Texas Dairy Farm

Business Continuity Guide Supplement



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# Acronyms

**AH Animal Health / Hospital Management (KBF)**

APHIS Animal and Plant Health Inspection Service (USDA)

**BA Business Administration / Personnel (KBF)**

BC Business Continuity

BIA Business Impact Analysis

BSE Bovine Spongiform Encephalopathy

**CI Capital and Investments (KBF)**

**CR Calf Rearing (KBF)**

**EM Environmental Management (KBF)**

EPA US Environmental Protection Agency

ERG Emergency Response Guide

**FM Facility Maintenance (KBF)**

FDA US Food and Drug Administration

FEAD Foreign and Emerging Animal Disease

FEMA Federal Emergency Management Agency

FMD Foot and Mouth Disease

**FW Feeding and Watering (KBF)**

GB Gigabyte

HAZMAT Hazardous Materials

**HM Herd Management (KBF)**

HSEEP Homeland Security Exercise and Evaluation Program

**IT Information Technology (KBF)**

KBF Key Business Function

MB Megabyte

OEM Office of Emergency Management

OSHA Occupational Safety and Health Administration

**PO Parlor Operations (KBF)**

PRPC Panhandle Regional Planning Commission

RA Risk Assessment

TAHC Texas Animal Health Commission

TB Terabyte

TDA Texas Department of Agriculture

USDA US Department of Agriculture

# Supplement Purpose

The purpose of this Business Continuity Guide (BCG) *Supplement* is to provide additional background information for the development of your BC Plan. Users can refer to this *Supplement* for additional information on topics such as business impact and risk analysis, risk mitigation, IT systems recovery and BC Plan training methods.  The Supplement also includes a variety of business evaluation, risk assessment and BC Plan training templates for users interested in a more in-depth evaluation of their business operations.

# Chapter 1: Business Impact and Risk Assessment

## Introduction

In 2013, a *Business Impact Analysis (BIA)* and *Risk Assessment (RA)* were conducted at a Panhandle-region medium size dairy. The analyses along with subject matter expect input, was used to develop an industry-wide perspective of critical business functions and major risks that the industry faces. The BIA and RA are elements of a larger Panhandle Regional Planning Commission (PRPC) initiative focused on Biosecurity and Business Continuity & Recovery. The BIA and RA methodologies and summary findings are included in this section.

## Business Impact Analysis

A BIA self-assessment questionnaire was completed by representatives of the dairy farm. This was followed by in-person interviews to clarify and further explore survey responses. The BIA identified ten key business functions (KBF) and associated sub-functions necessary to operate a typical dairy. A KBF is a grouping of related sub-functions focused on a particular aspect of a dairy. The KBFs were developed from a review of industry-wide dairy operations and validated by industry experts. See Table 1.1 Dairy Operations Key Business Functions.

The **self-assessment** **survey** requested the dairy respondents to identify key resources or assets required to perform each of the KBFs and associated sub-functions. Respondents were asked to identify how long before the loss of a particular sub-function would impact overall dairy operations. Survey participants were also asked to estimate the financial impact associated with loss of a particular sub-function to help determine the criticality of that sub-function. Additional information provided by the respondents included completion of both internal employee and external customer and stakeholder contact lists. Listings of vital data records, their storage medium, frequency of backup and estimated period of time data can be lost, were also obtained during the survey.

### Business Impact Analysis Findings

Typically, dairies are independently owned and operated, with all KBFs performed on-site at the dairy. Business functions supporting **herd management, feeding, watering, milking and nutrient (manure) management** are the most critical to dairy operations.

Questionnaire responses and information gained during dairy interviews were used to identify KBFs having the greatest impact on the business and dairy operations if disrupted. KBFs were organized into three groups based on their criticality.

###### Most Critical Key Business Functions

**Parlor Operations, Feeding and Watering,** **Facility Maintenance, and Waste Management** were found to be the four most critical KBFs for dairy operations. These would have the greatest impact to the business if disrupted and not reconstituted within hours. Birthing and calving in the HMcategory in particular are vital functions since personnel assistance may be essential for complicated births and newborn calf care. Parlor Operations is a time-critical operation, generates business cash flow, and if not executed within a narrow time window, puts the entire dairy operation at risk. Feeding and Watering ensure herd health and productivity. Facility Maintenance and Waste Management are also a critical support functions since dairy operations rely heavily on reliable equipment and vehicles and disposition of waste in accordance with regulatory requirements.

Moderately Critical Key Business Functions

**Herd Management, Animal Health and Hospital Management** is a critical KBF if there is a threat or possible threat of widespread animal disease such as Foot and Mouth Disease (FMD). Routine medical surveillance and health maintenance of the herd is important however in assuring overall productivity and milk quality.

**Calf Rearing** is also a moderately critical KBF and would have a significant impact on operations if not reestablished within hours of disruption because of the need for specialized attention to young animals. Loss of calves resulting from inadequate care will affect the animal replacement process and possibly affect overall dairy productivity in the longer term.

###### Least Critical Key Business Functions

The **Business Administration and Personnel**, **Capital and Investments and Information Technology** are the least critical KBFs. Although moderately critical to the business, dairies do not generally have highly complex business or IT processes or systems in place. A disruption of a week or less would not significantly affect operations at the dairy; however, disruptions of more than a week could have significant impact on the overall business.

Table 1.1 Dairy Operations Key Business Functions

| **Key Business Function (KBF)** | **Sub-Function** | **Responsible Department(s)[[1]](#footnote-2)** |
| --- | --- | --- |
| Parlor Operations  **(Most Critical)** | Herd management, scheduling, record keeping | Parlor Manager |
| Milking Preparation |
| Milking |
| Milk transport |
| Milk storage |
| Feeding and Watering  **(Most Critical)** | Receipt of feed, commodities and additives | Feed Manager |
| Feed processing and mixing |
| Ration formulation |
| Feed storage |
| Feed herd |
| Facility Maintenance  **(Most Critical)** | Buildings | Maintenance Manager |
| Vehicles |
| Water supply |
| Yard, pens, stalls, stanchions, feed bunks |
| Electrical equipment |
| Parlor equipment |
| Milk transport and storage tanks |
| Environmental Management  **(Most Critical)** | Nutrient management | Environmental Services |
| Water resource management and planning |
| Permitting |
| Recording keeping |
| Spill/hazmat management |
| Herd Management  **(Moderately Critical)** | Artificial Insemination | Herd Manager |
| Breeding |
| Calving |
| Records management |
| Pregnancy Diagnosis |
| Animal Movement |
| Calf Rearing  **(Moderately Critical)** | Care | Herd Manager |
| Records management |
| Weaning |
| Feeding |
| Animal Health/Hospital Management  **(Moderately Critical)** | Records and management | Environmental Services Manager |
| Use of on-site and off-site veterinary services |
| Treatment and Vaccinations |
| Carcasses disposal activities |
| Interface with USDA/TAHC and other regulatory agencies |
| Information Technology  **(Least Critical)** | Off-site network and data systems management | IT Manager |
| On-site network and data systems management |
| Software and hardware maintenance |
| Business Administration-Personnel  **(Least Critical)** | Payroll | Human Resources/Employee Relations Manager |
| Accounts Receivable |
| Accounts Payable |
| IT Systems and databases to support dairy personnel |
| Overall dairy farm management and supervision |
| Hourly employee management |
| Capital and Investments  (Least Critical) | Business risk management portfolio | Human Resources/Employee Relations Manager |
| Develop and approve financial reports |
| Manage assets and liabilities |
| Crop Insurance |

## Risk Assessment

The RAs were conducted concurrently with the BIAs at the representative dairy. The process included a risk identification step followed by a consideration of risk management options for addressing identified business risks. As noted previously, the BIAserved to identify critical KBFs and associated sub-functions. Key resources needed to carry out specific business functions were identified during the BIA interview process. In the risk identification step, risks associated with a wide spectrum of hazards or abnormal events were recognized and categorized in terms of potential to disrupt those KBFs deemed critical for overall business continuity.

A second aspect of the RA involved a compilation and consideration of risk managementmeasures that are already be in place or may be implemented in dairy operations in order to reduce specific risks. When faced with a particular risk, dairy managers can exercise a number of risk management strategies which include:

* **Risk acceptance** (e.g., absorb the losses that occur following a disruptive event)
* **Risk transfer or sharing** (e.g., purchase insurance to cover the anticipated losses or share the risk through alliances with other dairies)
* **Risk avoidance** (e.g., eliminate the process that is at risk—this is generally not an option for critical business functions)
* **Risk reduction** (e.g., implement one or more risk mitigation measures)

***Note:*** Management may want to consider conducting a cost-benefit Assessment to help choose the best risk management strategy. For example, risk mitigation measures may not be warranted when costs associated with implementation of a risk reduction strategy exceed the anticipated cost to the business in simply absorbing the risk.

### Risk Assessment Findings

The key RA findings are summarized in Table 1.2 (next page). This table outlines various hazards and resulting impacts on key functions and resources, as further described below.

**Column 1 (Hazards)** – Disruptive events or loss of key resources (e.g., cattle disease outbreak, loss of workforce, equipment failure) that can affect business operations.

**Column 2 (Causes)** – Possible causes for the disruption. (***Note***: a disruption in the availability of key resources could be caused by more than one type of event.)

**Column 3 (KBFs Impacted)** – KBFs that would be impacted by the event or situation. (***Note***: the focus in this risk Assessment is on the loss of KBFs and their associated required resources with less emphasis on the specific cause of the disruption).

**Column 4 (Business Impact)** – A risk exposure ranking (High, Medium or Low) that takes into account the likelihood of the occurrence as well as the impact on key business functions during the disruptive event.

**Column 5 (Risk Mitigation Measures)** – The final column in the table summarizes a number of potential risk mitigation measures that could be effective in better managing the risk.

Table 1.2 Texas Dairy Hazards, Impacts and Risk Mitigation Measures

| **Hazard** | **Causes** | **KBFs Impacted** | **Risk Exposure** | **Summary Risk Mitigation Measures** |
| --- | --- | --- | --- | --- |
| Onsite FMD outbreak | * Natural or intentional | All | High | Biosecurity Plan including: visitor and site access controls; new cattle surveillance; routine cattle surveillance; decontamination methods; employee education measures |
| Loss of hourly labor | * Pandemic * Employee loss | PO  HM  CR | High | Emergency staffing plan; adequate compensation; employee retention incentives; employee cross-training |
| Waste Lagoon Failure | * Liner leakage * Pump failure | EM | High | Lagoon equipment preventive maintenance; long-term planning for irrigation water use; solids management plan |
| Total/partial loss of dairy | * Severe weather | All | Medium | Emergency evacuation and response plans; adequate insurance coverage |
| Routine disease (e.g. mastitis) | * Inadequate surveillance/sanitation * Inadequate culling * Malnutrition | PO  HM | Medium | Routine herd surveillance; employee training in observation and prevention; vet services oversight |
| Loss of feed supply | * Supply shortage * Supplier failure * Transport loss | FW | Medium | Alternative suppliers; on-hand stockpile; alternative feed plans; feed supply contracts |
| Loss of  cow-calf operations | * Business failure * Inadequate capacity | CR | Medium | On-site operations capability; alternative suppliers |
| Loss of yard equipment / vehicles | * Inadequate maintenance * Aging equipment | FW  FM | Medium | Preventive maintenance programs; operator training; equip upgrades; parts/spares on hand |
| Mechanical failure – parlor operations | * Aging equipment * Inadequate maintenance * Operator error * No spare parts | PO  FM | Medium | Preventive maintenance program; employee training; equip upgrades; spare parts on hand |
| Loss of management | * Pandemic * Personnel loss | BA  CI  IT | Low | Management cross-training; emergency staffing plan |
| Loss of vet services | * Pandemic * Personnel loss * Weather event | AH | Low | Alternative vet services; employee training for routine animal health surveillance |
| Loss of downstream customer | * Business failure * Decreased product demand | PO | Low | Alternative creameries/buyers; coop membership; purchase contracts; |
| Utility loss | * Severe weather * Utility malfunction | PO | Low | Backup generator; rapid service contracts with utilities |
| KBF abbreviations: | | | | |
| HM = Herd Management, CR = Calf Rearing, PO = Parlor Operations  FW = Feeding and Watering, FM = Facility Maintenance,  AH = Animal Health/Hospital Management = Business Administration, CI = Capital/Investments,  IT = Information Technology EM = Environmental Management | | | | |

**The following paragraphs elaborate on information presented in the Hazards table.**

###### High-Impact Risks

High-impact risks for Panhandle-region dairy operations include: **an onsite FEAD/FMD event, loss of hourly employees and a waste lagoon failure.** The likelihood of occurrence of either of these may be low; however, the business impact or consequence from either could be substantial.

**Onsite FEAD/FMD Event**

**Hazard Description** – An FMD event could be caused by natural means such as receipt of infected cattle or via contaminated equipment, employees or visitors. The event could also occur through adversarial means by intentional infection of cattle/calves in transit to or at a dairy. Those KBFs impacted in an FMD situation would include Cattle Animal Health, although in the event of the verified presence of FMD on a dairy with a subsequent USDA-issued quarantine or “stop movement” order, the entire operation would be impacted.

**Risk Management Best Practices** – Important pre-event FMD risk mitigation measures include the development and implementation of a Biological Security Plan. An implemented plan puts risk mitigation strategies in place to address biosecurity vulnerabilities in dairy operations that include: visitor access control, cattle movement controls, cattle surveillance, as well as many other measures. Additional risk communication strategies and employee FMD education plans would serve to address the potential loss of workforce due to unfounded employee fears about their own health in an FMD-infected dairy. A Dairy Industry *Biosecurity Guide* has been developed as a companion to this *Texas* *Dairy* *Farm* *Business Continuity Guide.*

**Risk Exposure Findings** – Interview results revealed that biosecurity risk of an FEAD/FMD outbreak is an important concern to the industry. Routine biosecurity measures such as animal surveillance conducted by the Animal Health function at a typical dairy appear to meet standard and accepted industry practices, as explained by subject matter experts and references consulted during this process. Employee education and other important measures require improvement. **Based on these observations, risk exposure to onsite FEAD/FMD and related animal disease outbreaks is high based on a combination of probability of occurrence and consequence.**

**Loss of Hourly Employees**

**Hazard Description** – A high-impact event could be the unexpected loss of a significant number of hourly employees. Impact would be particularly high for employee loss in the Parlor Operations and Breeding, Gestation and Parturition since these areas are particularly labor intensive and loss of productivity would impact overall business productivity.

**Risk Management Best Practices** – Employee cross-training measures help to address this risk. Emergency staffing plans can be used to address short-term measures in the event of unexpected loss of hourly employees. Other helpful measures include average or above average compensation and employee retention incentives that reduce the likelihood of employee resignation or departure.

**Risk Exposure Findings** – Interview results indicate that the local work force is generally adequate to fill hourly employee needs. Hourly worker turnover is generally quite high however. Unexpected departure of employees in labor intensive operations such as parlor operations and birthing/calf care operations is of concern, since these require a reliable labor force. Dairy managers are aware of this constraint and place high priority on hiring to assure an adequate work force for critical operations.

**Waste Lagoon Failure**

**Hazard Description** – Loss of waste management functions can impact overall dairy operations by virtue of the volume of waste generated during normal dairy operations. Inadequate waste handling can result in non-compliance with state or federal waste management regulations.

**Risk Management Best Practices** – Routine surveillance and maintenance of waste lagoon operations is important. Appropriate long-term planning for irrigation water and solids disposition is also essential.

**Risk Exposure Findings** – The age of the dairy and its layout influence the level of risk associated with waste management functions. Newer dairies designed for efficient waste handling encounter lower risk in this area than older dairies.

###### Medium-Impact Risks

Medium-impact events involve disruptions in one or more key functions or resources as a result of any number of causes, as shown in Table 1.2. The likelihood of occurrence of many of these events may be higher; however, the anticipated business impacts or consequences are less severe. A number of typical hazard scenarios and associated risk management measures are discussed below.

**Mechanical Failure – Parlor Operations**

**Hazard Description** – A mechanical failure in parlor machinery is a high-consequence event and directly impacts business productivity. Loss of milking function not only reduces milk production but also jeopardizes herd health if cows cannot be milked on schedule.

**Risk Management Best Practices** – Backup power as well as equipment spares for all vacuum and liquid pumps are essential. Employees must be well rehearsed in rapid equipment repair or change out. Rapid response from milking equipment service vendors at all hours is important. Refrigeration units used for heat exchange units must have routine maintenance and backups as well.

**Risk Exposure Findings** – Survey results indicate that nearly all dairies have backup power and rapid on-site repair capabilities for milk parlor equipment and machinery. Overall risk exposure for this key function is low to mid as a result of these widely implemented mitigation measures.

**Total or Partial Loss of Dairy**

**Hazard Description** – Infrastructure loss could result from a severe weather event such as a tornado or intense ice storm. Herd loss or damage to critical milking parlor operations could result.

**Risk Management Best Practices** – A severe weather watch is warranted although advance warning capabilities may be limited. With impending severe weather, pre-planned preventive measures should be implemented to secure as much equipment, feed and livestock as possible. An emergency milking plan should be in place in the event that routine milk parlor operations are impacted. Adequate insurance of dairy assets is essential.

**Risk Exposure Findings** – Interview results revealed that, in general, dairies have limited ability to mitigate tornado, major ice storm or other natural risk. Some pre-planned prevention measures such as feed and water stockpiling may help to limit damage however, in the event of a tornado direct strike, little can be done other than to protect human life through evacuation and/or adequate shelter.

**Routine Disease**

**Hazard Description** – Diseases such as mastitis can have a significant impact on herd health and dairy milk productivity. Inadequate milk parlor sanitation and unhealthy cows can be contributing factors for disease. Milk quality rankings can be downgraded during disease episodes, further lowering dairy profitability.

**Risk Management Best Practices** – Well-trained, observant employees in the parlor are essential for disease control. Contract veterinary services can help put adequate sanitation, nutrition and treatment plans in place for disease prevention, management and control.

**Risk Exposure Findings** – All dairies deal with diseases such as mastitis and are generally well-equipped to identify, control and treat for this disease before it significantly impacts production.

**Loss of Feed Supply**

**Hazard Description** – The loss of feed suppliers can impact dairy operations, particularly for those dairies that do not stockpile large amounts of silage. Loss of suppliers as a result of poor crop yields or business failure can impact dairy operations.

**Risk Management Best Practices** – Diversification of feed supplies from a variety of sources can help reduce this risk. Financial management and reserves that allow stockpiling or large quantities of silage are recommended.

**Risk Exposure Findings** – Many dairies stockpile large amounts of silage which provides them 6-12 months of feed supply. Many of the larger dairies supplement purchased feedstock with their own feed raised as a part of the overall farm operation.

**Loss of Calving Operations**

**Hazard Description** – Dairies that conduct on-site calf raising operations can be at risk if this operation is threatened by lack of manpower, disease, weather or other factors. Dairies that transport calves to off-site calf raising operations can face similar indirect risks that can impact overall dairy productivity.

**Risk Management Best Practices** – Assured supplies of replacement milk, herd health surveillance and ready access to a work force and vet services are essential for uninterrupted calf raising operations. Alternative off-site resources for calf raising are warranted.

**Risk Exposure Findings** – Dairies generally recognize the importance of uninterrupted calf-raising operations and take the necessary steps to insure continuous operations.

**Loss of yard equipment/vehicles**

**Hazard Description** – Loss of key equipment or vehicles used on the dairy can adversely impact operations

**Risk Management Best Practices** – Routine maintenance and aging equipment change out help to reduce this risk. Vehicle leasing programs can reduce maintenance costs and may be a cost effective alternative to on-site maintenance.

**Risk Exposure Findings** – Modern equipment and vehicles are generally reliable and provide uninterrupted service to dairies.

###### Low-Impact Risks

Low-impact hazards do not have the potential to significantly jeopardize business functions. Many could be listed here but for the sake of brevity only two will be described.

**Hazardous Materials (HAZMAT) Spill**

**Hazard Description** – Events that fall into this category include hazardous material spills, waste lagoon breaches, or other dairy events that could impact the environment. Causative factors could be weather, employee error, aging infrastructure as well as improper construction and maintenance.

**Risk Management Best Practices** – These types of risks are best managed by good engineering plans and reviews of related dairy infrastructure, employee training, and HAZMAT spill response plans that are periodically rehearsed among employees.

**Risk Exposure Findings** – Interview results indicate that most dairies have the necessary plans and procedures in place to address the variety of HAZMAT issues likely to be encountered at the dairies. The use of good engineering and planning practices is more variable among the dairies interviewed.

**IT/Data Systems Failure**

**Hazard Description** – A loss of IT functions may impact dairy operations. The extent of impact is dependent upon the degree to which database access is required for routine milking and breeding operations.

**Risk Management Best Practices** – IT system and database backups along with rapid response service contracts from IT support vendors help to reduce business impacts from IT system failure.

**Risk Exposure Findings** – Dairies generally have the capability to continue milking operations when an IT system is down. Business risk in these instances is low.

# 

# Chapter 2: Business Impact and Risk Assessment Survey Forms

## Business Impact Assessment Survey Forms

### What is a Business Impact Analysis?

A “Business Impact Analysis” (BIA) is a management Assessment tool aimed at identifying an organization’s exposure to sudden loss of critical KBFs and resources due to an accident, disaster, emergency, or any other threat to routine operations. A BIA involves gathering critical business information, assessing key business functions and processes, and estimating financial and non-financial costs (customer service, market confidence, and creditor or supplier confidence) during business disruption and business restoration periods.

Creating a BIA is the key first step in the “Business Continuity Planning” process for a dairy operation. A BIA enables a dairy manager to itemize all Key Business Functions (KBF) and sub-functions as well as gather the data needed to develop response and recovery strategies. Potential disruption to a business and its consequences due to specific threats, hazards, or vulnerabilities are identified during a Risk Assessment (RA) which is completed separately or in concert with the BIA. Potential response and preventive strategies identified by the BIA and RA are addressed separately in the BC Plan. The plan enables management to identify and evaluate the impact of a range of disruptions on business operations. The plan also provides the basis for the development of recovery strategies as well as investment decisions in prevention and management strategies.

The key steps in the Business Continuity Planning process are illustrated in Figure 2.1. The RA may be done concurrently with the BIA:

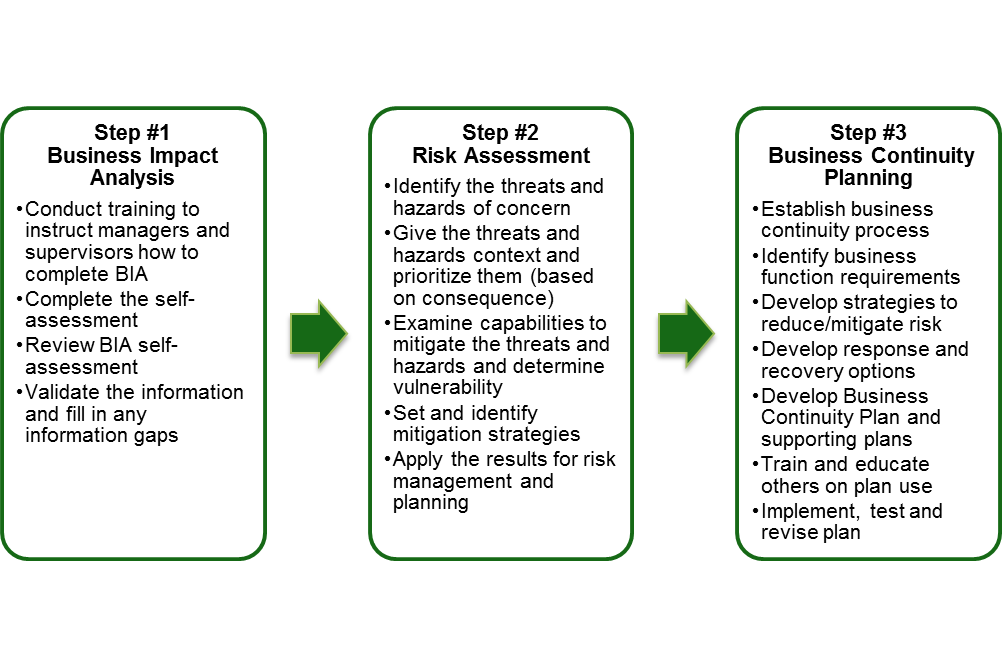


Figure 2.1 Steps in Business Continuity Planning

### Instructions

The following Business Impact Analysis survey forms are examples of a dairy’s KBFs based on an analysis of dairy operations and input from subject matter experts. The answers and data collected on the attached forms will aid in the preparation of a dairy’s BC Plan and associated Risk Management and Emergency Response Plans.

Although Management is normally responsible for collecting BIA information managers may require respective supervisors or department heads responsible for the function to provide detailed information and, in some cases complete that section of the form. **This assessment focuses on day-to-day operations and does not assume any particular type of business disruption or emergency.** For the purpose of completing the questionnaire and forms consider the following:

* Facility’s resources, assets and personnel currently required to perform the Key Business Functions during daily normal operations
* How long the facility can function without a Key Business Function being performed
* Do not be concerned with the potential hazards that may disrupt operations; they will be addressed in the Risk Assessment

In summary, the purpose of the BIA is to gather data and information that will help identify and prioritize the most critical functions and resources that are vital to continue operations in the event of a disruptive event.

Form A Self-Assessment Questionnaire: Key Business Functions & Processes

The following Key Business Function Questionnaire will enable Management to identify all KBFs, assets, and resources. Upon completion, this questionnaire will help determine just how critical certain functions, assets or resources are to the operation. For example, daily watering and feeding are understood to be a critical business sub-function. On the other hand, nutrient management may be regarded as a less critical function. The completed questionnaire will also help identify the maximum downtime a dairy operation can experience before the loss of a sub-function adversely affects a key business function specifically or operations in general.

It is important to point out that the information gathered will not be shared with anyone outside of your organization unless you or your organization chooses to do so.

Please complete the following questionnaire. Additional space is allocated at the end for additional functions which may be unique to the dairy operation or otherwise not included in this questionnaire. See the [Definition of Business Impact Analysis Terms](#_Glossary) for additional descriptions of key resources, assets and positions.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **KEY BUSINESS FUNCTION #1:**  **Herd Management**  Sub-Functions: | | Mark only those resources, assets and or positions critical to the performance or completion of each sub-function.  **(add additional resources/assets as needed)** | | | | | | | | | | | | | | | | | | | How long (time) before the loss of this sub-function impacts operations? | Estimate the financial impact with the loss of this sub-function  (based on percentage of gross) |
| Management | Hourly Labor | Stationary Equip | Mobile Equipment | Utilities (water, gas) | Computers | Transportation | Automated Equip | Breeding Stock | Milking Herd | Dry Cows | Young Stock |  |  |  |  |  |  |  |
| 1 | **Artificial Insemination**  **(includes receipt and storage of semen)** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 2 | **Breeding** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 3 | **Calving** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 4 | **Records management.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 5 | **Pregnancy Diagnosis** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 6 | **Animal Movement** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |

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| **KEY BUSINESS FUNCTION #2:**  **Calf Rearing**  Sub-Functions: | | Mark only those resources, assets and or positions critical to the performance or completion of each sub-function.  **(add additional resources/assets as needed)** | | | | | | | | | | | | | | | | | | | How long (time) before the loss of this sub-function impacts operations? | Estimate the financial impact with the loss of this sub-function  (based on percentage of gross) |
| Management | Hourly Labor | Stationary Equip | Mobile Equipment | Utilities (water, gas) | Computers | Transportation | Automated Equip | Breeding Stock | Milking Herd | Dry Cows | Young Stock |  |  |  |  |  |  |  |
| 1 | **Care** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 2 | **Records management** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 3 | **Weaning** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 4 | **Feeding** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |

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| **KEY BUSINESS FUNCTION #3:**  **Parlor Operations**  Sub-Functions: | | Mark only those resources, assets and or positions critical to the performance or completion of each sub-function.  **(add additional resources/assets as needed)** | | | | | | | | | | | | | | | | | | | How long (time) before the loss of this sub-function impacts operations? | Estimate the financial impact with the loss of this sub-function  (based on percentage of gross) |
| Management | Hourly Labor (milker) | Robotic Milking Sys | Stationary Equip | Rotaries & cow gates | Utilities (gas, elect.) | Computers | Comm Equip | Transportation | Vacuum Pump | Vacuum Regulator | Receiver Jar | Pulsator | Claw | Vacuum Lines | Chillers |  |  |  |
| 1 | **Herd management, scheduling, record keeping** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 2 | **Milking Preparation** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 3 | **Milking** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 4 | **Milk transport** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 5 | **Milk storage** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |

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| **KEY BUSINESS FUNCTION #4:**  **Feeding**  **and Watering**  Sub-Functions: | | Mark only those resources, assets and or positions critical to the performance or completion of each sub-function.  **(add additional resources/assets as needed)** | | | | | | | | | | | | | | | | | | | How long (time) before the loss of this sub-function impacts operations? | Estimate the financial impact with the loss of this sub-function  (based on percentage of gross) |
| Management | Hourly Labor | Feed Ingredients | Stationary Equip | Mobile Equipment | Utilities (water, gas, | Feed Wagons | Automated Equip | Fuel (gas, diesel,) | Scales | Upright Bulk Bins | Commodity Shed | Feed Silos | Silage Bunker | Plastic Feed Bags | Pumps |  |  |  |
| 1 | **Receipt of feed, commodities and additives** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 2 | **Feed processing and mixing** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 3 | **Ration formulation** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 4 | **Feed storage** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 5 | **Feed herd** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |

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| **KEY BUSINESS FUNCTION #5**  **Facility Maintenance**  Sub-Functions: | | Mark only those resources, assets and or positions critical to the performance or completion of each sub-function.  **(add additional resources/assets as needed)** | | | | | | | | | | | | | | | | | | | How long (time) before the loss of this sub-function impacts operations? | Estimate the financial impact with the loss of this sub-function  (based on percentage of gross) |
| Management | Hourly Labor | Stationary Equip | Mobile Equip | Utilities (water, gas) | Supply Vendors | Transportation | Computers | Fuel (gas, diesel) | Comm Equip |  |  |  |  |  |  |  |  |  |
| 1 | **Buildings** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 2 | **Vehicles (tractors, feed trucks, milk transport etc.)** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 3 | **Water supply (well, pumps and storage)** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 4 | **Yard, pens, stalls, stanchions, feed bunks** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 5 | **Electrical equipment** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 6 | **Parlor equipment** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 7 | **Milk transport and storage tanks** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |

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| **KEY BUSINESS FUNCTION #6:**  **Animal Health /**  **Hospital**  **Management**  Sub-Functions: | | Mark only those resources, assets and or positions critical to the performance or completion of each sub-function.  **(add additional resources/assets as needed)** | | | | | | | | | | | | | | | | | | | How long (time) before the loss of this sub-function impacts operations? | Estimate the financial impact with the loss of this sub-function  (based on percentage of gross) |
| Management | Hourly Labor | Stationary Equip | Mobile Equip | Utilities (water, gas) | Supply Vendors | Transportation | Computers | Fuel (gas, diesel) | Comm Equip |  |  |  |  |  |  |  |  |  |
| 1 | **Records and management** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 2 | **Use of on-site and off-site veterinary services** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 3 | **Treatment and Vaccinations** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 4 | **Carcasses disposal activities** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 5 | **Interface with USDA/TAHC and other regulatory agencies** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| **KEY BUSINESS FUNCTION #7:**  **Business Administration / Personnel**  Sub-Functions: | | Mark only those resources, assets and or positions critical to the performance or completion of each sub-function.  **(add additional resources/assets as needed)** | | | | | | | | | | | | | | | | | | | How long (time) before the loss of this sub-function impacts operations? | Estimate the financial impact with the loss of this sub-function  (based on percentage of gross) |
| Management | Hourly Labor | Stationary Equip | Mobile Equip | Utilities (water, gas) | Supply Vendors | Transportation | Computers | Fuel (gas, diesel) | Comm Equip |  |  |  |  |  |  |  |  |  |
| 1 | **Payroll** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 2 | **Accounts Receivable** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 3 | **Accounts Payable** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 4 | **IT Systems and databases to support dairy personnel** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 5 | **Overall dairy farm management and supervision** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| **KEY BUSINESS FUNCTION #8:**  **Capital and Investments**  Sub-Functions: | | Mark only those resources, assets and or positions critical to the performance or completion of each sub-function.  **(add additional resources/assets as needed)** | | | | | | | | | | | | | | | | | | | How long (time) before the loss of this sub-function impacts operations? | Estimate the financial impact with the loss of this sub-function  (based on percentage of gross) |
| Management | Hourly Labor | Stationary Equip | Mobile Equip | Utilities (water, gas) | Supply Vendors | Transportation | Computers | Fuel (gas, diesel) | Comm Equip |  |  |  |  |  |  |  |  |  |
| 1 | **Business risk management portfolio** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 2 | **Develop and approve financial reports** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 3 | **Manage assets and liabilities** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 4 | **Crop Insurance** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |

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| **KEY BUSINESS FUNCTION #9:**  **Information Technology**  Sub-Functions: | | Mark only those resources, assets and or positions critical to the performance or completion of each sub-function.  **(add additional resources/assets as needed)** | | | | | | | | | | | | | | | | | | | How long (time) before the loss of this sub-function impacts operations? | Estimate the financial impact with the loss of this sub-function  (based on percentage of gross) |
| Management | Hourly Labor | Stationary Equip | Mobile Equip | Utilities (water, gas) | Supply Vendors | Transportation | Computers | Fuel (gas, diesel) | Comm Equip |  |  |  |  |  |  |  |  |  |
| 1 | **Off-site network and data systems management** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 2 | **On-site network and data systems management** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 3 | **Software and hardware maintenance** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| **KEY BUSINESS FUNCTION #10:**  **Environmental Management**  Sub-Functions: | | Mark only those resources, assets and or positions critical to the performance or completion of each sub-function.  **(add additional resources/assets as needed)** | | | | | | | | | | | | | | | | | | | How long (time) before the loss of this sub-function impacts operations? | Estimate the financial impact with the loss of this sub-function  (based on percentage of gross) |
| Management | Hourly Labor | Stationary Equip | Mobile Equip | Utilities (water, gas) | Supply Vendors | Transportation | Computers | Fuel (gas, diesel) | Comm Equip |  |  |  |  |  |  |  |  |  |
| 1 | **Nutrient management** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 2 | **Water resource management and planning** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 3 | **Permitting** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 4 | **Record keeping** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 5 | **Spill/hazmat management** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |

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| **KEY BUSINESS FUNCTION**  (List Below)  Sub-Functions: | | Mark only those resources, assets and or positions critical to the performance or completion of each sub-function.  **(add additional resources/assets as needed)** | | | | | | | | | | | | | | | | | | | How long (time) before the loss of this sub-function impacts operations? | Estimate the financial impact with the loss of this sub-function  (based on percentage of gross) |
| Management | Hourly Labor | Stationary Equip | Mobile Equip | Utilities (water, gas) | Supply Vendors | Transportation | Computers | Fuel (gas, diesel) | Comm Equip |  |  |  |  |  |  |  |  |  |
| 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |
| 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Hours**  **Days**  **Weeks**  **Months** | **Insignificant**  **Somewhat Insignificant**  **Significant**  **Very Significant**  **Catastrophic** |

Form B1 Management and Staff

Complete the following rosters, providing as much information as possible. This information helps in the development of contingency plans and alternate arrangements to be made with suppliers, staff, and downstream customers.

| **Staff Member Name** | **Position/Title** | **Work Contact Information** | **Cell Contact Information** | **Home Contact Information** | **E-Mail Address** |
| --- | --- | --- | --- | --- | --- |
|  | President/Owner |  |  |  |  |
|  | Chief Financial Officer |  |  |  |  |
|  | Chief Operating Officer |  |  |  |  |
|  | Operations Manager |  |  |  |  |
|  | Human Resources/Employee Relations Manager |  |  |  |  |
|  | Maintenance Manager |  |  |  |  |
|  | Parlor Manager |  |  |  |  |
|  | Herd Manager |  |  |  |  |
|  | Young Stock Manager |  |  |  |  |
|  | Feed Manager |  |  |  |  |
|  | Nutritional Services |  |  |  |  |
|  | Veterinary Services |  |  |  |  |
|  | Environmental Services |  |  |  |  |
|  | Purchasing/Sales Mgr |  |  |  |  |

Form B2 Supply Vendors (Commodities)

List all suppliers of critical commodities for dairy operations. (Recommend referring to Accounts Payable list of vendors and list only those that are essential).

| Company Name | Company  Point-of-Contact Name | Supplies Provided | Office Information | Cell Information |
| --- | --- | --- | --- | --- |
| *Smith Feed* | *Fred Smith* | *Corn* | *888-888-8888* | *888-888-8888* |
|  |  |  |  |  |
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Form B3 Supply Vendors (Utilities and Fuels)

Briefly describe all utility and fuel suppliers, identifying those that are most critical for operations (Recommend referring to Accounts Payable list of vendors and list only those that are essential).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Company Name | Company  Point-of-Contact Name | Supplies Provided | Office Information | Cell Information |
| *Smith Natural Gas* | *Fred Smith* | *Natural Gas* | *888-888-8888* | *888-888-8888* |
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Form B4 Supply Vendors (Equipment and Repair)

Briefly describe equipment suppliers and repair services, identifying those that are most critical for operations (Recommend referring to Accounts Payable list of vendors and list only those that are essential).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Company Name | Company  Point-of-Contact Name | Supplies Provided | Office Information | Cell Information |
| *Smith Truck Repair* | *Fred Smith* | *Truck Repair* | *888-888-8888* | *888-888-8888* |
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Form B5 Supply Vendors (Admin and Services)

Briefly describe admin suppliers and other services, identifying those that are most critical for operations. (Recommend referring to Accounts Payable list of vendors and list only those that are essential).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Company Name | Company  Point-of-Contact Name | Supplies Provided | Office Information | Cell Information |
| *Smith Paper Supplies* | *Fred Smith* | *Office Supplies* | *888-888-8888* | *888-888-8888* |
|  |  |  |  |  |
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Form B6 Downstream Customers

Briefly describe all downstream customers that are dependent on the operations (Recommend referring to Accounts Receivable list of customers and list only those that are essential).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Company Name | Company  Point-of-Contact Name | Services Provided | Office Information | Cell Information |
| *Smith Packing* | *Fred Smith* | *Packing* | *888-888-8888* | *888-888-8888* |
|  |  |  |  |  |
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Form C Identification of Regulatory Requirements

List all Regulatory Agencies and briefly describe compliance or legal requirements and the Key Business Function associated with the requirement.

|  |  |  |
| --- | --- | --- |
| Regulatory Agency | Regulatory Requirement, Legal, Service Level, Expectation, Etc… | KBF Impacted |
| USDA APHIS | Import/Export, Disease Mitigation/Response and Animal Movements | Animal Health/Hospital Management |
| FDA | Veterinary Client/Patient Relationships, Enforcement, Pharmaceutical licensing & handling requirement | Animal Health/Hospital Management |
| FDA | Requires a mill license to feed category II additives/Frequent audits for proper feed additive usage, housekeeping | Feeding and Watering |
| EPA | Delegates permitting authority to state, but has authority to inspect operations and pollution controls. | Environmental Management |
| OSHA | Regulatory Requirements for Safety under the General Industry | Facility Maintenance |
| State Animal Health Commission | Cattle Movements, Disease Reporting, Some reclamation of diseased animals | Animal Health/Hospital Management |
| Texas Department of Agriculture | Pesticides | Environmental Management |
| Texas State Board of Veterinary Examiners | Veterinary licensing and compliance | Animal Health/Hospital Management |
| Groundwater Districts | Administers Texas Water Code - Groundwater Management Areas & Groundwater Districts | Environmental Management |
| Texas Dept. of Licensing | Requires all boilers to be inspected annually, licensing through Hartford Insurance | Feeding and Watering |

Form D Identification of Vital Records and Data

In addition to the examples listed below, list other vital records necessary to the operation, how the information is stored, its location, how much data can afford to be lost in terms of time, and the frequency of backup.

| Vital Records  *Required* | Key Business Function | Type of Media  E – Electronic  P – Paper  O - Other | Location of the Vital Record  (e.g., 6th floor file room: system name; off-site storage; etc.) | Estimated Period of Time Data can be Lost  (Hours / Days / Weeks) | Frequency of Backup  (Hours / Days / Weeks) |
| --- | --- | --- | --- | --- | --- |
| *Employee Information* | *Business Admin/Personnel* |  |  |  |  |
| *Brand Registration, Permits, Health Certificates, Veterinary testing* | *Breeding, Gestation and Parturition* |  |  |  |  |
| *Dairy Cattle Purchasing* | *Breeding, Gestation and Parturition* |  |  |  |  |
| *Dairy Cattle Sales* | *Breeding, Gestation and Parturition* |  |  |  |  |
| *Commodity Purchases* | *Feeding and Watering* |  |  |  |  |
| *Commodity Sales* | *Feeding and Watering* |  |  |  |  |
| *Payroll* | *Business Admin/Personnel* |  |  |  |  |
| *Accounts Receivable* | *Business Admin/Personnel* |  |  |  |  |
| *Accounts Payable* | *Business Admin/Personnel* |  |  |  |  |
| *Nutrient Reclamation Sales* | *Environmental Management* |  |  |  |  |
| *Dairy Cattle Treatment Records* | *Animal Health/Hospital* |  |  |  |  |
| *Feeding Contracts* | *Capital and Investments* |  |  |  |  |
| *Financing Agreements* | *Capital and Investments* |  |  |  |  |
| *Partnership Agreements* | *Capital and Investments* |  |  |  |  |

Form E Financial Stakeholders

Identify the lienholders for financial points of contact for the dairy, and other related financial stakeholders below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Company Name | Company  Point-of-Contact Name | Services Provided | Office Information | Cell Information |
| *XYX Bank* | *Fred Smith* | *Banking* | *888-888-8888* | *888-888-8888* |
|  |  |  |  |  |
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### Risk Assessment Survey Forms

#### What is a Risk Assessment?

The objective of this survey form is to help you identify and rank the risks to which your operation may be exposed. Following completion of this survey you may decide to either accept the risk associated with each hazard with your existing mitigation measures, or you may choose to increase mitigation measures in order to better protect yourself against the risk. Your actions are influenced by your particular business situation and your level of risk tolerance for the various hazards listed.

**Instructions**

* Review the first four columns of Form F to help identify what risks dairy operations could face.
* The first column in the form lists a number of dairy operation hazards or threats. These are divided into five general categories: 1) Suppliers/Downstream Customers, 2) Equipment, 3) Personnel, 4) Animal Health, and 5) Natural/Regional Disaster.
* The second column includes one or more potential causes for each listed hazard. The hazard could be a result of one, some or all of the listed potential causes.
* The third column lists some potential business impacts for each listed hazard. Some or all of the impacts listed may apply to your operation. Other impacts unique to your operation may not be listed.
* The fourth column lists a number of hazard mitigation measures that you may or may not already have in place. Consider those you already have in place as you weigh business impacts for the various hazards listed.
* After reviewing the first four columns, complete the fifth, sixth, and seventh columns of the form. These columns will help you rank your risks in order of priority.
* In the fifth column “Likelihood of Event” estimate the frequency of occurrence of the threat listed in first column. Use Low, Medium or High rankings. Low would be 1 or 2 occurrences over the past 5 years. Medium would be on the order of 3 to 5 occurrences over the past 5 years; and High would more than 5 occurrences over the past 5 years.
* Also choose High, Medium and Low rankings for the sixth column, “Business Impact.” Assuming the event occurs, what would be the impact on your overall business operations? Consider risk mitigation measures like the ones listed that you may already have in place as you estimate potential business impact. If adequate risk mitigation measures are already in place, business impact risk will be low.
* The seventh column, “Overall Risk” is a combination of what you entered for the fifth and sixth columns. If entries in both the fifth and sixth columns are High, the seventh column would also be High. If the fifth and sixth columns are both Low, your entry in the seventh column would also be Low. An entry of High in the fifth column and Low in the sixth column would result in a Medium entry in the seventh column. An entry of Low and Medium in the fifth and sixth columns could have an overall risk ranking of either Medium or Low. Use your best judgment on these overall risk values.

***Note:***Add additional hazards, causes and impact entries at the end of Form F in the blank spaces provided.

Form F Texas Dairy Hazard Assessment and Risk Ranking Survey

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Hazard/Event** | **Possible Causes** | **Business Impacts** | **Mitigation Measures** | **Likelihood of Event Occurrence**  **(H,M,L)** | **Overall Business**  **Impact**  **(H,M,L)** | **Overall**  **Risk**  **(H,M,L)** |
| **Suppliers/Downstream Customers** | | | | | | |
| Loss of feed supply | * Supply shortage * Supplier failure * Weather event * Transport loss | * Inability to feed * Improper rations | * Alternate suppliers * On-hand stockpiles * Alternate feed plans * Hedging/futures contracts |  |  |  |
| Loss of replacement heifers | * Heifer supply shortage * Supplier failure * Weather event * Transport loss | * Inability to feed * Improper rations * Loss of replacement animals * Productivity loss | * Alternate suppliers * On-hand stockpiles * Alternate feed plans |  |  |  |
| Loss of vaccination supply | * Supply shortage * Supplier failure * Transport loss | * Compromised herd health * Productivity loss * Income loss | * Adequate stockpiles * Alternate suppliers * Alternate vaccines |  |  |  |
| Loss of semen inventory/supply | * Supply shortage * Storage failure | * Limited breeding * Productivity loss | * Alternate suppliers * Alternate breeding methods |  |  |  |
| Loss of calving operation | * Business failure * Inadequate capacity | * Herd population disruption * Productivity loss | * On-site operations * Alternate suppliers |  |  |  |
| Loss of downstream milk customer | * Business failure * Inadequate capacity | * Production loss * Income loss | * Alternate buyers * Alternate end-uses(cheese vs. milk) * Hedging/futures contracts |  |  |  |

| **Hazard/Event** | **Possible Causes** | **Business Impacts** | **Mitigation Measures** | **Likelihood of Event Occurrence**  **(H,M,L)** | **Business**  **Impact**  **(H,M,L)** | **Overall**  **Risk**  **(H,M,L)** |
| --- | --- | --- | --- | --- | --- | --- |
| **Equipment** | | | | | | |
| Loss of feed mixing/feeding | * Aging equipment * Inadequate maintenance * Personnel loss * Inadequate spare parts | * Inability to feed * Improper rations * Productivity loss | * Preventive maintenance * Employee training * Equip. upgrades * Parts/spares avail. |  |  |  |
| Loss of water | * Well system failure * Severe weather * Loss of aquifer | * Herd loss * Productivity loss | * Alternate supplies * Preventive maintenance * Severe weather plan * Long range water plan |  |  |  |
| Utility loss (elect, gas) | * Severe weather * Utility malfunction | * Loss of automated equip. * Production loss * Income loss | * Backup generator * Rapid service agreement/contract |  |  |  |
| IT/data systems failure | * Software malfunction * Hardware malfunction * Inadequate maintenance * Operator error * Cyber-attack (insider/outsider) * Supplier loss/errors | * Loss of herd records * Loss of bus. office functions (e.g. payroll) * Productivity loss * Regulatory non-compliance | * Preventive maintenance * Alternate servers * System backups * Operator training * Manual backup plans * Cyber security plan |  |  |  |
| On-site HAZMAT event | * Lagoon failure * Fuel spill * Sub-standard design/engineering * Inadequate maintenance | * Regulatory fines * Business loss * Adverse publicity | * Best practices design/engineering * Preventive maintenance * Employee training * Ongoing systems surveillance |  |  |  |
| Loss of yard equip/vehicles | * Inadequate maintenance * Aging equipment | * Productivity loss * Income loss | * Preventive maintenance * Operator training * Equip. upgrades * Parts/spares on hand |  |  |  |
| **Personnel** | | | | | | |
| Loss of management | * Pandemic illness * Termination/loss * Weather event | * Productivity loss * Loss of key functions (e.g. payroll) * Productivity loss | * Mgr cross-training * Emergency staffing plan * Emergency transportation plan |  |  |  |
| Loss of hourly labor | * Pandemic illness * Termination/loss * Weather event | * Productivity loss | * Employee cross-training * Emergency staffing/transport plan |  |  |  |
| Loss of vet services | * Pandemic illness * Termination/loss * Weather event | * Compromised health surveillance * Productivity loss * Increased disease risk | * Alternate vet services * Routine animal health surveillance training |  |  |  |
| **Animal Health** | | | | | | |
| FAD infectious disease outbreak | * Natural causes * Inadequate biosecurity * Intentional event | * Production loss * Herd loss * Dairy quarantine | * Routine and heightened biosecurity plans * Herd health surveillance * Employee biosecurity training * Dairy access control * New cattle receipt controls * Equipment/personnel decon |  |  |  |
| Other routine disease | * Inadequate surveillance * Malnutrition | * Production loss * Herd loss | * Routine herd surveillance * Employee training |  |  |  |
| **Natural/Regional Disaster** | | | | | | |
| Partial loss of facility | * Tornado, flood | * Herd loss * Capital loss * Income loss | * Emergency evacuation plan * Emergency response plan * Insurance coverage |  |  |  |
| Forced facility evacuation | * Flood, wildfire, regional HAZMAT event | * Inability to feed/water * Herd loss * Production loss | * Emergency evacuation plan * Emergency response plan |  |  |  |

### Definition of Business Impact Analysis Terms

**Animal Health / Hospital Management (KBF)** – The prevention, diagnosis and treatment of disease, disorder and injury to herds.

**Automated Equipment** – Machinery or technical systems used to automatically perform a function.

**Automatic** **Milking System** – Equipment or computerized systems used in the involuntary milking of dairy cows, without human labor (i.e. robotics)

**Breeding, Gestation and Parturition (KBF)** – Includes natural or artificial insemination, care of pregnant cows, and birthing.

**Business Administration / Personnel (KBF)** – The administration of a business which includes management of operations, people, decision making and other resources to direct activities toward common business goals and objectives.

**Calf Rearing (KBF)** – The process of growing and managing calves.

**Capital and Investments (KBF)** – Funds invested in a firm or enterprise for the purposes of furthering its business objectives.

**Communication Equipment** – Radios, cell phones or other equipment needed to sustain operations.

**Computers** – On-site or corporate computer systems need to sustain the operation.

**Downstream Customers** – Off-site entities that receive material or services related to the function (e.g. packing house, recycled receivers, co-owners).

**Environmental Management (KBF)** – The management of a business’ environmental programs in a comprehensive, systematic, planned and documented manner.

**Facility Maintenance (KBF)** – The various task and functions necessary to sustain the operations of a dairy facility.

**Feed and Watering (KBF)** –The providing of feed and water to herds.

**Feed Ingredients** – Includes all types of feed and feed additives.

**Fuel** – Gasoline, diesel and other on-site supplies needed to operate equipment.

**Gestation** – The period of development of the fetus in the uterus from conception until birth; pregnancy.

**Hourly Labor** – Non-management personnel at the dairy needed to sustain operation of the function.

**Information Technology (KBF)** – The use of technologies from computing, electronics, and telecommunications to process and distribute information in digital and other forms.

**Line-Management** – Dairy facility supervisory personnel (e.g. department heads).

**Management** – Dairy owners or supervisory personnel needed to sustain operation of the function.

**Mobile Equipment** – Moveable equipment needed for the function (e.g. on-site vehicles, loaders, tractors, trailers).

**Parturition** – The act or process of giving birth.

**Parlor Operations (KBF)** – Tasks such as cattle movement/preparation, milking, milk transport and storage performed in the milking parlor.

**Rearing** – To breed and raise livestock.

**Stationary Equipment** – Non-mobile equipment needed for the function (e.g. parlor equipment, pumps, vacuums, etc.).

**Supply Vendors** – Off-site suppliers required to complete function (e.g. feed ingredients, pharmaceuticals, software, etc.).

**Switch Panels** – A mechanical, electrical or electronic device used to open or close a circuit.

**Transportation** – Off-site transportation providers needed to sustain the function (e.g. feed ingredient / livestock transport trucking companies).

**Utilities** – Essential gas, electric, telephone services provided by off-site vendors

# Chapter 3: Risk and Resource Management Plan

### Instructions

The Risk and Resource Management Plan, in conjunction with Business Impact Analysis (BIA) and Risk Assessment (RA) results, outlines specific risk management steps that can be taken to reduce business risk exposure to a broad spectrum of hazards that have the potential to interrupt dairy operations.

The layout of this chapter is as follows:

* Risk Management Strategies for Specific Hazards (Tables 3.1 – 3.11)
* Critical Resources for Execution of Key Business Functions (Table 3.12)

To address specific risks, work through the tables and identify those risk management options which are appropriate for implementation at the dairy. Space is provided to add additional measures at the end of each table.

The Critical Key Business Functions Resources (Table 3.12) is provided to help identify specific resources or actions that can help maintain the Key Business Functions.

The risk management strategies and measures included in this chapter are based on best practice risk management measures. Hazards or incidents with little or no potential for significant business disruption are not included.

***Note:*** Complete descriptions of measures that can be implemented to better manage risk to foreign and emerging animal diseases (FEAD) such as Foot and Mouth Disease (FMD) is beyond the scope of this chapter. Refer to the facility *Biosecurity Plan* for a more complete listing of FEAD risk management steps.

Table 3.1 Off-Site FMD Incident

|  |
| --- |
| **An FMD or other FEAD incident could occur within the nation or Panhandle region. This would result in a heightened biosecurity condition within the dairy.**  **Impact to operations: HIGH[[2]](#footnote-3)** |
| **Risk Reduction Measures** |
| Visitor access controls  Site vehicle access controls  Increased herd health surveillance  New cow/calf quarantine/surveillance  Up-to-date Dairy Biosecurity Plan  Employee FMD education  Vehicle and personnel decontamination capacity  Cooperate with other regional dairies and regional livestock operations (e.g. cattle swine, transport operations) to contain disease  Cooperate with state and federal disease management agencies  A written dairy management requirements plan for communication with FEAD Incident Commander  Others:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  ***Note*:** Consult the *Texas Dairy Biosecurity Plan* for more detailed information. |

Table 3.2 On-Site FMD Incident

|  |
| --- |
| **The presence of FMD-infected cattle could be strongly suspected or preliminarily confirmed at the dairy. Causative factors could be receipt of infected cattle, contamination via visitors/employees or intentional contamination by an individual wishing to do harm. Additional more stringent biosecurity measures are warranted.**  **Impact to operations: HIGH** |
| **Risk Reduction Measures** |
| Visitor access controls  Site vehicle access controls  Suspect cattle quarantine  Diseased cattle quarantine  Increased cattle health surveillance  Employee FMD education  Vehicle and personnel decontamination capacity  Cooperate with other regional dairies and regional livestock operations (e.g. cattle swine, transport operations) to contain disease  Cooperate with state and federal disease management agencies  A written dairy management requirements plan for communication with hazmat FEAD Incident Commander  Others:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  ***Note*:** Consult the *Texas Dairy Biosecurity Plan* for more detailed information. |

Table 3.3 Partial or Total Dairy Loss

|  |
| --- |
| **An extreme weather incident such as a tornado or flood could result in significant dairy property loss with possible additional loss of personnel or livestock. Dairy management and/or feeding operations could be compromised.**  **Impact to Operations: HIGH** |
| **Risk Reduction Measures** |
| Alternative herd holding and/or transport plans  Alternative feeding and watering plans  Weather watch and employee notification plan  Emergency response and employee evacuation plans  Vital equipment spares and/or backup plans  High herd mortality disposal plans  Insurance coverage for capital assets  Insurance coverage for livestock assets  Others:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Table 3.4 Loss of On-Site Utilities

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| --- |
| **A severe weather incident or failure of off- or on-site equipment could result in an extended electricity or gas service loss. Critical dairy functions such as milk parlor operations or vital data services may be impacted.**  **Impact to Operations: MODERATE** |
| **Risk Reduction Measures** |
| Backup generator and fuel reserves at dairy  Routine, timely backups of dairy vital records  Manual/paper-based backup procedures for milking operations  Alternate access to feed supplies in event of feedstock loss  Others:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Table 3.5 Regional HAZMAT Event

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| --- |
| **A regional HAZMAT event such as a rail accident with hazardous cargo could create an exclusion zone that includes a dairy or dairy support facilities. Lack of facility access could jeopardize cattle care operations.**  **Impact to Operations: MODERATE** |
| **Risk Reduction Measures** |
| Emergency staffing and equipment plan for required milking operations  A written dairy management requirements plan for communication with HAZMAT Incident Commander  Others:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Table 3.6 Loss of Supplier

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| --- |
| **The loss of a key supplier could limit access to feed, semen or medications. Causative factors could include financial failure of a supplier business, product contamination or failure, regional drought-induced commodity shortages, as well as others.**  **Impact to Operations: MODERATE** |
| **Risk Reduction Measures** |
| Alternative feedstock sources and plans  Alternative semen, medication suppliers  Periodic supplier performance/financial audits  Standing agreements with other dairies for shared access to existing suppliers  Others:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Table 3.7 Loss of Downstream Customer

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| **Downstream losses could include loss of creamery, cheese plant or other mik receiver. Causative factors could include business failure, labor disputes, market decline.**  **Impact to Operations: MODERATE** |
| **Reduce Risk** |
| Alternate downstream customers  Milk cooperative membership  Others:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Table 3.8 Dairy Equipment Failure

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| --- |
| **Failure of critical milk processing equipment, dairy vehicles, boilers or well water system failure. Causative factors could include: weather events, normal-use equipment failure, employee operational error, aging equipment, and inadequate maintenance.**  **Impact to Operations: MODERATE** |
| **Risk Reduction Measures** |
| Vital equipment spares available  Employee equipment use training program  Preventive maintenance program for dairy equipment  Critical equipment upgrade/replacement program  Timely access to off-site repair personnel  Standing agreements with other dairies for emergency, short-term critical equipment loans  Others:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Table 3.9 Computer or Automation Failure

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| **A hardware/software failure, insider or outsider cyber-attack or other incident could compromise all or some of the information technology (IT) function. Loss of computer control could impair milk parlor operations. Causative factors could include inadequate cyber protection measures, aging equipment, and inadequate maintenance.**  **Impact to Operations: MODERATE** |
| **Reduce Risk** |
| Cyber-attack protection measures  IT system failure disaster recovery plan  Manual operation/backup plans for milk parlor operations  Manual/backup payroll and other critical administration procedures  Computer hardware replacement/upgrade program  IT loss insurance policies  Others:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Table 3.10 Loss of Hourly Employees

|  |
| --- |
| **A severe weather incident or flu pandemic could threaten the hourly workforce at the dairy. Missed payroll or unwarranted employee fears about exposure to FMD or other animal disease agents could also compromise the availability of hourly workers.**  **Impact to Operations: HIGH** |
| **Risk Reduction Measures** |
| Weather watch and employee communication/alert plan  Emergency dairy staffing plan  Formal employee cross-training  Employee FMD-awareness education program  Emergency short-term hourly employee sharing agreements with other dairies  Average or above average employee compensation  Other hourly employee retention incentives  Others:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Table 3.11 Hazardous Material (HAZMAT) Spill

|  |
| --- |
| **Employee error, inadequate equipment design or maintenance as well as weather factors could result in a hazardous material spill (e.g., fuel, nutrient pond breach) that could jeopardize dairy operations.**  **Impact to Operations: LOW** |
| **Risk Reduction Measures** |
| Employee training program for HAZMAT handling  Infrastructure preventive maintenance program  HAZMAT incident response plans and periodic training  Best practices design, engineering and construction  Insurance coverage for HAZMAT incidents  Others:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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### Resources for Recovery of Critical Key Business Functions

Table 3.12 lists a summary of key risk mitigation measures found in the preceding hazard tables. Implementation of these measures for the most critical key business functions listed will strengthen overall business continuity.

Table 3.12 – Critical Key Business Function Resources

| **KBF/Criticality** | **Risk Mitigation Measures** |
| --- | --- |
| **Herd Management**  **High Criticality** | Emergency staffing plan for vital calf operations |
| Alternate semen suppliers |
| Employee cross-training |
| **Parlor Operations**  **High Criticality** | Backup generator and adequate fuel |
| Key equipment spares |
| Management/employees trained in rapid repair |
| Manual backups for automated parlor systems |
| Routine maintenance for refrigeration systems |
| Employee cross training |
| Emergency staffing plan |
| **Feeding and Watering**  **High Criticality** | Adequate or alternate feed supplies |
| Backup well with adequate storage |
| **Facility Maintenance**  **High Criticality** | Emergency staffing plan |
| Spare tools, parts inventory |
| Routine preventive maintenance |
| Maintenance mechanic cross-training |
| **Environmental Management**  **High Criticality** | Routine lagoon system maintenance |
| Routine lagoon system surveillance |
| **Animal Health**  **Hospital Management**  Moderate Criticality | Employee training |
| **Calf Rearing**  Moderate Criticality | Employee cross-training |
| Alternate cow/calf services |
| Emergency staffing plan |
|  |
| **Business**  **Administration /**  **Personnel**  **Management**  Least Critical | Manual backups for vital services |
| **IT Services/**  **Data Management**  Least Critical | Backup servers/software |
| Backup data restoration plan |
| IT loss communication plan (see IT Disaster Recovery Plan -- Chapter 4) |
| Rapid service/repair contracts |
| Routine off-site cloud backup services |

# Chapter 4: Information Technology Disaster Recovery Plan

The objective of the Information Technology (IT) Disaster Recovery (DR) Plan is to ensure timely and effective response to an incident or other emergency that affects a Dairy’s hardware, software, network connectivity, and critical data and information. Timely response includes restoring these IT services and critical data as quickly as possible while minimizing the loss of data and impact to business and dairy operations.

The plan outlines data backup preparations, and steps to take immediately after an incident. Depending on the type of incident and extent of disruption, steps outlined may be performed out of sequence or skipped altogether.

The layout of this Chapter is as follows:

* IT Disaster Recovery Objectives and Key Activities
  + IT Disaster Recovery Plan objectives
  + IT Recovery Activities
  + Reviewing Recovery Plans
* Roles and Responsibilities
  + Director Information Technology
  + Dairy Manager
* Data Backup and Storage
  + Developing a Back Up Plan
* Recovering From an Incident
  + Assessing Extent and Scope of Damage
  + Restoring Network Connectivity and Computer Systems

### IT Disaster Recovery Objectives and Key Activities

Objectives of this IT Disaster Recovery Plan are:

* Minimize interruptions
* Minimize data loss
* Limit extent of disruption and damage
* Minimize economic impact
* Identify alternative means of operation
* Back up and store critical data and information

Key IT recovery activities include:

* Activating the IT Disaster Recovery Plan
* Assessing extent and scope of damage
* Restoring network connectivity and computer systems
* Reinstalling software applications
* Retrieving data backups and restoring critical data

### 

### Roles and Responsibilities

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, maintains and implements the IT Disaster Recovery Plan.

Primary responsibilities in preparing for and recovering from an incident are:

* Creating and maintaining data backup schedules
* Backing up data and storing media offsite
* Restoring computer room | Data Center operations (if applicable)
* Restoring hardware (networks, servers, desktops, laptops, and peripherals)
* Reconfiguring data network(s) and re-establishing connectivity
* Reinstalling software applications
* Retrieving data backup media and restoring critical data
* Maintain and update IT contact list.

### Data Backup and Storage

Critical business data is stored on media such as CD, DVD, or USB flash drive, and stored in a secure offsite location. Data backup and testing for data integrity is done on regularly scheduled bases, see below.

#### Data Backup Plan

Critical data and information, to include desktop computer, laptops and servers, requiring backup and backup storage capacity is listed in Table 4.1. The data backup schedule along with the secure backup data location is listed in Table 4.2.

#### Network Logging

Core network devices such as routers and firewalls log network traffic used to identify and mitigate risks to the IT infrastructure and assist in assessing the cause and extent of damages after an incident. Logs are stored on a remote log server and routinely reviewed. Key Data Management assets will also log activities to a remote log server to provide real-time data to assist in recovery following an incident.

Table 4.1 Critical Data and Information

|  |  |  |
| --- | --- | --- |
| **Step 1 | Critical Data and Information** | | |
| Data to Backup | Data Location | Data | File Size\* |
|  |  | Size:  TB | GB | MB |
|  |  | Size:  TB | GB | MB |
|  |  | Size:  TB | GB | MB |
| \* TB=Terabyte (1,000 GB) | GB=Gigabyte (1,000 MB) | MB=Megabyte (1,000 KB or Kilobytes) | | |

Table 4.2 Data Backup and Offsite Location

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Step 2 | Data Backup Schedule and Offsite Location** | | | | |
| **Backup Frequency** | **Backup Tested?** | **Target Device** | **Device Location** | **Backup Media Offsite Location** |
| Daily  Weekly  Monthly | Yes  No |  |  |  |
| Daily  Weekly  Monthly | Yes  No |  |  |  |
| Daily  Weekly  Monthly | Yes  No |  |  |  |

### Recovering From an Incident

Once an incident occurs that disrupts network connectivity and computer systems, activate the IT Disaster Recovery Plan and take these steps:

* Assess extent and scope of damage
* Restore network connectivity and computer systems
  + Salvage or replace servers, computers, and peripherals
  + Re-establish network connectivity
  + Reinstall software applications
  + Retrieve data backups and restore critical data

Restoring Network Connectivity and Computer Systems

Restoring network connectivity and computer systems from an incident will be done at either the temporary location or permanent facility. Deciding where to recover and restore network connectivity and computer systems will be done after assessing the extent and scope of damage to a facility. At the end of the restoration process, identify IT Disaster Recovery Plan deficiencies, take necessary remediation steps, update and then distribute a revised plan.

Software Application Restoration

Identify, prioritize, and restore operating systems and software applications as needed. Priorities can change depending on the incident and type of operation being restored.

# Chapter 5: Training and Exercises

### Business Continuity and Crises Awareness Training

Business continuity and crisis awareness training should concentrate on the use of Emergency Response Guides (ERGs) that form the basis of this BC Plan. Employees responsible for executing the various actions outlined in the ERGs will be made familiar with their roles and responsibilities. Training sessions offer the opportunity to work through the guides so that all are familiar with the purpose of the guides and how best to execute them. In a typical training session, one or more guides can be selected for discussion and review. Each training session should be on the order of 30 to 60 minutes duration.

### Training Methods

Several types of drills and exercises are listed below and provide simple and efficient ways to ensure familiarity and validation of the plan. If more comprehensive exercises are desired, planners can consult the Department of Homeland Security (DHS) [Homeland Security Exercise and Evaluation Program (HSEEP)](https://hseep.dhs.gov/pages/1001_HSEEP7.aspx) or the [FEMA Ready Program](http://www.ready.gov/planning), both sites have exercise planning guidance, recommended materials and slide templates.

* **Training Sessions** used to review, discuss, and familiarize employees in the use of the Emergency Response Guides.
* **Tabletop exercises** are conducted with key players and allow participants the opportunity to walk through the Emergency Response Guides whether at the onset, during, or after a crisis event. A script, timeline, or similar guiding document outlines the situation, scenario, and other details the participants work through together.
* **Functional exercises** build upon the tabletop model, but include performing actual functions – in real time – and in conjunction with others in response to a crisis. For example, communications is often a challenge when responding to an incident; therefore, discussing various forms of communications in a tabletop followed by actual testing of these communications methods (e.g., between the Business Recovery Team, Management, and Emergency Responders) during a functional exercise will enhance the capability to effectively communicate.
* **Drills** test a single, specific operation or function. Drills are generally limited to internal company personnel and used to provide training on new equipment, develop or test new policies or procedures, or practice and maintain current skills.

### Exercise and Drill Scenarios

The following scenarios for exercises and drills are provided based on major types of hazards and the potential impact of associated incidents to disrupt dairy operations. These include:

* Natural – Foreign Emerging Animal Disease or severe weather (ice/snow storm, tornado, flood)
* Technological – Cyber-attack or extended loss of power
* Human-caused – Acts of terrorism or strikes (e.g., loss of transportation sector)
* All Hazards – Emergency Communications Drill
* All Hazards – Emergency Accountability and Notification Drill

### Training, Exercise and Drill Materials

The FEMA Ready Program, [Business Continuity Planning Suite](http://www.ready.gov/business-continuity-planning-suite), can be used to develop exercises and drills. The BC Training Team will download and extract the Business Continuity Planning Suite, click on media folder to access BC Plan Exercise Planner Instructions and various templates for exercise planning at the FEMA Ready Program. A basic exercise or drill template will include:

* Title of Drill/Exercise
* Description
* Date/Time/Length of Drill/Exercise
* Drill/Exercise Planner/Facilitator
* Objectives
* Participants
* Key issues to discuss
* References

**Template samples on the following pages may be used by the training team to facilitate training:**

Table 5.1 - **Training Session Template**

Table 5.2 - **Exercise/Drill Template**

Table 5.3 - **Completed Exercise/Drill Template**

Table 5.4 - **After Action Report Template**

Table 5.5 - **Training Log Template**

Table 5.1 Training Session Template

|  |  |  |
| --- | --- | --- |
| **Lesson Title** | | |
| Date: | Time: | Length: |
|  |  |  |
| Facilitator: | | |
|  | | |
| Introduction: | | |
| * Provide a brief overview of what will be covered. * Provide a clear and concise statement of the objective of the training session. * Provide a clear understanding of what each participant is expect to “take-away” from the session. | | |
| Presentation: | | |
| * Introduce the subject and material to be covered. * Present material in a logical and sequential order, i.e. duties and responsibilities, time sequence etc. * As much as possible allow for practical activities which includes discussion to open ended questions e.g. “what do you think is the most likely or critical impact of?” * Allow ample time for questions. * Provide a summation of what was covered, expectations of participant’s use of material and any other relevant information that may have resulted from discussion. | | |
| References: | | |
| * None for this training session. | | |

Table 5.2 Exercise/Drill Template

|  |  |  |
| --- | --- | --- |
| **Exercise/Drill Template** | | |
| Title of Exercise/Drill: | | |
|  | | |
| Description: | | |
|  | | |
| Date: | Time: | Length: |
|  |  |  |
| Planner/Facilitator: | | |
|  | | |
| Objectives: | | |
|  | | |
| Participants: | | |
|  | | |
| Key Issues to Discuss or Functions to Accomplish: | | |
|  | | |
| References: | | |
|  | | |

Table 5.3 Completed Exercise/Drill Template

| **Exercise / Drill Sample** | | |
| --- | --- | --- |
| Title of Exercise/Drill: | | |
| Emergency Accountability And Notification Drill | | |
| Description: | | |
| A severe winter storm has impacted the Panhandle Region and has caused power outages and significant disruption to dairy operations. Road conditions are hazardous. It is imperative all employees be accounted for and receives information about business continuity operations and expectations for work requirements. | | |
| Date: | Time: | Length: |
| TBD | TBD | TBD |
| Planner/Facilitator: | | |
| TBD | | |
| Objectives: | | |
| 1. Ensure emergency contact information is accurate 2. Determine average time of response and any gaps in the notification process 3. Assure the employees the company is concerned about their welfare | | |
| Participants: | | |
| All Employees | | |
| Key Issues to Discuss or Functions to Accomplish: | | |
| 1. Order by Management to account for employees and families 2. Active contact by department heads with all employees and a report on status and availability (i.e., there must be two way communications via phone, email, or text). On contact, the department head or designated representative must preface this is an EXERCISE call and no action after the call is required. The following questions will be asked:  * Are you and your family safe? * Do you require any assistance from the company? * What is your availability for emergency operations? * Can you travel safely to the worksite?  1. The drill will be unannounced and will occur after normal working hours 2. A status report will be given to Management in 2 hours   There will be a general announcement a week prior that sometime in the next week a no-notice accountability drill be conducted in order to check contact information and rehearse emergency procedures. | | |
| References: | | |
| Emergency Response Guides 4 and 5 | | |

### After Action Report and Template

At the end of each drill or exercise, the Planner/Facilitator creates a summary of the event and the key issues discussed and will develop an After Action Report with table of corrective actions to address gaps and shortfalls, those responsible for remediation, and timeline for completion. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, reviews and approves the After Action Report and implements corrective actions.A blank After Action Report Template is provided below.

Table 5.4 After Action Report Template

|  |  |
| --- | --- |
| **After Action Report** | |
| Title: | Date: |
|  |  |
| Description of Event: | |
|  | |
| Gaps/Issues: | |
|  | |
| Recommendations: | |
|  | |

### Employee Training Log

At the end of each training session, drill or exercise, the training team coordinates with department heads to ensure training is recorded. Use Table 5.5 to keep a training log.A record of training will be kept by department heads and human resources.

Table 5.5 Training Log Template

|  |  |  |
| --- | --- | --- |
| **Training Log** | | |
| Training Topic: | | |
|  | | |
| Instructor: | | Date: |
|  | |  |
| Employee Name: | Signature: | |
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# Chapter 6: Employee Support and Assistance

Local, regional, and national resources exist to assist employees before, during and after emergency situations. Refer to Table 6.1 below for contact information. This information is also included in the **Employee Resource Guide** tri-fold brochure which can be provided to new employees (**Figure 6.2).** It can be further customized by adding company logo and phone numbers. It is recommended that the Employee Resource Guide be displayed in employee break rooms and handed out to employees annually and at time of hire.

Table 6.1 Community and Emergency Support Resources

| **Community Support and Emergency Resources** | |
| --- | --- |
| The following contact and resource information provides links and information that employees and their families may use in preparation for or in response to an emergency. **Following any emergency, employees need to monitor local media for information.** | |
| **Preparedness Resources** | **Description of Services and Internet Links** |
| Local Office of Emergency Management (OEM) | Local OEMs participate in an inter-jurisdictional emergency management programs to ensure the readiness of a community to respond to all hazards that exist in a given region. It is highly recommended that you contact your local OEM to learn how to be prepared for hazards within your region. |
| Federal Emergency Management Agency (FEMA) | *Ready* is designed to educate and empower Americans to prepare for and respond to natural and man-made disasters.  Ready and its Spanish language version *Listo* asks individuals to do three key things: (1) build an emergency supply kit, (2) make a family emergency plan and (3) be informed about the different types of emergencies that could occur and their appropriate responses.  [www.ready.gov](http://www.ready.gov)  www.Listo.gov  <http://www.ready.gov/are-you-ready-guide> |
| American Red Cross | Preparedness Education: Become a Master of Disaster  Be Red Cross Ready (family plans and go kits)  <http://www.redcross.org/prepare> |
| **Emergency Resources** | **Description of Services and Internet Links** |
| Weather Information | Current Watches and Warnings, Hazardous Weather  [www.weather.gov](http://www.weather.gov) |
| Road Conditions | **Texas:** 1-800-452-9292 or <http://www.drivetexas.org/>  **Oklahoma:** 1-888-425-2385 or [www.okladot.state.ok.us/road\_condition.htm](file:///\\cai-sd-fs1\HLS-HLD\Panhandle%20Regional%20Planning%20Commission\Business%20Continuity%20Guide\TF1-3%20Operation%20-%20Feedyard\BC%20Guide%20&%20Plan\BCG\www.okladot.state.ok.us\road_condition.htm)  **Kansas:** 1-800-585-7623 / 511 or <http://511.ksdot.org/> |
| **Recovery Resources** | **Description of Services and Contact Information** |
| Family Support Services | Clinical, crisis, education (counseling, domestic violence, sexual assault, parenting, life skills).  **Contact your region-specific organization for assistance.** |
| Health and Human Services Commission | General health and human services provider (Medicaid, disaster assistance, food benefits).  **Contact your region-specific organization for assistance.** |
| Housing and Community Affairs | Housing assistance and disaster relief (temporary accommodations, immediate needs, food and clothing).  **Contact your region-specific organization for assistance.** |



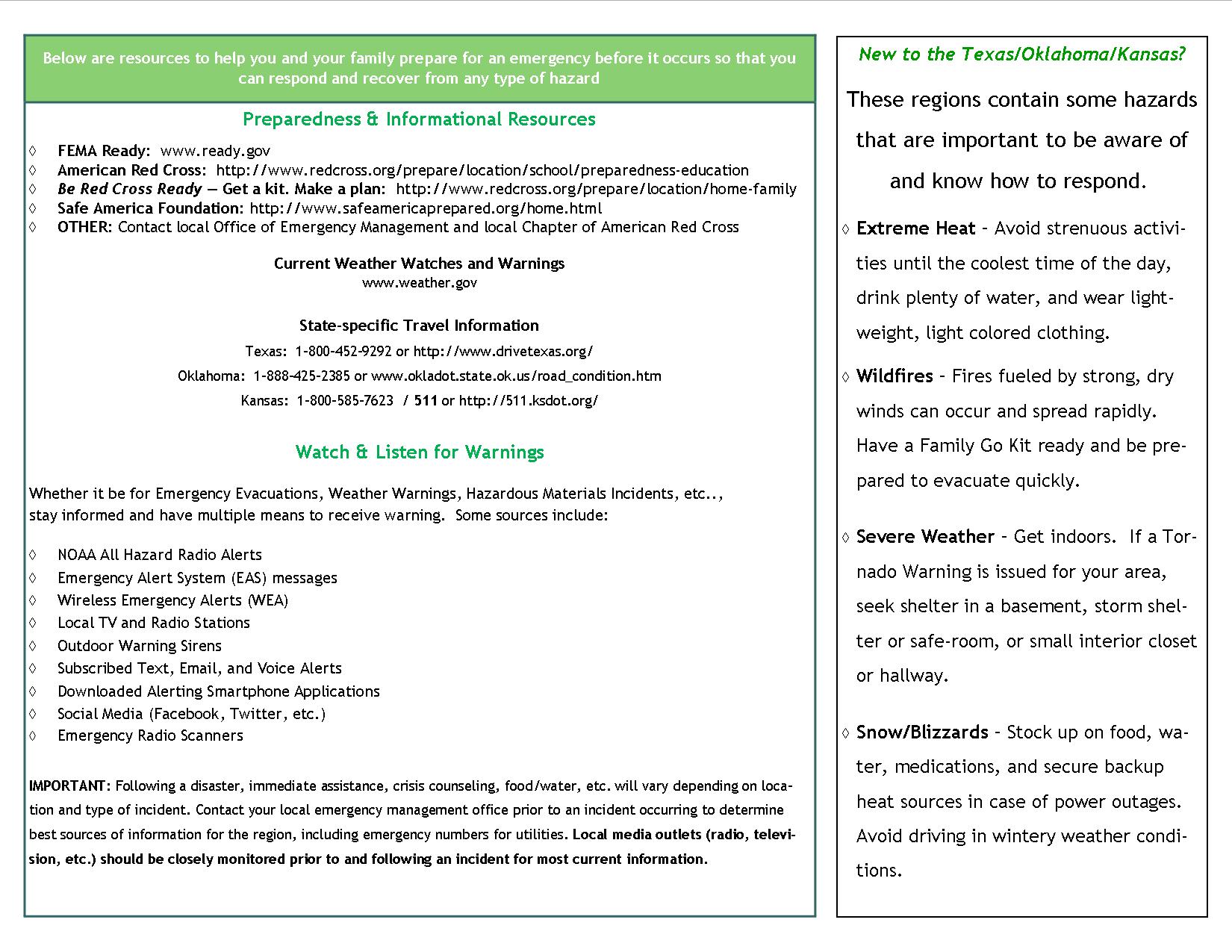


Figure 6.2 Employee Resource Guide

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1. These are typical department names and/or manager titles and may differ for specific dairies. [↑](#footnote-ref-2)
2. Impact to operations (high, medium, low) for this and all following hazards is *suggested* based on a dairy survey. Results for individual dairies may vary. [↑](#footnote-ref-3)