitzgerald
Connecticut	149,000	Citigroup / Solomon Smith Barney
NY State Other than NYC	22,000	Morgan Stanley

Source: Controller NYC, *One Year Later: The Fiscal Impact of 9/11 on New York City*, William C Thompson September 2002, p. 11

# Asset & Staff Separation: Jersey City's Growing Skyline





# Loss Reduction: Employee Workplace Disaster Kits



This sample kit includes many of the recommended items on the DHS site for business and personal preparedness. See:

<http://www.ready.gov/business/downloads/checklist.pdf>



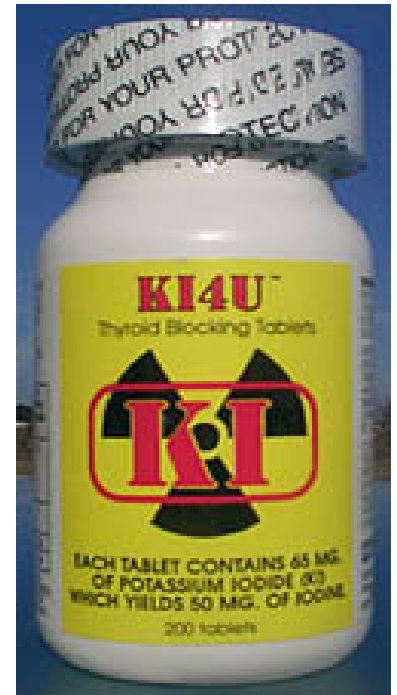
# Beyond the Basics?

- Gas masks, "Aerial Egress Chutes", Potassium Iodide Pills...  
*What is "prudent" in our new world of risk?*



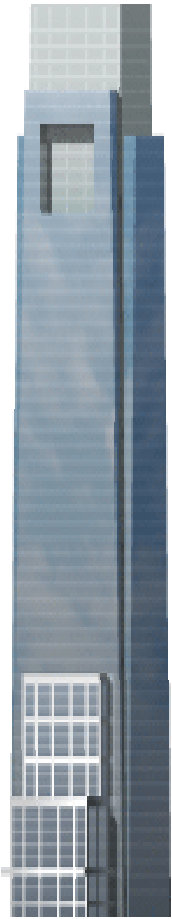
**Aerial Egress Chute**

**World War I: French Horse  
& Soldier wearing gas  
masks**



**Potassium Iodide  
Pills**

# Safer Workplaces: New terrorism specific construction standards...



- The American National Standards Institute (ANSI) in concert with the National Fire Protection Association (NFPA) has issued new guidelines for premises terrorism preparedness in NFPA 1600 (ed. 2004), NFPA 730 (Premises), and NFPA 731 (Security System Installation)
- The General Services Administration (GSA) has issued PBS100.1, Facilities Standards for the Public Buildings Service, with Chapter 8 providing design criteria for blast resistance, progressive collapse, and chemical, biological and radiological attacks.
- In September 2005, the National Institute of Standards & Technology (NIST) issued an extensive assessment of the WTC building collapse (NCSTAR 1) expected to immediately impact building codes for new high-rise structures. See: <http://wtc.nist.gov/NISTNCSTAR1CollapseofTowers.pdf>
- Similar initiatives have been taken by American Society for Testing and Materials (ASTM) referenced in many building codes, the American Society of Mechanical Engineers (ASME), the Department of Defense and other organizations. See FEMA 429 (12/03) at: <https://www.fema.gov>

# Overview

**Risk Management Goals & Options**

**Quake & Terrorism Threat Assessment**

**Commercial Private Sector Progress Since 9/11**

**Conclusions**

# Conclusions: More improvement is needed - December 2005 “Final Report” of 9/11Commission

## EMERGENCY PREPAREDNESS AND RESPONSE

- **Provide adequate radio spectrum for first responders** F
- **Establish a unified Incident Command System** C
- **Allocate homeland security funds based on risk** F
- **Critical infrastructure risks and vulnerabilities assessment** D
- **Private sector preparedness** C

*“National preparedness standards are only beginning to find their way into private sector business practices. Private sector preparedness needs to be a higher priority for DHS and for American businesses.”*

Source: 9-11 Public Discourse Project, Final Report on 9/11 Commission Recommendations, December 5 2005 Available from: [www.pdp.org](http://www.pdp.org)

# Conclusions: Does America need mandatory, minimum national preparedness standards?

- **Private Sector at increased risk:** Many assessments conclude that the significant “hardening” of government and military targets has shifted risk to “soft” private sector targets.
- **The “perception of risk” problem:** Recent history shows that most people believe they are not at risk to terrorism or natural catastrophes and hesitate to invest in mitigation or preparedness.
- **The “information sharing” issue:** Although Information Sharing Access Centers (ISACs) offer some assistance to critical infrastructure companies, terrorism risk information is mostly classified.
- **Are nation-wide “new rules” needed?** To ensure more consistency and clarity to private and public sector extreme event response, some argue that new “rules” are essential, e.g., certain events like a cat 3 to 5 hurricane should arguably be immediately defined as an “incident of national significance” to enable a proactive federal response.\*

\* See “*Rules rather than Discretion: Lessons Learned from Hurricane Katrina*”, Kunreuther and Pauley, September 2006, working paper, available at: <http://opim.wharton.upenn.edu/risk/library/>

## Conclusions: Workers Compensation requires a continued federal backstop....

- Workers Compensation is a unique commercial line in that in that (a) in almost all states it must be purchased, (b) no state allows WC insurers to exclude or limit coverage for terrorism, and (C) there is no set policy limit on a WC coverage part – the loss equals whatever the given state benefits require the insurer to pay.
- In 2005, almost 50% of the total Workers Compensation market was written by 109 specialty WC insurers with an average capital base less than \$120 m\*. This means that even a *small truck bomb* explosion = Insurer solvency risk.

\* SOURCE: *Best's Aggregates & Averages*, 20006 Edition, QAR, p. 150

# Conclusions: Workers Compensation requires a continued federal backstop....

In a 2005 TRIA discussion hosted by the American Enterprise Institute, the Congressional Budget Office's Douglas Holtz-Eakin stated that if the TRIA program is allowed to expire:

*“We still have an issue with the nuclear, chemical, biological and radiological attacks which would not be covered and a substantial policy dilemma with workers compensation...there may still remain a need for some form of TRIA-like mechanism with worker's compensation...”\**

Source: Seeds of Disaster, *ibid*: p. 317

# Overview

**Risk Management Goals & Options**

**Quake & Terrorism Threat Assessment**

**Commercial Private Sector Progress Since 9/11**

**Conclusions**