# Appendix M: National Risk

## Overview

The SNRA is complemented by the Threat and Hazard Identification and Risk Assessment (THIRA) processes conducted at multiple jurisdictional levels.[1] THIRA is a common risk assessment process designed to help the whole community—including individuals, businesses, faith-based organizations, nonprofit groups, schools and academia and all levels of government—understand its risks and estimate capability requirements. The THIRA process helps communities map their risks to the core capabilities, enabling them to determine whole-community informed:

- Desired outcomes,
- Capability targets, and
- Resources required to achieve their capability targets.

At the national level, THIRA outputs provide the foundation for a range of other preparedness efforts within the National Preparedness System, including State Preparedness Reports (SPR) and the National Preparedness Report (NPR). At the jurisidictional level, the THIRA process informs a variety of emergency management efforts including emergency operations planning, mutual aid agreements, and hazard mitigation planning. Ultimately, the THIRA process helps communities answer the following questions:

- What do we need to prepare for?
- What shareable resources are required in order to be prepared?
- What actions could be employed to avoid, divert, lessen, or eliminate a threat or hazard?

The THIRA process consists of four steps:

1. **Identify Threats and Hazards of Concern:** Based on a combination of experience, forecasting, subject matter expertise, and other available resources, identify a list of the threats and hazards of primary concern to the community.

2. **Give the Threats and Hazards Context:** Describe the threats and hazards of concern, showing how they may affect the community.

3. **Establish Capability Targets:** Assess each threat and hazard in context to develop a specific capability target for each core capability identified in the National Preparedness Goal. The capability target defines success for the capability.

4. **Apply the Results:** For each core capability, estimate the resources required to achieve the capability targets through the use of community assets and mutual aid, while also considering preparedness activities, including mitigation opportunities.

## Analysis

For the 2015 SNRA, THIRAs from 2012 through 2014 were reviewed to identify the threats and hazards of greatest concern to urban areas, states, territories, and tribes across the Nation as reported in their THIRAs.
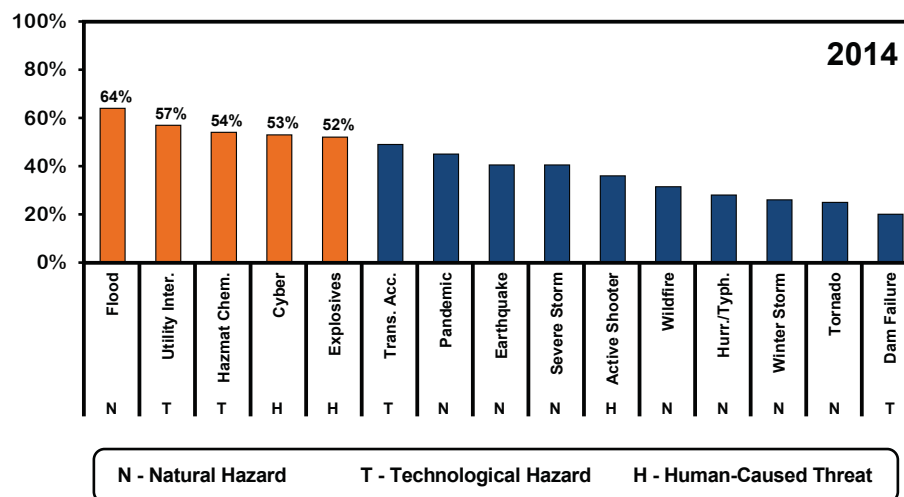
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[1] The THIRA process is completed by urban areas, states, tribal nations, territories, and the FEMA Regions.

**Added 2015**

- The 2014 THIRA analysis highlighted five threats and hazards frequently selected by a wide range of urban areas, states, tribal nations, and territories: Flood, Utility Interruption, Hazmat Release—Chemical, Cyber Attack, and Explosive Devices (see Figure M1).

- Flood, the most frequently identified hazard, was included by 64 percent of all contributing jurisdictions as a hazard of greatest concern.

- Year-over-year analysis indicates that the top five threats and hazards of greatest concern across jurisdictions remained largely consistent from 2012 through 2014, though in a slightly different order each year.

- In addition to the top five, other frequently identified threats and hazards throughout the three THIRA iterations include transportation accidents, human pandemic, and earthquakes. This reinforces that jurisdictions' perception of risk has not changed much since 2012.

The 2015 SNRA participants reviewed this data to identify potential national-level risks not previously identified in the 2011 SNRA.
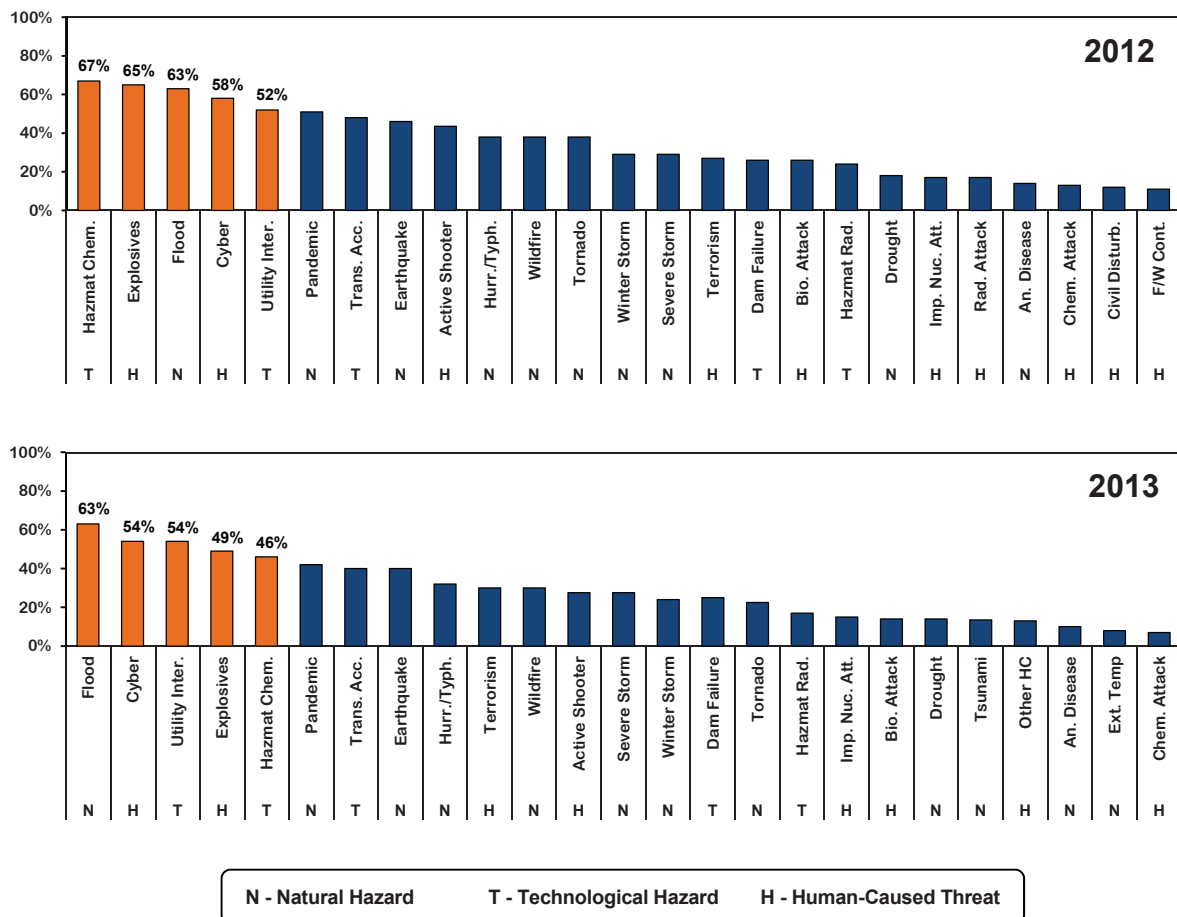
Figure M2 depicts the top 25 threats and hazards identified by all reporting jurisdictions across all groups (i.e., natural, technological, and human-caused) by year for 2012 and 2013.

**Figure M1: Most Frequently Identified Threats and Hazards in 2014 Jurisdictional THIRAs[2]**



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[2] While these findings do show trends across several different perspectives, they are not intended to create a ranking of threats and hazards. Likewise, they are not intended to be representative of all possible threats and hazards within the jurisdictions, as many jurisdictions utilize varying approaches to selecting threats and hazards for inclusion in their THIRAs.

**Figure M2: Top 25 Most Frequently Identified Threats and Hazards of Concern by Jurisdictions in 2012 and 2013[3]**



N - Natural Hazard          T - Technological Hazard          H - Human-Caused Threat

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[3] While these findings do show trends across several different perspectives, they are not intended to create a ranking of threats and hazards. Likewise, they are not intended to be representative of all possible threats and hazards within the jurisdictions, as many jurisdictions utilize varying approaches to selecting threats and hazards for inclusion in their THIRAs.

Added 2015

## *Threat and Hazard Identification and Risk Assessment: Capability Target Visualizations*

### Introduction

The SNRA provides a strategic view of risk to support the collective understanding of the full range of threats, hazards, and challenges facing the Nation. With this in mind, the SNRA project team analyzed the Threat and Hazard Identification and Risk Assessments (THIRA) received from jurisdictional partners to gain a better understanding of what capabilities requirements jurisdictions have identified and for which they are currently planning. The SNRA project team intends on comparing the effects identified across a broad range of risks from the SNRA, against the capabilities requirements identified in the jurisdictional THIRAs, to identify any correlations between national-level risk assessment and reported jurisdictional requirements. The following depicts the outputs from the THIRA analysis. The crosswalk between effects identified in the SNRA and jurisdictional capability requirements was not accomplished during the 2015 SNRA project and should be considered for future iterations of the SNRA.

### Background

The THIRA is a four-step common risk assessment process that helps the whole community understand its risks and estimate capability requirements. FEMA) Regions and jurisdictions identify risks in Step 1 of the THIRA process and map their risks to core capabilities to develop capability targets which define success. Capability targets provide a glimpse of the impacts regions and jurisdictions are preparing for across the Nation.

### Analysis

The following graphs depict representative targets* in terms of absolute capability for selected core capabilities. Each core capability graph depicts a sample subset of capability targets on a logarithmic scale and incorporates isoclines to show increasing levels of absolute capability requirements. Taken together, these graphs demonstrate the range of jurisdictional planning to deliver core capabilities across a wide range of threats and hazards.

*\*Representative targets depict a sample subset of submitted 2013 THIRA targets, as not all targets included comparable elements for analysis.*

### *Fatality Management Services*

Figure 6 represents the range of 2013 THIRA targets that focused on initiating fatality management services within a set period of time. While the number of fatalities varied widely, most jurisdictions defined their success as initiating fatality management within 24 to 72 hours. Figure 1 shows a majority of the represented targets included impacts of 10,000 fatalities or fewer, while a smaller subset suggested potential impacts of higher magnitudes. Several of
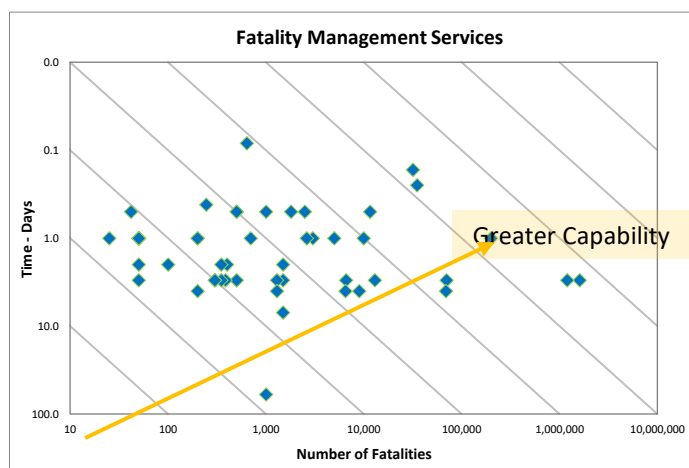


**Figure 7: Fatality Management Services**

**THIRA Capability Target Visualizations**

the targets with higher fatality impacts also identified time frames of 24 to 72 hours, indicating that these targets require greater capability to be successful.

### Mass Care Services

A majority of Mass Care Services targets indicated jurisdictions' desires to achieve their targets within 72 hours or fewer; however, a third of representative capability targets included a range of 5 days to 8 weeks as sheltering objectives can vary widely depending on requirements. Likewise, the range of people requiring sheltering services ranged from several dozen to several million, indicating that jurisdictions are planning for a wide scale of impacts. The variation in Mass Care Services targets is likely due to the wide range of sheltering impacts identified in Step 3 of the THIRA process, as impacts are linked to the size and complexity of threat and hazard scenarios identified in Step 1 of the THIRA process.



**Figure 8: Mass Care Services**

### Public Health and Medical Services

Figure 8 shows that approximately half of the represented Public Health and Medical Services targets included impacts of 10,000 to 100,000 people requiring treatment. The Public Health and Medical Services targets are correlated to time parameters, as they depict that the time required to achieve success increases with the number of people requiring treatment. Several targets requiring the most capability to be successful included longer-term actions, such as providing prophylaxis and treatment for an epidemic.



**Figure 9: Public Health and Medical Services**

### Housing

Similar to the wide range of targets to deliver Mass Care Services, Figure 4 depicts a wide variation in Housing targets to meet long-term housing
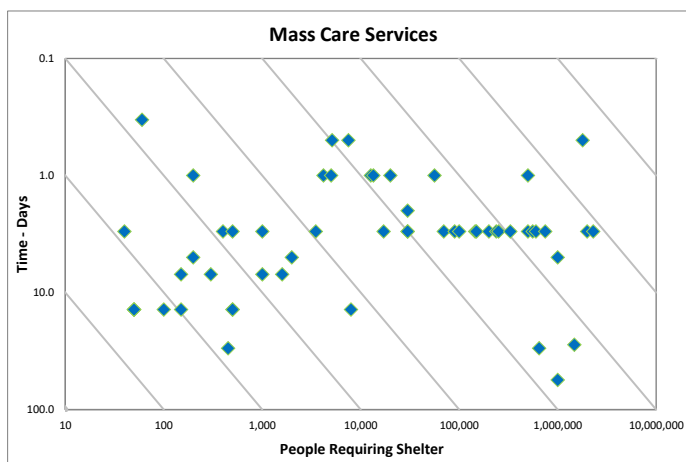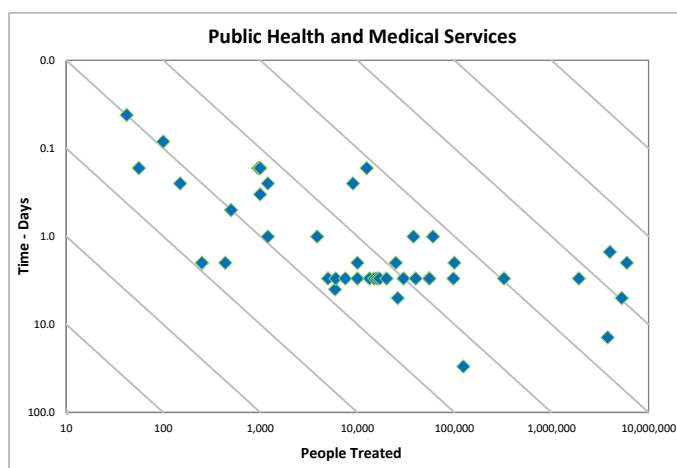


**Figure 10: Housing**

**Qualitative - SNRA 2015**

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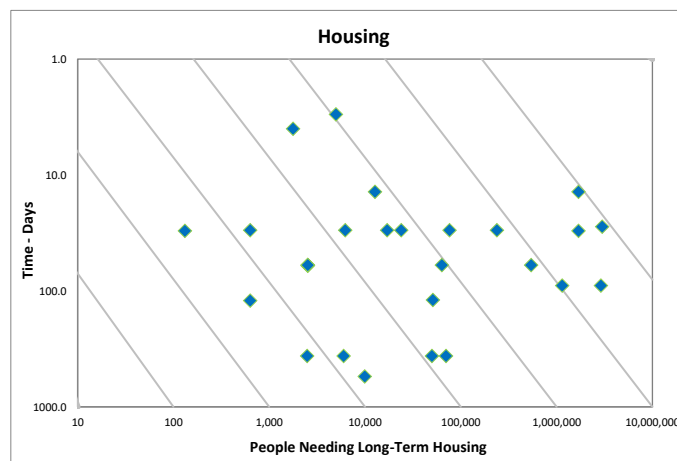
requirements. People needing long-term housing varied widely from less than a thousand to several million, while time constraints ranged from 3 days to 4 years due to the nature of the Recovery mission area and Housing core capability. The wide variation in Housing targets is likely due to the size and complexity of threat and hazard scenarios selected by jurisdictions in Step 1 of the THIRA process and the unique displaced populations identified as potential impacts in Step 3.