

*This presentation uses representative data
to show the analysis and results of a
Digital Sandbox Risk Baseline engagement*

Risk Baseline Executive Summary

Anytown Urban Area

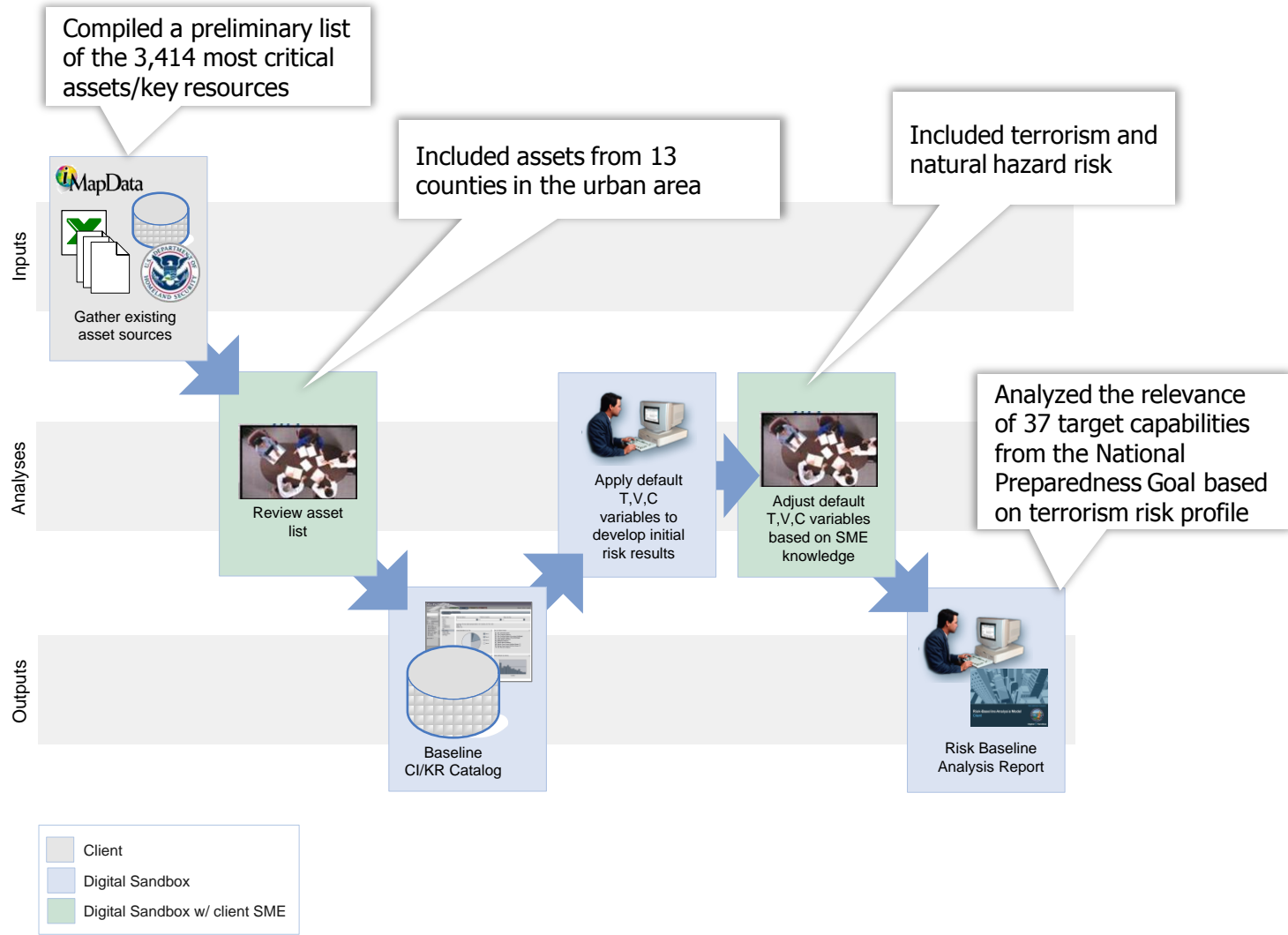
Agenda

- ▶ Scope
- ▶ Risk Context
- ▶ General Approach
- ▶ Detailed Analysis
 - Risk by Jurisdiction
 - Risk by Sector
 - Risk by Sub-Sector
 - Highest-Risk Assets
 - Total Terrorism Risk vs. Natural Hazard Risk
 - Threat Scenario Risk Profile
- ▶ Threat Scenarios
- ▶ Risk Informed Most Relevant Target Capabilities
- ▶ Summary Findings and Recommendations

Every Digital Sandbox customer starts with a Baseline, which provides initial asset, threat, risk, and capability assessments and analysis

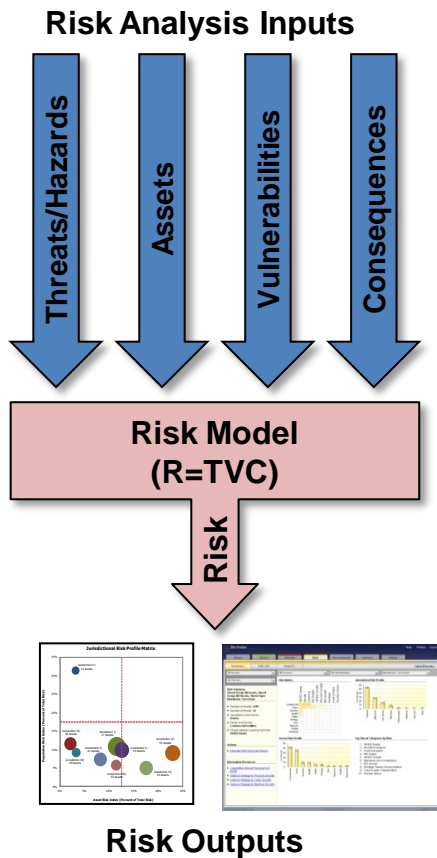
Scope of the Analysis

Digital Sandbox analysts, working with customer subject matter experts, compile critical infrastructure data from local sources and public records



Risk Baseline Analysis: A Scalable Foundation

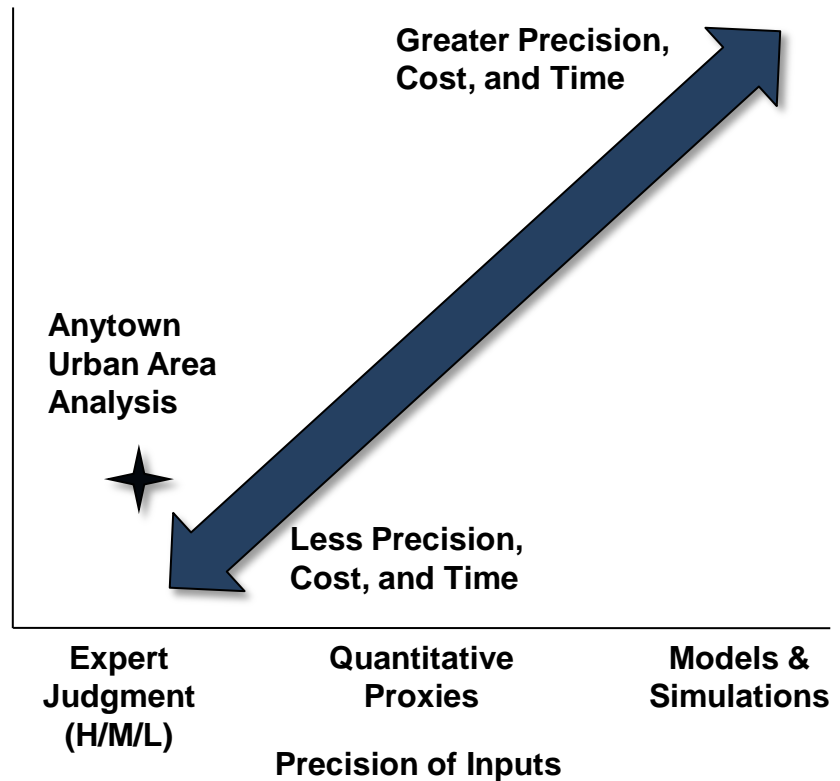
Digital Sandbox' scalable methodology allows customers to see results early, then build an increasingly rigorous process for analyzing risks



Complete List

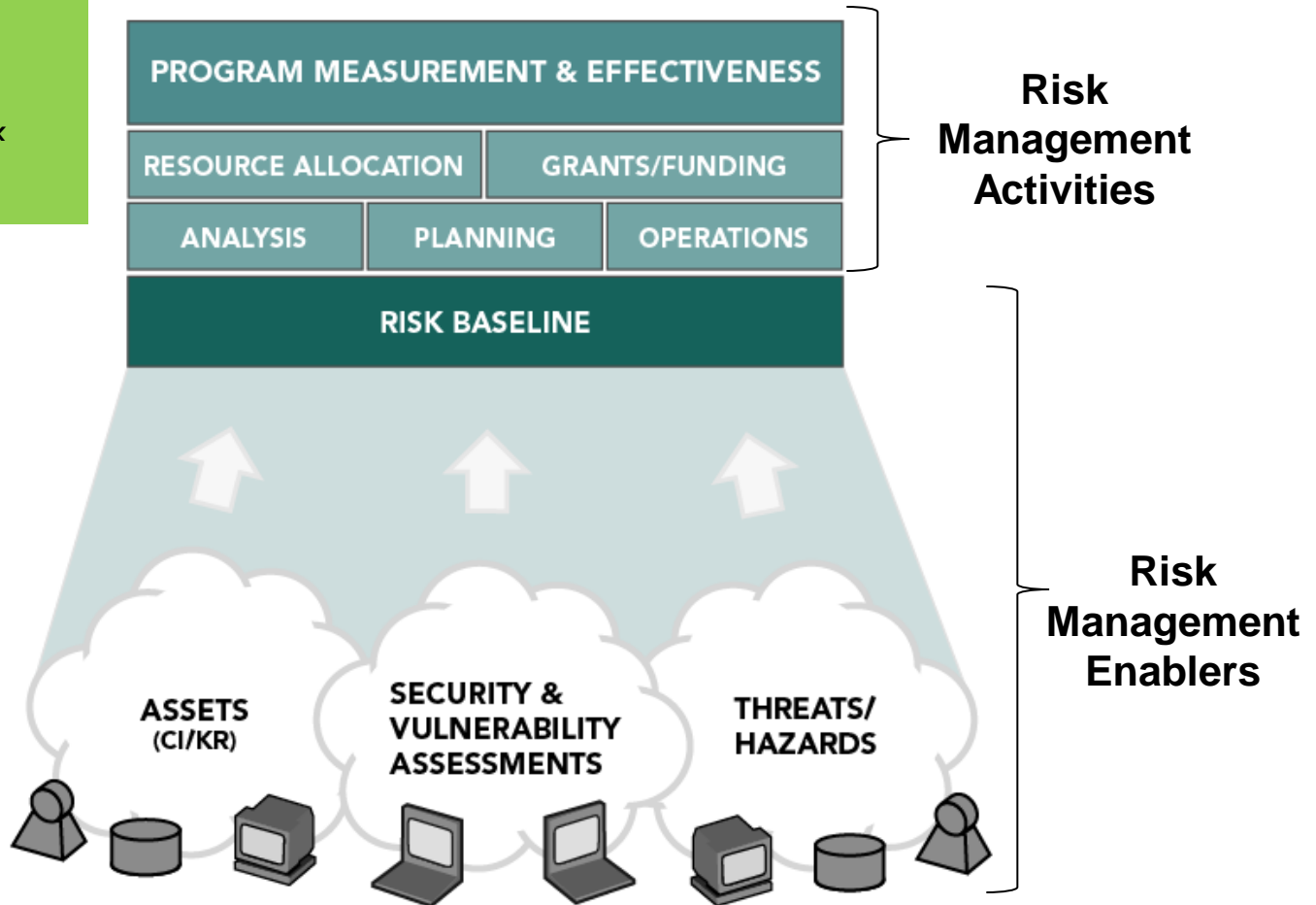
Number of Scenarios (CIKR Assets, Hazards)

Most Critical Only



Risk Baseline Analysis: Enables Risk Management

Digital Sandbox' goal is to establish a solid platform for customer teams to perform ongoing analytic risk management

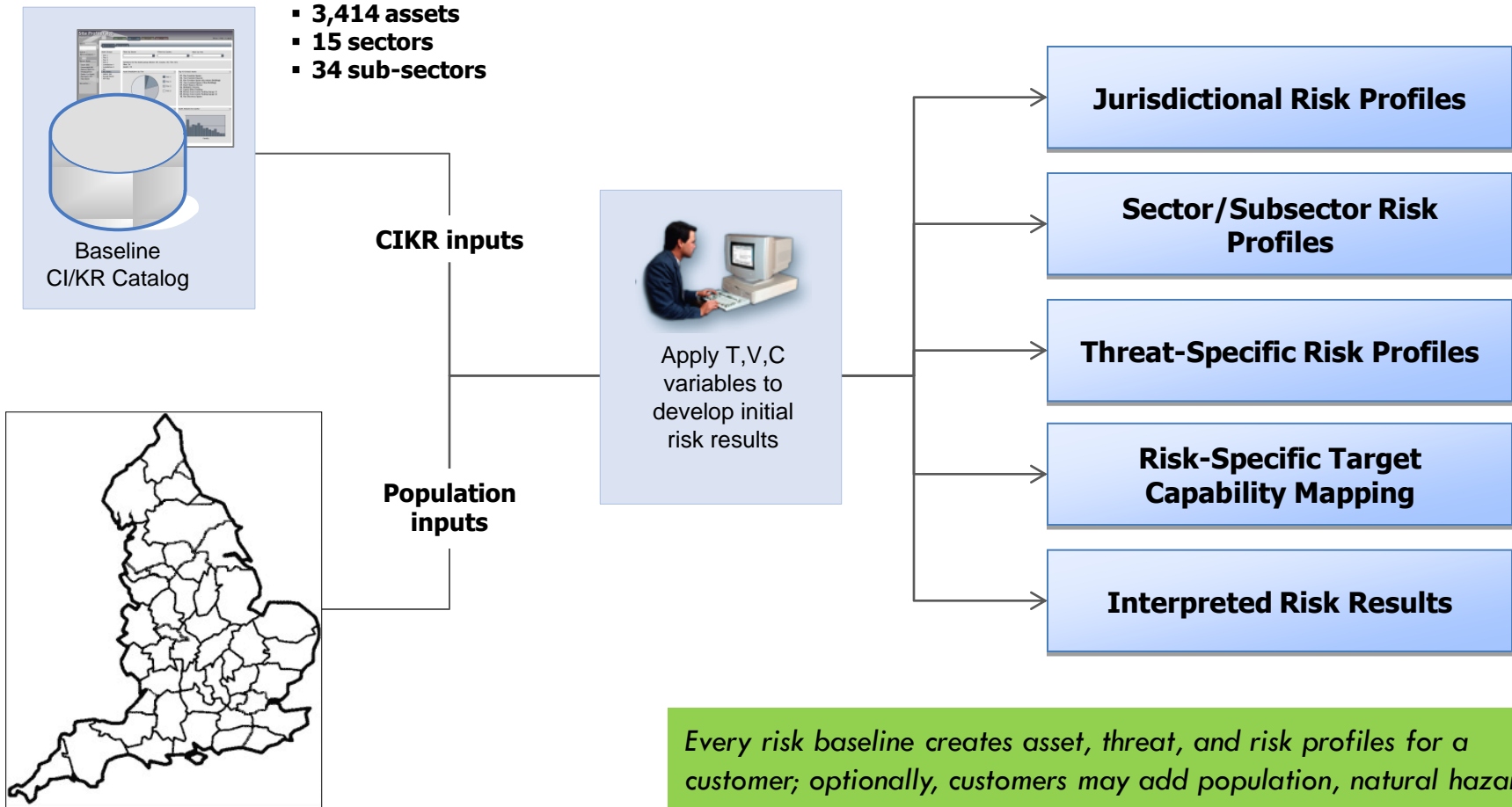


Overview – Anytown Risk Context

- ▶ Anytown is a major population center and tourist destination
 - City has 20 million residents make it the 3rd most populous city in the nation. It is also one of the largest cities in the country with an area of over 50 square miles.
 - Area concerts host over 5 million visitors each year. Major college and bowl games bring thousands of visitors per event.
- ▶ Area is a major production center for oil, natural gas, and hydroelectricity
 - The Anytown Urban Area is home to 30% of the nation's petrochemical manufacturing capacity and nearly half of its oil refineries.
 - The Gatsby Natural Gas Field is one of the five biggest in the Western Hemisphere, with a capacity of 50 trillion cubic feet.
 - The El Gibbs Dam has a total capacity of nearly 10,000 MW and has become a prominent tourist attraction, with 4 million annual visitors.
- ▶ The area has a history of natural disasters
 - Anystate is a major recipient of hurricanes, with five Category 3 storms and two Category 4 storms striking the mainland since 2004.
 - State data has recorded 45 tornado landings and more than 180 severe thunderstorm incidents in the region in the last half century.
 - Periodic ice storms typically cause major transportation difficulties and crop damage.

Every customer is unique. While Digital Sandbox uses a standard methodology and proven, patented software applications for all our clients, we tailor each installation to its specific local risk context.

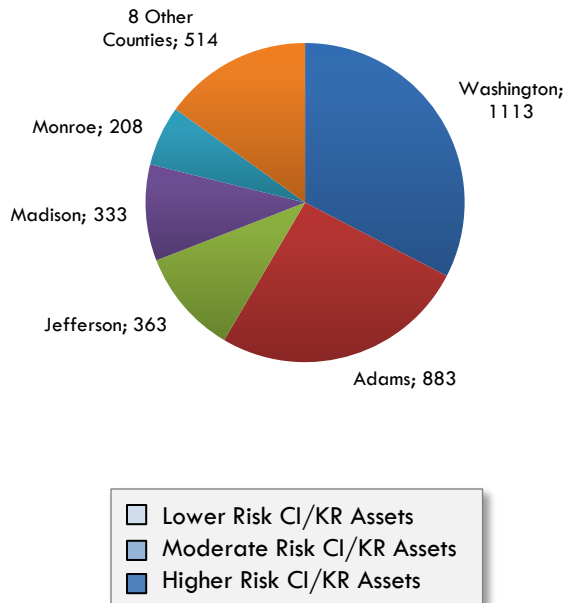
General Approach to Analysis



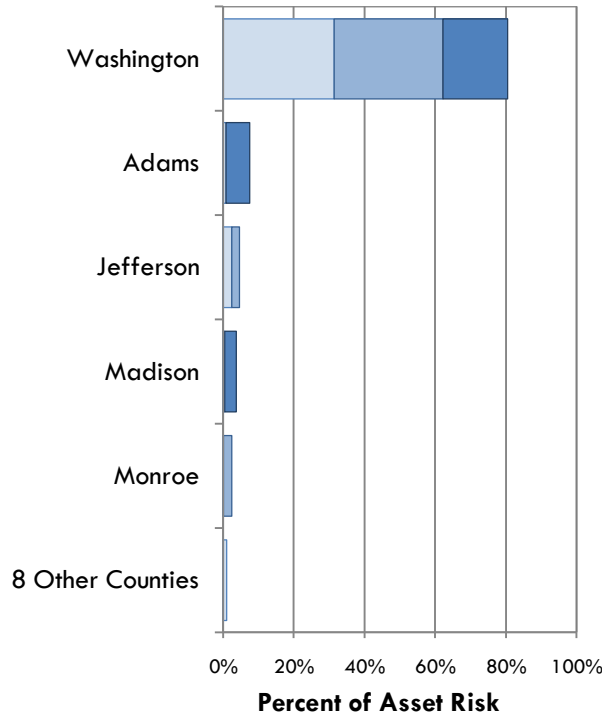
Every risk baseline creates asset, threat, and risk profiles for a customer; optionally, customers may add population, natural hazards, and target Capability analysis. The next 7 charts show sample results.

Higher Risk Concentrated in Washington County

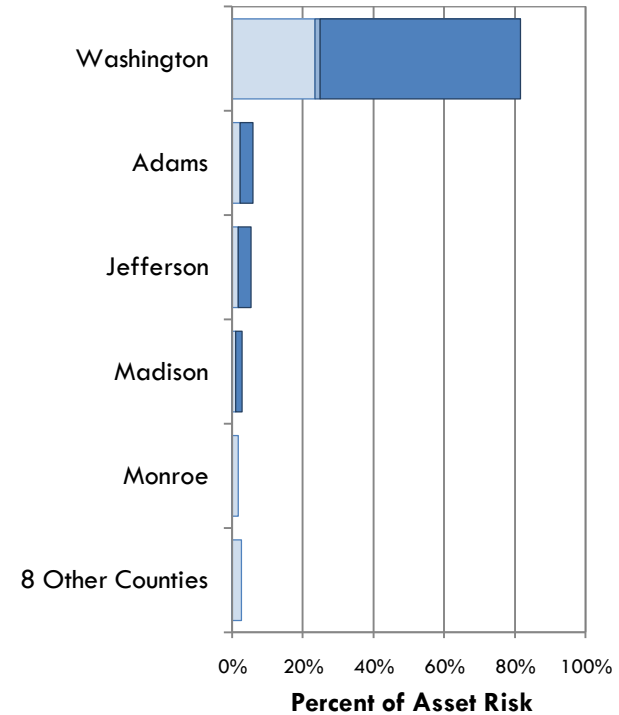
Distribution of Assets by County



Distribution of Terrorism Risk by County



Distribution of Natural Hazard Risk by County

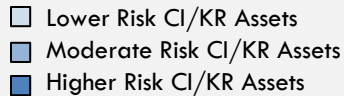
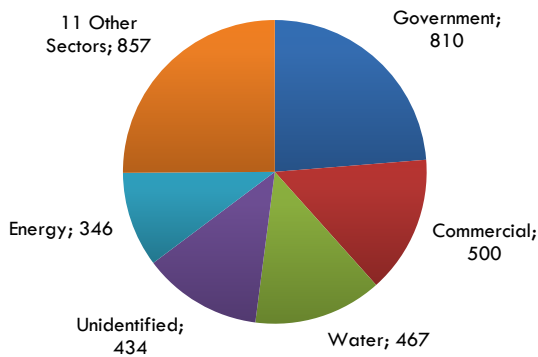


Findings

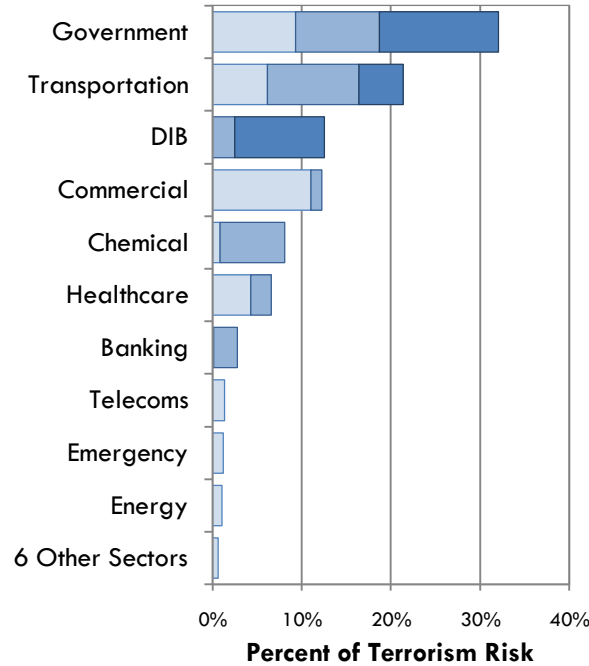
- Washington contains virtually all of the asset risk in the region. Although it has the most assets, it has a disproportionately higher amount of risk.
- Three higher terrorism risk sites are located outside of Washington. All three serve as Defense Industrial Base (DIB) sites, meaning they may benefit from federal funding to enhance capabilities.

Higher Risk in Government and Transportation Sectors

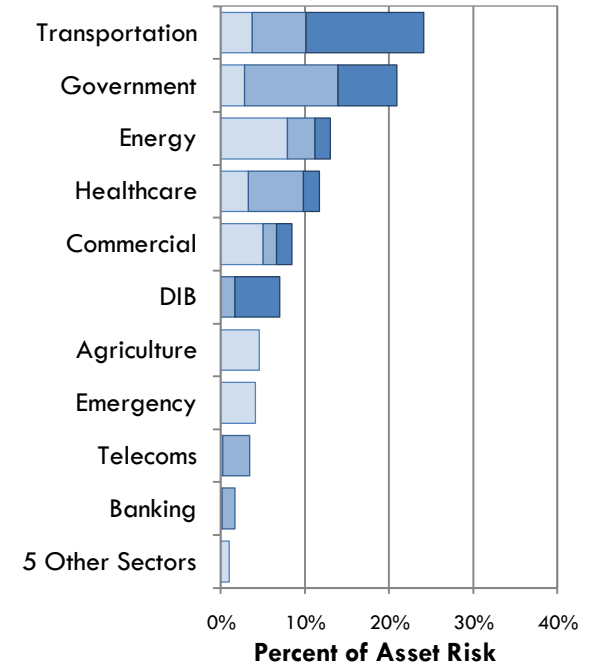
Distribution of Assets by Sector



Distribution of Terrorism Risk by Sector



Distribution of Natural Hazard Risk by Sector

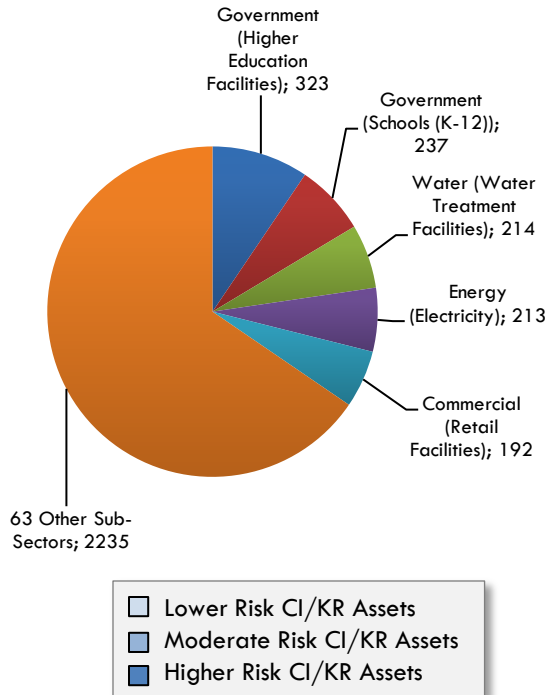


Findings

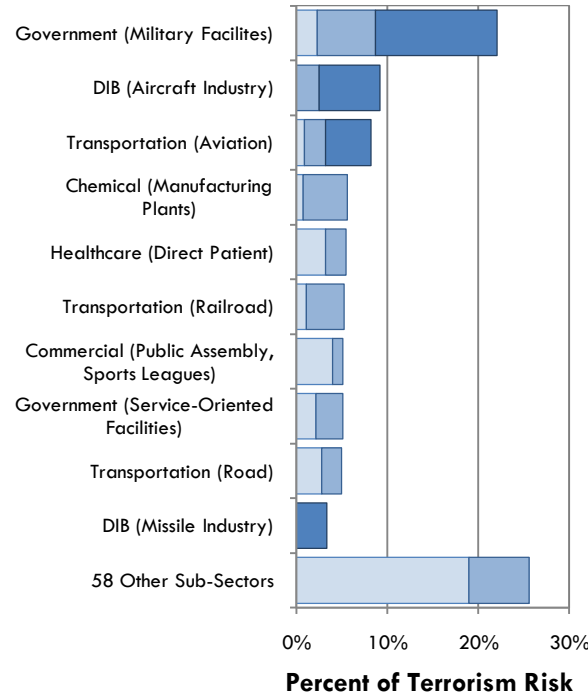
- Asset risk is mainly concentrated in the Government and Transportation sectors. Most natural hazard risk for these sectors comes from high and moderate-risk assets.
- The Government and DIB sectors are driven by multiple assets with high Mission and Psychological consequences, and medium-high Economic and Health consequences.
- The Healthcare, Energy, and Telecom sectors contain substantially more natural hazard risk than terrorism risk.

Natural Hazard Risk Spread Across Many Sub-Sectors

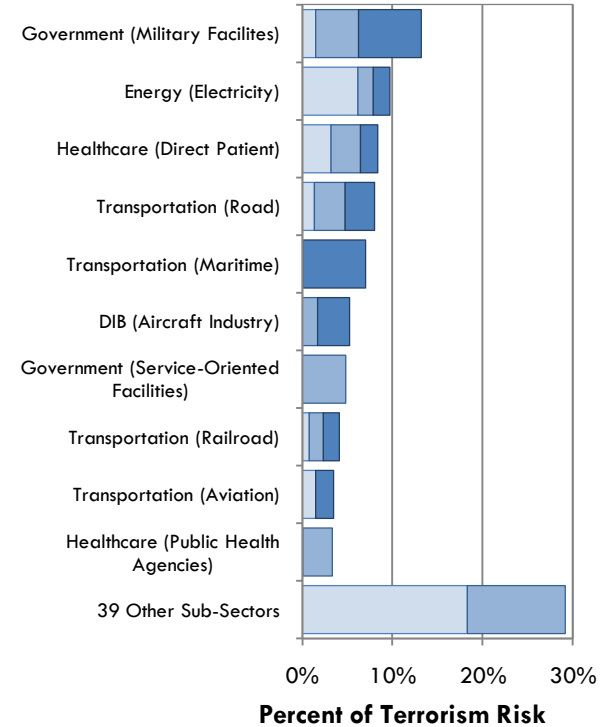
Distribution of Assets by Sub-Sector



Distribution of Terrorism Risk by Sub-Sector



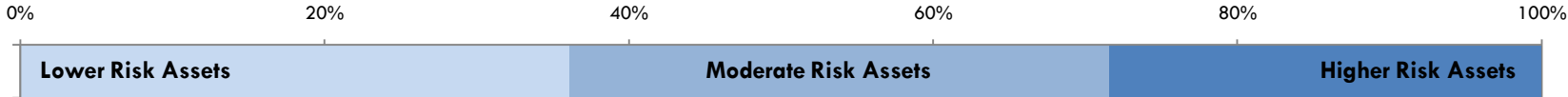
Distribution of Natural Hazard Risk by Sub-Sector



Findings

- One third of terrorism risk is located in military-related sub-sectors. Due to their cooperative purpose and geographic proximity, coordinated capabilities between Government (Military), DIB (Aircraft Industry), and DIB (Missile Industry) may be appropriate.
- The Anytown Urban Area is unique in that no sub-sector contains substantially more natural hazard risk than any other.

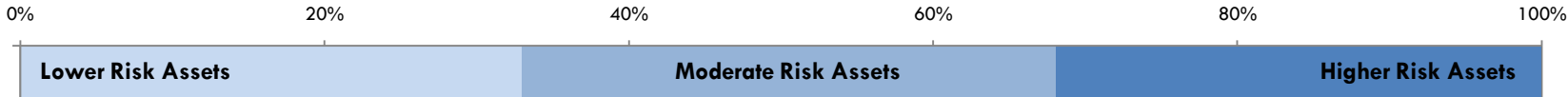
Many Assets Contain Large Amounts of Both Terrorism and Natural Hazard Asset Risk



3,389 Other Assets

Bering Sea Terminal	McCoy Polymer Production
Cash Stadium	More Chemical Holdings, Inc.
Commercial Chemical Suppliers	Myers Chemicals
Commercial Chemical Agency	National Aviation
Digital Sandbox -HQ	National Power Supply
Gatsby Bridge	Northeast Anytown Chemical
Grover Maintenance Complex	Northern Anystate University
Hallmark Railroad Bridge	University of Anytown
Harrison - Federal Aviation Admin.	US Marine Command
Harrison Federal Reserve Bank	

ALP International Airport
Lewis Field
Parsec Space Systems
Raven Commercial Center
Royal Industrial Alliance
United Chemical



3,376 Other Assets

American Express Center	Grover Maintenance Complex
AT&T Connection Tower	Harrison Federal Reserve Bank
AT&T Power Supply	Jackson County Laboratory
Baldwin Memorial	Kent Industries
Baldacci Bridge	National Aviation
Cash Stadium	Naval Airport
County Court Office	Naval Hospital
County Police Station	Northern Anystate University
Dietrich Operations Center	Truman Park
Folsom Tower	United Auto
Grant Health Department	Zycorp

AT&T Tower
ALP International Airport
Bering Sea Terminal
Ed Austin Marine Terminal
Gatsby Bridge
Hallmark Railroad Bridge
Lewis Field
Matrix Defense Systems
Mayday Hospital
McCoy Polymer Production
National Power Supply
Parsec Space Systems
Raven Commercial Center
Royal Industrial Alliance
United Chemical
US Marine Command

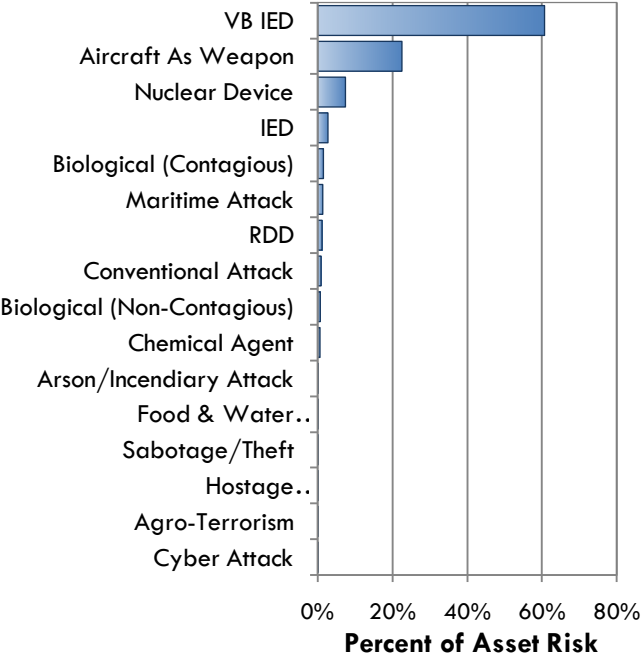
Findings

- Seventeen assets contain a high or moderate amount of both terrorism asset risk and natural hazard asset risk. Capabilities for these assets should mitigate both kinds of risk to ensure best protection.*
- Of these seventeen assets, six are in the Government sector, four are in the Transportation sector, and four are in the DIB sector.

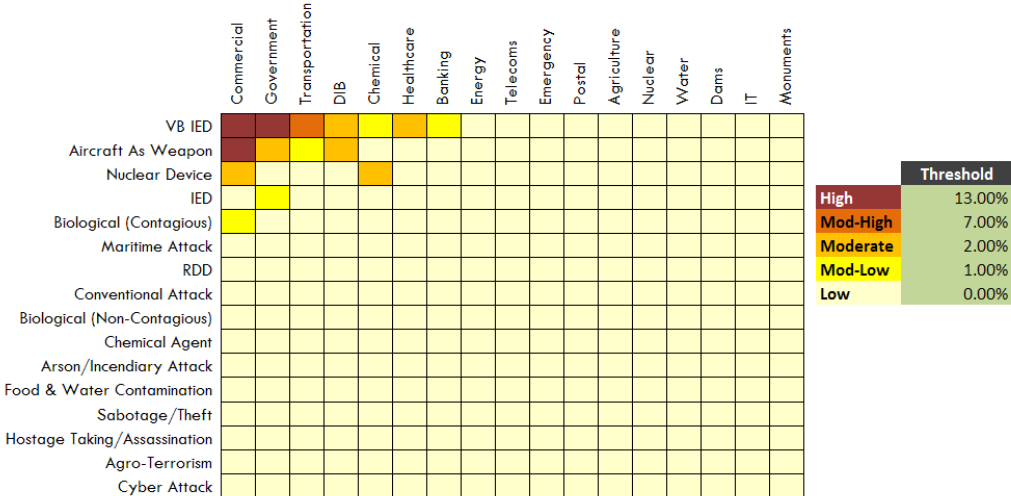
*Highlighted assets appear on both lists

Conventional Explosive Attacks Represent Greatest Terrorism Threat

Terrorism Threat Scenario Risk Profile



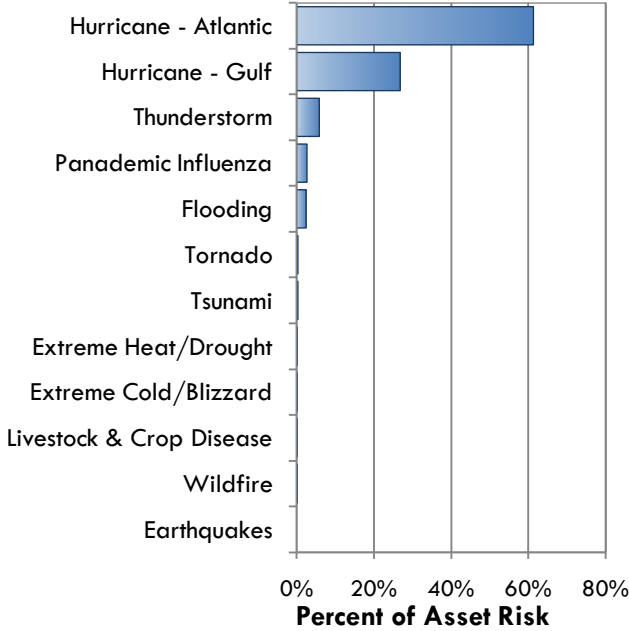
Terrorism Heat Map



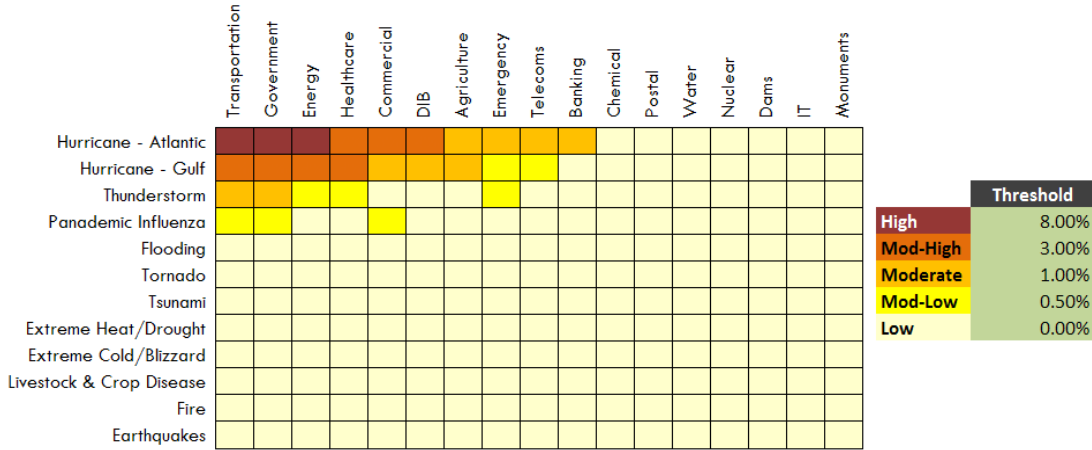
- Findings**
- Conventional explosive attacks (VBIED) account for the vast majority of terrorism asset risk. The required technology is relatively easy to produce, and such attacks are historically common. However, these attacks are potentially preventable with screening and barriers.
 - WMD attacks, including Aircraft as a Weapon, comprise a significant amount of the terrorism asset risk. Though less likely than explosive attacks, these scenarios are driven by higher consequences. WMD attacks are difficult to prevent or protect against, but capabilities for response to and recovery from such attacks that are deployable across the region could mitigate these consequences.
 - Though several key assets are vulnerable to a Maritime Attack, the vast majority of assets are not, which drives down risk due to this scenario. Conventional explosives, Nuclear Weapons, and Aircraft as a Weapon attacks can be levied against key maritime assets as well as virtually all other assets in the region.

Hurricane Hazards Dominate Risk to the Region

Natural Hazards Threat Scenario Risk Profile



Natural Hazards Heat Map

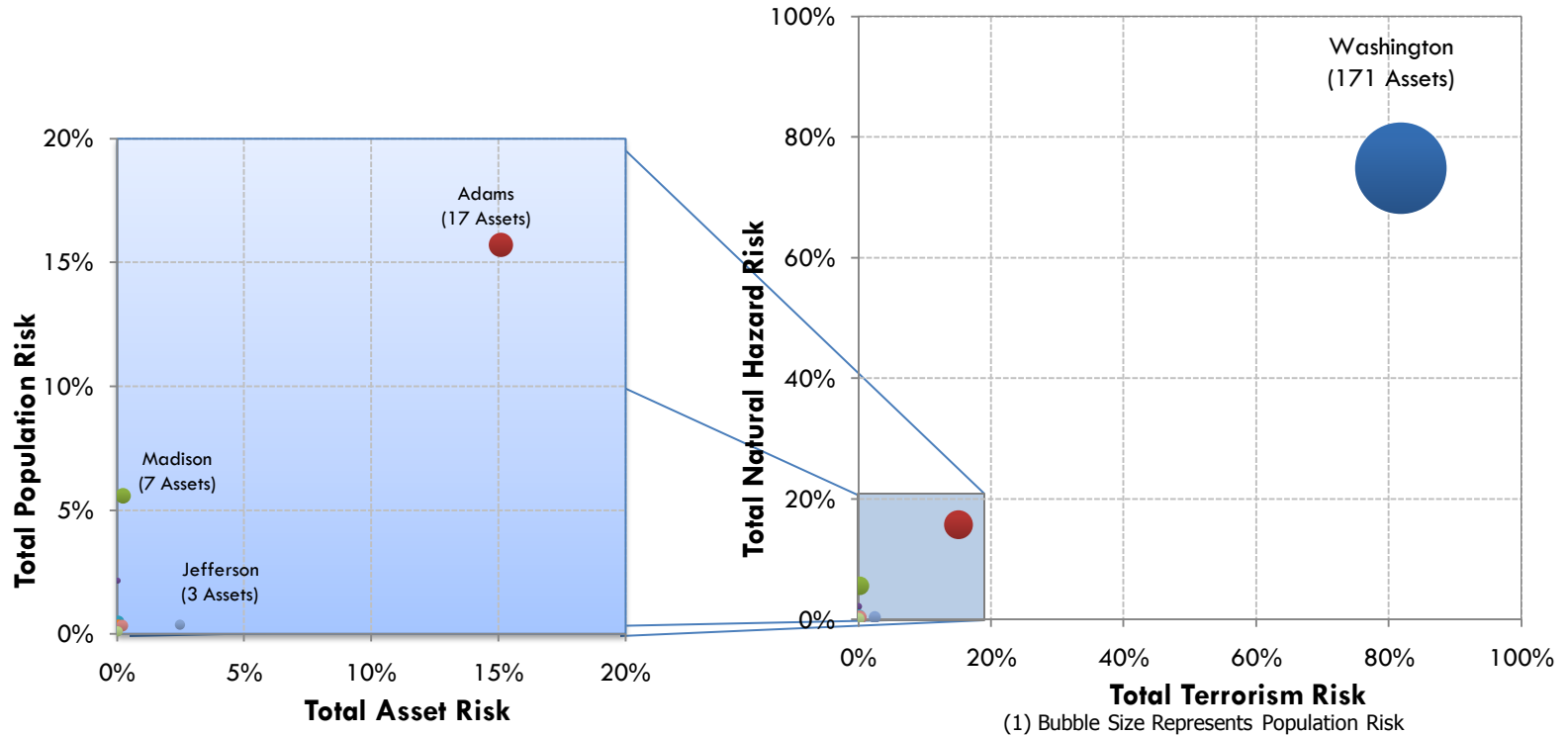


Findings

- Though relatively few hurricanes have struck Anytown, they frequently occur in and around Anystate and can cause significant consequences to assets across sectors. Atlantic hurricanes have higher risk due to their higher frequency in the region, and the higher amount of critical infrastructure located in counties on the coast.
- Wildfires are a threat to population, agriculture, and divert economic resources; however, they contain less risk to critical infrastructure. Critical assets are generally not located near major fire centers, and are likely closer to fire and rescue resources.

Asset and Population Risk Largely Concentrated In Washington

Distribution of Terrorism, and Population Risk by *County*



Findings

- In addition to its high asset risk, Washington also has the most population risk. This suggests the county has a higher population density, or the population lives closer to critical infrastructure.
- Half of Adams’s asset risk is from five hospitals in the county, suggesting Healthcare sector investment in the county could reduce county risk to expected levels.

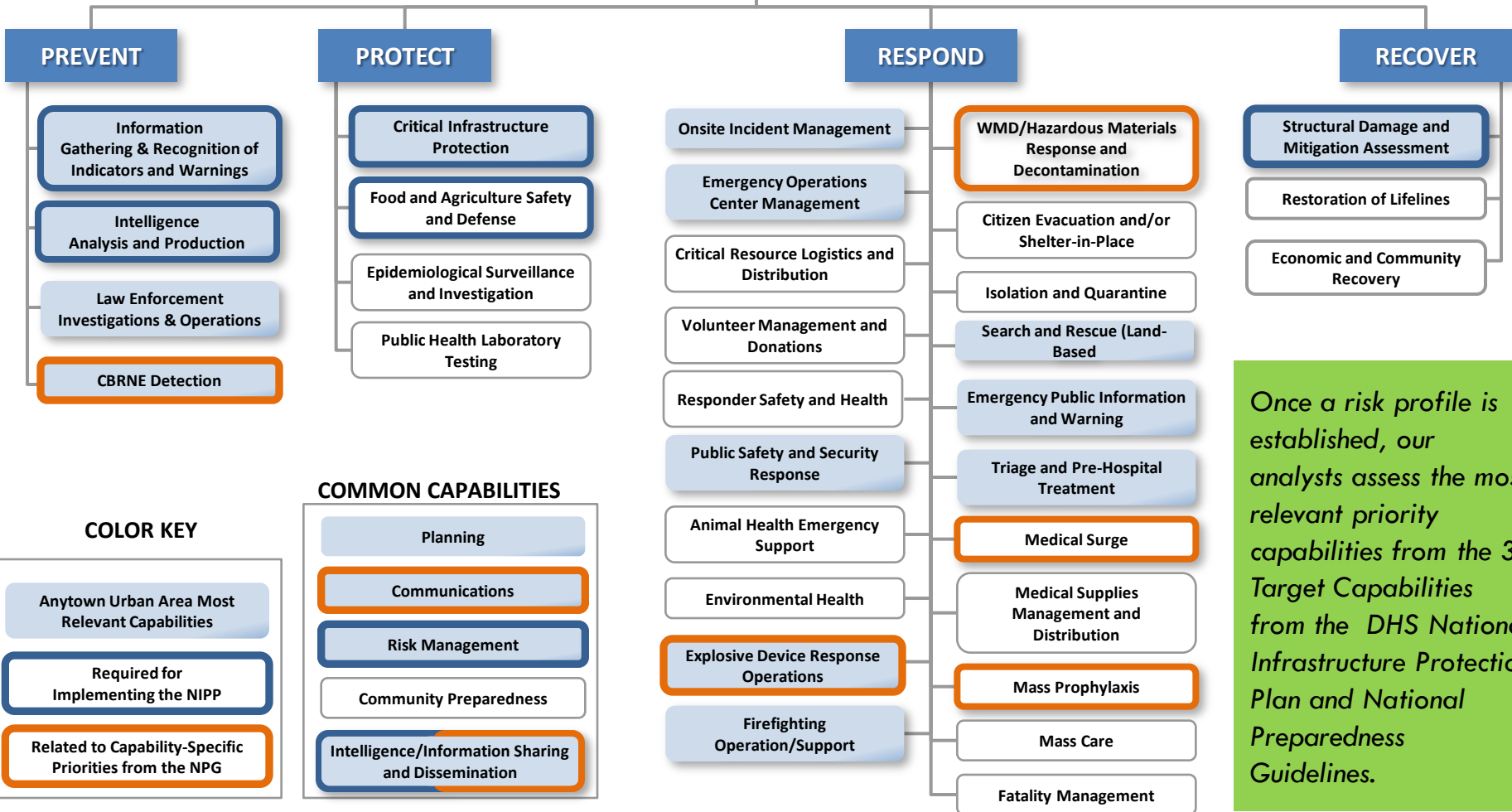
RBA Threat Scenarios

We consider all 15 National Planning Scenarios, plus six additional terrorism threat types and nine natural hazards

DSI Developed Scenarios	National Planning Scenarios
Agro-Terrorism	Biological Attack – Foreign Animal Disease; Biological Attack – Food Contamination
Biological (Contagious)	Biological Disease Outbreak – Pandemic Influenza; Biological Attack – Plague
Biological (Non-Contagious)	Biological Attack – Aerosol Anthrax
Food and Water Contamination	Biological Attack – Food Contamination
Chemical Agent	Chemical Attack – Blister Agent, Chemical Attack - Toxic Chemical Industry, Chemical Attack – Nerve Agent, Chemical Attack – Chlorine Tank Explosion
Cyber Attack	Cyber Attack
Improvised Explosive Device (IED)	Explosives Attack – Bombing Using Improvised Explosive Devices
Vehicle-Borne IED (VBIED)	Explosives Attack – Bombing Using Improvised Explosive Devices
Nuclear	Nuclear Detonation
Radiological Dispersal Device (RDD)	Radiological Attack – Radiological Dispersal Devices
Aircraft as a Weapon	Unaccounted for
Arson/Incendiary Attack	Unaccounted for
Conventional Attack	Unaccounted for
Hostage Taking/Assassination	Unaccounted for
Sabotage/Theft	Unaccounted for
Maritime Attack	Unaccounted for
Hurricane	Unaccounted for
Tornado	Unaccounted for
Flood	Unaccounted for
Severe Thunderstorm	Unaccounted for
Tsunami	Unaccounted for
Extreme Heat/Drought	Unaccounted for
Extreme Cold/Blizzard	Unaccounted for
Wildfire	Unaccounted for
Earthquake	Unaccounted for

DHS Target Capabilities List (TCL) – Relevant Capabilities

TAXONOMY OF NATIONAL PREPAREDNESS CAPABILITIES



Once a risk profile is established, our analysts assess the most relevant priority capabilities from the 37 Target Capabilities from the DHS National Infrastructure Protection Plan and National Preparedness Guidelines.

Summary Findings and Recommendations

Summary Finding I: Washington County is the Largest Opportunity for Risk Mitigation Investment.

- ▶ Washington requires substantial consideration due to its overwhelming shares of asset and population risk:
 - Funding for risk mitigation should be primarily directed to this jurisdiction.
 - Risk Management, Planning, Emergency Operations Center
- ▶ Capabilities are necessary in all jurisdictions:
 - These other areas may be less equipped to respond to such an incident due to their relative lack of critical infrastructure.
 - Regional planning, shared capabilities, and mutual aid agreements between local jurisdictions may address this risk.
 - Communications

Summary Finding II: Transportation and Commuting Trends of the Area are Uniquely Impacted.

- ▶ No single asset or sector stands out among Natural Hazard asset risk. Capabilities should impact multiple assets in highest risk sectors to best utilize resources. The Transportation sector demonstrates the need for coordination, as many area residents commute between jurisdictions.
 - Planning, Community Preparedness, Emergency Operations Center, Public Safety and Security Response, Emergency Public Information and Warning, Structural Mitigation and Damage Assessment
- ▶ Attacks or hazards in non-CI/KR heavy areas could still result in large human casualties; these areas may be less equipped to respond to such an incident due to their relative lack of critical infrastructure. Regional planning, shared capabilities, and mutual aid agreements between local jurisdictions are recommended.
 - Triage and Pre-Hospital Treatment, Urban Search and Rescue, Risk Management, Planning, Emergency Operations Center, and Firefighting/Operation Support

Summary Finding III: Military-related Sub-Sectors are Uniquely Positioned for Investment.

- ▶ The military presence and related industry make Anytown a unique target for terrorists. The similar functions of Military Facilities and various Defense Industrial Base facilities, plus existing experience in sharing of intelligence, provides a unique opportunity for improved Prevention capabilities.
 - Planning, Communications, Intelligence/Information Sharing and Dissemination, Information Gathering and Recognition of Indicators