



# Business Process Analysis and Business Impact Analysis User Guide

July 2019



FEMA



# Table of Contents

- I. Why Identify Essential Functions? ..... 1
- II. What is a BPA and BIA? ..... 5
- III. Business Process Analysis ..... 6
- VI. BIA and Risk Mitigation ..... 8
- Annex A: Organizational Functions Worksheet ..... A-1
- Annex B: Business Process Analysis Data Sheet Template..... B-1
- Annex C: Business Impact Analysis and Risk Management Worksheet ..... C-1
- Annex D: NEFWheels .....D-1



# I. Why Identify Essential Functions?

To understand the supporting nature of the whole community and continuity, it is important to first understand the National Essential Functions (NEFs) as identified in Figure 1. The NEFs are those critical activities that sustain our Nation and are the primary focus of the federal government before, during, and after a catastrophic emergency. The federal government cannot maintain these functions and services without the support of the rest of the Nation; the whole community directly contributes to the federal government's ability to perform the NEFs.

## The National Essential Functions (NEFs)

- 1** *Ensure the continued functioning of our form of government under the United States Constitution, including the functioning of the three separate branches of government.*
- 2** *Provide leadership visible to the nation and the world and maintain the trust and confidence of the American people.*
- 3** *Defend the United States against all enemies, foreign and domestic, and prevent or interdict attacks against the United States or its people, property, or interests.*
- 4** *Maintain and foster effective relationships with foreign nations.*
- 5** *Protect against threats to the homeland and bring to justice perpetrators of crimes or attacks against the United States or its people, property, or interests.*
- 6** *Provide rapid and effective response to and recovery from the domestic consequences of an attack or other incident.*
- 7** *Protect and stabilize the nation's economy and ensure public confidence in its financial systems.*
- 8** *Provide for federal government services that address the national health, safety, and welfare needs of the United States.*

Figure 1: National Essential Functions

Organizations should identify their own essential functions (EFs) that support and are aligned with individual NEFs. Government agencies identify EFs and critical services that provide support and are necessary to assist the accomplishment of NEFs in support of these overarching missions. Other entities, in both the public and private sectors, may also find that their functions are nested within these higher-level EFs and play a direct role in insuring the continuation of governmental functions at all levels.

Figure 2 on the next page provides examples of how whole community partners' EFs can align to accomplishing the NEFs. Annex D provides illustrations for each NEF.

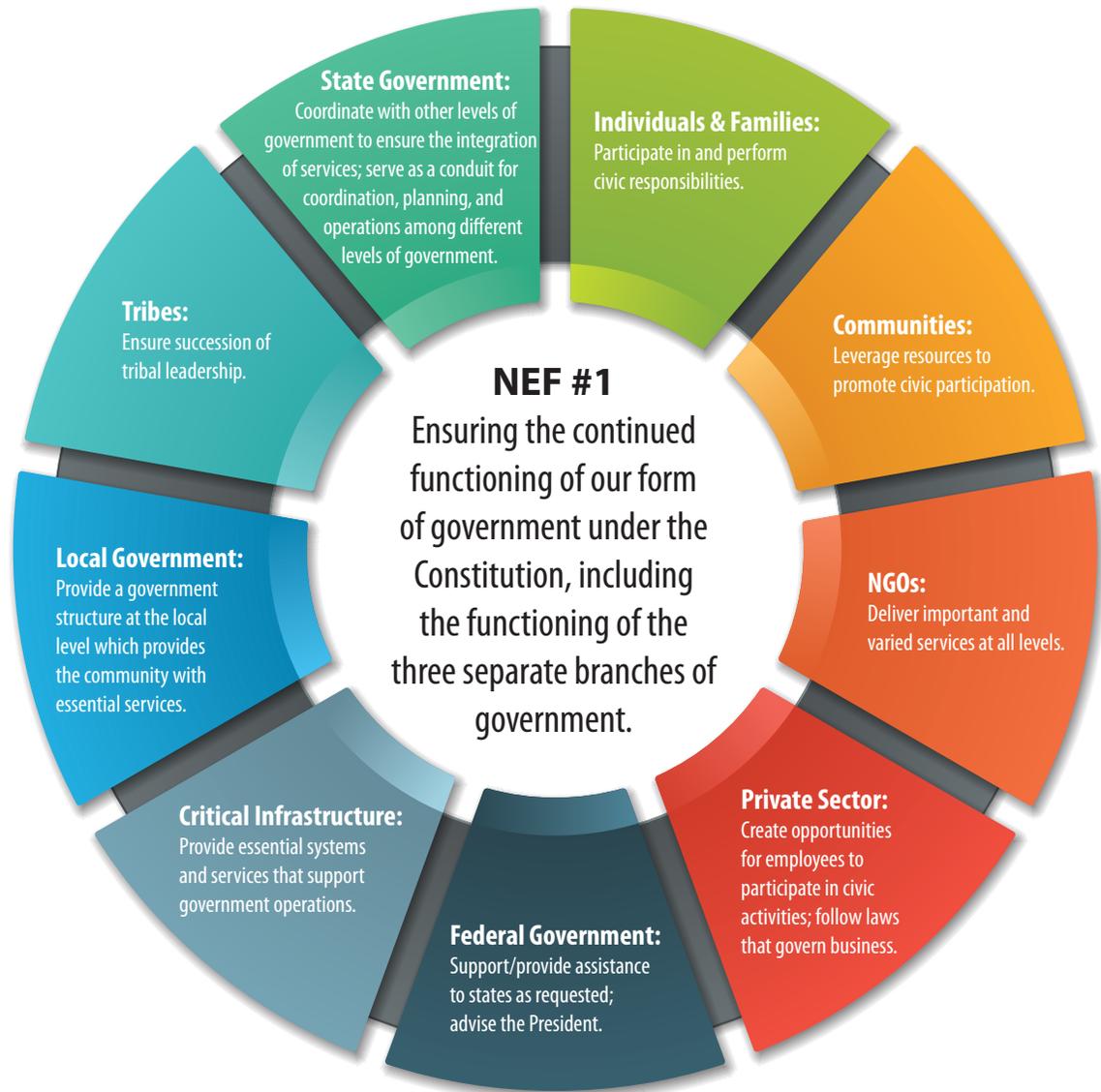


Figure 2: NEF #1 Wheel

The Commonwealth of Pennsylvania has mapped its EFs to the NEFs. Figure 3 contains an example of their mapping and shows how the successful accomplishment of EFs at the local level support the successful accomplishment of NEFs at the national level.



State Essential Function	
STATE ESSENTIAL FUNCTION - Brief description	National Essential Functions
SECURITY - The Department of General Services (DGS) is responsible for all law enforcement activity and the safety and security of Commonwealth property, employees, public officials and visitors at DGS-managed buildings. Additionally, the DGS Security Administration Office is responsible for issuing access badges for DGS-managed buildings.	<b>NEF #5</b> Maintain Law and Order
EMERGENCY MANAGEMENT AND EMERGENCY PREPAREDNESS LIAISON OFFICE (EPLO) SUPPORT - COOP Program Office provides training, testing and maintenance of the Agency COOP Plan. Also is liaison with OA CoG coordinator and COOP peers. The COOP Coordinator provides agency coordination with the Governor's Office of Homeland Security (GOHS), the Pennsylvania Emergency Management Agency (PEMA) and FEMA.	<b>NEF #6</b> Provide Emergency Services
BUILDING SERVICES - DGS is responsible for the operation and maintenance of building systems, including heating, ventilation and air conditioning (HVAC) equipment, plumbing, electrical, mechanical and fire detection and suppression systems within the Capital Complex and the state office buildings.	<b>NEF #8</b> Provide Basic Essential Services

Figure 3: NEF Mapping

## Essential Function Identification Process

During a continuity event, key resources may be limited, and personnel may be unavailable. Proper identification of EFs is critical to effective continuity planning. The three-step EF identification process is outlined below in Figure 4. The outcome of this process supports the development, review, and validation of essential functions through conduct of the Business Process Analysis (BPA) and Business Impact Analysis (BIA).

<p><b>Step 1: Identify Organizational Functions</b></p> <p>Identify all functions which the organization performs, mandates to perform each functions, and the function's products or services.</p> <p><b>Output:</b> List of all organizational functions.</p>
<p><b>Step 2: Identify Draft Organizational Essential Functions</b></p> <p>Identify candidate essential functions based on criteria for essential vs. non-essential during a disruption.</p> <p><b>Output:</b> Draft organizational essential functions.</p>
<p><b>Step 3: Present Draft Essential Functions to Leadership</b></p> <p>Develop and present draft essential functions for leadership review and concurrence.</p> <p><b>Output:</b> Leadership concurrence on draft essential functions.</p>

Figure 4: Identification of Essential Functions Process



## Step 1: Identify Organizational Functions

In this step, an organization identifies and lists all major organizational functions that support performance of the organization's mission. As part of this step, an organization may review and validate existing lists of organizational functions, as appropriate.

The list of organizational functions should include:

1. A description of each function in basic terms.
2. The requirement to perform each function, listing the applicable statute, regulation, presidential directive, or other legal authority.
3. The products or services delivered or actions each function accomplishes.

Examples of organizational function descriptions are listed below:

1. Protect critical infrastructure.
2. Maintain and ensure operational capability of organizational computer systems.
3. Provide medical services to veterans.
4. Manage facilities.
5. Lead emergency response efforts during disasters and emergencies.

Organizations may use Annex A, *Organizational Functions Worksheet*, for documenting the information collected during Step 1.

## Step 2: Review or Identify Organizational EFs

After identifying and listing all major organizational functions that support the performance of its mission, organizations should review each identified function and determine which functions are potential new EFs or updates to existing EFs. Organizations should consider several factors when identifying EFs:

1. Concurrently review existing EFs and make necessary updates or validate information, as appropriate.
2. Review functions performed both at headquarters and other locations where the organization's mission is executed.

Organizations should assess EF priorities to more effectively plan for the required resources and capabilities to perform the EF(s) under all conditions.

### EFs versus Non-EFs

When reviewing the list of organizational functions, an organization should first identify whether a function is essential or non-essential. The distinction between these two categories is whether or not an organization must perform a function during a disruption to normal operations and must continue performance during emergencies. EFs are both important and urgent. Functions that can be deferred until after an emergency are identified as non-essential.



## II. What is a BPA and BIA?

The BPA is a systematic process that identifies and documents the activities and tasks that are performed within an organization. A BPA captures and maps the functional processes, workflows, activities, subject matter expertise, systems, resources, controls, data, and facilities required in the execution of a function or task. An effective BPA supports the development of detailed procedures that outline how an organization accomplishes its mission.

The BIA provides a method of identifying and evaluating the effects of various threats and hazards and the impact they may have on the ability of an organization to perform its EFs. It facilitates the identification and mitigation of vulnerabilities to ensure that when a disruption or crisis occurs, an organization can still effectively perform EFs. The results of the BIA will establish the foundation for evaluating and establishing risk mitigation strategies, which ensure the continued performance of all organizational EFs.

Conducting a BPA and a BIA are critical steps in developing a comprehensive continuity plan. If a natural or man-made crisis occurs that forces an organization to perform its mission with fewer people and from a place different than where it normally operates, a solid plan is needed to accomplish that action successfully. Once the organization has identified its EFs, the organization performs a BPA to determine and understand the processes necessary to perform organizational functions and requirements. The organization conducts a BIA to identify potential impacts on the performance of essential functions and the consequences of the failure to sustain those functions. The data collected and analyzed in the BPA and BIA process allows for the application of organization-wide risk analysis to contribute to sound decision making and strengthens operations through effective risk management. This guide will assist organizations so that the organization can create a comprehensive capability to sustain critical operations.

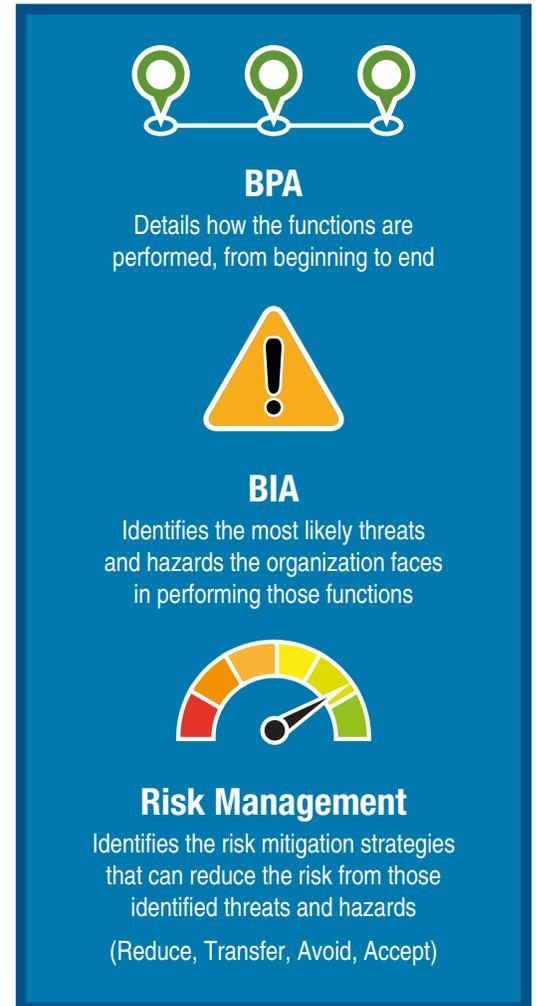


Figure 5: BPA-BIA-Risk Management



# III. Business Process Analysis

Each organization should look at the BPA process from the point of view of both the strategic, or big picture, and the tactical, or operational, details. Performing a BPA is not a minor undertaking and organizations should approach the process systematically and with a focus on clearly describing the details regarding how each EF is performed during normal operations so that guidelines for performing the EF during a continuity event can be developed.

The BPA is a nine-step process as identified in Figure 6: Nine Step BPA Process.

Use the Business Process Analysis Data Sheet Template (Annex B) to aid in documenting the BPA.



Figure 6: Nine Step BPA Process



# Business Process Analysis Data Sheet: Instructions

## Business Process Analysis Data Sheet

**EF Statement and Description:** A concise statement of what your EF is and a description. What does it do? This is not a complete process flow, as that will come later.

**EF Outputs (Step 1):** Identify products, services, and information (i.e., deliverables or outputs) that result from performance of the EF. An organization also identifies the partners and stakeholders that receive the outputs. The description should include appropriate metrics that identify specific performance measures and standards, as the EF output timeframes will inform the BIA.

**EF Inputs (Step 2):** Identify products, services, information, supplies, equipment, and other resources (i.e., inputs) required to perform the EF and deliver the EF outputs, which may be internal to the organization or depend on external partners. Organizations should identify what input is required, from whom, and when, as the input may be required at the beginning of EF performance or as the functional process proceeds. The input descriptions should include delivery time requirements, which will inform the BIA.

**Dependencies and Interdependencies (Step 3):** Identify dependencies and interdependencies with partners and stakeholders required to perform the EF, to include other government organizations, critical infrastructure owners and operators, non-governmental organizations, private sector organizations, and others as appropriate. The description should include information on the ability and expectations of dependent organizations to provide required inputs during a disruption to normal operations.

**Leadership (Step 4):** Identify organizational leadership required to make decisions and perform other key actions necessary to perform the EF. The description should include the location of appropriate senior leadership, specifically if their action can be performed remotely or they are needed at a certain facility, as well as communication requirements to support EF performance.

**Staff (Step 5):** Identify staff required to perform the EF. The description should include appropriate knowledge, skills, abilities, expertise, experience, certifications, licenses, clearances or permissions needed, and the number of staff required to perform the EF.

**Communications and Information Systems (Step 6):** Identify communications and information systems required to perform the organization's EFs. The description should include specific capabilities or data needed, classification requirements, and any other unique requirements. The description should also include information on system dependencies and interfaces with other systems or data sources.

**Alternate Location Requirements (Step 7):** Identify facility requirements needed to perform the organization's EFs. The description should include space, configuration, security, safety, support services (e.g., lodging, food services, medical support), and storage requirements appropriate for the organization's operations.

**Resources and Budgeting (Step 8):** Identify resource and budget requirements to perform the EFs for whatever time period is required by the organization's governing directives, authorities, etc. following a continuity activation or until normal operations are resumed. Resources not yet captured in the BPA process may include standard operating procedures, essential records, and reference materials required for EF performance. The description should include and account for funding requirements for all identified resources needed to perform the EF and any supporting activities.

**Process Details (Step 9):** Develop a narrative description that captures all information gathered during Steps 1-8 and describes the process of performing the EF. The organization will develop appropriate diagrams or other informational aids to support the narrative description. Documenting the process will not only describe how the EF is accomplished, but will also validate the information compiled and limit omission of any details.

**Other Comments:** Organizations can add any other details not previously captured.



# VI. BIA and Risk Mitigation

Through the BIA, organizations will identify threats and hazards that may impact the performance of their functions and problem areas such as resource gaps, process weaknesses, points of failure, and vulnerabilities. The threats and hazards that are deemed to pose the highest risk should be reviewed with leadership to determine appropriate mitigation strategies.

The results of the BIA will inform the process of evaluating and establishing risk mitigation strategies that can be implemented to reduce the risk to the EFs. An organization should evaluate the risks to the performance of each individual EF and determine how to address unacceptable risks. In some instances, the decision may be made to accept risk if it is low or if other factors determine that the risk is acceptable. The organization should choose to make changes or improvements to significantly reduce unacceptable risk. For each organization, the criteria or factors for determining whether to accept risk will vary. Factors that frequently influence decisions regarding risk mitigation include likelihood of the threat or hazard occurring, impact of mission failure, cost of risk mitigation, and risk reduction that mitigation can provide.

Organizations can use the enclosed Business Impact Analysis/Risk Mitigation Worksheet Template (Annex C) during the BIA and risk mitigation process. The BIA and risk mitigation process includes five steps as identified in Figure 8: BIA/Risk Mitigation Process. This process is adapted from the U.S. Department of Homeland Security's (DHS) Threat and Hazard Identification and Risk Assessment (THIRA) and Stakeholder Preparedness Review (SPR) Guide.<sup>1</sup>

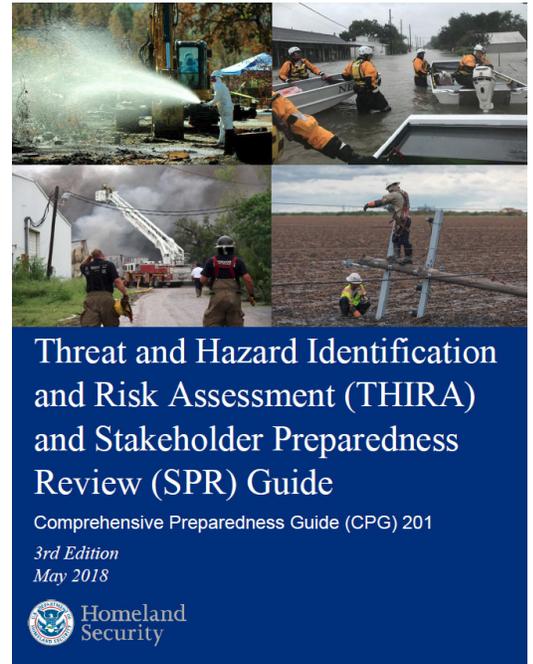


Figure 7: THIRA/SPR

<sup>1</sup>For additional information on the THIRA, refer to the Comprehensive Preparedness Guide (CPG) 201, May 2018.

[https://www.fema.gov/media-library-data/1527613746699-fa31d9ade55988da1293192f1b18f4e3/CPG201Final20180525\\_508c.pdf](https://www.fema.gov/media-library-data/1527613746699-fa31d9ade55988da1293192f1b18f4e3/CPG201Final20180525_508c.pdf)



## Business Impact Analysis

### Step 1: Identify Potential Threats and Hazards

What threats and hazards are most likely to disrupt EF performance?

### Step 2: Describe How the Threat or Hazard Can Impact the Essential Function

What characteristics of the threat or hazard can disrupt the performance of the EF?



## Risk Mitigation

### Step 3: Identify and Assess Risk Mitigation Strategies and Options

Review BIA results with leadership and identify and assess risk mitigation strategies and options.

### Step 4: Develop and Incorporate Risk Mitigation Strategies Into Continuity Plan

Develop mitigation approaches and incorporate into continuity or implementation plan.

### Step 5: Assess Risk Mitigation Effectiveness

Develop and present draft essential functions for leadership review and concurrence.

**Output:** Leadership concurrence on draft essential functions.

Figure 8: BIA/Risk Management Process

## BIA-Risk Mitigation Process

### Step 1: Identify potential threats and hazards

Identify potential threats and hazards that are most likely to impact performance of each EF (threats and hazards should be listed in priority order). Threats and hazards may be natural, technological, human caused, or process-oriented. There are many common threats and hazards that should be considered. Figure 9 lists a selection of potential hazards.

NATURAL	TECHNOLOGICAL	HUMAN-CAUSED	PROCESS ORIENTED
<ul style="list-style-type: none"> <li>• Avalanche</li> <li>• Drought</li> <li>• Earthquake</li> <li>• Epidemic</li> <li>• Flood</li> <li>• Hurricane/Typhoon</li> <li>• Space Weather</li> <li>• Tornado</li> <li>• Tsunami</li> <li>• Volcanic Eruption</li> <li>• Winter Storm</li> </ul>	<ul style="list-style-type: none"> <li>• IT System Crash</li> <li>• Dam Failure</li> <li>• Hazardous Materials Release</li> <li>• Industrial Accident</li> <li>• Levee Failure</li> <li>• Mine Accident</li> <li>• Pipeline Explosion</li> <li>• Train Derailment</li> <li>• Transportation Accident</li> <li>• Utility Disruption</li> </ul>	<ul style="list-style-type: none"> <li>• Active Shooter</li> <li>• Armed Assault</li> <li>• Biological/Chemical Release</li> <li>• Cyber Attack</li> <li>• Explosives</li> <li>• Radiological Attack/Release</li> <li>• Internal Threats</li> </ul>	<ul style="list-style-type: none"> <li>• Inadequate Critical Supply</li> <li>• Supply Chain Failure</li> <li>• Single Points of Failure</li> </ul>

Figure 9: Potential Threats and Hazards



In addition to evaluating direct threats and hazards, it is important to assess what threats or hazards might impact critical partners or pieces of a supply chain. For example, an ice storm or blizzard is unlikely to occur in Hawaii; however, if the delivery of critical supplies from Denver is required to perform the EF, do not discount the effect of an ice storm or blizzard.

## Step 2: Describe How the Threat or Hazard Can Impact the EF

In this step, organizations should specify associated characteristics, assumptions, and effects for each threat or hazard identified and describe the potential impact or consequences if the threat or hazard occurs (consider the worst case) and prevents or delays the performance of the EF. Organizations should answer the following questions:

- What is the vulnerability of the EF to each threat or hazard identified in Step 1?
- What would be the impact if the EF's performance is disrupted?
- What is the timeframe for unacceptable loss of functions and critical assets?

For example, if a hurricane has been identified as a hazard, it is important to identify that it is a Category 3 or higher hurricane, lasting two days or more, resulting in flooding, power outages, closed roads, etc. This information can be based on historical patterns (typical duration) and general predictions of the effect on the community, as well as likely effects on the organization. Alternatively, for low frequency events which local historical data is not readily available (e.g. truck bomb), make general assumptions about the likely characteristics and effects of the event.

For each EF, it is important to consider acceptable versus unacceptable downtime. For example, a 12-hour delay in beginning to process disaster claims may be acceptable, whereas a 12-hour delay in initiating search and rescue services may not. When evaluating impact, consider whether another organization may be able to perform the EF if your organization cannot.

## Step 3: Identify and Assess Risk Mitigation Strategies and Options

Each organization should review the BIA results with leadership to determine if risk mitigation is necessary and evaluate mitigating strategies. There may be more than one option developed to reduce a single vulnerability. For example, if telework is chosen as a primary mitigation strategy, there may be disruptions (such as power or communications outages) where telework will not work. An alternate facility a safe distance from the area impacted may be a viable strategy to continue an EF in that circumstance.

Mitigation strategies might include the following:

1. Additional backup systems and personnel
2. Enhanced continuity planning (such as devolution plans or mutual aid agreements)
3. Additional telework flexibility
4. Additional suppliers
5. Additional facilities
6. Resilient communications and infrastructure (i.e. generator power)

When developing mitigation strategies, avoid situations that may introduce new vulnerabilities. For example, it may not be prudent to move the performance of an EF from a facility in a flood zone to a facility that is next to a chemical processing plant.



## Step 4: Develop and Incorporate Risk Mitigation Strategies Into Continuity Plan

Risk Mitigation strategies should be developed and incorporated into the organization’s continuity plan.

## Step 5: Assess Mitigation Effectiveness

Organizations should use tests, training, and exercises (TT&E) to assess the implementation and effectiveness of the continuity plan and mitigation strategies. Refer to the Continuity Guidance Circular (CGC) for additional information on TT&E.<sup>2</sup>

# BIA/Risk Mitigation Worksheet Template with Examples

BIA/RISK MITIGATION WORKSHEET: THREAT AND HAZARD ANALYSIS			
EF Number and Statement:			
	Step 1	Step 2	Step 3
Entry #	Threat or Hazard	Threat or Hazard Characteristics and Potential Impacts	Mitigation Strategy
1	Input Threat or Hazard	<i>Input the threat or hazard characteristics and likely effects on the organization or region. It is important to provide sufficient data to help characterize the likelihood of occurrence and evaluate the EF vulnerability and impact. If a lot of data is available, consider attaching a separate sheet.</i>	
2	Severe Winter Storm	24 or more hours of active severe winter weather including 12” + of snow; power lines down; impassable roads; facilities closed.	<ul style="list-style-type: none"> <li>Relocate to an alternate location before storm hits.</li> <li>Memoranda of agreement with a partner organization.</li> </ul>
3	Cyber Attack	Computer network breach – malware discovered that restricts access to information stored on office’s server. All mapped network drives infected.	<ul style="list-style-type: none"> <li>Purchase redundant server at the alternate facility.</li> <li>Devolve operations to another location.</li> </ul>

Figure 10: BIA/Risk Mitigation Worksheet

<sup>2</sup>Continuity Guidance Circular (CGC); FEMA NCP; February 2018.

<https://www.fema.gov/media-library-data/1520878493235-1b9685b2d01d811abfd23da960d45e4f/ContinuityGuidanceCircularMarch2018.pdf>



# Annex A: Organizational Functions Worksheet

Function	Requirement to Perform Function	Products or Services of Function	Essential (X)	Non-Essential (X)	Essential Function (X)	Essential Supporting Activity (X)

<sup>3</sup> The forms found in Annexes A-C can be found on the Continuity Resource Toolkit site at: <https://www.fema.gov/continuity-resource-toolkit>.



# Annex B: Business Process Analysis Data Sheet Template

Business Process Analysis Data Sheet
<b>EF Statement and Description:</b>
<b>EF Outputs (Step 1):</b>
<b>EF Inputs (Step 2):</b>
<b>Dependencies and Interdependencies (Step 3):</b>
<b>Leadership (Step 4):</b>
<b>Staff (Step 5):</b>
<b>Communications and Information Systems (Step 6):</b>
<b>Alternate Location Requirements (Step 7):</b>
<b>Resources and Budgeting (Step 8):</b>
<b>Process Details (Step 9):</b>
<b>Other Comments:</b>



# Annex C: Business Impact Analysis and Risk Management Worksheet

## BIA/RISK MITIGATION WORKSHEET: THREAT AND HAZARD ANALYSIS

*EF Number and Statement:*

	Step 1	Step 2	Step 3
Entry #	Threat or Hazard	Threat or Hazard Characteristics and Potential Impacts	Mitigation Strategy
1			
2			
3			
4			
5			
6			



# Annex D: NEF Wheels

