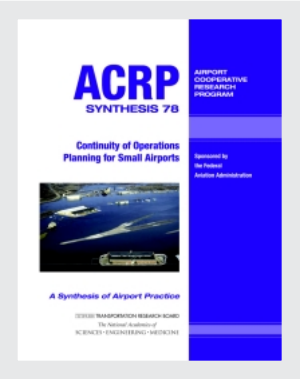

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ACRP SYNTHESIS 78

AIRPORT COOPERATIVE RESEARCH PROGRAM

Continuity of Operations Planning for Small Airports

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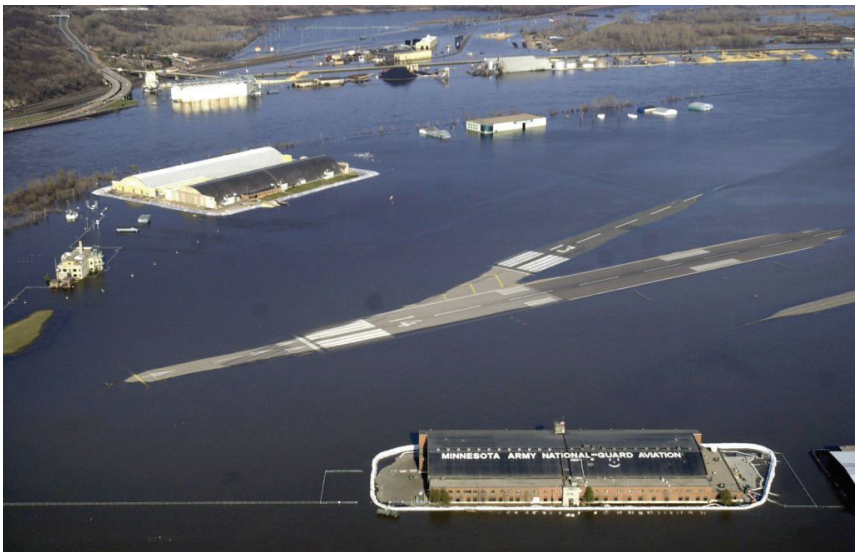

A Synthesis of Airport Practice

TRB TRANSPORTATION RESEARCH BOARD
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AIRPORT COOPERATIVE RESEARCH PROGRAM

ACRP **SYNTHESIS 78**

Continuity of Operations Planning for Small Airports

A Synthesis of Airport Practice

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AIRPORT COOPERATIVE RESEARCH PROGRAM

Airports are vital national resources. They serve a key role in transportation of people and goods and in regional, national, and international commerce. They are where the nation's aviation system connects with other modes of transportation and where federal responsibility for managing and regulating air traffic operations intersects with the role of state and local governments that own and operate most airports. Research is necessary to solve common operating problems, to adapt appropriate new technologies from other industries, and to introduce innovations into the airport industry. The Airport Cooperative Research Program (ACRP) serves as one of the principal means by which the airport industry can develop innovative near-term solutions to meet demands placed on it.

The need for ACRP was identified in *TRB Special Report 272: Airport Research Needs: Cooperative Solutions* in 2003, based on a study sponsored by the Federal Aviation Administration (FAA).

ACRP carries out applied research on problems that are shared by airport operating agencies and not being adequately addressed by existing federal research programs. ACRP is modeled after the successful National Cooperative Highway Research Program (NCHRP) and Transit Cooperative Research Program (TCRP). ACRP undertakes research and other technical activities in various airport subject areas, including design, construction, legal, maintenance, operations, safety, policy, planning, human resources, and administration. ACRP provides a forum where airport operators can cooperatively address common operational problems.

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ACRP benefits from the cooperation and participation of airport professionals, air carriers, shippers, state and local government officials, equipment and service suppliers, other airport users, and research organizations. Each of these participants has different interests and responsibilities, and each is an integral part of this cooperative research effort.

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Cover figure: Flooding south of St. Paul Airport (Holman Field) (used by permission, STP).

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FOREWORD

Airport administrators, engineers, and researchers often face problems for which information already exists, either in documented form or as undocumented experience and practice. This information may be fragmented, scattered, and unevaluated. As a consequence, full knowledge of what has been learned about a problem may not be brought to bear on its solution. Costly research findings may go unused, valuable experience may be overlooked, and due consideration may not be given to recommended practices for solving or alleviating the problem.

There is information on nearly every subject of concern to the airport industry. Much of it derives from research or from the work of practitioners faced with problems in their day-to-day work. To provide a systematic means for assembling and evaluating such useful information and to make it available to the entire airport community, the Airport Cooperative Research Program authorized the Transportation Research Board to undertake a continuing project. This project, ACRP Project 11-03, "Synthesis of Information Related to Airport Practices," searches out and synthesizes useful knowledge from all available sources and prepares concise, documented reports on specific topics. Reports from this endeavor constitute an ACRP report series, *Synthesis of Airport Practice*.

This synthesis series reports on current knowledge and practice, in a compact format, without the detailed directions usually found in handbooks or design manuals. Each report in the series provides a compendium of the best knowledge available on those measures found to be the most successful in resolving specific problems.

PREFACE

By Gail R. Staba
Senior Program Officer
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"When a disruption occurs, our airport is prepared to handle it!" Business continuity planning is the process of developing a plan for operating essential operational and business functions in the face of a disruption caused by any types of emergencies, incidents, or events. The purpose of this study was to compile information about current continuity planning practices at airports of different types and sizes and determine how they can be effectively applied to smaller airports to maintain resilient operational and business capacity during a disruption, regardless of cause. This study was explicitly not about emergency response, but addresses business continuity planning for both emergency and non-emergency disruptions. This report is a companion to *ACRP Report 93: Operational and Business Continuity Planning for Prolonged Airport Disruptions.* This synthesis report identifies alternatives and effective approaches for continuity planning at smaller airports. A variety of resources are identified in this report that smaller airports can use to develop inexpensive, non-complex but practical continuity plans, Business Continuity Plans, or Continuity of Operations Plans.

Amiy Varma, North Dakota State University, Fargo, North Dakota; Shaun Germolus, AirportAdmin LLC, Hibbing, Minnesota; and David Beaver, Owatonna Degner Regional Airport, Owatonna, Minnesota, collected and synthesized the information and wrote the report. The members of the topic panel are acknowledged on the preceding page. This synthesis is an immediately useful document that records the practices that were acceptable within the limitations of the knowledge available at the time of its preparation. As progress in research and practice continues, new knowledge will be added to that now at hand.

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Note: Many of the photographs, figures, and tables in this report have been converted from color to grayscale for printing. The electronic version of the report (posted on the web at www.trb.org) retains the color versions.

CONTINUITY OF OPERATIONS PLANNING FOR SMALL AIRPORTS

SUMMARY

Airports are valuable assets. Individuals, companies, and surrounding communities depend on them to provide transportation resources, support employment, and generate significant economic impacts. However, each airport has the potential for encountering disruptions in staffing, processes, facilities and equipment, or technology. Lack of preparedness for such disruptions will undoubtedly have negative effects on business efficiencies and revenues. Airport owners/operators are responsible for proactively planning to reduce or eliminate disruptive effects. It should never be a question of "If a disruption occurs, how will our airport respond?" It should be a matter of "When a disruption occurs, our airport is prepared to handle it!"

Business continuity planning is the process of developing a plan to ensure essential operational and business functions in the face of a disruption caused by an emergency, incident, or event. The plan should cover actions to take during the disruptive event as well as priorities and methods for recovering essential processes, functions, and resources after the disruption. The purpose of this study was to compile information about current continuity planning practices at airports of different types and sizes and determine how these practices can be effectively applied to smaller airports to maintain resilient operational and business capacity during a disruption, regardless of the cause. The study is explicitly not about emergency response but addresses business continuity planning for both emergency and nonemergency disruptions.

For the purposes of this study, "smaller airports" are small hub, non-hub primary, commercial service, reliever, and general aviation airports. Recognizing that smaller airports do not always possess the resources of larger airports, the study cites aspects of larger airports' plans and planning processes that smaller airports can use to create a useful and practical initial plan. The study examined continuity of operations planning and business continuity planning at airports. The former addresses how to recover and restore normal airport operations after a disruption, while the latter is typically used to describe business continuity in the public sector, including interactions with outside agencies. Most airports are public entities and may be required by their governance structures to engage in continuity of operations planning; they can also benefit from developing site-specific business continuity planning practices.

Through a literature review, surveys, interviews, and case examples, the study assesses the motivation for continuity planning, as well as types of plans and the state of the practice. Benefits, barriers, and costs of developing and maintaining business continuity plans (BCPs) and continuity of operations plans (COOPs) are also included. Through the use of case examples, the study examines barriers to successful BCPs and describes practices to overcome those barriers. Survey responses from 54 airports, interviews, and case studies of nine airports provided practical information regarding how different kinds of airports are handling continuity planning.

This report identifies a variety of resources that smaller airports can use to develop uncomplicated, inexpensive, and practical BCPs and COOPs. With such plans, airport

owners/operators will be better prepared to handle operational disruptions, thus enabling efficient airport business continuity and positive tenant and community relations.

On the basis of an analysis of the data obtained through the survey and the nine case study interviews, the report draws the following 11 conclusions:

1. A successful BCP reflects the unique needs of an airport.

2. Small airports benefit from having operational recovery plans such as BCPs and COOPs. These may be formal or informal; however, a formal written plan or intentional integration of continuity practices into airport functional plans appears to have greater benefits. Small airports can benefit from a simple BCP that is not expensive to implement.

3. The benefits of written plans include increased preparedness, improved recovery and response, reduced liability, improved insurance rating, decreased downtime, better relationships with tenants, and improved perception of the airport and how it is managed.

4. The BCP may be separate from the COOP or integrated with it. BCPs deal primarily with business continuity, while COOPs typically focus on operational issues.

5. A relatively small number of airports of all categories, including small airports, have adopted formal, written BCPs.

6. Typically, airports operate in a culture of safety, with the primary focus on preventing, preparing for, mitigating, and recovering from aeronautical emergencies. This approach to operational recovery—typically based on National Incident Management System (NIMS) principles—can be expanded to include recovery of airport business functions.

7. Recognizing that continuity practices are valuable to the business and operations of the airport, small airports are interested in having tools that streamline recovery planning. Appendices T and U provide a template and checklist, respectively, and Appendices G through S provide samples and tools that can be adapted for a specific airport.

8. Small airports can benefit by leveraging recovery tools used by their local governments, sponsors, and other stakeholders. Building relationships—both internal and external—is integral to developing effective BCPs/COOPs.

9. Small airports that are contemplating the development of continuity plans or practices can benefit from examining the practices other airports have implemented.

10. BCPs and COOPs are living documents; they must be flexible, scalable, revisable, and exercised.

11. As part of the BCP/COOP development and maintenance process, airports expect to interact more extensively with tenants and outside agencies, both for coordination and to access resources.

Further research is not necessary because this synthesis simply describes the application of existing practices to small airports. Specifically, the synthesis uses case examples to extract directly applicable tools as described in *ACRP Report 93: Operational and Business Continuity Planning for Prolonged Airport Disruptions.*

CHAPTER ONE

INTRODUCTION

BACKGROUND

Airports face a broad range of potential disruptions, from major natural disasters to smaller interruptions in staffing, processes, plant and equipment, or technology. Problems may include staff shortages, payroll glitches, Internet/power outages, labor strikes, and disruptions in supplies or funding, to name a few. Through business and operations continuity planning, an airport seeks to position itself to answer the question "What do we recover first, and how?" Waiting to address these issues until a storm knocks out power and blocks supply routes, disrupting the airport's ability to provide fuel, could have a devastating impact on airport revenues and service capabilities.

Many individuals, businesses, and communities rely on small airport operations to maintain their own employment and revenues. Negative effects on these businesses and the traveling public can have a significant impact on the airport. Airport owners/operators are responsible for continuity planning to minimize or eliminate disruptive effects; they need a formal, systematic process in place to activate plans, systems, resources, and people to effectively handle the disruption and efficiently bring the airport back to normalcy. Continuity planning is not only a responsible airport strategic process but can also lead to key benefits, including these:

- Increased preparedness
- Improved recovery and response
- Reduced liability
- Decreased downtime
- Better relationships with tenants
- Improved coordination with emergency response organizations
- Improved public perception of facility management.

Some airports have no continuity plan, while others have actively engaged in business continuity planning and continuity of operations planning. The motivation for developing these plans is typically a combination of external mandates, negative experiences from disruptions, and the need to enhance risk management.

Smaller airports that are interested in developing or enhancing their continuity planning can benefit from the lessons learned at other airports. In interviews, personnel from airports that already have business continuity plans (BCPs) and continuity of operations plans (COOPs) suggest that smaller airports reach out to those that have completed the process and not be afraid to ask colleagues how they are handling such planning. They also recommended keeping the plans simple at first; for example, developing checklists for potential disruptions. The plans will continue to develop with time and experience. This strategy will help keep initial costs low and make it easier for staff to implement the plans. This synthesis examines effective ways for an airport to accomplish this process.

PURPOSE

The purpose of this study was to compile information about current continuity planning practices at airports of different types and sizes and determine how these practices can be effectively applied to smaller airports to maintain resilient operational and business capacity during a disruption, regardless of cause. Airport business continuity was examined with the intent of introducing useful practices to smaller airports. For the purpose of this study, smaller airports were considered to be small hub, non-hub primary, commercial service, reliever, and general aviation airports.

CONTINUITY PLANNING AND EMERGENCY MANAGEMENT

Although emergency situations are certainly disruptive to the operation of an airport, this report is not about emergency response. Emergency management and business continuity both require recovery actions; however, airport emergencies typically require hazard-specific responses that may be part of an airport emergency plan (AEP). Continuity planning deals with business and operations recovery after any airport disruption, including disruptions to routine airport business functions and processes for the overall management and support of the airport.

"BCP/COOP is about incident agnostic recovery" (S. Corzine, personal communication, June 17, 2015). Airport business continuity practices focus not on why a system or function is down but on the resources needed to restore that system or function. For example, if the airport computer system is down, planners must determine the answer to two questions: "How do we operate while the system is down?" and "How do we restore the system?" This will require an evaluation of the resources needed to temporarily maintain the function and those needed to restore the system.

STUDY METHODOLOGY

Selection of Airports

The research team identified 70 airports to survey, based on team members' professional experience and familiarity with the airports' histories over the past decade with regard to disruptions or continuity planning efforts. The team selected various airport sizes and category types in the National Plan of Integrated Airport Systems (NPIAS), and choices were finalized in consultation with the panel of experts guiding this project. The collection of data and the results presented can be categorized as descriptive statistics summarizing the responses of a relatively small and select convenience sampling.

Literature Review

Available literature was reviewed on topics associated with continuity planning at airports or with disruptions that required such planning. The research team searched in both the open web (Google and Google Scholar) and the deep web (TRB database, ProQuest, and EBSCO). The peer-reviewed literature in the field of airport business or operations continuity planning is severely limited, owing to the sensitive nature of the information involved and the scarcity of such practices. The following related ACRP research and synthesis reports were important resources for this study: *ACRP Report 93, ACRP Report 112, ACRP Report 65,* and *ACRP Synthesis 60.*

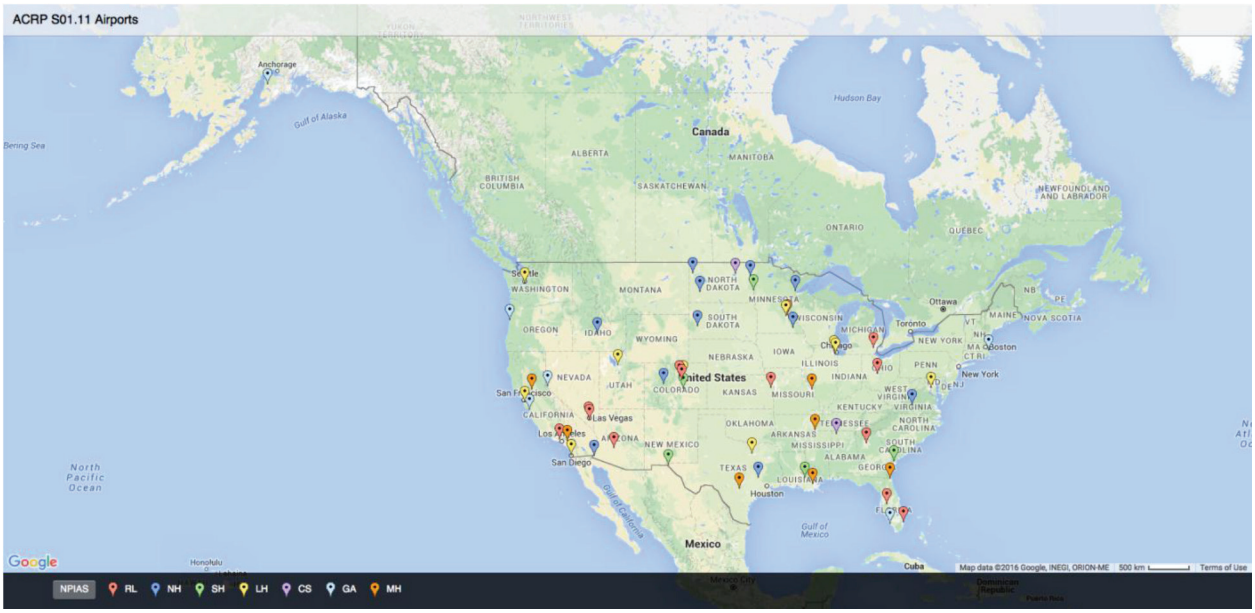

FIGURE 1 Location of airports responding to survey.

Survey and Analysis of Responses

The analysis of survey responses led to numerous insights regarding the need for, state of, and nature of business continuity planning and continuity of operations planning at various types of airports. Of the 70 airports contacted, 54 completed the survey, five declined to participate, and the rest did not respond before the deadline. Thus, there was an 84% response rate. The surveys were completed by airports of all types and sizes, located all over the United States (Table 1, Figure 1, and Appendix A).

Case Examples and Interviews

The research team conducted follow-up interviews with personnel from nine airports who were willing to be interviewed or whose responses indicated unique contexts and practices, even if they did not have formal plans. Three airports did not have continuity plans: Duluth International Airport (DLH), Lakeland Linder Regional Airport (LAL), and Watsonville Municipal Airport (WVI). Five airports did have BCPs/COOPs: Ft. Lauderdale Executive Airport (FXE), Ohio State University Airport (OSU), Dallas/Fort Worth International Airport (DFW), Minneapolis–St. Paul International Airport (MSP), and Minden-Tahoe Airport (MEV). One airport, Savannah/Hilton Head International Airport (SAV), intentionally incorporated business and operations continuity practices into functional plans and was thus included with the airports that have BCPs/COOPs. These case studies illustrate the different motivations and approaches to continuity planning, and the nature of continuity planning without formal BCPs or COOPs. The interviews and analysis of survey responses can provide smaller airports with insights and tools to help them develop or enhance their continuity planning.

Results

Using the analysis of survey responses, the interview reports, and sample worksheets, templates, and plans, the research team compiled information on the state of the practice of continuity planning, alternative approaches, and effective practices. This study offers the information to help smaller airports establish a BCP and a COOP. The appendices contain templates, checklists, and sample plans to assist in this endeavor.

CHAPTER TWO

CONTEXT FOR CONTINUITY PLANNING AT AIRPORTS

CONTINUITY PLANNING AT SMALL AIRPORTS

Small airports serve an important role in the National Airspace System (NAS) and may fall under multiple FAA classifications such as general aviation airports or reliever airports (FAA, Airport Categories 2015). The largest group of airports in the United States is general aviation airports, which includes both public and private airports. Some public use facilities in this category may also offer scheduled airline service. Because airports are critical to the nation's infrastructure and to the economies of entire cities and counties, they should be interested in developing continuity plans, not only for emergency situations but also for the ongoing functionality of all airport business and operations.

Addressing continuity planning at small airports can be a complex undertaking, because each airport is different. Small airports have a multitude of operational differences, including their forms of governance, management structures, contractual service arrangements, and operating characteristics. The research conducted for this report indicates that very few airports of any classification—including small airports—have adopted formal BCPs or COOPs. Many of the airports that responded to the survey said they did not know the state of their continuity planning process, it had just started, or it was nonexistent. A relatively small number of airports reported having a mature, written BCP.

Through the continuity planning process, small airports can focus on business function recovery as well as emergency management. Like any business, airports must consider human resource needs, budgetary constraints, risk management, administrative policy, contractual agreements, and a host of other administrative and business-related functions. Airports must focus not only on aeronautical recovery but also on the business side of the house (S. Walsh, personal communication, Oct. 15, 2015). If a business system is down, the airport "needs to determine how to recover, not why the system is down" (S. Corzine, personal communication, June 17, 2015).

FEDERAL, STATE, AND LOCAL REQUIREMENTS FOR AIRPORT BUSINESS AND OPERATIONS CONTINUITY PLANNING

The FAA does not mandate that airports adopt business continuity plans; however, there is clearly a trend toward continuity planning requirements at the federal level. Federal directives (e.g., National Security Presidential Directive 51 and Homeland Security Presidential Directive 20) encourage business continuity planning, and it is becoming a greater priority for airport access to FAA programs.

For example, in October 2012, the FAA Office of Airports (ARP) issued Program Guidance Letter 13-01, Airport Improvement Program (AIP) Grant Oversight Risk Model Policy (Sample 1, Appendix G). The guidance is intended to improve the ARP's risk-based approach to airport grant oversight and associated documentation. To comply with this provision, airports must complete a risk assessment checklist to certify documented procedures for grant management, including processes that confirm business continuity pertaining to grant management and technical methods of storing grant documents.

Individual state and local requirements may also mandate business continuity at municipal and county levels. These mandates may indirectly subject airports to business continuity planning through governing body continuity of operations planning for offsite departmental support resources.

STAKEHOLDER RELATIONSHIPS AND BUSINESS CONTINUITY PLANNING

Every airport is different, and the differences can include governance, classification, number of stakeholders, nature of operations, layout, management structure, and geographic location.

The responsibility for various functions at airports may reside with different stakeholders, many of whom are not under the direct control of airport management.

Communication among stakeholders regarding business continuity planning is required to improve coordination and avoid jurisdictional issues within their governance structure or with government agencies such as the Transportation Security Administration (TSA) or the FAA, which may have their own recovery or contingency plans for handling operational disruptions. For example, in determining whether an airport is open or closed, *ACRP Synthesis 60* (Smith et al. 2015) found that—

> Although the decision to open, close, or reopen an airport begins and ends with the airport operator or certificate holder, they must take into account binding agreements and approvals that have been incorporated in the airport's ASP and ACM. They also must ensure that agencies having an interest or legal jurisdiction, such as FAA, TSA, CBP, FBI, and CDC, are respected, involved, and informed throughout the decision processes leading to recovery. (pp. 36–37)

Because of these variables, comprehensive business continuity planning practices can be complex. This report underscores the need for airports of all sizes to coordinate and communicate with stakeholders in the development of a BCP. Regardless of airport complexity, business continuity is about the people, processes, facilities, and technology required to keep the core mission going in the face of any type of disruption.

BUSINESS CONTINUITY PLANNING PROCESS

All airports experience disruptions of their essential functions. These disruptions may affect staffing, plant and equipment, technology, or normal business processes. Effective business continuity evaluates available resources and determines how to use them to recover from disruptions (Figure 2).

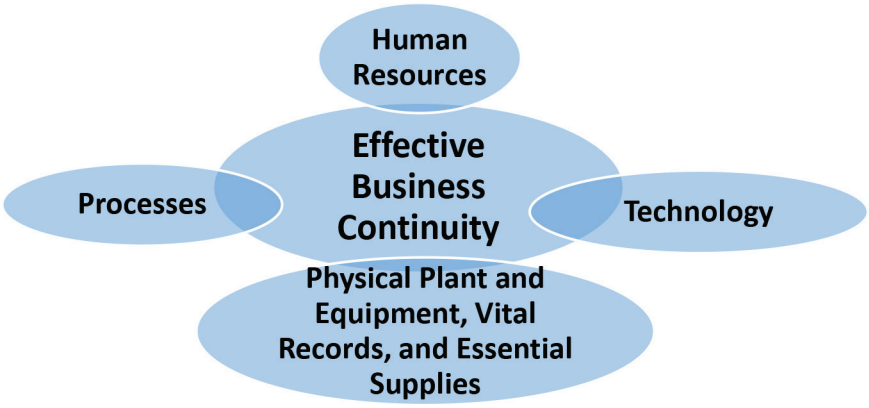

FIGURE 2 Resources impacting effective business continuity.

Every function at an airport requires certain resources that enable it to work, including human resources, physical plant and equipment, technology, and processes. Planners must carefully consider what resources are available or can be made available during a disruption to maintain business functions until those defined as critical, important, and convenient can be restored.

ACRP Report 93 (Corzine 2013) is a comprehensive resource that provides guidance to airport operators to help them plan and prepare for business recovery actions. The report provides detailed guidance on business continuity planning for all airports and includes a software tool that can be used to create a basic BCP.

Small airports follow the same steps as larger airports to begin the continuity planning process, although they may have far fewer staff members available to develop and execute their plans. Larger airports have more core functions, but the process of risk assessment and development of recovery priorities is the same at small airports—only on a smaller scale. *ACRP Report 93* (Corzine 2013) provides detailed guidance on the preliminary process, which may involve developing an airport-specific risk profile, developing the scope of the plan, and forming a business continuity planning team. Development of the actual BCP begins after the scope of the plan is determined on the basis of the airport's specific risk assessment, operational functions are analyzed, and both internal and external stakeholders are identified and included.

PRIORITIES FOR RECOVERING AND MANAGING DISRUPTIONS

The business continuity planning team must define the business and operational priorities of the airport and how disruption impacts will be measured. For example, will the disruption result in loss of revenue, inability to deliver service, or regulatory impact? This determination will help planners prioritize the functions to be recovered and the recovery time objectives (RTOs). The team should use a business impact analysis (BIA) to identify essential business and operational functions, assess how they work (including the resources needed to maintain and recover them), set RTOs for these functions, and rank the priority of recovery.

ACRP Report 93 (Corzine 2013) also provides a critical framework for determining recovery priorities, which can be used to evaluate how critical function recovery is to airport operation. This kind of process mapping helps identify the operational and business functions that have the greatest impact on the mission of the airport. The recovery of a particular function may be less critical if the negative impact is felt over time rather than immediately. The key is to identify the functions that are essential to the airport's mission and those that are merely convenient or even nonessential.

For small airports, the process may boil down to an order of recovery based on how resources will be used to keep prioritized airport functions operational during disruption and to recover fully after the disruption. Minden-Tahoe Airport (MEV), a general aviation airport near Lake Tahoe (chapter four, Case Example 3), works with the county on business continuity planning and suggests that small airports, "have a plan, even if it is just a page long" (B. Thompson, personal communication, Oct. 14, 2015).

BUSINESS CONTINUITY PLANNING AND INTERFACE WITH OTHER PLANS

The airports surveyed in this study use a combination of tools and resources, including functional plans, to address operational recovery after disruptions. Functional plans that address specific issues and disruptions include AEPs, irregular operations (IROPS) recovery plans, hurricane plans, H1N1 flu (swine flu) plans, and snow and ice plans. A number of airports responding to the survey indicated that they do not have a formal BCP because business continuity issues are handled as part of other plans (Table B28, Appendix B). AEPs and IROPS recovery plans were the two most often cited resources for operational recovery.

Airport Emergency Plans

Many airports have become proficient at emergency response and possess a well-developed and practiced airport emergency plan that addresses functional components of emergency response, roles and responsibilities, and hazard-specific emergency response. FAA Advisory Circular 150/5200-1C, *Airport Emergency Plan* (2009) provides guidance on AEP development.

ACRP Synthesis 60 (Smith et al. 2015) cites FAA Advisory Circular 150/5200-31C, which states that an AEP is not required to reflect all phases of an emergency:

> [The AEP] does not need to reflect all four phases of Comprehensive Emergency Management (CEM). Rather, its focus should be mainly on response and the initial recovery issues. Detailed Mitigation Plans, Administrative Plans, or Recovery Plans can be handled separately. (FAA 2009, pp. 2–3)

While AEPs are important emergency management documents, they are not developed to specifically address business continuity needs. Emergency plans are incident-specific protocols to protect life and property, while COOPs and BCPs address the recovery of essential operating and business functions and processes, and the data that support those processes. Airports governed by Federal Aviation Regulation (FAR) Part 139 are required to have an FAA-approved AEP. For this reason, if an airport sponsor chooses to incorporate business and operations continuity practices into an AEP, it may be useful to incorporate them by reference, so the FAA can skip them when it reviews the emergency practices in the plan.

Irregular Operations and Recovery Plans

Many airports with commercial airline service have IROPS and recovery plans to deal with issues they face as a result of circumstances within the larger air transportation system, on or off the airport. For example, weather-related delays at one location may adversely affect an airport at another location, creating issues involving handling passengers or coordinating facility use. IROPS plans were developed primarily to deal with passenger impacts, and many small airports do not deal with

these issues. *ACRP Report 65: Guidebook for Airport Irregular Operations (IROPS) Contingency Planning* (Nash et al. 2012) provides guidance regarding IROPS.

Other Plans

Interfacing BCPs or COOPs with other plans may include the process of coordinating continuity practices with those of stakeholder plans. Savannah/Hilton Head International is an example of an airport that has incorporated business continuity planning practices into airport functional plans (chapter four, Case Example 6). At many airports, important operational and business functions are handled by contractors, fixed-base operators (FBOs), or government agencies. The airports manage these relationships in various ways, including basic coordination or requiring compliance with the airport BCP through a lease agreement, letter of agreement, or memorandum of understanding.

SUMMARY

The practice of business or operations continuity planning is not formally established at many airports, especially smaller ones. Continuity planning is not the same as emergency management. Every airport uses some mix of business functions, whether handled internally or offsite. The development of a BCP will enhance the airport's ability to recover from common operational and business function interruptions. This can be a simple process for small airports, and airports have effectively used various approaches to continuity planning, depending on local circumstances.

Small airports that are considering the development of a BCP might be able to leverage city or county resources to address continuity planning. A good place to start is to identify the city or county department, official, or staff member responsible for continuity planning and inquire about training or resources that might be available to help the airport develop its own plan. Depending on the airport's business structure, coordination with airport stakeholders can also be an important part of the process. *ACRP Report 93* (Corzine 2013) is a comprehensive resource that provides guidance to airport operators to assist in planning and preparing for business and operational recovery actions. Airports have demonstrated that this does not have to be an overly complicated process; it can be simple and inexpensive. The case examples in chapter four offer various approaches to business continuity planning, and chapter six describes tools and resources used by airports for business continuity and recovery practices.

CHAPTER THREE

SURVEY RESPONSES

The research team, with advice from the study panel, developed a survey questionnaire to gather information on business continuity planning and continuity of operations planning at airports of various sizes and types throughout the United States. The team sought to identify airports that engage in continuity planning, the reasons why, and the barriers to and benefits of planning. Team members also wanted to determine which airports would make good case studies and provide interview subjects. Appendix B includes the entire survey questionnaire, as well as the responses detailed in figures and tables.

Seventy airports were contacted and 54 completed the survey; five declined to participate and the rest did not respond before the deadline. The result was an 84% response rate.

DEMOGRAPHIC DATA

Ownership varied among the respondent airports (Figure 3). The majority of the airports were owned by a city department (40%), airport authority (37%), or county department (17%). Others were owned by a joint board, an institute of higher education, or a management contract. Airports included in the study were selected from various FAA Regions and represent all NPIAS airport categories. General aviation and reliever airports were much more likely than other airports to be owned by a city or county. (See Table B2, Appendix B for a breakdown of airport ownership by NPIAS category.)

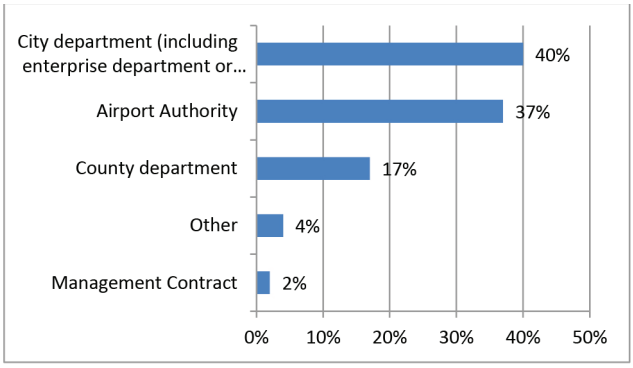

FIGURE 3 Airport ownership (*Source*: Survey results).

STATE OF CONTINUITY PLANNING

The state of continuity planning varied broadly in the survey (Figure 4). About 29% of respondent airports had no plans, had just begun the planning process, or were uncertain about the state of planning. At the same time, 46% had an adequately developed or mature BCP/COOP. The remaining 25% were identifying critical resources and recovery priorities or had developed a plan that was considered not adequate or complete. Table B3 in Appendix B provides insights into the state of planning at smaller airports. The majority of smaller airports do not have such plans, but a few have well-developed plans. The interviews and related case examples of airports with developed plans are covered in chapter four and Appendix D.

MOTIVATION FOR BUSINESS AND OPERATIONS CONTINUITY PLANNING

The motivation for having or developing a BCP/COOP also varied (Figure 5). About 40% of respondent airports indicated that they did not have a BCP/COOP, and about 31% of the respondent airports reported that the plans were required by the

airport owner. Development of a BCP/COOP was also motivated by the need to enhance risk management (23%), as part of an airport strategic initiative (15%), in response to a regulatory requirement (12%), by the need to address potential key staff departures (10%), and by financial concerns (8%). Table B4 in Appendix B provides insights into the motivations at smaller airports; most of those with a BCP/COOP initiated the process in response to owner requirement, an airport strategic plan initiative, or the need to enhance risk management.

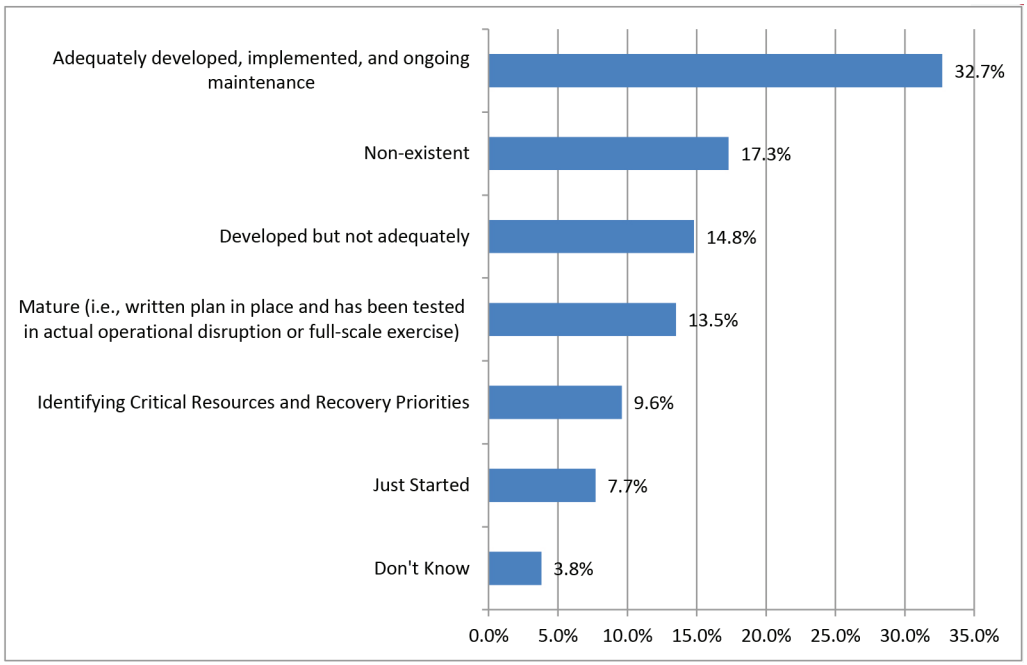

FIGURE 4 State of BCP/COOP (*Source*: Survey results).

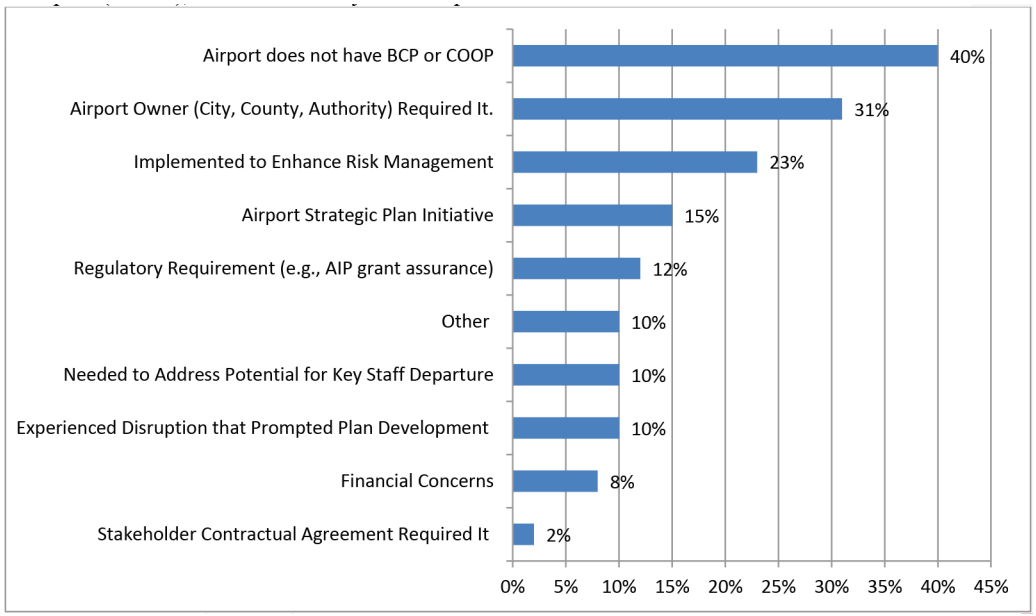

FIGURE 5 Motivation for BCP/COOP (*Source*: Survey results).

PLAN COORDINATOR(S)

The key coordinators or people responsible for developing a BCP/COOP are shown in Tables B5 and B6 in Appendix B. As expected—especially at small airports—airport managers, executive directors, and directors of operations typically play an important role; however, many others are likely to participate because of the diverse tasks and outside resources involved in

the planning process. Some of these participants are airport department heads, airport tenants, emergency response agencies, suppliers, utility companies, and insurance agencies.

TYPES AND FREQUENCIES OF DISRUPTIVE EVENTS

The responding airports have encountered various disruptive events, with different frequencies, over the past 5 years (Tables B7 through B26, Appendix B). One airport experienced a 3-month closure due to the funding and construction of a capital improvement project. Operations at another airport were interrupted by an air show, and a third had a construction-related system failure. One airport experienced a stakeholder IT system failure that affected the airline ticketing system. Major disruptions at respondent airports included utility outages (60%), construction disruptions (60%), temporary flight restrictions (52%), airfield system or navigational aid failures (51%), critical equipment outages or breakdowns (36%), and personnel issues (22%).

Many respondent airports have encountered several events more than once in the past 5 years, including special events (80%), aircraft accidents (72%), major snow or ice events (70%), events causing activation of the airport emergency plan (55%), security threats (50%), and capital improvement project funding disruptions (40%).

STATE OF PRACTICE FOR AIRPORT CONTINUITY PLANNING

Approximately half of the respondents had a formal BCP/COOP, while the other half did not (Table B27, Appendix B). Some reasons for not having a written BCP/COOP are listed in Table B28, Appendix B; the primary reasons cited were "handled by others" or "other plans," "no resources," "no mandates," "no guidance," "seems redundant," and "no clear perceived benefits." Among smaller airports, many believe that their AEP adequately covers continuity issues and that additional plans would be redundant. Lack of mandates, resources, and guidance also deter the development of BCPs/COOPs at smaller airports.

Among airports that have a BCP/COOP, 63% reported some dissatisfaction with how well the plan serves the airport (Table B30, Appendix B). Among the reasons given for not being satisfied were "needs to be updated to conform to ISO 22301" and "the plan was written several years ago and not updated." A reliever airport with a BCP/COOP cited the need to rewrite the current plan to address functionality improvements (Table B31, Appendix B). A number of airports with developed BCPs/COOPs mentioned the need for timely updates to enable the plans to function as living documents.

BENEFITS

Many respondents indicated that their airports benefited from having a written BCP/COOP. Table B32, Appendix B lists those benefits. Only 4% of respondents saw no real or perceived benefits to having a written BCP/COOP. The majority of airport respondents (over 50%) consider the following to be benefits of a written BCP/COOP:

- Increased preparedness
- Improved recovery and response
- Reduced liability
- Decreased downtime
- Better relationship with tenants
- Improved coordination with emergency response organizations
- Improved public perception of facility management.

TENANTS WITH BCPs AND COOPs

Some airports indicated that their tenants have BCPs/COOPs and that the airport coordinates its plan with the tenant plans. Other airports reported that their plans are not coordinated (Table B33, Appendix B). The Metropolitan Airports Commission (MAC) system has implemented a phasing plan with tenants to require them to reference continuity planning as their leases renew and may ultimately require tenants to develop a BCP/COOP (chapter four, Case Example 2). Tenants that already have a BCP/COOP include air carriers, terminal tenants, FBOs, and maintenance facilities/departments (Table B34, Appendix B).

RESOURCES FOR OPERATIONAL RECOVERY

Some airports use a combination of entities and resources to aid operational recovery after disruptions, which illustrates the various components and diverse nature of continuity planning. Many rely on, AEPs (80%), governing body plans (50%), backup generators (63%), mutual aid agreements (48%), and irregular operations recovery plans (48%). Table B35 in Appendix B provides additional insights into resources used by airports in various NPIAS categories.

A number of airports surveyed have never considered developing a BCP (28%). Others have been mandated to do so through their governance structure, such as a city or county. Numerous airports have developed a BCP as part of an airport initiative.

BUSINESS AND OPERATIONS CONTINUITY PLANNING TOOLS

Several tools are used for continuity planning and operations; among them are checklists, templates, standard operating procedures (SOPs), standard practice memorandums (SPMs), SaaS (software as a service) platforms, and others. Table B36 in Appendix B provides details on tools used by airports in various NPIAS categories.

COSTS TO DEVELOP AND MAINTAIN CONTINUITY PLANNING

Twenty-four of the 30 airport respondents with BCPs/COOPs indicated that they spent less than $10,000 per year for continuity planning. Table B37 in Appendix B shows that the majority of smaller airports with BCPs/COOPs spend less than $10,000 annually, with costs including only staff time and coordination among departments and agencies. Four airports indicated that they spend more than $30,000 annually; these are typically large hub airports such as Denver International, Minneapolis–St. Paul International, and Dallas/Fort Worth International.

UPDATING BCPs AND COOPs

Most airport respondents indicated that their BCP/COOP is updated on an as-needed basis (33%); 17% review their plans annually, and only one airport has never updated its BCP or COOP since initial development. Table B38, Appendix B shows the frequency of updates, and Table B39 lists the individuals responsible for updating the procedures and tools for continuity planning.

The case examples included in this report support the need to review and update the BCP as part of regular plan maintenance.

The case examples included in this report support the need to review and update the BCP as part of regular plan maintenance. Fort Lauderdale Executive Airport, for example, reviews its BCP annually, including verification of resources such as alternative locations to be used in the event of disruption, human resources, technology, and other processes (chapter four, Case Example 5).

CONTROL OVER CONTINUITY PLANNING

Most airports said they have control over their core functions, but they do not control certain other aspects, such as tenant plans and outside resources. Table B40 in Appendix B shows what airports in various NPIAS categories control, and Table B41 illustrates what they consider to be outside their control.

INTERFACING WITH OTHER PLANS

As the BCP/COOP development and maintenance process continues, airports expect to interact more extensively with tenants and outside agencies, both for coordination and to acquire resources.

As the BCP/COOP development and maintenance process continues, airports expect to interact more extensively with tenants and outside agencies, both for coordination and to acquire resources. Many case examples in chapter four discuss interacting with these partners. Table B42, Appendix B lists the various plans and programs with which airports may interface for continuity planning purposes.

A number of airports (22% of those surveyed) believe that business continuity is handled by other plans. Three reasons for this belief are most often cited. First, the airport may not be aware of or fully understand continuity planning and may consider it part of emergency management and the AEP. Second, the airport may think business continuity is handled offsite through another support department, such as risk management. Finally, the airport may have intentionally addressed business continuity planning in other airport functional plans. (This approach is described in chapter four, Case Example 6.)

The airports surveyed use a combination of tools and resources to address operational recovery after disruptions (Table B43, Appendix B). They use AEPs (80%), backup generators (63%), governing body plans (50%), mutual aid agreements (48%), and IROPS plans (48%). A number of airports (22%) responded that no formal BCP has been developed because business continuity issues are handled by other plans (Table B28, Appendix B).

ADVICE FOR AN AIRPORT JUST STARTING CONTINUITY PLANNING

The following are some key suggestions from the survey responses and case example interviews to help an airport get started with business continuity or continuity of operations planning.

Planning considerations:

- "Take free FEMA classes."
- "Work with large businesses in the community and learn about their plans."
- "Plan based on your operational needs—not just the airport's normal operational needs but the potential operational needs of supporting response and recovery for a regional disaster."

Preliminary steps:

- "Plan ahead."
- "Just start the process and simplify planning efforts. Ask simple questions about your operation. For example, 'If I can't use my admin office, what do I need to operate? Can I do it with a tablet and a mobile phone?' Take this type of approach with all aspects of your operation."

Plan development:

- "Start with a basic plan and make it available to all your staff for review and input."
- "Develop succession planning (personnel changes), designate an alternative location (physically moving personnel to operate from a different location), and develop alternative payroll provisions."
- "Based on economic concerns, use the airport emergency plan as a document in support of the COOP."

Resources:

- "List your critical resources and prioritize."
- "Familiarize key airport leadership team members with the Southeast Airports Disaster Operations Group (SEADOG) and the Western Airports Disaster Operations Group (WESTDOG) programs and other partnerships/contract services that could provide needed personnel or infrastructure support."
- "Evaluate all your primary equipment and departments to understand your existing resources. Know community resources available; airports of any size can benefit from relationships with local school districts, voluntary organizations active in disasters, and other groups."

Stakeholder involvement:

- "Collaborate and coordinate with all parties."
- "Identify key stakeholders; update this list periodically; and conduct tabletop exercises with all stakeholders."
- "Work with local, regional, and state planning, emergency management, business continuity, and first responder organizations."
- "Develop solid and open relationships with all critical external and internal stakeholders. Many times each entity has its own pool of money to help with recovery actions/plans. Having a relationship with the stakeholders and being able

to pool money together may help in recovery operations. Little cost involved to have meetings with stakeholders and to openly discuss available resources."

- "Ensure you have all of your stakeholders involved in the planning process, including airlines, private plane owners and pilots, FBOs, fire, police, finance, risk management, communications department, etc."

Plan testing and maintenance:

- "Develop your decision-making team, train and exercise annually."

The complete survey responses to this question are listed in Table B44, Appendix B. Much of this advice has been included in Appendix U, Small Airport BCP/COOP Planning Checklist. Additional information concerning BCP/COOP benefits is in chapter five.

CHAPTER FOUR

CASE EXAMPLES

This study includes nine case examples, selected from airports ranging from large hubs to general aviation (GA) airports and representing a broad range of business continuity and continuity of operations planning practices. In many cases, larger airports have developed tools that are readily accessible and easily scaled to small airports. Examples and materials from larger airports are therefore provided as a resource that can be easily adapted for use by smaller airports to improve business continuity planning.

Case Examples 1 through 5 represent airports that have existing BCPs or COOPs; they include two large hub airports, two reliever airports, and one GA airport. These airports have intentionally developed a BCP/COOP for a variety of reasons to address organizational deficiencies in business continuity preparedness.

Dallas/Fort Worth International Airport (DFW) is the fourth busiest airport in the United States and has developed a sophisticated and costly business continuity model. However, this model includes continuity practices that can be applied by airports of any size or complexity. Case Example 2 (also involving a large hub airport) explores how continuity planning flows across a large airport authority with a system of interconnected reliever airports.

Case Example 6 involves a small hub airport that values business continuity planning; although the airport has no stand-alone BCP or COOP, it incorporates continuity planning practices into existing functional plans. The airport has taken an innovative approach considered by airport officials to be appropriate for their particular set of circumstances.

Case Examples 7 through 9 represent airports that have no BCP or COOP; however, they employ innovative, highly effective business continuity practices that may be applicable to small airports. These airports include a non-hub primary airport, a reliever airport, and a GA airport. The procedures and tools they use are scalable and can be adapted to meet the needs of any size or category airport.

The nine case examples represent a diverse group of airports, selected on the basis of effective operational recovery approaches that can be tailored to meet the needs of small airports. The information from interviews has been supplemented with survey responses and documentation provided by the airports.

AIRPORTS WITH BCPs OR COOPs (CASE EXAMPLES 1 THROUGH 6)

Case Example 1: Dallas/Fort Worth

DFW, a large hub, is the fourth busiest airport in the United States and the eighth busiest in the world. This case example is based on an interview with Alan Black, DFW director of public safety; his responses to the survey; documentation provided; and other relevant documented sources.

History and Motivation for BCP/COOP Development

The trigger for the development of the airport BCP/COOP was the severe acute respiratory syndrome (SARS) or avian flu threat and the need for a pandemic plan. A consultant advised the airport to develop a BCP, including a pandemic plan as an annex. Initially, DFW wanted only a pandemic plan; however, officials made the determination to initiate an in-house effort to follow best practice by developing a more comprehensive BCP. DFW has had a BCP/COOP for 3 years (A. Black, personal communication, Oct. 14, 2015).

Airport Characteristics

NPIAS category: Large hub

Governance: Joint board

Number of operations (2014): 679,820 annual

Number of airport employees: Approximately 30,000 badged employees

Part 139: Yes

Budget for BCP: The cost is primarily related to staff hours devoted to maintaining the BCP/COOP. Approximate annual expenditure of $60,000.

Airport BCP/COOP Planning and Coordination

DFW considers its BCP/COOP to be adequately developed and implemented; the plan is maintained in an ongoing fashion. The airport's director of public safety is the facilitator for BCP/COOP development; other staff members involved in the process are the airport manager/executive director, director of operations, Aircraft Rescue and Fire Fighting (ARFF) chief, risk manager, director of finance, director of IT, and property manager. Each department develops its own plan using a common template/worksheet (Sample 4, Appendix J). A steering committee evaluates the individual plans, and the public safety department integrates them into an overall BCP/COOP.

The DFW BCP/COOP is an internal document; however, the airport receives copies of all BCPs developed by tenants and other stakeholders, such as airlines, TSA, and U.S. Customs. These organizations also participate in the review of the airport's plan. DFW critical systems and core business functions are all under the control of the airport; however, the airport does not exercise any control over tenant airline BCPs. A number of airport functions are contracted by commercial tenants and other agencies that are not under the direct control of the airport. The individual stakeholder BCPs/COOPs are coordinated with the airport's BCP/COOP through communications and exercises. The airport is governed by a joint board that includes the mayors of Dallas and Fort Worth, but there is no specific coordination of the airport's BCP with those of the two cities.

Disruptions Impacting Airport Operations and Business Continuity

Disruptive events over the past 5 years included special events or security threats (five); aircraft accident, natural disaster, major snow event (two); regulatory concern; and activation of the AEP. DFW has also experienced utility outages, construction disruptions, breakdown of critical equipment, and tenant issues. Other essential airside operational disruptions impacting runway operations have included soil and sinkhole problems, technical shortages, and other short-term disruptions. None of these events has been serious enough to trigger activation of or improvements to the airport BCP/COOP.

Operational Recovery Tools and Resources

Resources used by DFW for operational recovery include backup generators, essential equipment backup plans, the AEP, IROPS plans, emergency communications plan, and other stakeholder plans, coordinated with the airport as required. Airport staff receive guidance from a combination of tools such as checklists, templates, SPMs, mutual aid agreements, and SOPs.

DFW values its involvement with airport-to-airport mutual aid programs such as the Western Airports Disaster Operations Group (WESTDOG) and the Southeast Airports Disaster Operations Group (SEADOG). Through its participation in SEADOG and through mutual aid agreements with smaller airports and other agencies, the airport can access additional operational recovery resources in the event of a large emergency or disruption.

Airport Procedures for BCP/COOP Evaluation and Maintenance

The airport's director of public safety reports that there have been no opportunities so far to assess the effectiveness of the BCP/COOP; however, if any gaps are observed regarding capabilities or limitations, plans are updated to the extent possible to address those gaps (A. Black, personal communication, Oct. 14, 2015). DFW reviews a third of the plan each year and seeks feedback to make any needed updates. The effort is coordinated by the airport's public safety department, and interdepartmental inputs are evaluated to address current needs.

The airport's involvement with WESTDOG and SEADOG has been useful for review of airport procedures. The airport coordinates quarterly exercises with TSA, the local Public Works Department, the state Energy Department, the state Transportation Department, and U.S. Customs and Border Protection.

Effective Continuity Planning Practices

DFW considers the following to be effective continuity planning practices:

1. The plan is supported by top executives.
2. The plan is comprehensive, robust, and flexible.
3. The plan accounts for all essential functions.

Lessons Learned

The ability to hypothesize disruptive scenarios and forecast related impacts has helped clearly identify roles and responsibilities. Proper planning and review ensure that the airport is adequately prepared to address a wide range of operational and business disruptions.

Advice to Smaller Airports

Advice to smaller airports includes the following:

1. Don't overthink it.
2. Look for the "big rocks."
3. Have a plan (not necessarily a comprehensive or complex plan) right in the beginning.
4. After the initial plan is developed, continue to work on it as a living document and update it as needed.

Summary

DFW values its BCP/COOP and engages numerous individuals and departments in plan development, implementation, review, and updating. The airport allocates significant funding for this purpose. The importance of formal continuity planning is summed up by Alan Black, DFW director of public safety: "I don't know how an airport can remain profitable without one" (A. Black, personal communication, Oct. 14, 2015).

Although DFW is a complex organization, every one of its continuity planning practices can be modified to meet the needs of a small airport. For example, the COOP worksheet used by DFW (Sample 4, Appendix J) can be easily scaled and adapted for use by smaller airports.

The DFW's BCP/COOP results in increased preparedness, improved recovery and response, reduced liability, decreased downtime, better relationships with tenants, and improved coordination with emergency response organizations. The entire organization benefits from transparency, collaboration, and consistency, resulting in quicker return to normalcy of the airport's core operational and business functions in the event of a significant disruption.

Case Example 2: Metropolitan Airports Commission System

The Metropolitan Airports Commission (MAC) owns and operates the Minneapolis–St. Paul International Airport (MSP) and six smaller airports; the system is governed by a 15-member commission. Twelve commission members and the chair are appointed by the governor of Minnesota: eight members representing metropolitan area districts and four members representing outstate areas. The remaining two commission members are appointed by the mayors of St. Paul and Minneapolis.

Minneapolis–St. Paul International Airport

MSP is a joint civil–military, public use, large hub international airport located in Hennepin County, Minnesota. It is the 15th-busiest airport in the United States and the 44th-busiest airport in the world.

MAC Reliever Airport System

The MAC is a system of seven airports anchored by a large hub airport, with six smaller airports that relieve congestion at MSP and provide infrastructure for corporate and general aviation needs in the area.

The MSP plans for continuity of operations and continuity of business have been developed separately, although the MAC is evaluating the feasibility of combining them in the near future. This process might also involve developing a strategy to bring the six reliever airports under the umbrella of MSP's emergency management and continuity plans. This case example is based on an interview with Phil Burke, director of operations, and Kristin Rollwagen, emergency program manager; responses to the survey; documentation provided; and other relevant documented sources.

Airport Characteristics

NPIAS category: The MAC is a seven-airport system anchored by a large hub.

Governance: Authority

Number of operations (2014): 412,695 annual

Number of airport employees: Approximately 580

Part 139: Yes

Budget for BCP/COOP: Costs for maintaining the BCP and COOP are minimal for MSP. Costs are primarily in terms of staff time to perform review and maintenance on the plans. The original BCP was developed by a contracting firm, but the exact cost was not known at the time of the interview.

MAC reliever system: Six airports

Number of aircraft operations: 400,000

Number of aircraft based: Approximately 1,600

Number of jobs: Approximately 2,200

Reliever system economic impact: $250,000,000

- Anoka County Airport (ANE)
- Airlake Airport (LVN)
- Crystal Airport (MIC)
- Lake Elmo Airport (21D)
- Flying Cloud Airport (FCM)
- St. Paul Downtown Airport (STP)

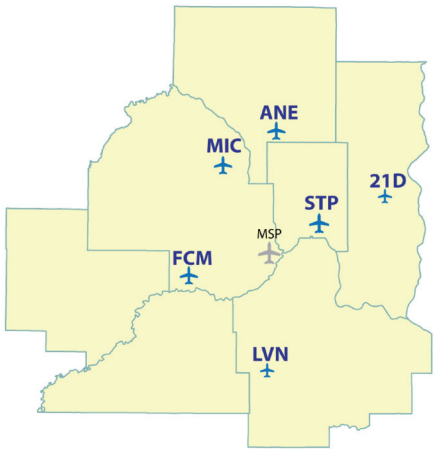

FIGURE 6 MAC reliever airports. *Source*: MAC website photo (http://www.macnoise.com)

History and Motivation for BCP/COOP Development

The BCP/COOP process evolved as an airport initiative, through which MSP also recognized the need to address risk and financial management and the potential for key staff departures.

The business and operations continuity planning process evolved as an airport initiative, through which MSP also recognized the need to address risk and financial management and the potential for departure of key staff members. The airport developed a BCP in 2004, hiring an outside contracting firm to develop the plan. The airport COOP was developed separately following the National Security Presidential Directive regarding continuity planning (NSPD-51). Planners used the Federal Emergency Management Agency's (FEMA's) COOP guidance and followed the criteria set forth in a 2015 Minnesota Governor's Executive Order for COOP (MN State Executive Order 15-14). The COOP was approved in April 2015.

MSP is currently revisiting its BCP, using the ACRP 93 software tool that was developed specifically to create a basic BCP for airports and is included in *ACRP Report 93: Operational and Business Continuity Planning for Prolonged Airport Disruptions* (Corzine 2013). Both the 2004 BCP and the 2015 COOP are currently being evaluated with the intent of combining them in the near future.

Airport BCP/CCOP Planning and Coordination

The emergency program manager oversees the management of the COOP, while the BCP is managed by the airport's Risk and Safety Department. The airport manager/executive director, director of operations, ARFF chief, risk manager, director of finance, and director of IT are also engaged in continuity planning, and the process has involved the airport's Internal Audit and Compliance Office. MSP considers its BCP and COOP to be adequately developed, implemented, and maintained. The process of developing the airport COOP was very involved and took place over a 6-month period (see Sample 5, Appendix K). One person has been dedicated to the review and revision of the BCP from July 1, 2015, until the end of 2016. The process employs the *ACRP Report 93* tool to involve and coordinate all airport departments.

All aspects of the BCP and the COOP as they relate to airport operational and business functions are under the control of the airport; however, the airport does not control tenant plans. MSP officials foresee much challenging work ahead to coordinate its plans with those of airport tenants, especially as the airport is in the process of turning over the concession agreements to five to six operators who will oversee approximately 100 stores. The airport is coordinating business and operations continuity planning with all its tenants and hopes to incorporate the requirement into future leases, requiring tenants to plan for and meet the challenges of foreseeable disruptions. Phase I will reference continuity planning in airport lease agreements, while Phase II may require tenants to have COOPs. The airport will initiate this process with the major airlines and continue with the remaining tenants, working on emergency response procedures and coordinating/developing recovery procedures. Airport officials have visited the Mall of America in Bloomington, Minnesota, to draw on the experience of mall managers, who have coordinated with store owners for evacuation, shelter-in-place, and lockdown procedures.

Each MSP reliever airport is assigned an airport manager who is responsible for working with reliever staff to bring the airport back online after an incident or disruption. The MAC is committed to providing the reliever airports with tools and support from the emergency management department to help minimize the impacts of disruptions to normal operations and business functions.

Disruptions Impacting Airport Operations and Business Continuity

Over the past 5 years, MSP has experienced the following disruptions more than five times: special events, major snow events, security threats, capital improvement project funding disruptions, temporary flight restrictions, and tenant issues. On one occasion, the airport was unable to monitor security card readers for 6 hours, which required placing several people in strategic positions to handle the technological deficiency and enable continuity of operations. Another incident involved an unattended backpack on a ticket counter, which affected both the TSA and airline areas and disrupted operations. This situation was handled internally at first; an after-action discussion concluded that outside resources could have been called in earlier to assist.

Operational Recovery Tools and Resources

MSP has used backup generators, IROPS plans, and an emergency communication plan in its continuity planning. The airport has also invested in a permanent and portable floodwall system to protect against the recurring threat of flooding (see text box.).

MSP Reliever Operational Disruption
St. Paul Downtown Airport

St. Paul Downtown Airport (STP, Holman Field) is a busy MSP reliever airport that was affected by Mississippi River flooding in 1997 and 2001 to the point of shutting down most of the airport for multiple days. Significant flood events in both years essentially rendered the airport unusable. The 1997 flood was a 50-year event; the 2001 flood was even higher and was determined to be a 75-year event. Continuity of operations planning was used to craft a short-term and long-term recovery plan to bring the airport back online.

Although STP had no formal COOP, the airport used a variety of measures and recovery practices to restore service once the floodwaters abated. In 2007, the MAC began construction of a combination permanent and portable floodwall system as a mitigation measure to reduce future losses and reduce the impact of flooding on the operation of the airport.

The MAC invested millions of dollars in the floodwall system; it continues to be used as a mitigation tactic to stop the repetitive loss of service. The highest priority is to ensure a level of service at the airport, even if it means that STP has to shorten a runway or close one runway to ensure the viability of another.

The MAC reports that the biggest cost for deploying the floodwall system is the amount of dedicated staff time required for planning, constructing the wall and putting the pumps in place, daily monitoring when the wall is up, and coordinating with all airport tenants during a flood.

Airport Procedures for BCP/COOP Evaluations and Maintenance

Although airport officials recognize the importance of the plans, they are not sure how effective they were in the past. The BCP and COOP are now on the radar in every airport department, and both are currently under review, with plans to revise them in the near future.

One measure of the effectiveness of the plans is operational or business system downtime. The airport's major flight operations, numerous passengers, and commerce all contribute to an economic impact that cannot sustain disruptions.

The plans will be reviewed in conjunction with the 3-year cycle of the airport's emergency exercise program. They will be used with the exercise to determine critical recovery functions and measured against lessons learned. The plan for future exercises is to focus on more recovery processes and implementation of the BCP and COOP during events.

Effective BCP/COOP Practices

In addition to emergency management, the airport has involved four other primary departments with continuity planning: law enforcement, fire, operations, and field maintenance. Relying on a unified command that coordinates resources is the most effective approach to minimize disruptions. Practicing and reviewing scenarios in a tabletop environment has been very beneficial.

Lessons Learned

Disruptions and operational shutdowns cost money. A well-developed BCP and COOP will minimize the length of time an incident or emergency will impact operations. Many people and businesses count on the airport. Merging and integrating programs appears to be beneficial in developing the overall plan.

MSP is developing a strategy to bring its six reliever airports under the umbrella of the MSP emergency management plan and the COOP.

MSP is developing a strategy to bring its six reliever airports under the umbrella of the MSP emergency management plan and the COOP. This will enhance coordination and planning efficiencies among the airports in the system and provide additional resources to the smaller airports.

Advice to Smaller Airports

Work with your emergency management peers who have already developed a COOP.

MSP considers collaboration and coordination among all parties to be very important for business and operations continuity planning. MSP recommends that other airports use best practices, documents, and existing templates and that they work with emergency management peers who have already developed a COOP.

The airport suggests searching "Planning" and "Templates" on the FEMA COOP website (https://www.fema.gov). MSP used templates listed under "Federal Departments/Agencies" and "Non-Federal Entities," incorporating appropriate guidance from both. Planners gathered feedback and questions from all airport departments, identified shortcomings, and developed a spreadsheet of issues to address. The next step is to establish the budgets and capital improvement projects necessary to accommodate potential disruptions. This may include planning for relocation to alternative offsite facilities, using alternative telecommunications, and other IT department arrangements.

MAC officials strongly suggest that a small airport can benefit from having a champion in the organization who can lead the effort. Persons involved with continuity planning should not be afraid to ask colleagues how they have handled it or to beg, borrow, and steal from others who have completed the process (K. Rollwagen, personal communication, Oct. 13, 2015).

Summary

MSP is looking into implementing the tool developed under *ACRP Report 93* and could provide useful guidance to other airports regarding that experience. Also, the airport is considering combining its BCP and COOP, an exercise that could be of use to other airports. And MSP's plan to develop a strategy to bring its six reliever airports under the umbrella of its own emergency management and BCP/COOP could be useful for many smaller airports seeking to cooperate with larger airports to address their continuity needs.

Case Example 3: Minden-Tahoe Airport

Minden-Tahoe Airport (MEV) is a general aviation airport serving the Carson Valley in Douglas County, Nevada, including the towns of Minden, Gardnerville, and Genoa. This case example is based on an interview with Bobbi Thompson, airport manager, and responses to the survey.

Airport Characteristics

NPIAS category: General aviation

Governance: County department

Number of operations (2015): 90,000 annual

Number of airport employees: 8

Part 139: No

Budget for BCP/COOP: The cost has been less than $10,000 per year. Costs are primarily related to staff hours required for the COOP and occasional investments required for improving communication infrastructure or acquisition.

History and Motivation for BCP/COOP Development

Business and operations continuity planning started as part of a strategic planning initiative at the county level. MEV developed the airport-specific part of the countywide COOP. The plan was developed in-house; it required coordination with the county and considerable staff hours over a period of 6 months.

Airport BCP/COOP Planning and Coordination

Douglas County has a committee that oversees the review and update of the countywide COOP. One section of the COOP is devoted to continuity of operations planning for the airport. The committee is assisted by the airport manager, director of operations, and the ARFF chief at Minden-Tahoe Airport.

The overall COOP is a county-held document, and many of the core business support functions at the airport are provided through the county. No core functions are contracted to commercial tenants or agencies. The airport lease agreements require FBOs, 20 commercial businesses, and other tenants to comply with the countywide COOP. Compliance is monitored by airport management in consultation with the county emergency management department. The airport tenants do not have their own continuity plans. The airport does coordinate with outside agencies such as security, fire, and medical services, as well as with airports in the area.

Disruptions Impacting Airport Operations and Business Continuity

The types of events and disruptions experienced at MEV over the past 5 years were aircraft accident, natural disaster, major snow or ice event, significant growth in aviation activity, utility outage, IT issues, construction disruptions, critical equipment outage or breakdown, temporary flight restriction, and airfield system or navigational aid failure. The only operational disruptions MEV experienced more than five times over the past 5 years were special events; however, none of these was disruptive enough to activate the COOP. There were some capital improvement funding disruptions related to project closeouts, but these occurred before the COOP was implemented. Current construction disruptions are related to conflicts between construction activities and normal airfield operations, but they are addressed by construction phasing plans. The airport has been able to address some continuity issues by using its emergency plans.

Operational Recovery Tools and Resources

The COOP includes checklists, templates, communication details, memos, recovery priority determination decision tree and scale, mutual aid agreements, and SOPs. The COOP is not available for public viewing, and the airport does not release any specific information related to it, as it contains sensitive details on the management of threats.

For operational recovery, MEV also includes planning and other recovery resources such as governing body (city, county, municipality) BCPs, data recovery systems/services, essential equipment backup plans, alternative facilities, AEP, emergency communication plan, and mutual aid agreements.

Airport Procedures for BCP/COOP Evaluation and Maintenance

The committee meets once a year to review input from stakeholders.

MEV considers its COOP to be adequately developed, implemented, and maintained. It devotes about 24 hours a year to continuity of operations planning. The county steering committee meets once a year to review input from stakeholders, including the airport. Each stakeholder examines the relevant section of the COOP and provides feedback to the committee. Any significant issues are incorporated into tabletop exercises. Examples of issues that have led to improvements in the airport section of the COOP were the need to review plans for equipment storage and identification of isolated staging areas.

There have been no significant situations in which the effectiveness of the COOP could have been assessed. Tabletop exercises are carried out once a year, and live exercises are carried out every 5 years. MEV coordinates live exercises with fire, medical, and police organizations.

Effective BCP/COOP Practices

The COOP has effectively identified roles, responsibilities, and assignments, and has improved awareness of capabilities and limitations.

Lessons Learned

It takes time to develop and update a comprehensive COOP. For MEV, this process involves close coordination with the county offices. The COOP maintenance and review process provides an opportunity to improve airport preparedness by looking at continuity issues before they happen and incorporating them into exercises.

Advice to Smaller Airports

"Have a plan, even if it is just a page long."

"Have a plan, even if it is just a page long" (B. Thompson, personal communication, Oct. 14, 2015). The cost to develop a plan is often the most significant barrier. The Airport Improvement Program (AIP) Grant Oversight Risk Model Policy (Sample 1, Appendix G) may motivate airports to adopt continuity of operations policies as a requirement for obtaining federal grants. But these policies may not be fully comprehensive, as they pertain only to grant management and many airports do not seek grants, so developing a plan may not be a high priority. MEV believes that business and operations continuity planning is valuable for all airports. Critical elements of successful continuity plan development and implementation include coordination with emergency service providers, tabletop exercises, and mutual aid or memorandums of understanding.

Summary

MEV is an example of a small airport that has effectively used its governing body, the county, as a resource to develop its COOP. This approach improves MEV's ability to coordinate airport and associated business support functions with the county and to obtain assistance from the county if the COOP is activated. Working through the process helped the airport effectively address the AIP Grant Oversight Risk Model Policy, which requires airports to demonstrate their continuity of operations capability.

Case Example 4: Ohio State University Airport

Ohio State University Airport (OSU) is a reliever airport owned by Ohio State University. The airport serves the university and is a public use airport located in Franklin County. OSU is a busy facility, with more than 180 based aircraft and its longest runway at 5,004 ft. This case example is based on an interview with Doug Hammon, airport director; his responses to the survey; documentation provided; and other relevant documented sources.

Airport Characteristics

NPIAS category: Reliever

Governance: Institute of higher education

Number of operations (2012): 72,635 annual

Number of airport employees: 88

Part 139: Yes

Budget for BCP/COOP: Minimal cost to airport; expenditures run through the university and the risk management office.

History and Motivation for BCP/COOP Development

OSU is owned by the university. Five years ago—motivated by the need to reduce liability and for insurance coverage purposes—the university mandated that all business and academic units have business continuity plans. A central committee led by the university's risk management office oversaw the effort and provided resources and expertise to develop the airport's BCP/COOP. Airport staff educated the committee about the airport's core operational and business functions.

Airport BCP/COOP Planning and Coordination

The risk management office at the university leads the business continuity planning effort and seeks input from the airport through the airport manager. The airport director of operations, risk manager, director of finance, and director of IT are also engaged in the overall process to provide review and feedback.

Currently the airport has specific continuity plans for administrative continuity, line of operations continuity, aircraft maintenance continuity, customer service continuity, and flight education continuity. (For the details of the administrative and line of operations plans, see Sample 6, Appendix L, and Sample 7, Appendix M.) Coordination is required with a variety of airport tenants and agencies. The facility coordinator coordinates with the more than 180 private aircraft owners with aircraft based at the airport and with other stakeholders regarding facility issues, such as closing down a runway. The FBO general manager deals with coordination related to service issues; communication is primarily through emails, the monthly newsletter, and updates on the airport website.

The overall university and airport-specific BCP/COOP is self-sufficient. Functions that are not under the direct control of the airport include wildlife control, which is contracted out, shifting the associated risks and liability to the contractor. The airport control tower is contracted to Midwest Air Traffic Control through a letter of agreement (LOA) among the airport, Midwest, and the FAA. If for some reason the control tower is not functioning, the airport can operate as an uncontrolled airport. The division of fire, which operates a joint-use fire station located on airport property, is also subject to a letter of agreement with OSU. The fire station houses a fire truck to respond to aircraft incidents. Emergency planning is coordinated among fire, police, and medical services.

Disruptions Impacting Airport Operations and Business Continuity

Certain special events affect the operation of the airport. For example, OSU has been the host site for the Safety and Flight Evaluation Conference, attracting more than 100 industry experts and students from 30 schools. The Memorial Golf Tournament in central Ohio draws corporate aircraft and golfers, and it is not unusual for university football games to bring in many private aircraft. Typically, all these events are scheduled and planned for in advance. The security plan has been activated, but the continuity plan has not.

Many of the airport's core business functions are handled by the university's business office, which can help if the airport's payroll or accounting systems experience any disruptions.

Operational Recovery Tools and Resources

The airport uses specific continuity plans for specific functions. For business continuity, the administrative continuity plan employs an integrated incident management structure that provides an organizational structure to deal with business function disruptions. The structure includes area continuity teams that will formulate action plans to help the airport recover from disruptions and resume key business functions. The structure also identifies the relationships and roles of area crisis teams and crisis coordinators, and the university crisis team (Sample 6, Appendix L).

Airport Procedures for BCP/COOP Evaluation and Maintenance

Any proposal for a new activity at the airport is reviewed by the central COOP committee, led by the university's risk management office, which assesses whether the activity would expose the university to an increased level of risk. The risk management office also receives regular updates on airport personnel changes and the implementation of new procedures.

The university conducts an annual review of the continuity plans of all units, including the airport. Participating in such meetings allows the airport to better understand its operational needs under both normal and disruptive conditions. The AEP and the security plans have proven effective during disruptive events, but so far the BCP/COOP has not been activated.

Effective BCP/COOP Practices

There are many overlaps among the various plans dealing with airport response and recovery from disruptions, as well as Part 139 requirements. These plans include the AEP, security plans, and an anticipated effort regarding the safety management system. Consolidating these plans under one umbrella may reduce redundancy and eliminate the need for multiple plans.

Lessons Learned

"Whenever we sit down and discuss continuity needs and review continuity plans, a better understanding regarding airport operational needs is developed. The process helps to identify what is important, what is not important, and if there is a better way of performing any airport functions in both normal and disruptive situations" (D. Hammon, personal communication, Oct. 15, 2015).

Advice to Smaller Airports

OSU offers the following advice to smaller airports seeking to develop continuity practices:

1. See what is already out there. Look at other airports or similar businesses to see if they have a plan; if so, obtain their template and adapt it for your airport. Do not reinvent.

2. Check with the entity that governs the airport to ascertain whether it already has a plan. You may find that its governing entity already has templates, guidance, expertise, and even resources to help you develop an airport-specific BCP/COOP.

3. Use the process to assist with meeting the FAA-required AIP Grant Oversight Risk Assessment.

Summary

OSU suggests that small airports considering BCP/COOP development start by seeking guidance within their own governance structure.

OSU operates in a somewhat unique university setting that has required its departments to work through the business continuity planning process. This has allowed the airport to coordinate operational and business functions with the university and use university resources to assess continuity needs and processes. The airport also coordinates its regular review of the BCP with the university, enhancing communication and supporting the relationship between the university and the airport. The sample plans from OSU (Sample 6, Appendix L, and Sample 7, Appendix M) can be readily adapted for use by smaller airports. OSU suggests that small airports considering BCP/COOP development start by seeking guidance within their own governance structure.

Case Example 5: Fort Lauderdale Executive Airport

Fort Lauderdale Executive Airport (FXE) is one of the busiest general aviation airports in the United States; it serves the Fort Lauderdale area in Broward County, Florida. The airport is designated as a reliever facility for Fort Lauderdale-Hollywood International Airport. It is also the busiest GA facility for U.S. Customs passenger and aircraft clearance. FXE is home to more than 800 based aircraft, five FBOs, numerous commercial tenants, and more than 400 hangar facilities. This case example is based on an interview with Carlton Harrison, operations supervisor; his response to the survey; and other relevant documented sources.

Airport Characteristics

NPIAS category: Reliever

Governance: City department

Number of operations (2014): 149,710 annual

Number of airport employees: 17

Part 139: No

Budget for BCP/COOP: Costs are minimal to maintain the BCP. Costs are primarily in terms of staff time to perform annual maintenance of the plan, which typically takes no more than 40 hours.

History and Motivation for BCP/COOP Development

The airport's continuity planning evolved as part of a city initiative. As it developed a COOP to be coordinated with the overall city plan, the airport began by looking for answers to simple questions about what resources would be required to address basic operating needs during, for example, a power outage.

Airport BCP/COOP Planning and Coordination

The city manager has been the champion of the overall city COOP. On the basis of his direction, the airport took deliberate steps to develop a site-specific plan. One airport staff person attended FEMA course IS-547.A, "Introduction to Continuity of Operations," which provided train-the-trainer guidance; this staffer became the airport's point person on plan development.

Many of the airport's core functions are handled offsite by city departments; for example, IT, human resources, finance, and risk management. These departments have their own COOPs, which must be coordinated with the airport's plan. Building relationships with these offsite departments facilitates a better understanding of their respective operational needs and departmental priorities.

Coordination of COOPs with stakeholders can be challenging. FXE has five FBOs. The larger FBOs have business continuity practices that are internal to their own recovery actions; they communicate with the airport as needed to ensure coordination with airport functions. The airport also uses LOAs to coordinate and has found them to be effective. For example, FXE has an FAA control tower. In the event that a disruption causes loss of this agency-controlled function, the LOA and the COOP provide guidance on the use of an alternative location. Building relationships with stakeholders is important and encourages communication. The airport is exploring the possibility of bringing even more stakeholders into the annual review process.

The COOP also addresses internal city communication; for example, requiring the airport manager to "coordinate with public works and engineering departments to obtain operational status of runways to ensure emergency landing facilities are available" (Sample 11, Appendix Q).

Disruptions Impacting Airport Operations and Business Continuity

FXE has not had to activate its COOP for any major disruption. Recovery practices identified in the plan have been used for minor disruptions, and the AEP has been activated for other events, such as an aircraft accident. Other disruptions in the past 5 years have included a utility outage and temporary flight restrictions.

Priority determinations were situational for the different types of disruptions. For the utility outage, initial priorities included proper notification through issuance of Notices to Airman regarding impacts on essential airside facilities, repair actions, and restoration of utilities. Impacts were also mitigated through the use of a backup generator. For an aircraft accident, the airport used the AEP to formulate incident action plans (IAPs), following National Incident Management System (NIMS) principles to ensure that prioritized actions such as safety, communications, and airport closures were addressed. In the event of a hurricane, the airport coordinates with the National Weather Service to determine the potential need for facility closure and the use of alternative sites.

Impacts on human resources, physical plant and equipment, technology, and processes depend on the type of event. For extended disruptions, determining how to rotate limited staff resources is particularly challenging. Other resources—including backup generators, alternative facilities, and equipment—have been required, depending on the situation.

Airport Procedures for BCP/COOP Evaluation and Maintenance

The airport BCP/COOP is reviewed annually.

The airport BCP/COOP is reviewed annually in coordination with the annual hurricane plan update. The process involves updating all contact information; reviewing and verifying resources (including alternative locations) to be used in the event of a disruption; and verifying human resources, technology, record retention, and other processes. All updates and revisions made as a direct result of the annual review are submitted to the city and other stakeholders on the distribution list. All materials are developed and maintained using electronic files.

Having a continuity plan is effective in terms of preparedness. The airport has procedures in place that will increase preparedness and reduce downtime in the event of a normal operating function disruption. The "What do we do?" question has already been addressed (C. Harrison, personal communication, Oct. 12, 2015).

Effective BCP/COOP Practices

In developing a COOP, keep it simple and basic to start with and expand from there. Practice the plan during the annual review by creating tabletop exercise scenarios; this can be an effective way of walking through the process.

Lessons Learned

Communication is always a challenge. It may involve forwarding information to the city to be put out through the public information officer. The plan review and development process has underscored the importance of communication among internal and external stakeholders

Advice to Smaller Airports

Start simple and develop a basic plan to deal with disruptions.

FXE recommends starting simple and developing a basic plan to deal with disruptions. It is important to look at alternative resources, depending on the anticipated risk of disruption. It is also important to build relationships and awareness of the continuity plan among stakeholders.

Summary

FXE benefits from a formal COOP that addresses issues that may disrupt the normal business of operating the airport. The airport's plan is coordinated with the city of Fort Lauderdale COOP and is based on a well-thought-out assessment of actual risk

of certain disruptions, such as a hurricane. The "spectrum and scenarios" include airfield power outage, headquarters building incapacitation, aircraft accident, and acts of nature. The COOP provides detailed guidance and direction of resources for mission-critical systems, including components such as telephone trees, succession, and alternative facility operations. FXE highly values building relationships with city departments that provide continuity support functions, as well as with other stakeholders.

Case Example 6: Savannah/Hilton Head International Airport

Savannah/Hilton Head International Airport (SAV) is owned by the city of Savannah, Georgia, and managed by the Savannah Airport Commission. It is located in Chatham County. The airport serves the Savannah area, with a significant percentage of passengers traveling on to Hilton Head Island, South Carolina. The small hub airport is also a military use airport. This case example is based on an interview with Fred McCosby, senior programs manager; his responses to the survey; and other relevant documented sources.

Airport Characteristics

NPIAS category: Small hub

Governance: Airport authority

Number of operations (2014–2015): 85,000

Number of airport employees: 165

Part 139: Yes

Budget for BCP/COOP: The staff hours and related costs are incorporated into the cost of operation of the airport, because all aspects of continuity planning are incorporated into each functional plan.

History and Motivation for BCP/COOP Development

Savannah/Hilton Head International Airport initiated the process to address continuity of operations in existing plans. For example, the airport developed an H1N1 flu (swine flu) plan and a plan for infectious substances, both of which incorporate business continuity elements to deal with the potential of a 50% to 60% rate of staff absence. Similarly, the irregular operations plan ensures that enough concessionaires will remain open when the airport is overwhelmed by diversions or stranded passengers.

The airport does not have a standalone BCP/COOP document; rather, it has identified likely local conditions and operational concerns that would have a negative impact on airport resiliency and has incorporated continuity planning into existing functional plans.

Airport BCP/COOP Planning and Coordination

The airport's senior programs manager facilitates business continuity planning. Because continuity of operations is addressed in existing functional plans, the police, security, airport operations, airfield operations, legal department, and executive assistant director (who is also the director of finance) are all engaged.

The airport does not contract out its core operational and business functions and is self-sufficient for business and operations continuity purposes. SAV has cooperative agreements with the Chatham County Emergency Management Department. The Emergency Management Assistance Compact is also in place to locate resources (for example, a transformer) within or outside the state when local and regional options are exhausted.

Airport tenant plans are congruent with the plans of the airport when it comes to addressing continuity of business and operations issues. For example, the appropriate tenants are briefed about the IROPS plan throughout the year. A hurricane briefing is held once a year, at the beginning of hurricane season, to ensure that tenant plans are consistent and congruent with the airport's hurricane plan. The H1N1 business plan is referenced and reviewed before any potential pandemic incident.

The airport is an active participant in the airport-to-airport mutual aid program SEADOG and coordinates with first responders and FEMA. It has a letter of agreement with the local emergency management agency. Communication is important; communication with first responders is by email rather than formalized documents.

Disruptions Impacting Airport Operations and Business Continuity

The primary disruptions cited by SAV were hazard-specific threats such as natural disasters (hurricanes), pandemic events, and irregular operations caused by airline and weather delays. SAV has also encountered IT deficiencies and has discussed other typical business disruptions, such as cash flow issues during an event and dealing with electronic transactions during natural disasters.

The airport has experienced growth in aviation demand that requires both airport and local community involvement to address. Before 2007, SAV had had more than a million enplanements annually, but the tourism industry was depressed from 2008 through 2013 because of the recession. In 2014, Jet Blue started serving the area with two flights a day; the incremental boost in tourism from 800,000 to 1,000,000 annual enplanements spurred growth and had a multiplier effect. The community put up $1 million and the airport put up $2 million to have Jet Blue come in and address the growth in aviation demand. The infrastructure was already there, as the airport had previously handled more than a million enplanements a year.

Airport Procedures for BCP/COOP Evaluation and Maintenance

Business continuity practices had already been streamlined within existing functional plans; writing and review of these practices is ongoing. Each airport functional plan is reviewed regularly and issues related to continuity of business and operations are incorporated and updated. At the time of the interview, the airport's hurricane plan (Sample 8, Appendix M) and the H1N1 business plan (Sample 9, Appendix N) and infectious substance plan were under review by the Coastal Health Department as part of the plan review and agency coordination effort.

Effective BCP/COOP Practices

Being a small airport, SAV decided to include business and operations continuity practices in the existing functional plans.

SAV did not develop a separate BCP/COOP. Instead, being a small airport, it decided to include business and operations continuity practices in the existing functional plans. The airport makes the tenants, including airlines and FBOs, aware of its plans and coordinates actions. For example, SAV provides timely information to airlines and FBOs so they can quickly relocate their aircraft when a major disruption, such as a hurricane, is likely. By incorporating continuity into existing functional plans and briefing the tenants on the plans, the airport has been able to efficiently address continuity of operations.

In the event of a major hurricane, credit cards and electronic transactions may not work. In this situation, the airport withdraws $500,000 to $1,000,000 cash to meet payroll needs and pay for essential services. SAV uses "ride-out crews" during hurricanes: 36 hours before the event these crews (60–75 people) are contacted. Employees are sent home early so they can return after the hurricane to take over from the ride-out crews. Incorporating business continuity planning into existing plans has helped streamline the recovery and reconstitution process. The SAV plans also address business systems (including a total disruption of the banking system) and communications systems during a hurricane.

Lessons Learned

1. IT issues were not planned well, and this kind of inadequacy can have a major impact on airport functions and operations. IT staff has been increased, IT infrastructure has been enhanced and expanded, and efforts are under way to develop an IT plan that will include needs for continuity of business and operations. The lesson learned was to provide enough support to the IT manager so that he or she can plan for the future needs of the airport and develop a long-term IT business plan. A business plan specific to IT infrastructure allows the manager to plan years in advance so the airport is ahead of the curve in terms of IT resources.

2. In the past, there were instances in which airport operations managers did not communicate with concessionaires when the airport was overwhelmed with diversions. This led to travelers' needs not being met. The IROPS plan has been updated to address continuity of operations and business during diversions. The plan involves coordination between the airport and Delta Airlines, so that the airline flies diversion crews to SAV to supplement Delta's airport staff and deal with passenger needs.

3. Originally, a small group was responsible for addressing continuity of operations and business; airfield operations and security were left on the periphery. This has changed—more people are involved in discussing continuity of operations and business needs, and every two weeks airfield operations and security staff are included in the discussions.

Advice to Smaller Airports

SAV staff members visited Seattle-Tacoma International Airport (SEATAC) in Washington State and looked at the huge binder that contained the airport's BCP/COOP. They decided that a separate BCP/COOP might not work for a small airport like theirs, so they embedded and streamlined business and operations continuity needs within existing functional plans, the hurricane plan, the H1N1 business plan, and the IROPS plan. However, the template used by the Port of Seattle (Sample 2, Appendix H) can be relevant, applicable, and scalable for smaller airports.

Imagine the worst-case scenario during a major disruption and address the business and operation continuity issues in a separate plan or by embedding them in existing functional plans as SAV did. The time to plan is *before* an event, be that IROPS, a hurricane, or a pandemic.

It is important to look at alternative facility needs; for example, if the terminal is wiped out, what kind of modular facilities can be used to serve passengers? These facilities might not look pretty, but they can keep the airport operational.

Summary

SAV has taken a unique—and noteworthy—approach to business continuity planning: embedding business and operational continuity issues and plans in existing functional plans. Originally SAV intended to follow the Port of Seattle's approach to develop a continuity plan; but planners decided that such a voluminous document would not serve the airport well. SAV's approach demonstrates that smaller airports can successfully incorporate business continuity planning into existing functional plans to meet their resiliency demands.

AIRPORTS WITHOUT FORMAL BCPs OR COOPs (CASE EXAMPLES 7 THROUGH 9)

Three respondents were selected as case examples of airports that do not have standalone BCPs/COOPs but nevertheless incorporate effective operational and business continuity practices. These airports not only reported continuity practices but also demonstrated innovative approaches to operational recovery. The survey and interviews were fashioned to provide an understanding of why each airport did not have a formal plan, how it was handling continuity issues without a plan, how effective its practices have been, and what challenges it has faced.

Case Example 7: Duluth International Airport, Non-Hub Primary

DULUTH INTERNATIONAL AIRPORT
Closer to everywhere.

Duluth International Airport (DLH) is a city-owned, public use, joint civil–military airport located 5 nautical miles northwest of the central business district of Duluth in Saint Louis County, Minnesota. This case example is based on an interview with Blaine Peterson, director of operations; his responses to the survey; documentation provided; and other relevant documented sources.

Airport Characteristics

NPIAS category: Non-hub primary

Governance: Airport authority

Number of operations (2014): 55,115 annual

Number of airport employees: 16

Part 139: Yes

Budget impact of business continuity practices: There are few direct coordination costs involved with operational recovery from significant disruptions besides the direct costs related to items such as human resources, equipment and materials, and other resources required to return the airport to normal operations.

Continuity of Airport Operations/Business Functions

DLH has no BCP/COOP; however, the airport uses computer backup systems and services, data recovery systems and services, backup generators, essential equipment backup plans, and alternative facility contingencies. The airport also uses vari-

ous plans and agreements dealing with incident response and recovery, including the AEP, terminal incident plans, IROPS plans, emergency communications plan, and mutual aid agreements to address its continuity needs.

Current plans are generally reviewed annually. Effectiveness is assessed using a number of metrics, such as number of cancellations or significant delays, number of flight operations lost, and possibly the number of passengers rerouted to other airports.

The city of Duluth provides a number of typical business support functions for the airport, such as payroll services. Depending on the disruption, the Duluth Airport Authority (DAA) staff can assume control of the situation and manage resources to correct it as soon as possible.

Coordinator(s) and Coordination

The DAA operations director, airside manager, and airfield foreman are key persons for coordination of all events requiring actions to respond to and recover from significant airport disruptions. Coordination efforts may also be required with the airline station manager, FBO manager, and air traffic control tower (ATC) staff. The DAA coordinates on a routine basis with affected airport tenants, and coordination meetings are scheduled as necessary.

A number of core airport functions are contracted to commercial tenants or other agencies. For example, the 148th Air National Guard unit based at the airport provides emergency response services on the airfield through a use agreement with the airport authority. The airlines, FBO, and ATC also provide core service functions.

Disruptions Impacting Airport Operations and Business Continuity

DLH experiences a number of reoccurring, incident-specific disruptive events that affect airport operations, including snow and ice events, air shows, and VIP visits. The airport manages these events to reduce negative impacts.

Snow and Ice Events

It is not uncommon for DLH to experience snow and ice events that affect airport operations. On one occasion, significant freezing rain around the busy Christmas travel season disrupted flights, causing cancellations and delays and affecting airport, airline, and traveler schedules.

When DLH experiences heavy ice on the airfield, the snow and ice control plan is activated. DAA notifies tenants, communicates with ATC regarding conditions, and issues the appropriate Notice to Airmen. To deal with the ice, DLH determines the appropriate use of equipment, which sometimes requires a switch from the usual snowplow blades to a serrated blade that cuts grooves into the ice in an attempt to soften it or break it up. Sand is applied, along with an FAA-approved dry chemical. The process is repeated until the ice breaks and is safely removed. Throughout the process, airline passengers are kept informed of schedule changes. This process has been effective for the most part; however, the airport does rely on current FAA plans such as the snow and ice control plan and the IROPS plan.

Retuning the airport to normal operations can be a challenge during snow and ice events that disrupt operations for up to a couple of hours. DLH admits that a BCP/COOP might help in this situation; however, the DAA continues to rely on its current snow and ice control plan and the IROPS plan. *ACRP Report 65: Guidebook for Irregular Operations (IROPS) Contingency Planning* also addresses IROPS in great detail.

Air Shows and VIP Visits

DLH has hosted a number of air shows and VIP visits that have been extremely disruptive to normal airport operations. An air show typically affects airport functions for a full weekend; VIP visits vary in duration but generally last a few hours.

Because these events limit the availability of certain airfield operations to the public, the DAA has to make decisions about priorities. For example, during an air show, priority and scheduled airline service is adjusted or accommodated as needed to ensure that little or no disruption of service occurs. Certain general aviation operations may be unable to operate during these times. These events are generally scheduled in advance and coordinated with airport users by various means, including through the Notice to Airmen system.

In terms of their impact on human resources, equipment, facilities, and other resources, DLH reports that air shows and VIP visits require additional manpower to meet the event schedules. Airfield operations are limited, and landside issues such as spectator and parking facilities are modified or created. Air shows and VIP visits do not require much recovery planning, as they are scheduled events that end at a predetermined time.

Effective Airport Continuity Practices

DLH has found that existing plans—including the AEP, snow and ice control plans, and IROPS plans—are effective for dealing with airport disruptions. DLH coordinates certain business functions, such as payroll, with the city of Duluth and relies on the city for business continuity practices. The airport recognizes the benefits of a formal BCP/COOP but has not developed a standalone plan.

Advice to Smaller Airports

DLH suggests that smaller airports seeking to develop business continuity practices or considering development of a formal BCP/COOP may benefit from reaching out to larger airports or agencies that already have plans in place and tailoring those plans to meet the smaller airport's operational needs.

Summary

DLH, a non-hub primary airport, uses functional plans such as the AEP, IROPS plan, and snow and ice control plans to address continuity needs related to the disruptions the airport encounters most often. This incident-specific approach has served the airport's needs. Contingency planning has also proven to be useful, increasing efficiency by providing guidance on the types and quantities of resources that may be needed to cope with specific disruptions.

Case Example 8: Lakeland Linder Regional Airport

Lakeland Linder Regional Airport (LAL) is a reliever airport serving the Lakeland area in Polk County, Florida. The airport has more than 215 based aircraft and maintains FAR Part 139 certification. LAL has a substantial economic impact on the region: it is home to approximately 75 businesses and organizations that employ more than 1,000 people. LAL hosts the annual Sun 'n Fun Fly-In, which draws more than 200,000 people for a weeklong event. This case example is based on an interview with Adam Lunn, operations coordinator; his responses to the survey; documentation provided; and other relevant documented sources.

Airport Characteristics

NPIAS category: Reliever

Governance: City department

Number of operations (2015): 117,000 annual

Number of airport employees: 16

Part 139: Yes. Holds certificate but currently does not offer commercial service.

Budget for continuity practices: Costs depend on the nature of the disruption.

Continuity of Operations/Business Functions

LAL does not have a formal, written BCP/COOP to deal with events that cause significant disruptions to airport operations or business functions, although it has documented SOPs for many hazard-specific threats, such as severe weather, power outages, generator outages, and elevator malfunctions. (See the LAL Severe Weather SOP, Sample 13, Appendix S.) The airport has a current AEP and is compliant with NIMS.

Airport staff are trained and efficient with airport emergency response through the use of incident action plans; they use IAPs to bring critical systems back online, not only for airport emergencies but also for loss of nonemergency functions.

A number of core airport support business functions are covered by city departments, such as the city finance department, risk department, and technology department. These departments have internal continuity practices; however, the practices or written plans are not coordinated specifically with the airport. Airport staff regularly interact with these departments to ensure that they have a complete understanding of airport needs.

Coordinator(s) and Coordination

The airport coordinates business and emergency recovery actions using a team-based approach. Lunn says, "It is a team effort, and critical functions are recovered with coordination between impacted departments—Operations, Maintenance, Administration, Property, and Business Management for all financial and funding concerns" (A. Lunn, personal communication, Oct. 8, 2015).

The air traffic control tower is handled through the federal Contract Control Tower program. These services are currently provided through Robinson Aviation. In response to recent federal funding issues and uncertainty about tower operations, the airport has taken steps to mitigate potential tower closure with specialized training of airport personnel.

The airport participates in a citywide comprehensive emergency plan that is reviewed annually. This plan is coordinated with the AEP. Lunn explains, "Plans are cross-checked and provided to other city departments so they understand airport facilities or procedures" (A. Lunn, personal communication, Oct. 8, 2015).

Disruptions Impacting Airport Operations/Business Continuity

The most significant airport disruption in the past 5 years was the 2011 tornado, which occurred during the Sun 'n Fun Fly-In. During this disruption, LAL followed the Incident Command System (ICS) structure to make recovery priority determinations through the use of IAPs. Prioritization included rescue, life safety, evacuation, airport closure, damage assessments, and security issues. IAPs, departmental coordination, and mutual aid resources were used to prioritize recovery actions.

The tornado impacted the entire airport and an estimated 150,000 event attendees, and forced the airport to close down. Forty-one aircraft were overturned, buildings and hangar doors were damaged, temporary facilities such as tents and portable toilets were damaged, and participants lost personal items. Damage to LAL facilities such as pavements, terminal facilities, and other buildings was minimal, although a significant amount of foreign object debris had to be removed to restore the runways to safe operating condition. Security was required to ensure that totaled aircraft were not disturbed during insurance or EPA-required assessments.

Using ICS principles, the airport quickly recovered its operational capacity and reopened at 7:00 a.m. the next day. Building repairs that were required to be operable were restored, depending on the damage assessment for each hangar facility. There was limited down time for restoring airport operations; however, some of the events were canceled as a result of the damage.

The recovery from the tornado had a significant effect on human resources owing to overtime, on-call status, and airport staff rest periods. Since this event, the operations staff has been expanded from two to five employees. There was a limited impact on physical plant and equipment and none on technology. Daily processes were interrupted by the event.

Process for Reconstituting Airport Operations/Business Functions After Disruptions

The ICS principles are part of the recovery culture at the airport and are applicable to most continuity scenarios.

LAL staff are highly trained in emergency procedures, primarily owing to a well-developed AEP and exercise program. ICS principles are part of the recovery culture at the airport and are applicable to most continuity scenarios. During and after the tornado, these principles were used to develop an IAP for each step of the response and recovery actions. After the emergency response, LAL continued to use IAPs for recovery issues. "Not all AEP hazard-specific sections have specified checklists for recovery actions. Many rely on hazard-specific Unified Command actions based on Incident Action Plans (IAPs) for disruption recovery involving activation of the AEP" (A. Lunn, personal communication, Oct. 8, 2015).

For all airport disruptions, LAL brings department directors together as necessary, including operations, administration, maintenance, business, and property managers. Recovery priorities are identified and coordinated as required and may include the use of specifically developed SOPs for critical functions.

Offsite coordination is required for certain off-airport functions.

Offsite coordination is required for certain off-airport functions, including finance and IT needs. This requires constant communication to build relationships with offsite departments. Aircraft service and fueling is contracted to an FBO. The airport works closely with the FBO to make sure that operations are sustainable during any disruption. This is more of a partnership and operating understanding than a contractual lease provision.

Effective Airport Continuity Practices

LAL has effectively used a combination of airport SOPs, the AEP, NIMS principles, and relationships with the city and with external organizations such as the FAA to deal with disruptions. Communication among departments is essential, and the LAL business manager routinely interacts with the city risk manager to review potential continuity issues.

LAL has no formal BCP/COOP. The airport acknowledges that it would likely benefit from a written BCP/COOP to deal with some disruptions; however, it is difficult to plan for all types of disruptions, and there may be some advantages in certain situations to remaining fluid and proceeding with recovery actions using well-practiced processes.

Advice to Smaller Airports

Examine internal practices and assess for weaknesses and the need for updates. Airports that are contemplating the development of a BCP would benefit by looking at what other airports are doing. It is critical to build relationships and ensure that offsite city departments and other stakeholders are involved in the planning process.

Summary

LAL values emergency preparedness. Although no formal BCP/COOP exists, the airport considers internal recovery practices to be effective in dealing with all types of disruptions. "The Lakeland Airport understands that the purpose of [a] BCP is nonemergency management. However, the basic principles of NIMS and ICS are applicable to all disruptions. Using our basic AEP in conjunction with the principles of NIMS, we evaluate all situations and determine the most critical systems to be restored and proceed accordingly" (A. Lunn, personal communication, Oct. 8, 2015). The airport also uses written SOPs to efficiently address specific disruptions that affect both emergency and nonemergency airport functions.

LAL recommends good communication and relationship building with offsite city departments that support the business operations of the airport. Airport staff maintain a high level of communication that leads to addressing continuity priorities with city departments, airport stakeholders, and emergency management. The airport demonstrates that effective continuity practices can be achieved through the use of NIMS principles and the development of IAPs that prioritize recovery actions, the use of SOPs and other airport functional plans, and communication with both external and internal stakeholders.

Case Example 9: Watsonville Municipal Airport

Watsonville Municipal Airport (WVI) is a general aviation (GA) airport serving the city of Watsonville, California, and the county of Santa Cruz. The airport is a busy GA airport with more than 300 based aircraft. WVI has been recognized for its function as an emergency response entity, primarily as a result of a pilot group that serves as a response team in the event of an area disaster. The activation of this group also reinforces the importance of maintaining the appropriate use of airport facilities that, during a communitywide disaster, may be used for other purposes than just the operational continuity of the facility itself. This case example is based on an interview with Rayvon Williams, airport division manager; his responses to the survey; documentation provided; and other relevant documented sources.

Airport Characteristics

NPIAS category: General aviation

Governance: City department

Number of operations (2015): 65,100

Number of airport employees: 9

Part 139: No

Continuity of Operations/Business Functions

WVI has no formal BCP/COOP; airport staff plan primarily for continuity of operations and less for business continuity. Many airport business support functions (outside of functions such as point-of-sale transactions) are handled by other city departments. All facility operational functions and services are provided by the airport.

For emergency or operational situations, WVI has two general plans of action, depending on the type of disruption. As of October 2015, the majority of operational disruptions had been minor aircraft-specific issues (e.g., aircraft flat tire, gear-up landing, loss of control off runway, ground loop, blocking runway) or major actions that affected the infrastructure (1989 Loma Prieta earthquake, 2008 wildfires). For minor disruptions, the airport has a first response plan of action followed by coordination with Watsonville fire or police to bring the airport back to normal operations. In the case of a major disruption, the airport works with the city of Watsonville's Emergency Operations Center, but airport management and staff are ultimately responsible for restoring the airport to normal operations. The WVI Emergency Classification Grid is shown in Figure 7.

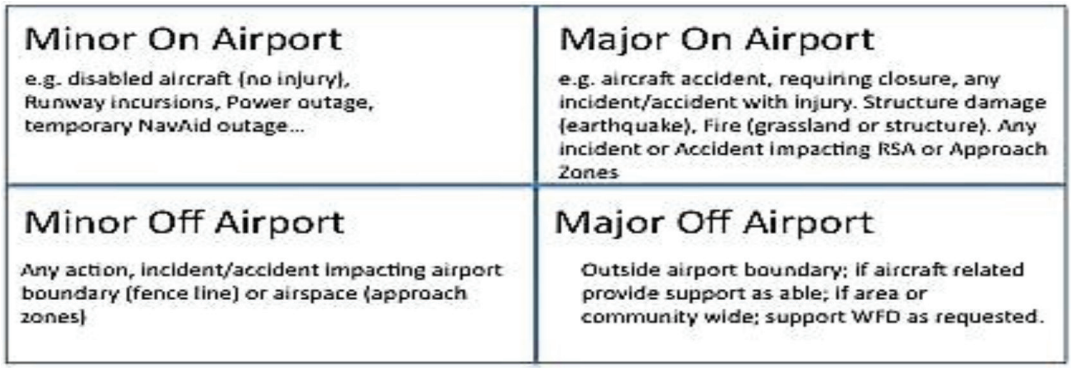

FIGURE 7 Watsonville Airport emergency classification grid. *Source:* R. Williams, personal communication, April 19, 2016.

The airport relies on the city of Watsonville for a number of finance functions, including automated clearinghouse payments and payroll, that are handled offsite by other city departments. Other functions—such as legal, human resources, contracting, and risk management—are handled at city hall. Business continuity functions are handled primarily in other city departments; this arrangement requires close coordination and communication, but the airport's focus is on the continuity of operations of the facility.

Coordinator(s) and Coordination

During minor disruptions, airport management and staff typically make decisions; during major disruptions, decision making is a combined effort between the airport manager and the Watsonville Emergency Operations Center (EOC). If the airport is secure and safe, and no life-threatening conditions exist, initial coordination is with Watsonville fire or police, followed by coordination with the EOC for power restoration via local utilities. For nonemergency disruptions, WVI determines recovery priorities on the basis of the situation. The airport may contact off-airport support services by telephone.

Disruptions Impacting Airport Operations/Business Continuity

The airport reports only limited business disruptions, but it enhances the continuity of operations by partnering with the Watsonville Emergency Airlift Command Team. WEACT is a community-based program involving the airport, its tenants, community members, the city of Watsonville, and Santa Cruz County. In the event of a large-scale community emergency, volunteers mobilize to provide airport, aircraft, and pilot services as needed; for example, moving people and goods to where they need to go. WEACT was modeled on a similar program developed by the South County Airport Pilots Association and based at nearby San Martin Airport. Both programs grew out of lessons learned from the 1989 Loma Prieta earthquake and a desire to combine community needs with the airport asset. WEACT helps mobilize resources to assist the community as a whole with recovery and continuity while also establishing practices at the airport, which may also be affected by the emergency. The program helps to ensure that the airport not only maximizes its recovery role within the community but also maintains the use of its own facilities during a disaster.

WVI has experienced aircraft accidents, special events, temporary flight restrictions, and construction disruptions. While these events affected the operation of the airport, none of them required any actions to recover core business functions.

Effective Airport Continuity Practices

Although the airport has no formal BCP/COOP, it coordinates with other city departments to maintain awareness of business continuity needs. This process is informal and requires airport management and staff to build relationships with offsite departments.

WVI employs a simple Emergency Classification Grid (Figure 7) to differentiate between minor and major on/off airport emergency events; the grid helps guide airport staff regarding initial actions and communications. The airport has also developed a simple one-page Initial Action Guide for employees; a laminated copy is in every airport vehicle and building location (Sample 12, Appendix R).

Advice to Smaller Airports

WVI suggests focusing on four elements in dealing with continuity issues:

1. Ensure timely and orderly continuous performance of essential functions during and after an emergency (keep the airport operational).

2. Reduce or mitigate disruptions to operations (see 1 above…keep the airport open).

3. Protect records and other assets that support essential functions (we still have legacy "paper" that must be preserved).

4. Minimize loss of life and injury to agency personnel.

Summary

WVI has an effective airport-based program for dealing with emergencies that impact the area. WEACT is a pilot-based organization that mobilizes assets to provide air resources for the community as needed. WEACT also enhances operational continuity at the airport when a disruption affects the overall community by ensuring appropriate use of airport facilities.

Most airport business continuity actions are handled offsite by other city departments. The airport focuses on continuity of airfield operational functions that may need to be recovered in the event of a disruption. The airport has successfully developed simple and easily accessible tactical/operational tools for dealing with emergency disruptions.

CHAPTER FIVE

BENEFITS AND BARRIERS

BENEFITS OF CONTINUITY PLANNING

The survey data, case examples, and literature review show that airports of all sizes realize a benefit from continuity planning, primarily in increased preparedness and improved response and recovery from airport disruptions. In the survey, 96% of the airports cited increased preparedness as a benefit and 93% cited improved response and recovery (Table B32, Appendix B).

Every case example cited increased preparedness as a benefit or perceived benefit to business and operations continuity planning. However, these examples show that airports address planning for operational and business continuity recovery in different ways. Many airports have developed formal BCPs/COOPs, while others have efficiently incorporated continuity practices into existing functional plans or their AEPs. Still others rely on standard operating procedures, checklists, and other tools.

ACRP Synthesis 60: Airport Emergency Post-Event Recovery Practices (Smith et al. 2015) looked at airport advance planning and preparation recovery practices:

> Where the recovery plan is inserted into airport plans is a matter of local choice and does not appear to affect the usefulness of the plan or the quality of its outcomes. (p. 38)

Depending on local circumstances and choices, airports can plan for recovery actions using AEPs, BCPs, COOPs, or any combination of functional or hazard-specific documents. Airports can realize a continuity planning benefit regardless of the instruments they use, as long as recovery and reconstitution practices are identified and applied. The case examples in this report reflect this fact.

With regard to airport disruptions, the majority of survey respondents and case example interviewees cited emergency or hazard-specific incidents. Lakeland Linder Regional Airport has found that applying emergency response and recovery principles laid out in the NIMS doctrine can be an effective way of dealing with all types of airport disruptions (chapter four, Case Example 8). Because LAL trains for emergency response and recovery, it is proficient and effective at emergency response. That training translates to a benefit for addressing nonemergency disruptions, in which the airport uses its familiar and practiced response style coupled with specific SOPs.

Regarding the use of business and operations continuity planning to reduce downtime, 80% of the airports surveyed responded that such planning decreased downtime in an airport disruption (Table B32, Appendix B). The majority of airports equate continuity planning with decreased downtime, resulting in a reduced operational and financial impact as well as a better public experience. This benefit is also supported by *ACRP Synthesis 60*, which suggests that one metric for the effectiveness of recovery is duration; that is, a speedy recovery is a successful recovery (Smith et al. 2015). (Although this is an oversimplified assessment of recovery success as defined in *ACRP Synthesis 60*.)

ACRP Synthesis 60 further finds that airport recovery actions reinforce public perceptions of the airport (Smith et al. 2015):

> A poor recovery—whether assessed internally by the airport and its tenants or externally by the public, media, and politicians—can damage an airport's professional reputation. Conversely, a successful recovery can substantially enhance both employee morale and commitment and public perception of the overall quality of the airport. (p. 5)

Fifty-two percent of the survey respondents cited improved public perception of facility management as a benefit of continuity planning (Table B32, Appendix B).

The involvement of stakeholders in business and operational continuity planning efforts, including review, improves the quality of the plan and its usability (Smith et al. 2015). *ACRP Report 93: Operational and Business Continuity Planning for Prolonged Airport Disruptions* (Corzine 2015) also suggests that it is beneficial to include stakeholders in the process:

> [Business continuity planning] at airports should comprehensively identify critical stakeholders, appropriately communicate with them about the process, and include them when relevant. Airports should consider whether stakeholder groups should be part of the process or simply be included in the communications plan to keep them appraised of BCP at the airport. (p. 12)

All nine of the case example airports reported some level of benefit to stakeholder communication and involvement in their business continuity planning practices; in fact, some are working toward phasing continuity planning actions and compliance into tenant lease agreements. More than half of the airports reported that improved coordination with stakeholders and emergency response organizations was a benefit of continuity planning.

Another primary benefit—reflected throughout the survey data and case examples—is further supported in one of the major conclusions of *ACRP Synthesis 60*:

> Relationships—among airport departments, between airports and their mutual aid partners, and between airports and other stakeholders—are essential to effective recovery, and relationships can be built in advance with a purpose, which is effective response and recovery. (p. 50)

A number of the case examples in this report pointed to the need for a high level of coordination with both external and internal stakeholders. Airports appeared to benefit by closely coordinating with other city departments when those departments supported critical airport business functions. Airports such as Dallas/Fort Worth International and Savannah/Hilton Head International cited the benefits of close coordination and training through their involvement with mutual aid organizations, including the Southeast Airports Disaster Operations Group and the Western Airports Disaster Operations Group.

Only a few respondent airports (4%) saw no real or perceived benefit to having a written BCP/COOP. The majority (more than 50%) consider one or more of the following as benefits of having a BCP/COOP:

- Increased preparedness
- Improved recovery and response
- Reduced liability
- Decreased downtime
- Better relationship with tenants
- Improved coordination with emergency response organizations
- Improved public perception
- Improved facility management.

For DFW, continuity planning has brought transparency, collaboration, and consistency, resulting in a quicker return to normalcy of the airport's core functions and businesses (chapter four, Case Example 1). The Minden-Tahoe Airport recognizes that continuity of operations planning allows it to act quickly and effectively during a disruption, with guidance for whom to call, who is in charge, how to handle the disruption, and how to determine the level of threat (chapter four, Case Example 3).

The Metropolitan Airports Commission airport system includes Minneapolis–St. Paul International Airport and its reliever airports. The MAC recognizes that any interruption to the operational or business functions of the airport will have a major impact on flight operations, passengers, and commerce, and the airport cannot sustain the huge economic impact of disruptions (K. Rollwagen, personal communication, Oct. 13, 2015). The MAC considers both its BCP and its COOP so beneficial in terms of preparedness that it plans to bring the entire reliever system, as well as numerous stakeholders, under the umbrella of the plans by incorporating them into lease agreements (chapter four, Case Example 2).

Douglas Hammon, director of the Ohio State University Airport, says there are opportunities in continuity planning to think about "what the airport does, what is important for the airport, what is not important for the airport, and is there a better way to handle any functions under normal or disruptive conditions" (D. Hammon, personal communication, Oct. 15, 2015) (chapter four, Case Example 4).

Fort Lauderdale Executive Airport believes that a continuity plan is an effective tool for preparedness. The airport has procedures in place to increase preparedness and reduce downtime in the event of a normal operating function disruption. The "what do we do?" question has already been addressed. FXE believes that a formal COOP increases preparedness, improves recovery and response, decreases downtime, and improves coordination with emergency response organizations (chapter four, Case Example 5).

The senior programs manager of SAV emphasized that the time to plan is *before* an event, be it irregular operations, a hurricane, or a pandemic. Including business continuity practices in airport functional plans has improved preparedness. For example, working through the continuity planning process helped the airport identify a deficiency in its technology resource. This led to the development of a business plan specific to IT infrastructure, which enabled the IT manager to plan years in advance and keep the airport well ahead of the curve in terms of IT infrastructure planning (chapter four, Case Example 6).

Duluth International Airport believes that business and operations continuity planning can increase preparedness, improve recovery and response, reduce liability, improve insurance rating, decrease downtime, improve relationships with tenants, improve coordination with emergency response organizations, and improve public perceptions of facility management. Contingency planning helps DLH staff function efficiently in demanding situations. It provides guidance regarding the types and quantities of resources that might be needed (chapter four, Case Example 7).

For Watsonville Municipal Airport, manager Rayvon Williams says continuity of operations planning is key to enabling the airport to quickly return from a minor or major disruption to its threefold mandate: "Safety, Service and Self-Sustainability." Planning allows the airport to increase preparedness, improve recovery and response, decease downtime, and reduce liability exposure (chapter four, Case Example 9).

BARRIERS TO CONTINUITY PLANNING

The survey responses, case examples, and literature review identify a number of barriers to the development and implementation of BCPs/COOPs or continuity practices at airports. These challenges involve many variables, including high costs, lack of resources, no perceived benefits, and lack of expertise with or understanding of business and operations continuity planning.

Airport ownership structures vary considerably, and many functions at small airports may be handled by offsite departments or federal or state agencies. In addition, contractual agreements with private companies often provide services such as airport management, fixed-base operator services, airfield maintenance, and air traffic control. Although small airports are typically less sophisticated in their makeup than larger airports, structural complexities can sometimes hinder continuity because of the decentralized nature of the operation.

Governance

Barrier Defined

Many small airports are municipally or county owned, and rely on external departmental resources for functions such as payroll, purchasing, and technology support. *ACRP Report 93: Operational and Business Continuity Panning for Prolonged Airport Disruptions* (Corzine 2013) addresses airport ownership as it affects business continuity planning:

> The implications for BCP include extending the management commitment process, assessment, planning process, and training and exercises beyond the boundaries of the airport to each of those core functions that are managed by the airport operator or a governmental department or agency, wherever it may be physically located. This adds a level of complexity and demands inclusion and coordination. (p. 8)

The airport's continuity planning process must take the city or county COOP (if it exists) into consideration, and the airport plan must take into account the exposure to disruption of core business functions handled offsite (Corzine 2013). Externally controlled priorities can have an impact on operations at the airport but may not be consistent with the airport's recovery needs.

How to Overcome

The key to addressing these issues is to build relationships, increase communication, and train with external departments. All the case examples in this report stressed the value of building relationships as a way to overcome this barrier. At Fort

Lauderdale Executive Airport, Minden-Tahoe Airport, and Ohio State University Airport, the airport BCP is part of the wider city or county plan.

Core Functions Not Under Airport Control

Barrier Defined

Airports of all sizes have many functions and services that are handled through contractual agreements with private companies, such as airport management and FBO services. Government agencies that are outside the control of the airport are often located on airport grounds for aeronautical purposes, such as air traffic control. This setup presents a challenge for the development of continuity practices. *ACRP Report 93* discusses this issue:

> Because contractors, commercial tenants, federal agencies, and FBOs often perform essential functions instead of airport employees, authority and control are dissipated and divided among those contractually connected organizations…. This level of complexity makes the BCP process at airports understandably challenging because so many core functions are out of the airports' control. (p. 7)

How to Overcome

When many of an airport's core functions are controlled by other entities, it is challenging to develop a comprehensive continuity strategy. Coordination is required among multiple entities to ensure cohesive and complementary continuity and recovery practices. Airports in this study overcome this barrier in a number of ways.

Dallas/Fort Worth International Airport (chapter four, Case Example 1) involves tenants in the review and training processes of the airport's BCP. Minneapolis–St. Paul International Airport (chapter four, Case Example 2) is phasing in a requirement to reference the airport BCP/COOP in tenant leases and ultimately plans to require tenants to have their own coordinated COOPs. The Minden-Tahoe Airport (chapter four, Case Example 3) requires its FBOs and 20 commercial tenants to comply with the countywide COOP. Fort Lauderdale Executive Airport (chapter four, Case Example 5) employs a letter of agreement with the air traffic control tower to address operational continuity issues.

Lack of Resources

Barrier Defined

Small airports face many challenges in developing a BCP, including limited staff, limited resources, high costs, and lack of expertise in standard business continuity practices. Of the airports surveyed, 16% of respondents cited lack of resources as the reason they do not have a BCP/COOP (Table B28, Appendix B). Nine percent cited a lack of guidance on continuity planning.

Managers of small airports typically perform both administrative and operational tasks. Employees may play multiple roles or specialize in certain functions. This structure can lead to the development of institutional knowledge and established (although unwritten) practices that can be effective when problems occur. However, it can create significant continuity issues if those employees move on, retire, or pass away.

How to Overcome

The first place a small airport can turn for assistance with continuity planning is its own governance structure. The city or county that owns the airport might already have developed a continuity plan or be considering one. At Minden-Tahoe Airport, the business and operations continuity planning effort was part of a strategic initiative at the county level. MEV worked with the county to develop the airport-specific part of the countywide BCP (chapter four, Case Example 3). At Ohio State University Airport, the university mandated that all its departments formalize BCPs/COOPs (chapter four, Case Example 4). The airport director has been able to leverage university resources to address both planning and implementation. He says that the cost of maintaining the airport BCP/COOP is minimal, as it part of the university's risk management office (D. Hammon, personal communication, Oct. 15, 2015). Likewise, the Fort Lauderdale Executive Airport developed its BCP as part of an overall planning effort by the city of Fort Lauderdale (chapter four, Case Example 5). Developing plans with direction and support from the governing entity leverages available resources and also enhances communication and coordination.

Costs for plan development and BCP/COOP maintenance can be barriers, especially for small airports with limited budgets. Airports that maintain a BCP/COOP as part of a city, county, or other governing entity BCP/COOP can leverage those

resources to reduce costs. Officials at Duluth International Airport report few direct costs other than those related to additional resources to respond to and recover from specific disruptive events (chapter four, Case Example 7). Dallas/Fort Worth International Airport, a large hub airport, allocates significant funding to maintain its BCP/COOP, budgeting more than $60,000 for annual plan maintenance. However, DFW and several other airports interviewed for this report advised small airports to keep their plans simple.

Small airports can achieve some level of business continuity planning with very little effort or expense. MEV advises small airports to have a written plan, even if it is only one page long (chapter four, Case Example 3). OSU advises keeping it simple by seeking out existing BCPs to use as a template rather than reinventing the wheel (chapter four, Case Example 4).

ACRP Report 93 (Corzine 2013) includes a software tool designed to help airports develop a BCP. Minneapolis–St. Paul International Airport is using this tool to revise the Metropolitan Airports Commission systemwide BCP (chapter four, Case Example 2). (This tool and others are described further in chapter six.)

As far as BCP/COOP maintenance is concerned, the majority of airports surveyed estimated that their annual maintenance costs were less than $10,000 (Table B37, Appendix B). Several airports with BCPs/COOPs reported these costs as minimal or said they were confined to staff time, which was incorporated into airport training budgets.

Prioritization of Continuity Planning

Barrier Defined

The survey responses indicated that many airports have not even considered developing a formal, written BCP/COOP. Twenty-six percent of airports surveyed responded that they had "never considered" adopting a formal BCP (Table B28, Appendix B). Although there are recognized business continuity standards, airport practitioners have not yet widely embraced written BCPs. *ACRP Report 93* (Corzine 2013) says,

> The research confirmed that although some airports have implemented various levels of BCP, a majority of them have not made BCP a critical priority. (p. 6)

One reason for the lack of interest in BCPs is confusion about the terms "emergency management" and "business continuity" (Corzine 2013). Many airports associate continuity with emergency preparedness and focus on emergency response to the exclusion of potential business disruptions, such as payroll issues or downed computer systems.

How to Overcome

Six percent of the airports surveyed responded that written BCPs seem redundant, and 22% believed that business continuity was handled in other plans (Table B28, Appendix B). While some airports may confuse business continuity with emergency management and, therefore, assume that it is covered in the AEP or IROPS plans, others have intentionally placed continuity practices in functional plans as a preferred practice for dealing with continuity issues.

Summary of Common Themes

The airports in this report that have BCPs/COOPs or have developed formal business continuity practices all say they have benefited from the process. A number of the officials interviewed agree that business continuity practices are valuable and suggest that small airports can develop their own BCPs with minimal expense. The barriers to BCP development noted in this study can be overcome, as demonstrated by airports that have improved their own capacity for business and operational continuity. Minneapolis–St. Paul International Airport, primary non-hub airports Lakeland Linder Regional and Duluth International, and reliever airport Ohio State University all recommend that small airports contemplating the development of a formal BCP/COOP look at what other airports are doing with continuity planning.

CHAPTER SIX

EFFECTIVE PRACTICES, TOOLS, AND TEMPLATES

Airports that operate with a formal BCP/COOP suggest that smaller airports initiate continuity planning by starting small and keeping it simple. This will keep costs low and ensure that the plans are easy for staff to use. Over time, circumstances and experience will allow the plans to grow as necessary.

Maintaining current and functional plans and practices is very important to the success of the business and operations continuity planning process. Many of the airports identified in this study review their BCP/COOP documents annually with stakeholders, typically in conjunction with emergency exercises and planning. They recommend involving all staff, departments, tenants, and outside agencies who share critical roles in the process.

Survey respondents and interviewees indicate that business and operational resiliency at small airports can be improved in a cost-effective manner. A small airport can develop a basic BCP/COOP by identifying potential disruptions, prioritizing functions, listing resources and how they can be applied to disruptive situations, and developing procedures that will enable the airport to maintain or recover essential functions.

The survey respondents reported using a number of planning tools to address business continuity concerns (Table B36, Appendix B). While 33% of respondents indicated that their airport did not have a BCP/COOP, many used other tools such as checklists (48%), SOPs (46%), or templates to assist with continuity planning. A few airports have used or considered using *ACRP Report 93* BCP software (5%) or commercial software tools available in the market, such as Gartner's Magic Quadrant BOLD Tool (2%).

CONTINUITY PLANNING TOOLS, MATERIALS, AND RESOURCES

The most comprehensive resource for airport business continuity planning is *ACRP Report 93: Operational and Business Continuity Planning for Prolonged Airport Disruptions* (Corzine 2013). The report offers detailed guidance for airports or fixed-base operators on business continuity planning and includes a software tool that helps users develop a customized BCP. The Metropolitan Airports Commission is one example of an airport that is currently using *ACRP Report 93* to update its BCP (chapter four, Case Example 2).

The survey data, case examples, and literature review provide many useful examples of business and operations continuity planning tools, materials, and other resources. Many of these materials are reproduced in Appendices G through S and include sample BCPs and COOPs, planning worksheets, examples of continuity practices embedded in functional plans, SOPs, and other federal agency guidance documents.

The tools, practices, and materials extracted from the case examples in this study can be adapted or scaled for use at small airports. Many of the survey respondents suggested that smaller airports look at what other airports are doing when they start to develop their own continuity plans and practices.

Among the case examples, Minneapolis–St. Paul Airport, Ohio State University Airport, and Fort Lauderdale Executive Airport have BCPs/COOPs. These plans are included in Appendices K, L, and Q.

Dallas/Fort Worth International Airport employs continuity of operations planning worksheets (Appendix J) to determine departmental continuity needs. Airports also reported using mutual aid agreements, checklists, and SOPs. Lakeland Linder Regional Airport does not have a formal BCP; however, it effectively addresses operational continuity through the use of NIMS principles and SOPs (Appendix S). Watsonville Municipal Airport uses a one-page document that lists initial response actions in all emergency situations (Appendix R).

The COOP template used by Seattle-Tacoma International Airport is shown in Appendix H. Appendices N, O, and P provide examples of how Savannah/ Hilton Head International Airport has incorporated business and operations planning elements into airport functional plans. This was an intentional practice that enabled the airport to apply continuity planning to plans addressing specific threats to the airport.

A number of respondent airports used existing federal guidance and training programs for COOP development. MSP reported using guidance FEMA to develop its plan. The FEMA COOP templates can be accessed at http://fema.gov by searching "Planning and Templates." FEMA also has developed a continuity assistance tool that local government jurisdictions can use to review their programs. An overview of the tool is provided in Appendix I.

FXE reported using FEMA COOP training course IS-547.A, "Introduction to Continuity of Operations" as a resource. This train-the-trainer program assisted airport staff in the development of a COOP. OSU reported that working through the continuity planning process has been useful for the airport in addressing the continuity requirements in the Airport Improvement Program Grant Oversight Risk Model Policy (Appendix G).

CONTINUITY PLANNING TEMPLATE

A small airport BCP/COOP planning template is provided in Appendix T. The basic template incorporates the elements of a viable continuity plan for small airports and can be tailored to meet the needs of various size airports. The template was developed from a variety of sources, including *ACRP Report 93*, a number of airport-based BCP samples, and a BCP developed for the New York City Small Business Service Agency (Benjamin Newman, personal communication, Jan. 4, 2016).

CONTINUITY PLANNING CHECKLIST

The results of the literature review, survey, case examples, and analysis of sample tools, checklists, and templates have been summarized in a checklist that can be used by small airports to help with business and operations continuity planning. The checklist is in Appendix U.

CHAPTER SEVEN

CONCLUSIONS

MAJOR CONCLUSIONS

Analysis of the data led to 11 major conclusions:

1. A successful business continuity plan (BCP) reflects the unique needs of an airport.

2. Small airports benefit from having operational recovery plans such as BCPs and continuity of operations plans (COOPs). These may be formal or informal; however, a formal, written plan or intentional integration of continuity practices into airport functional plans appears to have greater benefits. Small airports can benefit from a simple BCP that is not expensive to implement.

3. The benefits of written plans include increased preparedness, improved recovery and response, reduced liability, improved insurance rating, decreased downtime, better relationships with tenants, and improved perception of the airport and how it is managed.

4. The BCP may be separate from the COOP or integrated with it. BCPs deal with operational continuity, focusing most heavily on business functions. COOPs typically focus on operational issues.

5. A relatively small number of airports in all categories, including small airports, have adopted formal, written BCPs.

6. Typically, airports operate in a culture of safety, with the primary focus on preventing, preparing for, mitigating, and recovering from aeronautical emergencies. This approach to operational recovery—typically based on National Incident Management System (NIMS) principles—can be expanded or combined to include recovery of airport business functions.

7. Recognizing that continuity practices are valuable to the business and operations of the airport, small airports are interested in having tools that streamline recovery planning. Appendices T and U provide a template and checklist, respectively, and Appendices G through S provide samples and tools that can be adapted for a specific airport.

8. Small airports can benefit by leveraging recovery tools used by their local governments, sponsors, and other stakeholders. Building relationships—both internal and external—is integral to developing effective BCPs/COOPs.

9. Small airports that are contemplating the development of continuity plans or practices can benefit from examining the practices other airports have implemented.

10. BCPs and COOPs are living documents; they must be flexible, scalable, revisable, and exercised.

11. As part of the BCP/COOP development and maintenance process, airports expect to interact more extensively with tenants and outside agencies, both for coordination and to access resources.

FURTHER RESEARCH

Further research is not necessary, because this synthesis simply describes the application of existing practices to small airports. Specifically, the synthesis uses case examples to extract directly applicable tools as described in *ACRP Report 93: Operational and Business Continuity Planning for Prolonged Airport Disruptions.*

GLOSSARY

Advisory circulars	Instructions from the FAA on how to comply with federal aviation laws and regulations.
Air traffic control tower	A tower at an airfield from which air traffic is controlled by radio and observed physically and by radar.
Aircraft Rescue and Fire Fighting (ARFF)	Specialized fire fighters, rescuers, procedures, and equipment to deal with aircraft accidents at an airport.
Airport Community Emergency Response Team	A Community Emergency Response Team (CERT) that is specially trained to assist in defined functions at the airport to which it is attached.
Airport emergency plan (AEP)	A comprehensive plan for dealing with all hazards reasonably expected to affect a given airport, required for all Part 139 airports and recommended for all other airports.
Airport-to-airport mutual aid	Voluntary coordination among airports to provide assistance in the form of skilled airport workers, equipment, and supplies to an airport that has been impacted by a natural disaster and that requests aid.
Business continuity plan (BCP)	A plan that describes the arrangements and procedures that will enable an organization to respond to a disruptive event in such a manner that critical business functions continue or are quickly restored.
Business continuity planning	An ongoing process, adequately funded and supported by senior management, to ensure that the necessary steps are taken to identify the impact of potential losses, maintain viable recovery strategies and recovery plans, and ensure continuity of services through personnel training, plan testing, and maintenance.
Business impact analysis (BIA)	A management-level analysis that identifies and measures the effects of resource loss and escalating losses over time in order to provide the entity with reliable data upon which to base decisions regarding hazard mitigation and continuity planning.
Business recovery functions	Activities that will enable an agency to return to normal essential functions after a disruption. These activities are implemented after continuation efforts are put into place.
Contingency	A future event that is likely but not certain to happen. The consequences would be such that one must prepare for the event.
Contingency plan	A plan that describes how an agency intends to respond to events that disrupt normal operations. It provides instructions on how to perform recovery tasks to maintain essential functions.
Continuity of business practices	Practices that provide focus and guidance for the decisions and actions necessary for a business to prevent, mitigate, prepare for,

	respond to, resume, recover, restore, and transition from a disruptive event (crisis) in a manner consistent with its strategic objectives.
Continuity of operations plan (COOP)	A plan typically used in the public sector by an organization to ensure that the capability exists to continue essential operational functions across a wide range of potential disruptions, incidents, and emergencies.
Disaster operations group	A voluntary group of airports that provide coordinated assistance in the form of skilled airport workers, equipment, and supplies to an airport that has been impacted by a natural disaster and that requests aid. SEADOG and WESTDOG are currently the two disaster operations groups in the United States.
Emergency management	The coordination and integration of all activities necessary to build, sustain, and improve the capabilities to prepare for, respond to, recover from, or mitigate against threatened or actual disasters or emergencies, regardless of cause.
Emergency Management Assistance Compact	A congressionally ratified compact that provides form and structure to interstate mutual disaster relief.
Essential functions	Functions that must occur to enable a department or agency to perform services.
Federal Aviation Regulations (FARs)	Rules prescribed by the FAA that govern all aviation activities in the United States; part of Title 14 of the Code of Federal Regulations.
General aviation (GA) airport	An airport that does not meet the criteria for classification as a commercial service airport may be included in the National Plan of Integrated Airport Systems (NPIAS) as a GA airport if it has enough activity (usually at least 10 locally based aircraft) and is at least 20 miles from the nearest NPIAS airport.
Human resources	The personnel of a business or organization, especially when they are regarded as a significant asset; also, the department of a business or organization that deals with the hiring, administration, and training of personnel.
Incident action plan (IAP)	An organized course of events that addresses all phases of incident control within a specified time. An IAP is necessary to ensure successful outcomes in any situation, especially emergency operations, in a timely manner.
Incident Command System (ICS)	A standardized organizational structure used to command, control, and coordinate the use of resources and personnel that have responded to the scene of an emergency.
Information technology (IT)	The study or use of systems (especially computers and telecommunications) for storing, retrieving, and sending information.
Irregular operations (IROPS) plan	Actions taken to adjust for and recover from the impacts of airline schedules disrupted by, for example, aircraft accidents, security incidents, crew absences, mechanical failures, and severe weather.
Large hub airport	An airport with at least 1% of total U.S. passenger enplanements.

Medium hub airport	An airport with between 0.25% and 1% of total U.S. passenger enplanements.
Mutual aid	Reciprocal assistance by emergency services under a predetermined plan.
Mutual aid agreement	A voluntary, noncontractual arrangement between two or more entities to provide emergency or disaster assistance. It typically does not involve payment, reimbursement, liability, or mandatory responses.
National Incident Management System (NIMS)	A systematic, proactive approach guiding government agencies at all levels, the private sector, and nongovernment organizations to prepare for, prevent, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity, in order to reduce the loss of life and property and reduce harm to the environment.
National Plan of Integrated Airport Systems (NPIAS)	A national airport plan prepared by the FAA in accordance with Section 47103 of Title 49 of the U.S. Code. NPIAS includes all primary and commercial service airports, selected general aviation airports, and all general aviation airports designated as reliever airports by the FAA.
Navigation aid	Any visual or electronic device, airborne or on the ground, that provides point-to-point guidance information or position data to aircraft in flight.
Non-hub primary airport	An airport that has less than 0.05% of all commercial passenger enplanements but more than 10,000 annual enplanements.
Operations and maintenance	All the services required to ensure that the built environment will perform the functions for which it was designed and constructed.
Operations and procedures	Development, coordination, and implementation of operational policies, plans, and procedures.
Part 139 airport	An airport that serves scheduled and unscheduled air carrier aircraft with more than 30 seats and scheduled air carrier operations in aircraft with 10 to 30 seats, and is required by the FAA Administrator to have a certificate for operation.
Planning	The collection, analysis, and use of information, and the development, promulgation, and maintenance of an organization's comprehensive emergency management plan, action plans, and mitigation plans.
Preparedness	Activities, programs, and systems developed prior to a disaster or emergency that can be used to support and enhance mitigation of, response to, and recovery from disasters or emergencies.
Primary airport	A public airport that receives scheduled passenger service and has more than 10,000 annual enplanements.
Public information officer	The person responsible for communicating with the public and the media, and coordinating with other agencies regarding incident-related information.

Reliever airport	A high-capacity general aviation airport in a major metropolitan area that has 100 or more based aircraft or 25,000 annual itinerant operations; the FAA officially designates reliever airports.
Risk analysis	The systematic, objective examination or reexamination of the risks and hazards that might affect a facility, program, operation, or procedure.
Safety management system	The formal, top-down business approach to managing safety risk, which includes a systemic approach to managing safety, including the necessary organizational structures, accountabilities, policies, and procedures.
Small hub airport	An airport with 0.05% to 0.25% percent of total U.S. passenger enplanements.
Southeast Airports Disaster Operations Group (SEADOG)	The airport-to-airport mutual aid group made up of airports generally in the area from Washington, D.C., to Texas. SEADOG sends qualified volunteers to fill needs as requested by airports affected by natural disasters.
Tabletop exercise	An activity that involves key personnel discussing simulated scenarios in an informal setting. This type of exercise can be used to assess plans, policies, and procedures or to assess the systems needed to guide the prevention of, response to, and recovery from a defined incident. Tabletop exercises are typically aimed at facilitating understanding of concepts, identifying strengths and shortfalls, and generating positive changes in attitude. Participants are encouraged to discuss issues in depth and develop solutions through slow-paced problem solving as opposed to the rapid, spontaneous decision making that occurs under actual or simulated emergency conditions.
Terminal incident response plan (TIRP)	A detailed plan to guide evacuation, sheltering-in-place, repopulation, and other responses in an airport terminal after a disruptive incident.
Western Airports Disaster Operations Group (WESTDOG)	The airport-to-airport mutual aid group made up of airports generally in the area from Denver west to the Pacific Ocean. WESTDOG sends qualified volunteers to fill needs as requested by airports affected by natural disasters.

ACRONYMS AND ABBREVIATIONS

A-CERT	Airport Community Emergency Response Team
AAAE	American Association of Airport Executives
ACH	automated clearinghouse
ACM	Airport Certification Manual
AEP	airport emergency plan
AIP	Airport Improvement Program
ANE	Anoka County Airport
AOA	air operations area
ARF	alternative relocation facility
ARFF	Aircraft Rescue and Fire Fighting
ARP	Office of Airports
ASP	airport security program
ATC	air traffic control
ATCT	air traffic control tower
BCP	business continuity plan
BIA	business impact analysis
CAT	continuity assistance tool (FEMA)
CBP	U.S. Customs and Border Protection
CDC	Centers for Disease Control
CEM	Comprehensive Emergency Management
CERT	Community Emergency Response Team
COB	continuity of business
COOP	continuity of operations plan
DOG	disaster operations group
DFW	Dallas/Fort Worth International Airport
DLH	Duluth International Airport

FAR	Federal Aviation Regulation
FBI	Federal Bureau of Investigation
FBO	fixed-base operator
FCM	Flying Cloud Airport
FEMA	Federal Emergency Management Agency
FXE	Fort Lauderdale Executive Airport
GA	general aviation
HR	human resources
IAP	incident action plans
ICS	Incident Command System
IROPS	irregular operations
IT	information technology
LAL	Lakeland Linder Regional Airport
LH	large hub airport
LOA	letter of agreement
LVN	Airlake Airport
MAC	Metropolitan Airports Commission
MEV	Minden-Tahoe Airport
MH	medium hub airport
MIC	Crystal Airport
MSP	Minneapolis–St. Paul International Airport
NAS	National Airspace System
N-HP	non-hub primary airport
NIMS	National Incident Management System
NPIAS	National Plan of Integrated Airport Systems
O&M	operations and maintenance
OSU	Ohio State University Airport
PIO	public information officer

PR	public relations
RTO	recovery time objective
SAV	Savannah/Hilton Head International Airport
SEA	Seattle-Tacoma International Airport
SEADOG	Southeast Airports Disaster Operations Group
SH	small hub airport
SOP	standard operating procedure
SPM	standard practice memorandum
STP	St. Paul Downtown Airport
TFR	temporary flight restriction
TIRP	terminal incident response plan
WESTDOG	Western Airports Disaster Operations Group
WVI	Watsonville Municipal Airport
VIP	very important person

REFERENCES

Corzine, S., *ACRP Report 93: Operational and Business Continuity Planning for Prolonged Airport Disruptions,* Transportation Research Board of the National Academies, Washington, D.C., 2013.

Federal Aviation Administration (FAA), Airport Categories, FAA, Washington, D.C. [Online]. Available: http://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/categories/ [accessed Sept. 14, 2015].

Federal Aviation Administration (FAA), *Airport Emergency Plan,* FAA AC 150/5200-31C, FAA, Washington, D.C., June 19, 2009 [Online]. Available: http://www.faa.gov/documentLibrary/media/Advisory_Circular/150_5200_31c.pdf.

MN Executive Order 15-14, "Directing Implementation of the Minnesota Continuity of Government Plan" [Online]. Available: http://mn.gov/governor/images/2015_07_13_EO_15_14.pdf [accessed July 13, 2015].

Nash, J.M., et al., *ACRP Report 65: Guidebook for Airport Irregular Operations* (*IROPS*) *Contingency Planning,* Transportation Research Board of the National Academies, Washington, D.C., 2012.

Smith, J.F., K.A. Kenville, and J.M. Sawyer, *ACRP Synthesis 60: Airport Emergency Post-Event Recovery Practices.* Transportation Research Board of the National Academies, Washington, D.C., 2015.

BIBLIOGRAPHY

AirNav.com, "Airport Information" [Online]. Available: www.airnav.com/airports/ [accessed Oct. 15, 2015].

Duncan, M.D., J.F. Smith, K. Kenville, S. Germolus, and D. Beaver, *ACRP Report 95: Integrating Community Emergency Response Teams* (*A-CERTS*) *at Airports.* Transportation Research Board of the National Academies, Washington, D.C., 2013.

Federal Aviation Administration (FAA), Preliminary CY 2013 Passenger Boarding and All-Cargo Data, FAA, Washington, D.C. [Online]. Available: http://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger/?year=2013 [accessed Sept. 14, 2015].

Federal Aviation Administration (FAA) Office of Airports, Program Guidance Letter 13-01, "Airport Improvement Program (AIP) Grant Oversight Risk Model Policy," FAA, Washington, D.C. [Online]. Available: http://www.faa.gov/airports/aip/media/AIP-Oversight-Risk-Model.pdf [accessed Mar. 5, 2013].

Federal Emergency Management Agency (FEMA), "Continuity Assistance Tool (CAT) for Non-Federal Governments," FEMA, Washington, D.C., Sept. 30, 2013 [Online]. Available: https://www.fema.gov/media-library/assets/documents/86286.

Federal Emergency Management Agency (FEMA), "Continuity Guidance Circular 1 (CGC 1)," FEMA, Washington, D.C., Sept. 2013 [Online]. Available: https://www.fema.gov/media-library/assets/documents/86266.

Federal Emergency Management Agency (FEMA), "Continuity Plan Template for Non-Federal Governments," FEMA, Washington, D.C., Sept. 30, 2013 [Online]. Available: http://www.fema.gov "Planning and Templates."

Griffith, D., et al., *ACRP Report 112: Airport Terminal Incident Response Planning,* Transportation Research Board of the National Academies, Washington, D.C., 2014 [Online]. Available: http://www.trb.org/main/blurbs/171121.aspx.

IEM Inc., AirportAdmin LLC, Kim Kenville Consulting, QuinnWilliams LLC, and Smith-Woolwine Associates, *ACRP Report 95: Integrating Community Emergency Response Teams* (*CERTs*) *at Airports: What Is CERT and How Do I Use It?* Transportation Research Board of the National Academies, Washington, D.C., 2014.

IEM Inc., Smith-Woolwine Associates, Kim Kenville Consulting, Newton and Associates and Kimley–Horn and Associates, *ACRP Report 94: Integrating Web-Based Emergency Management Collaboration Software into Airport Operations—A Primer,* Transportation Research Board of the National Academies, Washington, D.C., 2013.

IEM Inc., Smith-Woolwine Associates, and TransSolutions, *ACRP Report 73: Airport-to-Airport Mutual Aid Programs,* Transportation Research Board of the National Academies, Washington, D.C., 2012.

Smith, J.F., "Maintaining Airport Continuity of Business and Operations During Disaster Response: The Role of Command and Control Relationships with Emergency Management Agencies," *Journal of Business Continuity and Emergency Planning,* Vol. 3, No. 1, 2008, pp. 66–74.

Smith, J.F. and K.A. Kenville, *ACRP Synthesis 50: Effective Cooperation Among Airports and Local and Regional Emergency Management Agencies for Disaster Preparedness and Responses,* Transportation Research Board of the National Academies, Washington, D.C., 2014.

Smith, J.F. and K.A. Kenville, A*CRP Synthesis 45: Model Mutual Aid Agreements for Airports,* Transportation Research Board of the National Academies, Washington, D.C., 2013.

Smith, J.F., F. McCosby, and S. Wareham, "Airports Helping Airports: Disaster Operations Groups," *Airport Magazine,* Vol. 21, No. 7, 2010, pp. 30–32.

Smith, J.F., T.J. Powers, G. Bender, and L. Spencer, *ACRP Report 73: Airport to Airport Mutual Aid Programs,* Transportation Research Board of the National Academies, Washington, D.C., 2012.

Stambaugh, H., M. Argabright, H. Benaman, and M. Cheston, *ACRP Report 103: A Guidebook for Integrating NIMS for Personnel and Resources at Airports,* Transportation Research Board of the National Academies, Washington, D.C., 2014.

White House, Homeland Security Presidential Directive 20 (HSPD-20), National Continuity Policy, May 9, 2007 [Online]. Available: http://fas.org/irp/offdocs/nspd/nspd-51.htm.

White House, National Security Presidential Directive 51 (NSPD-51), National Continuity Policy, May 9, 2007 [Online]. Available: http://fas.org/irp/offdocs/nspd/nspd-51.htm.

APPENDIX A

Airport Respondents

Code	Airport Name	NPIAS Category	Governance	City/County	State	FAA Region
APA	Centennial Airport	R	County	Englewood	CO	NM
ASE	Aspen/Pitkin County Airport	NH-P	County	Aspen	CO	NM
BJC	Rocky Mountain Metropolitan Airport-Denver Airport	R	County	Broomfield	CO	NM
BTR	Baton Rouge Metropolitan Airport	SH	Authority	Baton Rouge	LA	SW
CLL	Easterwood Airport	NH-P	Authority/Texas A&M	College Station	TX	SW
COS	Colorado Springs Municipal Airport	SH	City/Lease to Military	Colorado Springs	CO	NM
DCA	Washington Ronald Reagan National Airport	LH	Authority	Arlington	VA	EA
DEN	Denver International Airport	LH	City & County	Denver	CO	NM
DFW	Dallas–Fort Worth International Airport	LH	Authority/Corp.	DFW Airport	TX	SW
DIK	Dickinson–Theodore Roosevelt Regional Airport	NH-P	Authority	Dickinson	ND	GL
DLH	Duluth International Airport	NH-P	Authority	Duluth	MN	GL
DVL	Devils Lake Regional Airport	CS	Authority	Devils Lake	ND	GL
ELP	El Paso International Airport	SH	City	El Paso	TX	SW
FAR	Hector International Airport	SH	Authority	Fargo	ND	GL
FXE	Ft. Lauderdale Executive Airport	R	City	Ft. Lauderdale	FL	SO
GFK	Grand Forks International Airport	NH-P	Authority	Grand Forks	ND	GL
GHG	Marshfield Airport	GA	City	Marshfield	MA	EA
GYR	Phoenix Goodyear Airport	R	City	Goodyear	AZ	WP
HND	Hendersen Executive Airport	R	County	Hendersen	NV	WP
ISN	Sloulin Field International Airport–Williston, ND	NH-P	City	Williston	ND	GL
IXD	New Century Air Center	R	County	Gardner	KS	CE
JAX	Jacksonville International Airport	MH	Authority	Jacksonville	FL	SO
LAL	Lakeland Linder Regional Airport	R	City	Lakeland	FL	SO
LYH	Lynchburg Regional Airport	NH-P	City	Lynchburg	VA	EA
MDW	Chicago Midway International Airport	LH	Authority	Chicago	IL	GL

Code	Airport Name	NPIAS Category	Governance	City/County	State	FAA Region
MEM	Memphis International Airport	MH	Authority	Memphis	TN	SO
MEV	Minden–Tahoe Airport	GA	County	Minden	NV	WP
MKY	Marco Island Executive Airport–Naples Airport	GA	County Airport Authority	Naples	FL	SO
MSL	Northwest Alabama Regional Airport–Muscle Shoals	CS	Authority	Muscle Shoals	AL	SO
MSP	Minneapolis–St. Paul International Airport	LH	Authority	Minneapolis–St. Paul	MN	GL
MSY	Louis Armstrong International Airport	MH	Authority	Kenner	LA	SW
NYL	Yuma International Airport	NH-P	Authority	Yuma	AZ	WP
ONP	Newport Municipal Airport	GA	City	South Beach	OR	NM
ORD	O'Hare International Airport	LH	Authority	Chicago	IL	GL
OSU	Ohio State University Airport	R	Institute of Higher Education--OSU	Dublin	OH	GL
ONT	Ontario International Airport	MH	City	Ontario	CA	WP
PDK	Dekalb–Peachtree Airport- Atlanta	R	County	Dekalb County	GA	SO
RAP	Rapid City Regional Airport	NH-P	City	Rapid City	SD	GL
RST	Rochester International Airport	NH-P	City/RST Airport Co.	Rochester	MN	GL
SAN	San Diego International Airport	LH	Authority	San Diego	CA	WP
SAT	San Antonio International Airport	MH	City	San Antonio	TX	SW
SAV	Savannah–Hilton Head International Airport	SH	Authority	Savannah	GA	SO
SEA	Seattle–Tacoma International Airport	LH	Authority	Seattle	WA	NM
SFO	San Francisco International Airport	LH	City & County	San Francisco	CA	WP
SLC	Salt Lake City International Airport	LH	City	Salt Lake City	UT	NM
SMF	Sacramento International Airport	MH	County	Sacramento	CA	WP
STL	Lambert–St. Louis International Airport	MH	City	St. Louis	MO	CE
STP	St. Paul Downtown Airport	R	Authority	St. Paul	MN	GL
SUN	Friedman Memorial Airport	NH-P	Authority	Hailey	ID	NM
SXQ	Soldotna Airport	GA	City	Soldotna	AK	AL
VGT	North Las Vegas Airport	R	Authority	North Las Vegas	NV	WP
VNY	Van Nuys Airport	R	Los Angeles World Airports	Van Nuys	CA	WP
WVI	Watsonville Municipal Airport	GA	City	Watsonville	CA	WP
YIP	Willow Run Airport	R	Authority	Ypsilanti	MI	GL

Note:
FAA regions are:
Alaskan Region (**AL**): AK.
Central Region (**CE**): IA, IL (Madison, St. Clair, and Monroe Counties), KS, MO, NE.
Eastern Region (**EA**): DC, DE, MD, NJ, NY, PA, VA, WV, CT, ME, MA, NH, RI, VT.
Great Lakes Region (**GL**): IL (all other counties), IN, KY (Boone, Kenton, and Campbell Counties), MI, MN, ND, OH, SD, WI.
Northwest Mountain Region (**NW**): CO, ID, MT, OR, UT, WA, WY.
Southern Region (**SO**): AL, FL, GA, KY (all other counties), MS, NC, PR, SC, TN, VI.
Southwest Region (**SW**): AR, LA, NM, OK, TX.
Western-Pacific Region (**WP**): AZ, CA, HI, NV

NPIAS categories are:
LH : Large hub
MH: Medium hub
SH: Small hub
NH-P: Non-hub primaries
CS: Commercial service
R: Relievers
GA: General aviation

APPENDIX B

Summary of Survey Responses

Survey Question 4—What is the title of the survey respondent?

TABLE B1 Titles of Respondents

Large Hub	• Public Information Officer • Director of Operations • Airport Operations Manager—Emergency Management • Vice President (VP)/Director • Sr. Risk Management Analyst • VP Operations • Chief of Safety and Security • Manager Emergency Management • Manager of Training and Exercise Design and Team • Emergency Management (EM) Specialists
Medium Hub	• Supervisor Airport Emergency Operations • Assistant Chief Operating Officer (COO) • Operations Safety • Assistant Director of Operations & Maintenance • Chief Operating Officer • Chief of Airport Operations • Airport Emergency Manager
Small Hub	• Assistant Director • Operations Manager • Assistant Director of Aviation • Airport Operations Agent • Aviation Assistant Director of Operations and Security
Non-Hub Primaries	• Executive Director • Airport Manager • Airport Operations Officer • Airport Director • Operations and Security
Commercial Service	• Airport Manager • Airport Director
Reliever	• Deputy Director • Airport Operations Coordinator • Environment & Noise Abatement Analyst • Airport Director • Assistant Airport Manager • Assistant Airport Director • Director—Special Services • Airport Superintendent of Operations III • Assistant Director
General Aviation	• Airport Manager • Airport Operations Manager

Source: Survey results.

Survey Question 7—What is the type of ownership of your airport?

TABLE B2 Airport Ownership

NPIAS Category		City Department	County Department	Joint City-County	State	Airport Authority	Port Authority	Private Corporation/ Privatized/ Concessioned	Management Contract	Other
Large Hub	Count	5				4	1			1(a)
	Percent	50				40	10			10
Medium Hub	Count	2	1			4				
	Percent	29	14			57				
Small Hub	Count	3				2				
	Percent	60				40				
Non-Hub Primary	Count	4	1			5			1	
	Percent	36	9			45			9	
Commercial Service	Count					2				
	Percent					100				
Reliever	Count	4	5			3				1(b)
	Percent	31	38			23				8
General Aviation	Count	4	2							
	Percent	67	33							
All Types	Count	22	9			20	1		1	1
	Percent	41	17			37	2		2	2

Source: Survey results.
Note: (a) joint board; (b) institute of higher education.

Survey Question 8—What is the state of continuity planning at your airport?

TABLE B3 State of Continuity Planning

NPIAS Category		Non-existent	Just started	Identifying critical resources and recovery Priorities	Developed but not adequately	Testing plan	Adequately developed, implemented, and ongoing maintenance	Mature (i.e., written plan in place and has been tested in actual operational disruption or full-scale exercise)	Don't know
Large Hub	Count				2		5	3	
	Percent				20		50	30	
Medium Hub	Count			1	1		3	1	1
	Percent			14	14		43	14	14
Small Hub	Count	1			2		1	1	
	Percent	20			40		20	20	
Non-Hub Primary	Count	2	2	2	2		1	1	1
	Percent	18	18	18	18		9	9	9
Commercial Service	Count	1		1					
	Percent	50		50					
Reliever	Count	2	2	1	2		5	1	
	Percent	15	15	8	15		38	8	
General Aviation	Count	3		1			2		
	Percent	50		17			33		
All Types	Count	9	4	6	9		17	7	2
	Percent	17	7	11	17		31	13	4

Source: Survey results.

Survey Question 9—If you have a business continuity plan (BCP) or continuity of operations plan (COOP), what motivated you to adopt it?

TABLE B4 Motivation

NPIAS Category		Airport does not have BCP or COOP	Airport owner required it	Experience disruption that prompted plan development	Asked to develop and coordinate by business tenants	Stakeholder contractual agreement required it	Regulatory requirement (e.g,, AIP grant assurance)	Required to ensure compliance with mutual aid agreement	Airport strategic plan initiative	Implemented to enhance risk management	Financial concerns	Needed to address potential for key staff departure	Other
Large Hub	Count		3	2					2	5	2	1	2(c)
	Percent		30	20					20	50	20	10	20
Medium Hub	Count	2	2	1		1	1	1	1	2			1(b)
	Percent	29	29	14		14	14	14	14	29			14
Small Hub	Count	1	3						1				1(a)
	Percent	20	60						20				20
Non-Hub Primary	Count	8					1		2	1		1	
	Percent	73					9		18	9		9	
Commercial Service	Count	2											
	Percent	100											
Reliever	Count	5	5	1			1		2	1		1	
	Percent	38	38	8			8		15	8		8	
General Aviation	Count	3	2				2		1	1		1	
	Percent	50	33				33		17	17		17	
All Types	Count	21	15	4		1	5	1	9	10	2	4	4
	Percent	39	28	7		2	9	2	17	19	4	7	7

Source: Survey results.
Note: (a) wanted to be prepared for any event; (b) emergency preparedness; (c) executive order/best practice.

Survey Question 10—Who is responsible for continuity planning at your airport?

TABLE B5 Person/Group Responsible for Development and/or Updating of the BCP/COOP

Large Hub	• Airport Manager/Executive Director • Director of Operations • ARFF Chief • Risk Manager • Director of Finance • Director of IT • Internal Audit • Compliance Office • Property Manager • Steering Committee • Project Manager • Human Resources • Airport Emergency Manager • Director of Public Safety • Director of Corporate Information and • Governance • Emergency Manager & HR Manager • Chief of Operations • Maintenance & Emergency Preparedness • Department Managers	Reliever	• Airport Manager/ • Executive Director • Director of Operations Risk Manager • Director of Finance • Director of IT • Compliance Office • Emergency Management • Emergency Management • Superintendent of Larger • Airport • Property Manager • Project Manager • Airport does not have BCP or COOP • Airport Superintendent of • Operations III
Medium Hub	• Airport Manager/Executive Director • Director of Operations • ARFF Chief • Steering Committee • Risk Manager • Director of IT • Steering Committee • Emergency Management • Emergency Manager • Airport does not have BCP or COOP • Security Manager	General Aviation	• Airport Manager/ • Executive Director • Director of Operations • Risk Manager • Compliance Office • Steering Committee • ARFF Chief • Property Manager
Small Hub	• Airport Manager/Executive Director • Director of Operations • ARFF Chief • Director of Finance • Director of IT • Senior Programs Manager	Commercial Service	• Airport Manager/ • Executive Director • City • Airport does not have BCP or COOP

TABLE B6 Person Responsible for the BCP/COOP

NPIAS Category		Airport Manager/ Executive Director	Director of Operations	ARFF Chief	Risk Manager	Director of Finance	Director of IT	Internal Audit	Compliance Office	Property Manager	Steering Committee	Project Manager	Other
Large	Count	2	1		1	1	2			1	1	1	5(d)
Hub	Percent	20	10		10	10	20			10	10	10	50
Medium	Count	2	6	3	1		1				1		4(c)
Hub	Percent	29	86	43	14		14				14		57
Small	Count	2	4	3		1							1(b)
Hub	Percent	40	80	60		20							20
Non-Hub	Count	9	6	2						1			
Primary	Percent	82	55	18						9			
Commercial	Count	2											1(a)
Service	Percent	100											50
Reliever	Count	9	6		3	2	2		1				2(e)
	Percent	69	46		23	15	15		8				15
General	Count	5	1		1				1		1		
Aviation	Percent	83	17		17				17		17		
All Types	Count	31	24	8	6	4	5		2	2	3	1	13
	Percent	57	44	15	11	7	9		4	4	6	2	24

Source: Survey results.
Note: (a) city; (b) Senior Programs Manager; (c) emergency management, security manager, airport emergency manager; (d) Director of Public Safety, Director of Corporate information and governance, Chief of Operations, Maintenance and emergency preparedness, Human Resources; (e) Sponsor representative, Emergency Management Superintendent.

Survey Question 11—What types of events has your airport experienced in the last five years which have caused a disruption in normal operations? And how often have these events occurred?

TABLE B7 Special Events

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count		1	1	2	2	1	3
	Percent		10	10	20	20	10	30
Medium Hub	Count		1	1	1	2		2
	Percent		14	14	14	29		29
Small Hub	Count	1	2	1				1
	Percent	20	40	20				20
Non-Hub Primary	Count	5	3			1		2
	Percent	45	27			9		18
Commercial Service	Count	1			1			
	Percent	50			50			
Reliever	Count		1	2	1	1		8
	Percent		8	15	8	8		62
General Aviation	Count	3		1			1	1
	Percent	50		17			17	17
All Types	Count	10	8	6	5	6	2	17
	Percent	19	15	11	9	11	4	31

Source: Survey results.

TABLE B8 Aircraft Accident

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	4	4	1			1	
	Percent	40	40	10			10	
Medium Hub	Count	4	3					
	Percent	57	43					
Small Hub	Count	2	1	1	1			
	Percent	40	20	20	20			
Non-Hub Primary	Count	4	1	2	3			1
	Percent	36	9	18	27			9
Commercial Service	Count	1	1					
	Percent	50	50					
Reliever	Count	3		3	1	1		5
	Percent	23		23	8	8		38
General Aviation	Count	1	3		2			
	Percent	17	50		33			
All Types	Count	19	13	7	7	1		6
	Percent	35	24	13	13	2		11

Source: Survey results.

TABLE B9 Natural Disaster

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	5	1	3	1			
	Percent	50	10	30	10			
Medium Hub	Count	5	1	1				
	Percent	71	14	14				
Small Hub	Count	2	2	1				
	Percent	40	40	20				
Non-Hub Primary	Count	9	2					
	Percent	82	18					
Commercial Service	Count	2						
	Percent	100						
Reliever	Count	10	2					1
	Percent	77	15					8
General Aviation	Count	5	1					
	Percent	83	17					
All Types	Count	38	9	5	1			1
	Percent	70	17	9	2			2

Source: Survey results.

TABLE B10 Major Snow Event

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	2	1	2	1		2	2
	Percent	20	10	20	10		20	20
Medium Hub	Count	3	2					2
	Percent	43	29					29
Small Hub	Count		1	2				2
	Percent		20	40				40
Non-Hub Primary	Count	2	1	2			2	4
	Percent	18	9	18			18	36
Commercial Service	Count		1					1
	Percent		50					50
Reliever	Count	6		2		2		3
	Percent	46		15		15		23
General Aviation	Count	3			1			2
	Percent	50			17			33
All Types	Count	16	6	8	2	2	4	16
	Percent	30	11	15	4	4	7	30

Source: Survey results.

TABLE B11 Significant Growth in Aviation Activity

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	9		1				
	Percent	90		10				
Medium Hub	Count	6	1					
	Percent	86	14					
Small Hub	Count	3		1				1
	Percent	60		20				20
Non-Hub Primary	Count	6		1	1			3
	Percent	55		9	9			27
Commercial Service	Count	1		1				
	Percent	50		50				
Reliever	Count	9	2		1			1
	Percent	69	15		8			8
General Aviation	Count	5		1				
	Percent	83		17				
All Types	Count	39	3	5	2			5
	Percent	72	6	9	4			9

Source: Survey results.

TABLE B12 Event Causing Activation of Airport Emergency Plan

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	5	2		1			2
	Percent	50	20		10			20
Medium Hub	Count	2	1	2	1	1		
	Percent	29	14	29	14	14		
Small Hub	Count	2	3					
	Percent	40	60					
Non-Hub Primary	Count	6	2		2			1
	Percent	55	18		18			9
Commercial Service	Count	1	1					
	Percent	50	50					
Reliever	Count	6	2	1	1	1		2
	Percent	46	15	8	8	8		15
General Aviation	Count	5			1			
	Percent	83			17			
All Types	Count	27	11	3	6	2		5
	Percent	50	20	6	11	4		9

Source: Survey results.

TABLE B13 Security Threat

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	2	1		2	1	1	3
	Percent	20	10		20	10	10	30
Medium Hub	Count		4		1			2
	Percent		57		14			29
Small Hub	Count	2	1	2				
	Percent	40	20	40				
Non-Hub Primary	Count	4	7					
	Percent	36	64					
Commercial Service	Count	2						
	Percent	100						
Reliever	Count	10	2	1				
	Percent	71	15	8				
General Aviation	Count	6						
	Percent	100						
All Types	Count	26	15	3	3	1	1	5
	Percent	48	28	6	6	2	2	9

Source: Survey results.

TABLE B14 Regulatory Reasons

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	6	3	1				
	Percent	60	30	10				
Medium Hub	Count	5	1	1				
	Percent	71	14	14				
Small Hub	Count	4		1				
	Percent	80		20				
Non-Hub Primary	Count	9	2					
	Percent	82	18					
Commercial Service	Count	1	1					
	Percent	50	50					
Reliever	Count	12						1
	Percent	92						8
General Aviation	Count	6						
	Percent	100						
All Types	Count	43	7	3				1
	Percent	80	13	6				2

Source: Survey results.

TABLE B15 Capital Improvement Project Funding Disruptions

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	9						1
	Percent	90						10
Medium Hub	Count	6	1					
	Percent	86	16					
Small Hub	Count	2	2	1				
	Percent	40	40	20				
Non-Hub Primary	Count	6	5					
	Percent	55	45					
Commercial Service	Count	1	1					
	Percent	50	50					
Reliever	Count	7		1	1		1	3
	Percent	54		8	8		8	23
General Aviation	Count	3	2		1			
	Percent	50	33		17			
All Types	Count	34	11	2	2		1	4
	Percent	63	20	4	4		2	7

Source: Survey results.

Survey Question 12—What types of disruptions causing significant delays to return to normal airport operations have your airport encountered in last 5 years? And how often have these disruptions occurred?

TABLE B16 Utility Outage

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	1	2	1	3	1		2
	Percent	10	20	10	30	10		20
Medium Hub	Count	2		2	1			2
	Percent	29		29	14			29
Small Hub	Count	3			1	1		
	Percent	60			20	20		
Non-Hub Primary	Count	4	3	2		1		1
	Percent	36	27	18		9		9
Commercial Service	Count		1					1
	Percent		50					50
Reliever	Count	9	1	1				2
	Percent	69	8	8				15
General Aviation	Count	4	2					
	Percent	67	33					
All Types	Count	23	9	6	5	3		8
	Percent	43	17	11	9	6		15

Source: Survey results.

TABLE B17 Personnel Issues (Turnover, Key Staff Departure, Worker Strike)

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	7	1		2			
	Percent	70	10		20			
Medium Hub	Count	6						1
	Percent	86						14
Small Hub	Count	4		1				
	Percent	80		20				
Non-Hub Primary	Count	8	2		1			
	Percent	73	18		9			
Commercial Service	Count	2						
	Percent	100						
Reliever	Count	12	1					
	Percent	92	8					
General Aviation	Count	4	2					
	Percent	67	33					
All Types	Count	43	6	1	3			1
	Percent	80	11	2	6			2

Source: Survey results.

TABLE B18 IT Issues (Computers, Communications, Systems)

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	2	2		5			1
	Percent	20	20		50			10
Medium Hub	Count	5	1					1
	Percent	71	14					14
Small Hub	Count	4					1	
	Percent	80					20	
Non-Hub Primary	Count	7	1	1	1			1
	Percent	64	9	9	9			9
Commercial Service	Count	1				1		
	Percent	50				50		
Reliever	Count	13						
	Percent	100						
General Aviation	Count	4			2			
	Percent	67			33			
All Types	Count	36	4	1	8	1	1	3
	Percent	67	7	2	15	2	2	6

Source: Survey results.

TABLE B19 Critical Data Loss

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	7	1	1	1			
	Percent	70	10	10	10			
Medium Hub	Count	7						
	Percent	100						
Small Hub	Count	3	2					
	Percent	60	40					
Non-Hub Primary	Count	11						
	Percent	100						
Commercial Service	Count	1				1		
	Percent	50				50		
Reliever	Count	13						
	Percent	100						
General Aviation	Count	6						
	Percent	100						
All Types	Count	48	3	1	1	1		
	Percent	89	6	2	2	2		

Source: Survey results.

TABLE B20 Construction Disruption

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	6			3			1
	Percent	60			30			10
Medium Hub	Count	4		1		1		1
	Percent	57		14		14		14
Small Hub	Count	1	3	1				
	Percent	20	60	20				
Non-Hub Primary	Count	6	1	3	1			
	Percent	55	9	27	9			
Commercial Service	Count	2						
	Percent	100						
Reliever	Count	4	3	1	4			1
	Percent	31	23	8	31			8
General Aviation	Count	1	2	1	1			1
	Percent	17	33	17	17			17
All Types	Count	24	9	7	9	1		4
	Percent	44	17	13	17	2		7

Source: Survey results.

TABLE B21 Critical Equipment Outage or Breakdown

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	3	2	1	2			2
	Percent	30	20	10	20			20
Medium Hub	Count	5		2				
	Percent	71		29				
Small Hub	Count	3	1	1				
	Percent	60	20	20				
Non-Hub Primary	Count	7	2					2
	Percent	64	18					18
Commercial Service	Count	2						
	Percent	100						
Reliever	Count	13						
	Percent	100						
General Aviation	Count	3		1		1		1
	Percent	50		17		17		17
All Types	Count	36	5	5	2	1		5
	Percent	67	9	9	4	2		19

Source: Survey results.

TABLE B22 Temporary Flight Restriction (TFR)

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	5	2	1	1			1
	Percent	50	20	10	10			10
Medium Hub	Count	4		2				1
	Percent	57		29				14
Small Hub	Count	4		1				
	Percent	80		20				
Non-Hub Primary	Count	6	3	1				1
	Percent	55	27	9				9
Commercial Service	Count	2						
	Percent	100						
Reliever	Count	4		2	1			6
	Percent	31		15	8			46
General Aviation	Count	2		1	1			2
	Percent	33		17	17			33
All Types	Count	27	5	8	3			11
	Percent	50	9	15	6			20

Source: Survey results.

TABLE B23 Tenant Issue

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	5	2		1			2
	Percent	50	20		10			20
Medium Hub	Count	6						1
	Percent	86						14
Small Hub	Count	5						
	Percent	100						
Non-Hub Primary	Count	10						1
	Percent	91						9
Commercial Service	Count	2						
	Percent	100						
Reliever	Count	12						1
	Percent	92						8
General Aviation	Count	6						
	Percent	100						
All Types	Count	46	2		1			5
	Percent	85	4		2			9

Source: Survey results.

TABLE B24 Airfield System or Navigational Aid Failure

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	4	4	2				
	Percent	40	40	20				
Medium Hub	Count	5		1				1
	Percent	71		14				14
Small Hub	Count	3	2					
	Percent	60	40					
Non-Hub Primary	Count	3	3	2				3
	Percent	27	27	18				27
Commercial Service	Count	1	1					
	Percent	50	50					
Reliever	Count	9	1	2				1
	Percent	69	8	15				8
General Aviation	Count	3	1		1			1
	Percent	50	17		17			17
All Types	Count	28	12	7	1			6
	Percent	52	22	13	2			11

Source: Survey results.

TABLE B25 Disruption of Supply Line (Supplier Strike)

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	10						
	Percent	100						
Medium Hub	Count	6						1
	Percent	86						14
Small Hub	Count	5						
	Percent	100						
Non-Hub Primary	Count	11						
	Percent	100						
Commercial Service	Count	2						
	Percent	100						
Reliever	Count	13						
	Percent	100						
General Aviation	Count	6						
	Percent	100						
All Types	Count	53						1
	Percent	98						2

Source: Survey results.

TABLE B26 Payroll Issues

NPIAS Category		Never	Once	Twice	Three times	Four times	Five times	More than five times
Large Hub	Count	10						
	Percent	100						
Medium Hub	Count	6	1					
	Percent	86	14					
Small Hub	Count	5						
	Percent	100						
Non-Hub Primary	Count	11						
	Percent	100						
Commercial Service	Count	2						
	Percent	100						
Reliever	Count	13						
	Percent	100						
General Aviation	Count	6						
	Percent	100						
All Types	Count	53	1					
	Percent	98	2					

Source: Survey results.

Survey Question 13—Does your airport have a written or documented process for continuity of operations planning or business continuity planning?

TABLE B27 Written or Documented BCP/COOP

NPIAS Category		Yes	No	Don't know
Large Hub	Count	9	1	
	Percent	90	10	
Medium Hub	Count	5	2	
	Percent	71	29	
Small Hub	Count	4	1	
	Percent	80	20	
Non-Hub Primary	Count	1	10	
	Percent	9	91	
Commercial Service	Count		2	
	Percent		100	
Reliever	Count	7	6	
	Percent	54	46	
General Aviation	Count	1	5	
	Percent	17	83	
All Types	Count	27	27	
	Percent	50	50	

Source: Survey results.

Survey Question 14—Why is there no written, documented continuity plan?

TABLE B28 Reasons for Not Having Written BCP/COOP

NPIAS Category		No clear perceived benefits	Seems redundant	No mandates	No resources	No guidance	Handled by others or other plans	Never considered it	Other
Large Hub	Count						1(e)		9(c)
	Percent						10		90
Medium Hub	Count			1	1(d)			1	5
	Percent			14	14			14	71
Small Hub	Count		1					1	
	Percent		20					20	
Non-Hub Primary	Count	1	1	1	3	2	1	2	
	Percent	9	9	9	27	18	9	18	
Commercial Service	Count							2	
	Percent							100	
Reliever	Count		1				2		
	Percent		8				15		
General Aviation	Count			2	2	1	2(a)(b)	2	
	Percent			33	33	17	33	33	
All Types	Count	2	3	4	6	3	6	8	14
	Percent	4	6	7	11	6	11	15	26

Source: Survey results.
Note: (a) AEF, Natural Disaster Plans, County Continuity Plans, Staff Succession Documents; (b) City is updating their EOP and waiting for the final document; (c) Have BCP/COOP; (d) Staffing Constraints; (e) Principles embedded in other plans.

Survey Question 15—Has your airport implemented any unique or special practices, not part of a written plan, that have been effective in returning the airport to normal operations after a disruption?

TABLE B29 Unwritten Practices

Large Hub	
Medium Hub	• Yes. After our bomb threat in 2013, we implemented an ALERT (Airport Leadership Emergency Response Team), to include special badges that are worn to grant access back into the airport during a security event. We learned that the biggest hurdle in getting the airport back open quickly and efficiently after we conducted a full evacuation was that we could not let passengers back in until we had the staff at our ticket counters, TSA checkpoint and stores. Well, the police were not letting anyone back in, so we devised that ALERT badge, that will allow the user, in conjunction with their SIDA [security identification display area] badge, to access the airport through the police roadblock. This required training with our local police department who would typically respond during this type of event. We have not had a need to use it since the implementation, so I cannot speak to its effectiveness. • In the AEP and airport security program (ASP)
Small Hub	
Non-Hub Primary	• IROPS • Not outside of AEP • We utilize our AEP or Airport Certification Manual (ACM) guidance to return the airport to normal operations. • Utilize standard Part 139 AEP, Irregular Ops Plan, etc. • We have developed checklists to ensure the emergency is properly handled, therefore reducing the recovery time. In addition, all members of the admin and staff are annually trained on handling emergencies.
Commercial Service	• AEP
Reliever	• Yes • Airport does not have BCP • No—The plan needs to be rewritten to make it more functional. It is a good starting point, but is too complex.
General Aviation	• We have an emergency airlift team to facilitate supporting city and county emergency services...our focus is to keep the airport operating via back-up generators and staff to address operational issues on as "as-needed" basis. • Inter-local agreement with Airport Authority for emergency response aid to include personnel/equipment resources

Survey Question 16—Are you satisfied with your COOP or BCP?

TABLE B30 Satisfied with BCP/COOP?

NPIAS Category		Airport does not have BCP/COOP	Yes	No	Don't know
Large Hub	Count	1	3	6	1
	Percent	10	30	60	10
Medium Hub	Count	2	3	1(a)	1(b)
	Percent	29	43	14	14
Small Hub	Count	1	3	1	
	Percent	20	60	20	
Non-Hub Primary	Count	10	1		
	Percent	91	9		
Commercial Service	Count	2			
	Percent	100			
Reliever	Count	6	6	1	
	Percent	46	46	8	
General Aviation	Count	2	2		2
	Percent	33	33		33
All Types	Count	24	18	9	3
	Percent	44	33	17	6

Source: Survey results.
Note: (a) COOP plan is not current and not detailed enough; BCP not fully incorporated. (b) Plan was finalized in 2008 and is primarily focused on flood risk. Fortunately we have not had to implement the plan.

Survey Question 17—Why are you not satisfied with your COOP/BCP?

TABLE B31 Why Not Satisfied with Plan

Large Hub	• We have both BCP and COOP and want to migrate them into one document. • Needs additional detailed work. • We are currently revising our BCP to conform with ISO 22301.
Medium Hub	• Plan was finalized in 2008 and is primarily focused on flood risk. Fortunately we have not had to implement the plan. • COOP plan is not current and not detailed enough. BCP is not fully incorporated.
Small Hub	• Our plan was written several years ago and needs to be updated to reflect current business and operations practices and procedures.
Non-Hub Primary	• My company has recently taken over the airport and we haven't had time to draft these plans.
Commercial Service	• No comments.
Reliever	• The plan needs to be rewritten to make it more functional. It is a good starting point, but is too complex.
General Aviation	• Not applicable at this time. It is not written yet.

Survey Question 18—What are perceived or real benefits of a formal, documented business and operational continuity plan and related tools?

TABLE B32 Perceived or Real Benefits of Having BCP/COOP

NPIAS Category		Increased preparedness	Improved recovery and response	Reduced liability	Improved insurance rating	Decreased downtime	Better relationship with tenants	Improved coordination with emergency response organizations	Improved public perception of facility management	No perceived or real benefits	Other
Large Hub	Count	10	10	9	7	9	9	8	8		
	Percent	100	100	90	70	90	90	80	80		
Medium Hub	Count	7	7	4	1	7	4	3	2		
	Percent	100	100	57	14	100	57	43	29		
Small Hub	Count	5	5	2	1	2	4	3	3		
	Percent	100	100	40	20	40	80	60	60		
Non-Hub Primary	Count	9	9	8	5	8	5	8	6	1	
	Percent	82	82	73	45	73	45	73	55	9	
Commercial Service	Count	2	2	1	1	2	1	2	1		
	Percent	100	100	50	50	100	50	100	50		
Reliever	Count	13	13	6	4	12	6	11	7	1	
	Percent	100	100	46	31	92	46	85	54	8	
General Aviation	Count	5	4	2	1	3	1	4	2		
	Percent	83	67	33	17	50	17	67	33		
All Types	Count	51	50	32	20	43	30	39	29	2	
	Percent	94	93	59	37	80	56	72	54	4	

Source: Survey results.

Survey Question 19—Do any tenants at your airport have BCPs that are coordinated with the airport?

TABLE B33 Coordination with Tenant Plans

NPIAS Category		Yes, tenant plan is coordinated with airport plan	Yes, tenant has plan that is not coordinated with the existing airport plan	Yes, tenant has a plan but there is no existing airport plan	No	Don't know
Large Hub	Count	4	2		3	1
	Percent	40	20		30	10
Medium Hub	Count	1	1		1	4
	Percent	14	14		14	57
Small Hub	Count	1	1		1	2
	Percent	20	20		20	40
Non-Hub Primary	Count	1			5	5
	Percent	9			45	45
Commercial Service	Count				2	
	Percent				100	
Reliever	Count				8	5
	Percent				62	38
General Aviation	Count		1		3	2
	Percent		17		50	33
All Types	Count	7	5		23	19
	Percent	13	9		43	35

Source: Survey results.

Survey Question 20—What types of tenants have BCPs?

TABLE B34 Types of Tenants Having BCPs

NPIAS Category		No tenant has BCP	Fixed-base operator (FBO)	Air carrier	Terminal tenants	Maintenance facility	Other
Large Hub	Count		3	7	2	2	4(d)
	Percent		30	70	20	20	40
Medium Hub	Count	1	1	2	2	1	3(c)
	Percent	14	14	29	29	14	43
Small Hub	Count	1	1	2			2(a)
	Percent	20	20	40			40
Non-Hub Primary	Count	5	1	3	1		
	Percent	45	9	27	9		
Commercial Service	Count	2					
	Percent	100					
Reliever	Count	4	2				5
	Percent	31	15				38
General Aviation	Count	4					2(b)
	Percent	67					33
All Types	Count	17	8	14	5	3	7
	Percent	31	15	26	9	6	13

Source: Survey results.
Note: (a) Military, Gulfstream; (b) Civil Air Patrol; Tenants do not have separate plan; (c) Airport Vendors, TSA; (d) TSA, Operator of Centralized Receiving and Distribution Center, Concessionaries, U.S. Customs and Border Patrol, U.S. Customs, FAA, Regional Transportation Districts.

Survey Question 21—What entities and/or resources have helped address operational recovery after disruptions at your airport?

TABLE B35 Resources Used for Operational Recovery

NPIAS Category		Governing body (city, county, municipality) BCP/COOP plan	FAA Regional COOP	FEMA plan	State plan	Computer backup systems or services	Human Resources backup systems	Data recovery systems or services	Backup generators	Essential equipment backup plans	Alternate facilities	Airport emergency plan (AEP)	Terminal incident plans	Irregular operations (IROPS) plans	Emergency communication plan	Mutual-aid agreements	Stakeholders plans	Dedicated and standalone BCP	Other
Large	Count	3	2	3	2	6	3	4	9	7	6	7	6	8	9	5	4	3	1(b)
Hub	Percent	30	20	30	20	60	30	40	90	70	60	70	60	80	90	50	40	30	10
Medium	Count	3	2	3	2	1			4	1	2	7	3	5	2	5	1		
Hub	Percent	43	29	43	29	14			57	14	29	100	43	71	29	71	14		
Small	Count	3	2	2	2	2			4			4		3		2	1		2(a)
Hub	Percent	60	40	40	40	40			80			80		60		40	20		40
Non-Hub	Count	7	2	2	2	7	1	3	7	3	2	10	4	9	4	6	2		
Primary	Percent	64	18	18	18	64	9	27	64	27	18	91	36	82	36	55	18		
Commercial	Count	2				1						1				1			
Service	Percent	100				50						50				50			
Reliever	Count	6	4	4	4	4	2	3	7	4	3	8	2	3	3	5		1	
	Percent	46	31	31	31	31	15	23	54	31	23	62	15	23	23	38		8	
General	Count	4	2	2	2	2	1	2	4	2	2	5	1	1	2	2	1		
Aviation	Percent	67	33	33	33	33	17	33	67	33	33	83	17	17	33	33	17		
All Types	Count	28	14	16	14	23	7	12	35	17	15	42	16	29	20	31	9	4	3
	Percent	52	26	30	26	43	13	22	65	31	28	78	30	54	37	57	17	7	6

Source: Survey results.
Note: FEMA = Federal Emergency Management Agency; (a) Georgia Power and Military; (b) on-call contracts.

Survey Question 22—What is/are the type(s) of planning tools your airport uses to address business continuity concerns or makes part of a formal written BCP or COOP?

TABLE B36 Tools for Continuity Planning Using a BCP/COOP

NPIAS Category		Airport does not have BCP/ COOP	Checklists	Templates	Standard practice memos (SPMs)	Recovery priority determination decision tree and scale	Spreadsheet-based tools	Mutual-aid agreements	Standard operating procedures (SOPs)	ACRP 93 airport business continuity planning software tool	Gartner's Magic Quadrant BCP "BOLD" tool	Other
Large Hub	Count	1	10	6	6	5	1	7	8	1	1	
	Percent	10	100	60	60	50	10	70	80	10	10	
Medium Hub	Count	2	3	2		1		3	3			
	Percent	14	29	14		7		29	29			
Small Hub	Count	1	3	1				2	2	1		
	Percent	20	60	20				40	40	20		
Non-Hub Primary	Count	6	6	3	3	1	2	4	6			
	Percent	55	55	27	27	9	18	36	55			
Commercial Service	Count	2										
	Percent	100										
Reliever	Count	6	4	4	2		4	3	6			
	Percent	46	31	31	15		31	23	46			
General Aviation	Count	3	2	2	1	1		2	2			
	Percent	50	33	33	17	17		33	33			
All Types	Count	21	28	18	12	8	7	21	27	2	1	
	Percent	39	52	33	22	15	13	39	50	4	2	

Source: Survey results.

Survey Question 23—What is the perceived or incurred cost of business continuity planning or continuity of operations planning, including cost of acquiring and implementing tools for planning?

TABLE B37 Cost of Maintaining Business Continuity Planning or Continuity of Operations Planning

NPIAS Category		Airport does not have BCP or COOP	Less than $10,000 annually	$10,001 to $30,000 annually	$30,001 to $60,000 annually	Over $60,000 annually
Large Hub	Count		6	1	1	2
	Percent		60	10	10	20
Medium Hub	Count	2	5			
	Percent	29	71			
Small Hub	Count	1	3	1		
	Percent	20	60	20		
Non-Hub Primary	Count	9	1		1	
	Percent	82	9		9	
Commercial Service	Count	2				
	Percent	100				
Reliever	Count	6	7			
	Percent	46	54			
General Aviation	Count	4	2			
	Percent	67	23			
All Types	Count	24	24	2	2	2
	Percent	44	44	4	4	4

Source: Survey results.

Survey Question 24—How often are the BCP/COOP tools updated?

TABLE B38 BCP/COOP Tools Update Frequency

NPIAS Category		Airport does not have BCP/COOP or does not have any tools	Weekly	Monthly	Quarterly	Bi-Annually	Annually	As needed	Never been updated	Don't know	Other
Large Hub	Count				2			3	1	1	2(a)
	Percent				20			60	10	10	20
Medium Hub	Count	2					1	4			
	Percent	29					14	57			
Small Hub	Count	1		1				3			
	Percent	20		20				60			
Non-Hub Primary	Count	7					2	2			
	Percent	64					18	18			
Commercial Service	Count	2									
	Percent	100									
Reliever	Count	3					5	4			1
	Percent	23					46	31			8
General Aviation	Count	4				1		1			
	Percent	67				17		17			
All Types	Count	19		1	2	1	10	12	1	1	3
	Percent	35		2	4	2	19	22	2	2	6

Source: Survey results.
Note: (a) Different intervals.

Survey Question 25—Who is involved in any updates to tools for the BCP or COOP?

TABLE B39 Person(s) Responsible for Updating BCP/COOPs and Tools

NPIAS Category		Airport does not have BCP/ COOP	Airport Manager/ Executive Director	Director of Operations	ARFF Chief	Risk Manager	Director of Finance	Director of IT	Property Manager	Steering Committee	Project Manager	Other
Large Hub	Count		5	6	4	7	6	6	6	4	4	4(c)
	Percent		50	60	40	70	60	60	60	40	40	40
Medium Hub	Count	2	2	5	3	2		1				2(b)
	Percent	29	29	71	43	29						29
Small Hub	Count	1	1	3	1		1	1				1(a)
	Percent	20	20	60	20		20	20				20
Non-Hub Primary	Count	7	4	4	1		1	2				
	Percent	64	36	36	9		9	18				
Commercial Service	Count	2										
	Percent	100										
Reliever	Count	4	5	5	1	3	2	2	2		1	
	Percent	31	38	38	8	23	15	15	15		8	
General Aviation	Count	4	2	1	1	1			1			
	Percent	67	33	17	17	17			17			
All Types	Count	20	19	24	11	13	10	12	9	4	5	7
	Percent	37	35	44	20	24	19	22	17	7	9	13

Source: Survey results.
Note: (a) Senior Programs Manager; (b) Security Manager, Emergency Management; (c) Manager Emergency Operations, HR.

Survey Question 26—What aspects of continuity planning does your airport control on its own?

TABLE B40 Within Airport's Control

Large Hub	• All aspects of BCP and COOP as it relates to airport operator. • All • Our critical systems • All aspects • All aspects under the direct control of the airport. Power, Data, Airfield, Terminal Buildings, Roadways etc. • Airport Personnel, Property, Infrastructure (DEN) • Majority (SEA)
Medium Hub	• Orders of Succession Delegations of Authority Continuity Facilities • Continuity Communications Essential Records Management Human • Resources Test, Training, and Exercise Program Devolution of Control and Direction Reconstitution Operations (JAX) • ll (MEM) • Mutual aid agreements, SOPs, AEP (SMF) • Airport Emergency Plan (ONT) • Command and Control Communications Resource Utilization and • Coordination (SAT)
Small Hub	• The continuity planning is specific to our airport and so we control all of it. • We are responsible for all facets that affect the Airport. We have the authority to negotiate with the necessary agencies needed to implement our plan. • Airport recovery under natural disasters/security events • Everything within the airport operations area
Non-Hub Primary	• All aspects relating to facilities and infrastructure. • SICP, AEP opening and closing of the runway and terminal. • Items that are included in existing plans such as EAP, ACM and ASP • The coordination of table top exercises as well as attending the annual full scale with the NCAS Yuma. Providing facilities for emergency events as well as training throughout the year with various stakeholders. • ASP and AEP
Reliever	• The Airport controls the Airport Emergency Plan and IROPS Plan. • Anything owned or operated by the airport to include staff, facilities and equipment. • The implementation of the flood wall. Runways and Taxiways closures. • Relocation Sites, Facilities, Equipment. Almost all aspects of the plan except public roadways leading into the facility and utilities. • All • Airport recovers aircraft and returns to normal operations. Airport has three runways ensuring that the airport is always operational. Airport has manual backup procedures in case of system failures. Airport has multiple utility lines to for redundancy. • All continuity planning would be controlled by the airport. • Basic contingency plans and AEP. COOP is managed by PHX on our behalf.
General Aviation	• Airport Emergency Plan, Disaster Preparedness/Recovery plan, Airport Authority • SOPs, Irregular Ops plan, Mutual Aid agreements. • All airport properties.

Survey Question 27—What aspects of continuity planning are not within the control of your airport? How are these addressed?

TABLE B41 Not Within Airport's Control

Large Hub	• Tenant plans. • None • Airline specific plans • All aspects are within control of the airport • Internal airline or tenant disruptions. While we can drive or influence decisions we have little to no control of their continuity planning. • Tenants personnel, property, infrastructure
Medium Hub	• Unknown • Tenant activities • Responses from Mutual aid groups in other cities and counties outside of the city. • Other stakeholders—depends on situation. City ITSD infrastructure—close coordination and redundant systems when possible.
Small Hub	• Power grids. Roadway transportation system. Water utilities. • Business specific protocols • Other department's actions/needs
Non-Hub Primary	• Anything dealing with airline operations. They are addressed through the airlines SOPs and plans. • FAA Systems and airline operations. This would be done through coordination and monthly meetings. • Utilities, heavy equipment, and other resources not owned or operated by airport. • The airport work with the crisis management team for the city and county as well as the MCAS Yuma. • External stakeholders, conduct meetings to see what impact an emergency can cause a tenant.
Reliever	• The Airport is not in control of City's plans for continuity of operations. • Anything not owned by the airport. These areas are address by mutual aid or letters of agreement. • Emergency response in non-airport staff. Air traffic control staff and procedures. • Utility contractors and vendors. Weather and natural events. • Almost all aspects of the plan except public roadways leading into the facility and utilities. • All aspects of continuity planning would be controlled by the airport. • COOP and emergency management policies.
General Aviation	• Risk Management—controlled/dictated by separate county department • Outside of airport property. Airport coordinates with other departments.

Survey Question 28—How do airport continuity plans and programs interface with other plans, if at all?

TABLE B42 Interfacing Plans and Programs

NPIAS Category		Airport does not have BCP/ COOP	Airport has self-sufficient BCP/ COOP	Made part of overall community plan	Coordinated with tenant and stakeholder BCPs	Includes potential activation of mutual-aid agreements	Includes potential activation of airport to airport mutual-aid program programs (e.g., SEADOG or WESTDOG)	Coordinated with local, state, or federal COOP	Not sure	Other
Large Hub	Count	1	7	2	1	4	4	3		
	Percent	10	70	20	10	40	40	30		
Medium Hub	Count	2	1			2	1	2		
	Percent	29	14			29	14	29		
Small Hub	Count	1	1	2		2	1	2		
	Percent	20	20	40		40	20	40		
Non-Hub Primary	Count	10	1							
	Percent	91	9							
Commercial Service	Count	2								
	Percent	100								
Reliever	Count	5	5	3		2	1	3		
	Percent	38	38	23		15	8	23		
General Aviation	Count	4		1(a)		2	1	1		
	Percent	67		17		33	17	17		
All Types	Count	25	15	8	1	12	8	11		
	Percent	46	28	15	2	22	15	20		

Source: Survey results.

Survey Question 29—What BCP or COOP tool(s) has/have the airport licensed, installed, or implemented?

TABLE B43 Tools

Large Hub	• Checklists • Templates • Standard Practice Memos (SPMs) • Recovery Priority Determination Decision Tree and Scale • Spreadsheet Based Tools • Mutual-aid agreements • Standard Operating Procedures (SOPs) • *ACRP 93* Airport Business Continuity Planning Software Tool • Gartner's Magic Quadrant BCP "BOLD" Tool • Actively looking for BCP support software
Medium Hub	• Airport does not have BCP or COOP • Checklist • Templates • Recovery Priority Determination Decision Tree and Scale • Mutual-aid agreements • Standard Operating Procedures (SOPs)
Small Hub	• Checklists • Templates • Mutual-Aid Agreements • SOPs
Non-Hub Primary	• Checklists • Templates • Standard Practice Memos (SPMs) • Recovery Priority Determination Decision Tree and Scale • Standard Operating Procedures (SOPs) • Airport does not have BCP or COOP • Mutual-aid agreements • Spreadsheet Based Tools • The airport does not have a formal COOP or BCP in place
Reliever	• Airport does not have BCP or COOP • Checklists • Templates • Standard Practice Memos (SPMs) • Spreadsheet Based Tools • Mutual-aid agreements • Standard Operating Procedures (SOPs)
General Aviation	• Mutual aid agreements • County EOC coordination • AEP • Natural disaster planning/recovery

Survey Question 31—What would you suggest to other airports, particularly small airports, as critical elements to successful continuity plan development and implementation?

TABLE B44 Advice to Smaller Airports

Large Hub	1. Make sure exec team has the plan 2. Collaboration and coordination with all parties. 3. Succession planning Alternate location alternate pay for employees employee families planning 4. I don't know how the airport can stay profitable without one. 5. create, drill, assess 6. Identify key stakeholders; update this list periodically; conduct table top exercises with all stakeholders 7. Include SEADOG and WESTDOG, look for partnerships/contract services that could provide needed infrastructure. List your critical resources and priority order. Develop your decision making team, train and exercise annually. 8. Work with local, regional, state organizations, Take Free FEMA classes Work with Large Businesses in the community to learn about their plan.
Medium Hub	1. Conduct a Need and/or Vulnerability assessment with all of your stakeholders. Identify key areas of concern during a disaster that would impede your ability get the airport back open in a timely manner. Once these areas have been identified, work with your tenants and other stakeholders to devise a plan. FEMA has a great template that will help you get started: http://www.fema.gov//media-library/assets/documents/90025. 2. Informational meetings with all stakeholders. 3. Evaluate all your primary equipment and departments to understand your existing resources. Know community resources available, airports of any size can benefit from relationships with local school districts, voluntary organizations active in disasters and other groups.
Small Hub	1. Plan ahead. Plan based on your operational need. 2. Based on economic concerns we would suggest utilizing the Airport Emergency Plan as a document in support of the COOP. 3. Training on the COOP
Non-Hub Primary	1. Start with something and make it available to all your staff. 2. Develop solid and open relationships with all critical external and internal stakeholders. many times each entity has their own pool of money to help with recovery actions/plans. By having a relationship with the stakeholders and being able to pool all money together may help in recovery operations. Little cost involved to have meetings with stakeholders and to openly discuss available resources.
Reliever	1. Maintain open communications with other departments/entities. 2. Ensure that you have all of your stakeholders including: fire, police, finance, risk, communications department, etc. involved in the planning process. 3. Just start the process and simplify planning efforts. Ask simple questions about your operation; i.e., If I can't use my Admin office what do need to operate? Can I do it with a tablet and a mobile phone? Take this type of approach with all aspects of your operation. 4. Prevention, mitigation, preparedness, response and recovery. Incident command. 5. Keep your COOP up to date and ensure all responsible parties within the plan are informed of their role.
General Aviation	1. Mutual aid agreements/collaboration with larger government entities, resource sharing, etc. 2. Coordination with emergency service providers. TABLEtop exercises. Mutual aid or MOUs [memoranda of understanding].

APPENDIX C

Interview Guide Questions for Airports with Business Continuity Plans/ Continuity of Operations Plans

Interview Guide

ACRP Synthesis S01-11

Case Example:

Date:

This Case Example is based on an interview with _____, his/her responses to the survey, and airport information from FAA reports.

Airport Characteristics

NPIAS category:

Governance: _____

Number of operations: _____ annual

Number of airport employees:

The purpose of this interview is to gather detailed information for case studies by learning about your continuity planning practices and how effective it has been in bringing your airport back to normalcy from a broad range of disruptions.

1. How did the BCP/COOP/continuity planning start and how has it evolved?
2. Has there been a champion person/group for BCP/COOP?
3. How much time is devoted for BCP/COOP?
4. How is BCP/COOP maintained? Updated? Describe the process regarding this.
5. Questions on checklists, templates, tools, and other information provided.
6. What kind of coordination is there between airport and airport tenants' plans?
7. What kind of cost is incurred in maintaining BCP?
8. How effective have continuity plans and programs been? How do you assess the effectiveness?
9. What was the most recent significant airport disruption in the last five years?

During this disruption, what recovery priority determinations were made?

What were the essential, important, convenient, and non-essential functions impacted in this case?

For each of these impacted airport functions, what was the maximum downtime in this case?

How were human resources, physical plant and equipment, technology, processes, and other resources impacted in this case? How were they handled?

10. What do you consider as best practices in BCP/COOP and planning at your airport?
11. What are lessons learned from your involvement in BCP/COOP?
12. Are there any core airport functions that are contracted to commercial tenants or other agencies that may be outside the control of the airport? If yes, does the airport utilize any process, lease provision, or operating understanding with these entities that address dealing with recovering from disruptions? Please describe.
13. Have there been any other stakeholder coordination practices that have been effective in dealing with airport business disruptions?

14. Are any core airport support functions covered by external or departmental business continuity practices off site? For example, if the airport is municipally owned, payroll functions may be handled at an off-location finance department.
15. What are the benefits to having an airport BCP?
16. What advice would you have to a small airport to develop business continuity practices or when contemplating creating a formal BCP)?

APPENDIX D

Interview Reports for Airport with Business Continuity Plans/Continuity of Operations Plans

Interview Report 1—Dallas/Forth Worth (DFW)

Interview Guide

ACRP Synthesis S01-11

Case Example: *Dallas/Fort Worth Airport*

Date: *October 14, 2015*

This Case Example is based on an interview with Mr. Alan Black, director of public safety, on October 14, 2015; his responses to the survey; and airport information from FAA reports.

Airport Characteristics

NPIAS category: *Large hub*

Governance: *Joint board*

Number of operations (2014): *679,820 annual*

Number of airport employees: *60,000*

The purpose of this interview to gather detailed information for case studies by learning about your continuity planning practices and how effective it has been in bringing your airport back to normalcy from a broad range of disruptions.

1. How did the BCP/COOP/continuity planning start and how has it evolved?

   The trigger for BCP/COOP was the SARS or aviation flu and the need for Pandemic Plan. For this need DFW sought help from a consultant who advised DFW to have a BCP and have Pandemic Plan as an annex to that. However, at that time DFW only wanted a Pandemic plan. Later on DFW initiated an effort in-house to develop a BCP.

   DFW has a BCP/COOP for about three years. The key motivating factor for having a plan was "best practice."

2. Has there been a champion person/group for BCP/COOP?

   Director of Public Safety is the facilitator and integrator. Each department comes up with their own plan using a common template/worksheet, which is then integrated by the department of Public Safety. The example of the worksheet is shown in Appendix H (Sample 2).

3. How much time is devoted for BCP/COOP?

   It is hard to identify what each department put in as effort. There were continuing efforts over 2 to 3 years to develop the BCP/COOP. There is an ongoing effort where one-third of the plan gets reviewed each year and feedback is sought to make any updates, if needed.

4. How is BCP/COOP maintained? Updated? Describe the process regarding this.

   Multiple departments have developed their own BCP/COOP. All these are integrated for overall airport. One-third of the plan is reviewed each year and if needed updates are made. Office of Public Safety coordinates this.

5. Questions on checklists, templates, tools, and other information provided.

   Samples of checklists, templates, and other related information are provided in Appendix D.

6. What kind of coordination is there between airport and airport tenants' plans?

   The airport's BCP/COOP is an internal document/tool. The airport gets the copy of tenant's BCP, including those from airlines. However, there is no specific coordination. Also, through participation in SEADOG airport is involved in mutual-aid agreements with smaller airports and other agencies.

7. What kind of cost is incurred in maintaining BCP?

   The cost is primarily related to staff hours devoted to maintaining BCP/COOP. This is about $60,000 annually.

8. How effective have continuity plans and programs been? How do you assess the effectiveness?

   There have been no issues to really assess the effectiveness. If any gaps are observed regarding awareness of capabilities or limitations then plans are updated, to the extent possible, to address those gaps.

9. What was the most recent significant airport disruption in the last five years?

   There have been loss of power, technical shortages, soil and sinkhole problems that affected runway operations, and other short-term disruptions. But, none of these have been significant. None of these required or triggered any activation of or improvements in current BCP/COOP.

   During this disruption, what recovery priority determinations were made?

   NA

   What were the essential, important, convenient, and non-essential functions impacted in this case?

   NA

   For each of these impacted airport functions, what was the maximum downtime in this case?

   NA

   How were human resources, physical plant and equipment, technology, processes, and other resources impacted in this case? How were they handled?

   NA

10. What do you consider as best practices in BCP/COOP and planning at your airport?

    1. The plan is supported by top executives.

    2. The plan is comprehensive, robust, as well as flexible.

    3. The plan accounts for all essential functions.

11. What are lessons learned from your involvement in BCP/COOP?

    The ability to hypothesize disruptive scenarios and forecast related impacts has helped clearly identify roles and responsibilities and in being adequately prepared.

12. Are there any core airport functions that are contracted to commercial tenants or other agencies that may be outside the control of the airport? If yes, does the airport utilize any process, lease provision, or operating understanding with these entities that address dealing with recovering from disruptions? Please describe.

    There are some core airport functions that are contracted to commercial tenants or other agencies, but all are within the control of the airport.

13. Have there been any other stakeholder coordination practices that have been effective in dealing with airport business disruptions?

    Involvement in WESTDOG and SEADOG has been useful. There are quarterly exercises with TSA, Public Works Department, Energy Department, Transportation Department, and Customs and Border Patrol.

14. Are any core airport support functions covered by external or departmental business continuity practices off site? For example, if the airport is municipally owned, payroll functions may be handled at an off-location finance department.

    None. All are handled by the airport. The airport is owned by a Joint Board, which includes mayors from Dallas and Fort Worth. There is no coordination of airport's BCP with that of the cities of Dallas and Fort Worth.

15. What are the benefits to having an airport BCP?

    Transparency, collaboration, and consistency, resulting in quicker return to normalcy of the airport's core functions and business.

16. What advice would you have to a small airport to develop business continuity practices or when contemplating creating a formal BCP?

    1. Do not "over think" it.

    2. Look for what "big rocks" are.

    3. Have a plan, not necessarily a comprehensive and complex plan right in the beginning.

    4. Going forward, work on the plan as a living document and update it as needed.

Interview Report 2—Minneapolis-St. Paul International Airport (MSP)

Interview Guide

ACRP Synthesis S01-11

Case Example: *Minneapolis-St. Paul International Airport*

Date: *October 13, 2015*

This Case Example is based on an interview with Mr. Phil Burke, director of MSP operations, and Ms. Kristin Rollwagen, emergency program manager, on October 13, 2015; their responses to the survey; and airport information from FAA reports.

Airport Characteristics

NPIAS category: *Large hub*

Governance: *Authority*

Number of operations (2014): *412,695 annual*

Number of airport employees: *580 approximately*

The purpose of this interview to gather detailed information for case studies by learning about your continuity planning practices and how effective it has been in bringing your airport back to normalcy from a broad range of disruptions.

1. How did the BCP/COOP/continuity planning start and how has it evolved?

   The airport BCP/COOP planning evolved as part of an airport initiative. The airport developed a BCP in 2004, hiring an outside contracting firm to develop the plan. The airport COOP was developed and approved in April 2015. It is based on the FEMA COOP guidance and follows the criteria set forth in a 2015 Governor's Executive Order for COOP. The BCP is currently being revisited utilizing the ACRP 93 Tool. Both plans are being evaluated with the intent to combine them as one in the near future. The airport is also coordinating BCP/COOP with all of their tenants and hopes to incorporate the requirement into future leases.

2. Has there been a champion person/group for BCP/COOP?

   The Emergency Program Manager is overseeing the management of the COOP plan. The BCP plan is managed by the airport's Risk and Safety Department.

3. How much time is devoted for BCP/COOP?

   The process of developing the airport COOP was an involved process taking place over an approximate six month period. The BCP plan currently has one person dedicated since July 1st until the end of the year for its review and revisions utilizing the ACRP 93 Tool in coordination/involvement of all airport departments.

4. How is BCP/COOP maintained? Updated? Describe the process regarding this.

   The plans will be reviewed in conjunction with the airport's 3 year cycle of its emergency exercise program. They will be utilized with the exercise to determine critical recovery functions and measured against "lessons learned" from the exercise. The desire for future exercises will focus on more recovery processes and implementation of the plans during the events.

5. Questions on checklists, templates, tools, information provided.

   The airport suggests looking at the FEMA COOP site: https://www.fema.gov/planning-templates. They viewed 2 guide templates listed for Federal Department/Agencies and Non-Federal Entities incorporating guidance from each as was appropriate for them. They gathered feedback and questions from airport departments identifying any shortcomings and developed a spreadsheet to address. This will lead to a Phase II to establish budgets and capital improvement projects necessary to accommodate foreseeable disruptions. This may include relocation to off-site facilities, telecommunication and IT department arrangements.

6. What kind of coordination is there between airport and airport tenants' plans?

   The airport admits this is a challenge and there is much work to do with tenant coordination. The airport is currently in the process of turning over the concession agreements to 5-6 operators who will oversee approximately 100 stores. The intent is to incorporate COOP plans into future leases requiring tenants to meet the challenges of foreseeable disruptions. Phase I will reference COOP plans in the leases while Phase II may require COOP plans. The airport will initiate the COOP tenant plan process with the major airlines and continue with the remaining tenants working on emergency response procedures coordinating/developing recovery procedures. The airport has also visited with the Mall of America who has coordinated with its store owners for evacuation, shelter-in-place and lockdown procedures.

7. What kind of cost is incurred in developing BCP?

   Initially, the BCP was developed with a contracting firm but the exact amount was not known at the interview.

   What kind of cost is incurred in maintaining BCP?

   Maintaining BCP costs are minimal for MSP. Costs are primarily in terms of staff time to perform maintenance on the plans.

8. How effective have continuity plans and programs been? How do you assess the effectiveness?

   Although the airport recognizes the importance of the plans, not sure how effective the plans were in the past. They are being reviewed and revised now. The plans are now on the "radar" in every airport department. Recently, a new landside director was hired and saw the benefit of updating the airport/responder contact list for resources.

   The effectiveness of the plans will be measured in downtime. The airport experiences major flight operations, passengers, and commerce all contributing to an economic impact that cannot sustain disruptions.

9. What was the most recent significant airport disruption in the last five years?

   The airport experienced the inability to monitor security card readers for 6 hours. There was also an unattended back pack on a ticket counter disrupting operations.

   During this disruption, what recovery priority determinations were made?

   For the security monitoring, several people were placed in strategic positions to assist in allowing continuity of operations. The backpack incident affected both airline and TSA areas. It was handled internally for a period of time. An after action discussion suggested outside resources may have been called in earlier to assist.

How were human resources, physical plant and equipment, technology, processes, and other resources impacted in this case? How were they handled?

For these disruptions, it was primarily addressed with manpower/staffing resources.

10. What do you consider as best practices in BCP/COOP and planning at your airport?

The airport has involved 4 primary departments: law enforcement, fire, operations and field maintenance. Coordination and utilizing a unified command has the best effect for minimizing disruptions. Practicing or reviewing scenarios in a table-top environment has been very beneficial.

11. What are lessons learned from your involvement in BCP/COOP?

Disruptions and operation shutdowns cost money. Possessing a well-developed plan will minimize the duration of time the incident or emergency will impact operations. Many businesses and individuals count on the airport. Merging and integrating programs appear to be beneficial in developing the overall plan.

MSP is beginning to look at its reliever airports (6) to develop a strategy to bring them "under the umbrella" of MSP's emergency management and COOP plan.

12. What advice would you have to a small airport to develop business continuity practices or when contemplating creating a formal BCP)

I would recommend that folks utilizes best practices, documents and templates that have already been developed and to work with your EM [emergency manager] peers who have already developed a COOP Plan.

Interview Report 3—Minden-Tahoe Airport (MEV)

Interview Guide

ACRP Synthesis S01-11

Case Example: *Minden-Tahoe Airport*

Date: *October 14, 2015*

This Case Example is based on an interview with Ms. Bobbi Thompson, C.A.E., airport manager, on October 14, 2015; her responses to the survey; and airport information from FAA reports.

Airport Characteristics

NPIAS category: *General aviation*

Governance: *County department (Douglas County)*

Number of operations (2015): *90,000 annual*

Number of airport employees: *8*

The purpose of this interview to gather detailed information for case studies by learning about your continuity planning practices and how effective it has been in bringing your airport back to normalcy from a broad range of disruptions.

1. How did the BCP/COOP/continuity planning start and how has it evolved?

BCP/COOP started as part of strategic planning session at county level. The airport is part of the county-wide COOP. The plan was developed in-house. First development required considerable staff hours over a period of six months.

2. Has there been a champion person/group for BCP/COOP?

There is a committee within the Douglas County that oversees the review and update of the county-wide COOP. One section of the COOP is devoted to the continuity of operations planning for the airport. The committee is assisted by Airport Manager, Director of Operations, and ARFF Chief at Minden-Tahoe Airport.

3. How much time is devoted for BCP/COOP?

   About twenty-four hours per year is devoted for COOP. The committee meets once a year to review the input from different stakeholders, including airport, and look into ways of incorporating the feedback.

4. How is BCP/COOP maintained? Updated? Describe the process regarding this.

   Each stakeholder examines their section of COOP that is relevant to their department/agency and provides feedback to the steering committee. If there are significant issues then tabletop exercises are conducted. Some triggers in improving the COOP section pertaining to the airport have been plans for storage equipment or isolated staging areas. The review and related updating is done annually.

5. Questions on checklists, templates, tools, and other information provided.

   The COOP includes use of checklists, templates, communication details, memos, recovery priority determination decision tree and scale, mutual-aid agreements, and standard operating procedures. The policy is to not release any information related to COOP as it contains management of threats in addition to weather complications and how the county and airport handle threats and is not for public viewing.

6. What kind of coordination is there between airport and airport tenants' plans?

   Airport leases require FBOs, 20 commercial businesses, and tenants to comply with county-wide COOP. This compliance is monitored by Airport Management in consultation with County Emergency Management Department.

7. What kind of cost is incurred in maintaining BCP?

   The cost is primarily related to staff hours required for COOP and sometimes there is a need for investment in improving communication infrastructure or acquisition of key equipment. The cost has been less than $10,000 per year.

8. How effective have continuity plans and programs been? How do you assess the effectiveness?

   There have been no significant situations where effectiveness of COOP could have been assessed. Tabletop exercises are carried out once a year and live exercises are carried out once in 5 years.

9. What was the most recent significant airport disruption in the last five years?

   No significant disruptions encountered. There were some capital improvement project funding disruptions related to closeouts, but were before COOP was implemented. Current construction disruptions are related to conflicts between construction and normal operation, but are addressed by construction phasing plans. Emergency plans have been able to address some continuity issues as well.

   During this disruption, what recovery priority determinations were made?

   NA

   What were the essential, important, convenient, and non-essential functions impacted in this case?

   NA

   For each of these impacted airport functions, what was the maximum downtime in this case?

   NA

   How were human resources, physical plant and equipment, technology, processes, and other resources impacted in this case? How were they handled?

   NA

10. What do you consider as best practices in BCP/COOP and planning at your airport?

Having a plan has identified roles, responsibilities, and assignments effectively. It improves awareness of capabilities and limitations.

11. What are lessons learned from your involvement in BCP/COOP?

    It does take time to develop a comprehensive COOP.

12. Are there any core airport functions that are contracted to commercial tenants or other agencies that may be outside the control of the airport? If yes, does the airport utilize any process, lease provision, or operating understanding with these entities that address dealing with recovering from disruptions? Please describe.

    No core airport functions are contracted to commercial tenants or other agencies. However, the airport does coordinate with outside agencies such as security, fire, medical services, and other airports.

13. Have there been any other stakeholder coordination practices that have been effective in dealing with airport business disruptions?

    Airport does carry out live exercises with fire, medical, and police organizations.

14. Are any core airport support functions covered by external or departmental business continuity practices off site? For example, if the airport is municipally owned, payroll functions may be handled at an off-location finance department.

    It is handled at a central location in county.

15. What are the benefits to having an airport BCP?

    During disruption it helps address effectively and in timely manner:

    ** Who to call*

    ** Who is in charge*

    ** How to handle it and level of threat*

    This in turn increases preparedness, improves recovery and response, and improves coordination with emergency response organizations.

16. What advice would you have to a small airport to develop business continuity practices or when contemplating creating a formal BCP?

    Have a plan, even if it is just a page long. Cost to develop a plan is often the most significant barrier. Airport Improvement Program (AIP) Grant Oversight Risk Model Policy may motivate airports requiring federal grants. But, there are many airports not seeking grants so developing a plan may not be a high priority. This is of value to all airports. Critical elements to successful continuity plan development and implementation include coordination with emergency service providers, tabletop exercises, mutual aid and/or MOUs [memoranda of understanding].

Interview Report 4—Ohio State University Airport (OSU)

Interview Guide

ACRP Synthesis S01-11

Case Example: *Ohio State University Airport*

Date: *October 15, 2015*

This Case Example is based on an interview with Mr. Douglas Hammon, airport director, on October 15, 2015; his responses to the survey; and airport information from FAA reports.

Airport Characteristics

NPIAS category: *Reliever*

Governance: *Institute of higher education (Ohio State University)*

Number of operations (2012): *72,635 annual*

Number of airport employees: *88*

The purpose of this interview is to gather detailed information for case studies by learning about your continuity planning practices and how effective it has been in bringing your airport back to normalcy from a broad range of disruptions.

1. How did the BCP/COOP/Continuity Planning start and how has it evolved?

   OSU Airport is owned by Ohio State University. Five years ago, the University mandate[d] all business and academic units to have business continuity plans. A central committee led by the Risk Management Office oversaw the effort and provide[d] resources and expertise to develop the BCP/COOP. The airport educated the committee about airport's functions. The effort was motivated the need to reduce liability and for insurance coverage purposes.

2. Has there been a champion person/group for BCP/COOP?

   The risk management office at Ohio State University leads the effort and seeks input from Airport through Airport Manager.

3. How much time is devoted for BCP/COOP?

   The time involved at airport level is minimal as most of the guidance and assistance is provide by Risk Management Office at the University.

4. How is BCP/COOP maintained? Updated? Describe the process regarding this.

   Any proposal of new or proposed activity at the airport is taken to the committee, which assesses if university will be at increased level of risk. The Risk Management Office gets regular updates regarding personnel changes or if new procedures are implemented. Once a year continuity plan of all units, including the airport, is reviewed. Such review meeting allows the airport to better understand the needs of the airport operations under normal and disruptive conditions.

5. Questions on checklists, templates, tools, and other information provided.

   Currently there are five specific continuity plans for the airport for Administrative Continuity, Aircraft Maintenance Continuity, Customer Service Continuity, Flight Education Continuity, and Line of Operations Continuity. Appendix H shows some plans and related templates and checklist.

6. What kind of coordination is there between airport and airport tenants' plans?

   There are over 180 aircraft of private owners that are a parked at the airport. Facility coordinator interacts with stakeholders regarding facility issues such as closing down of runway. FBO general manager deals with coordination related to service issues. The communication for coordination is done using e-mails, monthly newsletter, and updates on website.

7. What kind of cost is incurred in maintaining BCP?

   Minimal cost having the advantage of University setting and help from Risk Management Office.

8. How effective have continuity plans and programs been? How do you assess the effectiveness?

   Emergency plan has been effective, but there have been no major disruption to find the use of continuity plan and assess its effectiveness.

9. What was the most recent significant airport disruption in the last five years?

Airport has been host site of the Safety and Flight Evaluation Conference (SAFECON), which attracts students from 30 schools and over 100 industry experts. Also, Memorial Golf tournament in Central Ohio attracts corporate people and golfers. Sometimes OSU football games brings in many private aircraft. However, all these are know and these special events are planned for. Security plan has been activated, but no activation of continuity plan has taken place.

During this disruption, what recovery priority determinations were made?

NA

What were the essential, important, convenient, and non-essential functions impacted in this case?

NA

For each of these impacted airport functions, what was the maximum downtime in this case?

NA

How were human resources, physical plant and equipment, technology, processes, and other resources impacted in this case? How were they handled?

NA

10. What do you consider as best practices in BCP/COOP and planning at your airport?

There are many overlaps among Part 139 requirements, Emergency plan, Security plan, and with upcoming effort about SMS [safety management system]. Consolidating it under one umbrella is a goal. It will reduce redundancy and there will not be a need for multiple plans.

11. What are lessons learned from your involvement in BCP/COOP?

Whenever we sit down and discuss continuity needs and review continuity plans, there develops a better understanding [of] airport operation needs. It helps in identifying what is important, what is not important, and if there is a better way of doing any airport functions in both normal and disruptive situations.

12. Are there any core airport functions that are contracted to commercial tenants or other agencies that may be outside the control of the airport? If yes, does the airport utilize any process, lease provision, or operating understanding with these entities that address dealing with recovering from disruptions? Please describe.

Wildlife control is no longer under USDA [U.S. Department of Agriculture]; it is contracted out and the risks and liability related to that is the responsibility of the contractor. Control tower is contracted to Midwest Air Traffic Control. If for some reason control tower is not function[ing] the airport can operate as uncontrolled. Letter of agreement between FAA, Midwest Air Traffic Control and the airport exists. Also, the airport has a letter of agreement between division of fire and a joint use fire station has been built on airport. Also, a fire truck is there to respond aircraft incidents.

13. Have there been any other stakeholder coordination practices that have been effective in dealing with airport business disruptions?

For emergency planning there is coordination with fire, police, and medical services. For COOP/BCP the plan is self-sufficient.

14. Are any core airport support functions covered by external or departmental business continuity practices off site? For example, if the airport is municipally owned, payroll functions may be handled at an off-location finance department.

University business office helps if airport's payroll or accounting systems have some disruptions.

15. What are the benefits to having an airport BCP?

When putting it together, there are opportunities to think "what airport does," what is important for the airport, what is not important for the airport, and is there a better way to handle any functions under normal or disruptive conditions. At university level, it helps with underwriters and for insurance coverage and allows the airport, one of the units in the university, to be in compliance.

16. What advice would you have to a small airport to develop business continuity practices or when contemplating creating a formal BCP?

1. See what is already out there. Look somewhere, airports or similar business if they have a plan and get their template and adapt it for the airport. Do not reinvent.

2. Check with the governing entity if they already have a plan. Oftentimes airport is thought of last and is not at the top of the list. So, if the airport approaches the governing entity they may find templates, guidance, expertise, and even resources to develop airport-specific BCP/COOP.

3. It could also help with AIP Grant Oversight Risk Assessment.

Interview Report 5—Ft. Lauderdale Executive Airport (FXE)

Interview Guide

ACRP Synthesis S01-11

Case Example: *Ft. Lauderdale Executive Airport*

Date: *October 12, 2015*

This Case Example is based on an interview with Mr. Carlton Harrison, operations supervisor, on October 12, 2015; his responses to the survey; and airport information from FAA reports.

Airport Characteristics

NPIAS category: *Reliever*

Governance: *City department*

Number of operations (2014): *149,710 annual*

Number of airport employees: *17*

The purpose of this interview to gather detailed information for case studies by learning about your continuity planning practices and how effective it has been in bringing your airport back to normalcy from a broad range of disruptions.

1. How did the BCP/COOP/continuity planning start and how has it evolved?

The airport BCP/COOP planning evolved as part of a city initiative. The airport developed a COOP to be coordinated with the overall city plan and began by looking for answers to simple questions on what resources would be needed to address basic operating needs such as power outage.

2. Has there been a champion person/group for BCP/COOP?

The City Manager has been the overall champion of the city COOP plan. Based on this direction the airport took deliberate steps to develop a site-specific plan. One airport staff person attended a FEMA course on COOP providing guidance to "train the trainer" and become airport point person on plan development. The FEMA course attended was IS-547.A "Introduction to Continuity of Operations."

3. How much time is devoted for BCP/COOP?

The process of developing the airport COOP was involved taking place over an approximate six month period. Annual plan maintenance requires approximately 40 hours.

4. How is BCP/COOP maintained? Updated? Describe the process regarding this.

The plan is reviewed annually. This is done in coordination with the annual hurricane plan update. The process involves updating all contact information. There is also a review and verification of resources including alternate locations to be utilized in event of disruption as well as verification of human resource, technology, and other processes. All updates and revisions made as a result of the annual review are then submitted to the city and others stakeholders on the distribution list.

5. Questions on checklists, templates, tools, information provided.

   These tools are an effective part of BCP/COOP documents. Please see sample plan, checklists, standard practice memos, and letter of agreements in Appendix H.

6. What kind of coordination is there between airport and airport tenants' plans?

   Coordination of COOP plans with stakeholders can be challenging. FXE has five Fixed-Base Operators (FBOs). The larger FBOs have their own internal BCP practices that are internal to their recovery actions and will communicate with the airport as needed to ensure potential issues with airport functions are coordinated.

   The airport also utilizes Letters of Agreement (LOA) for this purpose. For example, FXE has an FAA control tower. In the event that an event causes loss of this agency controlled function, plans for use of alternate location is handled through LOA.

7. What kind of cost is incurred in maintaining BCP?

   Maintaining BCP costs are minimal for FXE. Costs are primarily in terms of staff time to perform annual maintenance on the plan, typically taking no more than 40 hours. All materials are developed and maintained using electronic files. During the initial development of the city COOP plan, a number of departments utilized outside hired expertise. The airport handled this through internal assessment and use of FEMA training program as mentioned above.

8. How effective have continuity plans and programs been? How do you assess the effectiveness?

   Fortunately, FXE has not had to activate COOP plan for any major disruption. Recovery practices identified within the plan have been used for minor disruptions as well as use of Airport Emergency Plan (AEP) for other events such as aircraft accident.

   Having continuity plan in place is effective in terms of preparedness. The airport has procedures in place that will increase preparedness and reduce downtime in the event of a normal operating function disruption. The "what do we do?" question has already been addressed.

9. What was the most recent significant airport disruption in the last five years?

   The airport has experienced a number of disruptions within the last five years including utility outage, aircraft accident, and temporary flight restriction (TFR).

   During this disruption, what recovery priority determinations were made?

   Priority determinations were situational for the different types of disruptions. For utility outage initial priorities included proper notification including issuance of Notice to Airman (NOTAM) when impacting essential airside facilities, repair actions, and restoration of utilities. Impacts were also mitigated through use of backup generator. For aircraft accident, the airport utilized the AEP to formulate Incident Action Plans (IAP) following NIMS principles to ensure prioritized actions such as safety, communications, and airport closures were addressed. In the event of a hurricane, coordination with the National Weather Service is also accomplished as well as potential need for facility closures and use of alternates.

   What were the essential, important, convenient, and non-essential functions impacted in this case?

   All of these levels of airport functions have been impacted at the airport and were situational depending on the nature of the disruption.

   For each of these impacted airport functions, what was the maximum downtime in this case?

   Varied.

How were human resources, physical plant and equipment, technology, processes, and other resources impacted in this case? How were they handled?

Impact to human resources, physical plant and equipment, technology, and processes depended on the event. For extended disruptions, determining rotation of limited staff resources particularly challenging. Other resources including backup generators, alternate facilities, and equipment were needed depending on the situation.

10. What do you consider as best practices in BCP/COOP and planning at your airport?

When developing COOP plan, keep it simple and basic to start with and expand from there.

Practicing the plan during the annual review by creating tabletop type exercise scenarios can be an effective way of walking through process.

11. What are lessons learned from your involvement in BCP/COOP?

Communication is always a challenge. This may involve forwarding information to the city to be put out through the public information officer (PIO). The plan review and development process has underscored the importance of communication between internal and external stakeholders.

12. Are there any core airport functions that are contracted to commercial tenants or other agencies that may be outside the control of the airport? If yes, does the airport utilize any process, lease provision, or operating understanding with these entities that address dealing with recovering from disruptions? Please describe.

FXE has five commercial FBOs that use primarily internal continuity practices when dealing with recovering from disruptions and in some cases informal coordination with the airport. The FAA control tower air traffic function operates off a Letter of Agreement with the airport in regard to continuity of operations.

13. Have there been any other stakeholder coordination practices that have been effective in dealing with airport business disruptions?

Building relationships with stakeholders is important and encourages communication. The airport is also exploring bringing more stakeholders into the annual review process. Utilization of tools such as LOAs.

14. Are any core airport support functions covered by external or departmental business continuity practices off site? For example, if the airport is municipally owned, payroll functions may be handled at an off-location finance department.

There are many core functions needed by the airport that are handled off-site within other city departments including informational technology (IT), human resources, finance, and risk management. These departments have their own COOP plan that has to be coordinated with the airports plan. Building relationships with these off-site departments facilitates a better understanding of their respective operational needs and understanding of departmental priorities.

15. What are the benefits to having an airport BCP?

The airport is better positioned to deal with business disruptions. FXE is already thinking about continuity so has an understanding and plan to improve operational resiliency and minimize downtime. The airport has a starting point when faced with the question of "What do we do now?" in the event of a disruption.

16. What advice would you have to a small airport to develop business continuity practices or when contemplating creating a formal BCP?

Start simple and develop a basic plan to deal with disruptions. Important to look at alternative resources depending on anticipated risk of disruption. Important to build relationships and awareness of continuity plan between stakeholders.

Interview Report 6—Savannah-Hilton Head International Airport (SAV)

Interview Guide

ACRP Synthesis S01-11

Case Example: *Savannah/Hilton Head International Airport*

Date: *October 15, 2015*

This Case Example is based on an interview with Mr. Fred McCosby, A.A.E., senior programs manager, on October 15, 2015; his responses to the survey; and airport information from FAA reports.

Airport Characteristics

NPIAS category: *Small hub*

Governance: *Airport authority*

Number of operations (2014–2015): *85,000*

Number of airport employees: *165*

The purpose of this interview to gather detailed information for case studies by learning about your continuity planning practices and how effective it has been in bringing your airport back to normalcy from a broad range of disruptions.

1. How did the BCP/COOP/continuity planning start and how has it evolved?

   Savannah/Hilton Head International Airport started the process to address continuity of operations in existing plans. For example, H1N1 flu plan or Plan for Infectious Substances incorporated business continuity plan within it dealing with 50 to 60% absentees. Similarly, IROPs plan ensured that enough concessionaires remained open when airport was overwhelmed by diversions or passengers were stranded.

2. Has there been a champion person/group for BCP/COOP?

   Senior Programs Manager facilitates it, but since continuity of operations are addressed in existing functional plans police, security, airport operations, airfield operations, legal department, executive assistant director (who is also director of finance) are engaged.

3. How much time is devoted for BCP/COOP?

   Writing, reviewing of business model and business continuity aspects is ongoing and has been streamlined within existing functions and functional plans.

4. How is BCP/COOP maintained? Updated? Describe the process regarding this.

   H1N1 business plan, Infectious substance plan, Hurricane plan is currently under review by Coastal Health department. Each functional plan is reviewed regularly and issues related to continuity of business and operations are incorporated and updated.

5. Questions on checklists, templates, tools, and other information provided.

   There are procedures established within each functional plans and more specifically in H1N1 business plan, IROPS plan, and Hurricane plan. Some examples of these are shown in Appendix H.

6. What kind of coordination is there between airport and airport tenants' plans?

   Airport tenants' plan[s] are congruent with the plans of the airport addressing continuity of business and operations issues. Tenants are briefed about IROPS plan throughout the year. Hurricane briefing is done once a year, at the beginning of hurricane season to ensure tenant plans are consistent and congruent to the airport's hurricane plan. The H1N1 Business plan is referenced and reviewed prior to a possible pandemic incident.

7. What kind of cost is incurred in maintaining BCP?

   The staff hours or related cost are incorporated into the cost of operation of the airport because all BCP/COOP aspects are incorporated in each functional plan.

8. How effective have continuity plans and programs been? How do you assess the effectiveness?

There were issues regarding effectiveness in the past. During an actual event, the airport is now efficient and able to meet customer needs. The incorporation of continuity of operations in IROPS plan, Hurricane plan, and H1N1 business plan has allowed the airport to deal better with situations so that the airport is not overwhelmed with diversions, or when electronic transactions are disrupted during hurricane, or when the airport needs to be staffed adequately.

9. What was the most recent significant airport disruption in the last five years?

During this disruption, what recovery priority determinations were made?

What were the essential, important, convenient, and non-essential functions impacted in this case?

For each of these impacted airport functions, what was the maximum downtime in this case?

How were human resources, physical plant and equipment, technology, processes, and other resources impacted in this case? How were they handled?

There were issues of effectiveness in past. For example, if the operations manager is not able to communicate to the terminal about diversions there can be situation where passenger needs are not met. When information about 8 to 10 diversions does not get communicated, then travelers are upset when no concessionaires are open. The IROPS Plan incorporates communication to the concessionaires to ensure adequate concessions are available to our passengers during IROPs. Delta Airlines coordinates with the airport by flying diversion crew to Savannah to staff the airport and deal with travelers needs.

Also, in the event of a major hurricane, credit cards and electronic transactions may not work. The airport withdraws $500,000 to $1,000,000 cash to meet the needs of payroll and to pay for the services. Also 36 hours prior to the event "ride out" crews (60 to 75) are informed and used. Employees are sent home early, so they can return to take over from "ride out" crews. Having incorporated business plan in existing plans, it has helped streamline the restoration process.

Hence, by incorporating business plan in existing functional plans and by briefing the tenants about them, the airport has been able to address the continuity of operations more efficiently.

Within the past several years we recognized that our IT network was not conducive to the growth of the airport. Over the last several years the IT Manager has expanded his workforce so that he is free to plan for the growth of the airport specific to IT infrastructure. This has resulted in upgrading the business network as well as deriving revenue from the 4G BSS [4G long-term evolution business support systems] upgrade. The lesson learned was to provide enough support to the IT Manager so that he can continuously develop and plan for the future needs of the airport and develop a long-term IT Business Plan.

Prior to 2007 the airport had over 1 million enplanements. But, during 2008 to 2013 the tourism was depressed due to the economy. In 2014 Jet Blue started serving with 2 flights a day and the incremental boost in tourism from 800,000 to 1,000,000 enplanements spurred growth and had multiplier effect. The community put up $1 million and the airport put up $2 million to have Jet Blue come in and address the growth in aviation demand. The infrastructure was already there as prior to 2008 the airport had over 1 million enplanements.

10. What do you consider as best practices in BCP/COOP and planning at your airport?

The airport did not develop a separate BCP/COOP. Instead, being a small airport decided to include business or operations continuity plan within existing functional plans. The airport makes the tenants, including airlines and FBOs, aware of their plans. For example, it provides timely information to airlines and FBOs so they can quickly get their aircraft out of the airport when there is likelihood of major disruption such as caused by hurricane.

11. What are lessons learned from your involvement in BCP/COOP?

1. IT issues were not planned well. This inadequacy can impact airport functions and operations. Now, IT staff has increased, IT infrastructure has been enhanced and expanded, and efforts are underway for developing an IT plan, which will also include needs for continuity of business and operations.

2. Sometime airport operations managers did not communicate with concessionaires when the airport was overwhelmed with diversions. This led to travelers needs not being met well. IROPS plan has been updated to address continuity of operations and business during diversions.

3. The task of addressing continuity of operations and business was within a small group; airfield operations and security were left on the peripheral. This has changed and more people are involved in discussing continuity of operations and business needs. Every two weeks there is interaction with airfield operations and security staff.

12. Are there any core airport functions that are contracted to commercial tenants or other agencies that may be outside the control of the airport? If yes, does the airport utilize any process, lease provision, or operating understanding with these entities that address dealing with recovering from disruptions? Please describe.

Pensacolo had contracted out their landside operations, their airfield operations, and custodial services and when hurricane Ivan happened these contractors were not around, which made continuity of operations and business difficult. This is one of the reasons the airport does not contract out its functions.

13. Have there been any other stakeholder coordination practices that have been effective in dealing with airport business disruptions?

The airport participates in SEADOG and coordinates with first responders and FEMA. There is a letter of agreement with local emergency management agency. However, the communication with first responders is by e-mail instead of formalized documents. Example of such agreement is shown in Appendix D.

14. Are any core airport support functions covered by external or departmental business continuity practices off site? For example, if the airport is municipally owned, payroll functions may be handled at an off-location finance department.

The airport is self-sufficient for BCP/COOP purposes. But, there are cooperative agreements with Chatham County Emergency Management Department. Also, there are EMAC [Emergency Management Assistance Compact] agreements to find resources (say, a transformer) from within the state or outside the state when all local and regional options are exhausted.

15. What are the benefits to having an airport BCP?

SAV found that incorporating business and operations continuity needs within existing functional plans, hurricane plan, H1N1 plan, and IROPS plan, has increased preparedness, improved recovery and response, reduced liability, improved insurance rating, decreased downtime, bettered relationship with tenants, improved coordination with emergency response organizations, and improved public perception of facility management.

More importantly, the time to plan is prior to an event be that IROPs, hurricane or a pandemic. Plans should include a total disruption of the banking system as well as communications systems during a hurricane. A Business Plan specific to IT infrastructure allows the IT Manager to plan years in advance in order that the airport is well ahead of the curve in terms of IT infrastructure planning.

16. What advice would you have to a small airport to develop business continuity practices or when contemplating creating a formal BCP?

The airport staff visited Sea-Tac and looked into the huge binder that contained their COOP/BCP. They felt that it may not work for the small airport as Savannah/Hilton International Airport. So they embedded and streamlined business and operations continuity needs within existing functional plans, hurricane plan, H1N1 business plan, and IROPS plan.

Look at what your worst case scenario would be during a major disruption and consider that as part of airport business condition and address the business and operation continuity issues in a separate plan or by embedding them in existing functional plans as Savannah/Hilton International Airport did.

Also, for example if there is a possibility that the terminal is wiped out, think of modular type of facilities to serve passengers; these facilities may not look pretty but can keep the airport operational.

APPENDIX E

Interview Guide Questions for Airports Without Business Continuity Plans/ Continuity of Operations Plans

Interview Guide
(For Airports Having No Business Continuity Plans – BCPs)
ACRP Synthesis S01-11

Case Example: _____

Date: _____

This Case Example is based on an interview with _____, his/her responses to the survey, and airport information from FAA reports.

Airport Characteristics

NPIAS category:

Governance:

Number of operations: _____ annual

Number of airport employees:

The purpose of this interview is to gather detailed information to be used as a Case Example in support of the above referenced study. Interview responses together with responses given to the previously submitted survey will provide valuable information about your business continuity planning practices and how effective those practices have been in bringing the airport back to normalcy from a broad range of disruptions.

1. How do you manage bringing the airport back to normalcy after a disruption?

2. Is there a key person/group involved in bringing the airport back to normalcy?

3. Has there been a critical incident where bringing the airport back to normalcy was a challenge? Would a BCP/COOP have helped in this situation?

4. Describe the process involved.

5. What kind of coordination is used?

6. What kind of cost is incurred?

7. How effective have current practices been regarding business continuity without plans and programs? How do you assess the effectiveness?

8. What was the most recent significant airport disruption in the last five years?

   During this disruption, what recovery priority determinations were made (perhaps informally)?

   What were the essential, important, convenient, and non-essential functions impacted in this case?

   For each of these impacted airport functions, what was the maximum downtime in this case?

   How were human resources, physical plant and equipment, technology, processes, and other resources impacted in this case? How were they handled?

9. Are there any core airport functions that are contracted to commercial tenants or other agencies that may be outside the control of the airport? If yes, does the airport utilize any process, lease provision, or operating understanding with these entities that address dealing with recovering from disruptions? Please describe.

10. Have there been any other stakeholder coordination practices that have been effective in dealing with airport business disruptions?

11. Are any core airport support functions covered by external or departmental business continuity practices off site? For example, if the airport is municipally owned, payroll functions may be handled at an off-location finance department.

12. How often are current airport business continuity practices, checklists, tools, or processes reviewed or updated?

13. What are the benefits to having some level of business continuity practices?

14. What advice would you have to a small airport to develop business continuity practices or when contemplating creating a formal BCP?

APPENDIX F

Interview Reports for Airports Without Business Continuity Plans/ Continuity of Operations Plans

Interview Report 7—Watsonville Municipal Airport (WVI)

Interview Guide
(For Airports Having No Business Continuity Plans – BCPs)
ACRP Synthesis S01-11

Case Example: *Watsonville Municipal Airport*

Date: *October 12, 2015*

This Case Example is based on an interview with Mr. Rayvon Williams, C.M., C.A.E., airport manager, on October 12, 2015; his responses to the survey; and airport information from FAA reports.

Airport Characteristics

NPIAS category: *General aviation*

Governance: *City department*

Number of operations (2015): *65,100 annual*

Number of airport employees: *Nine (9)*

The purpose of this interview is to gather detailed information to be used as a Case Example in support of the above referenced study. Interview responses together with responses given to the previously submitted survey will provide valuable information about your business continuity planning practices and how effective those practices have been in bringing the airport back to normalcy from a broad range of disruptions.

1. How do you manage bringing the airport back to normalcy after a disruption?

   Depending on the type of disruption WVI has generally two plans of action. As of Oct 2015 the majority of operational disruptions have been minor aircraft specific issues (aircraft flat tire, gear-up landing, "loss-of-control" off runway, ground loop-blocking runway, etc.) or major actions impacting infrastructure (1989 Loma Prieta earthquake, 2008 wildfires). In the case of "minor disruptions" the airport staff has a First response plan of action (attached) followed by coordination with Watsonville Fire or Police. These actions work to bring the airport to normal operations. In the case of a major disruption the Airport would work with the City of Watsonville's Emergency Operations center. Effectively bringing the airport back to normal operations will ultimately lay with Airport management and Staff.

2. Is there a key person/group involved in bringing the airport back to normalcy?

   The key group for Watsonville is primarily Airport management and Staff during minor disruptions and a combined effort between the airport manager and Watsonville's Emergency Operations Center during major disruptions.

3. Has there been a critical incident where bringing airport back to normalcy was a challenge? Would a business continuity plan (BCP)/continuity of operations plan (COOP) have helped in this situation?

   Yes, the 1989 Loma Prieta earthquake. A Continuity of Operations Plan would have helped this situation.

4. Describe the process involved.

   Airport found its operations impacted due to power loss primarily; no structural damage to buildings or runways. Bringing the airport back "on-line" was a piecemeal effort that was refined over the early days with restoration of

power. The larger disruption was of course the quake itself and its impact. Looking back the airport was brought back to operations quickly but was not prepared for the "new level of service" required.

5. What kind of coordination is used?

   Initial coordination with Watsonville Fire or Police (airport is secure and safe; no life threatening condition); followed by the coordination with Watsonville EOC for power restoration via local utilities. For disruptions impacting the operation of the airport that are non-emergency in nature, WVI will determine recovery priorities depending on the situation sometimes involving off airport support services contacted through utilizing contact telephone lists.

6. What kind of cost is incurred?

   Not sure; certainly overtime of City employees.

7. How effective have current practices been regarding business continuity without plans and programs? How do you assess the effectiveness?

   Our view (at City and airport level) is less BCP and more of continuing operations. I can't speak regarding practices of BCPs.

8. What was the most recent significant airport disruption in the last five years?

   There has not been a significant (major) disruption in the last five years.

   During this disruption, what recovery priority determinations were made (perhaps informally)?

   NA

   What were the essential, important, convenient, and non-essential functions impacted in this case?

   NA

   For each of these impacted airport functions, what was the maximum downtime in this case?

   NA

   How were human resources, physical plant and equipment, technology, processes, and other resources impacted in this case? How were they handled?

   NA

9. Are there any core airport functions that are contracted to commercial tenants or other agencies that may be outside the control of the airport? No.

   If yes, does the airport utilize any process, lease provision, or operating understanding with these entities that address dealing with recovering from disruptions? Please describe.

   NA

10. Have there been any other stakeholder coordination practices that have been effective in dealing with airport business disruptions?

    Not "business disruptions," but the continuity of operations has been enhanced by partnering with WEACT.

    The Watsonville Emergency Airlift Command Team (WEACT) is a community based program involving the airport, its tenants, community members, the City of Watsonville and Santa Cruz County. In the event of a large scale community emergency, volunteers mobilize to provide airport, aircraft, and pilot services as needed such as moving people and goods to where they need to go. This was modeled after a similar program developed by the South County Airport Pilots Association (SCAPA) based at nearby San Martin airport. Both programs grew out of lessons learned from the 1989 Loma Prieta earthquake and a desire to unite the community needs with the airport asset. WEACT helps mobilize resources as needed to assist the community as a whole with recovery and continuity while also establishing practices at the airport which may also be impacted by the emergency. This helps to ensure that

the airport not only maximizes its recovery role within the community but also maintains appropriate use of airport facilities during a disaster.

11. Are any core airport support functions covered by external or departmental business continuity practices off site?

    Yes. Please note point of sale transactions (fuel sales, tie down, hangar payments) are conducted at the airport business office; however there are a host of finance functions that are leveraged by city CFO office (ACH payments, payroll, etc.) and there are other functions (legal, HR, Contracts, Risk Management, etc.) that are handled off site at City hall.

    For example, if the airport is municipally owned, payroll functions may be handled at an off-location finance department.

    NA

12. How often are current airport business continuity practices, checklists, tools, or processes reviewed or updated?

    Again, our focus is less on the "business" per se as these functions (the transactions) are the first line of action…the larger business elements are handled off site. Our focus will most likely be continuity of operations.

13. What are the benefits to having some level of business continuity practices?

    We see the benefits of continuity of operations as key to allowing us to quickly return, whether a minor or major disruption, to our threefold mandate: "Safety, Service and Self-Sustainability." This allows the airport to increase preparedness, improve recovery and response, decrease downtime, and reduce liability exposure.

14. What advice would you have to a small airport to develop business continuity practices or when contemplating creating a formal BCP?

    We focus on four elements:

    1. *Ensure timely and orderly continuous performance of essential functions during and after emergency (Keep the airport operational)*
    2. *Reduce or mitigate disruptions to operations (See 1 above…keep airport open)*
    3. *Protect records and other assets that support essential functions (we still have legacy "paper" that must be preserved)*
    4. *Minimize loss of life and injury to agency personnel.*

Interview Report 8—Lakeland Linder Regional Airport (LAL)

Interview Guide
(For Airports Having No Business Continuity Plans – BCPs)
ACRP Synthesis S01-11

Case Example: *Lakeland Linder Regional Airport*

Date: *October 8, 2015*

This Case Example is based on an interview with Mr. Adam Lunn, C.M., ACE, operations coordinator, on October 8, 2015; his responses to the survey; and airport information from FAA reports.

Airport Characteristics

NPIAS category: *Reliever*

Governance: *City department*

Number of operations (2015): *117,000 annual*

Number of airport employees: *16*

The purpose of this interview is to gather detailed information to be used as a Case Example in support of the above referenced study. Interview responses together with responses given to the previously submitted survey will provide valuable information about your business continuity planning practices and how effective those practices have been in bringing the airport back to normalcy from a broad range of disruptions.

1. How do you manage bringing the airport back to normalcy after a disruption?

   LAL has a current Airport Emergency Plan (AEP) and is NIMS [National Incident Management System] compliant. An Incident Action Plan (IAP) system is utilized to bring critical systems back on line.

2. Is there a key person/group involved in bringing the airport back to normalcy?

   It is a team effort and critical functions are recovered with coordination between impacted departments—Operations, Maintenance, Administration, Property, and Business Management for all financial and funding concerns.

3. Has there been a critical incident where bringing the airport back to normalcy was a challenge? Would a BCP/COOP have helped in this situation?

   The 2011 tornado that hit the airport during the large SUN'n FUN Event was particularly challenging due to the scope of the disruption. Tornado flipped 41 aircraft, damaged facilities, required evacuation, and airport closure. Following AEP was effective although some recovery issues may have benefited from a formal BCP.

4. Describe the process involved.

   Referred back to AEP and Incident Command System (ICS) principless to develop IAP for each time period of the response and recovery actions. After the emergency response, LAL continued to utilize IAP to work recovery issues.

   Not all AEP hazard specific sections have specified checklists for recovery actions. Many rely on hazard specific Unified Command actions based on Incident Action Plans (IAP) for disruption recovery involving activation of AEP.

5. What kind of coordination is used?

   Bring department directors together—Operations, Administration, Maintenance, Business, and Property managers. Recovery priorities are identified and coordinated. Off-site coordination for certain off airport functions including city finance and information technology (IT) needs. This requires building relationships with off-site departments.

6. What kind of cost is incurred?

   Costs depend on the situation and nature of the disruption. Coordination with the airport Business Manager is needed to address potential additional expenses such as personnel overtime or need to purchase equipment. LAL budgets for emergency contingencies.

7. How effective have current practices been regarding business continuity without plans and programs? How do you assess the effectiveness?

   A combination of activation of AEP, utilization of NIMS principles, and building relationships within the City as well as external organizations such as the FAA has been effective in dealing with airport disruptions to date.

8. What was the most recent significant airport disruption in the last five years?

   The 2011 Tornado occurring during the SUN'nFUN Event.

   During this disruption, what recovery priority determinations were made (perhaps informally)?

   LAL followed the ICS structure to make recovery priority determinations through Incident Action Plans (IAP). Prioritization included rescue, life safety, evacuation, airport closure, damage assessments, and security issues. IAP, departmental coordination, and available mutual aid resources were used to prioritize recovery actions.

What were the essential, important, convenient, and non-essential functions impacted in this case?

There was a total airport impact. Tornado impacted up to an estimated 150,000 attendees to the event. The event involved airport closure. There were 41 aircraft overturned, building and hangar door damage of varying degrees requiring property damage assessments, event specific facilities including tents and port-a-potties damaged, and loss of participant personal items. The damage to LAL facilities was minimal in terms of airport pavements, terminal facilities, and other buildings. Lots of foreign object debris (FOD) removed for recovery of safe aircraft operating conditions. Security was required to ensure that totaled aircraft were not disturbed during insurance or EPA required assessments.

For each of these impacted airport functions, what was the maximum downtime in this case?

Airport was opened at 7:00AM next day. Building repairs required to be operable depended on damage assessment for each hangar facility. Limited down time for restoring airport operations, however, event specific recovery was impacted for duration of the event.

How were human resources, physical plant and equipment, technology, processes, and other resources impacted in this case? How were they handled?

Significant impact on human resources involving overtime, on-call, and airport staff rest periods. Operations staff has grown from 2 employees at time of disruption to now 5 employees. Limited impact on physical plant and equipment, technology impacts were non-applicable. Impacts were felt on daily processes due to the event interruption.

9. Are there any core airport functions that are contracted to commercial tenants or other agencies that may be outside the control of the airport? If yes, does the airport utilize any process, lease provision, or operating understanding with these entities that address dealing with recovering from disruptions? Please describe.

   Aircraft service and fueling is contracted to Fixed-Base Operator (FBO). The airport works closely with the FBO to make sure that operations are sustainable during possible disruptions. This is more of a partnership and operating understanding than a contractual lease provision.

   Air Traffic Control is handled through the federal Contract Control Tower program. Services currently provided through Robinson Aviation (RVA). Due to recent federal funding issues and uncertainty with continued tower operations the airport did initiate steps to mitigate potential tower closure with specialized training of airport personnel.

10. Have there been any other stakeholder coordination practices that have been effective in dealing with airport business disruptions?

    Building relationships with City departments, FBO, Contract Tower (RVA) is important. LAL staff continually coordinates with these entities to optimize communication, knowing the right people, and building awareness of airport operational needs.

    City is proactive in preparing for emergency disruptions.

11. Are any core airport support functions covered by external or departmental business continuity practices off site? For example, if the airport is municipally owned, payroll functions may be handled at an off-location finance department.

    City has a city-wide comprehensive emergency plan that is reviewed annually. This plan is coordinated with AEP. Plans are always cross checked providing for other city departments to understand updates to airport facilities or procedures.

    City finance department, risk department, and technology department have internal continuity practices, however, practices or written plans are not coordinated with the airport specifically outside of being a core function for continued operations for the entire City.

12. How often are current airport business continuity practices, checklists, tools, or processes reviewed or updated?

    LAL Business Manager routinely interacts with City Risk Manager to review potential issues.

13. What are the benefits to having some level of business continuity practices?

Important to have AEP. Providing training and utilizing the NIMS/ICS principles is valued. In the event of an airport emergency disruption all employees and responders speak the same language facilitating efficient recovery. This also provides a benefit when handling potential non-emergency disruptions. LAL will coordinate these recovery practices in a similar manner through use of coordinated action plans, etc.

It is difficult to formally plan for all types of disruptions, there may be some advantages in certain situations to remain fluid and proceed with recovery actions utilizing well practiced processes. Other disruptions would likely benefit from a formal written BCP.

14. What advice would you have to a small airport to develop business continuity practices or when contemplating creating a formal BCP?

Look at internal practices. Assess for weaknesses or need for updates. Airports contemplating development of a BCP would benefit at looking at what other airports are doing with regard to BCP. Critical to build relationships and ensure that off-site city departments or other stakeholders are involved in the planning process.

Interview Report 9—Duluth International Airport (DLH)

Interview Guide
(For Airports Having No Business Continuity Plans – BCPs)
ACRP Synthesis S01-11

Case Example: *Duluth International Airport (DLH)*

Date: *October 6, 2015*

This Case Example is based on an interview with Mr. Tom Werner, executive director, on October 6, 2015; his responses to the survey; and airport information from FAA reports.

Airport Characteristics

NPIAS category: *Non-hub–primary*

Governance: *Airport authority*

Number of operations (2014): *55,115 annual*

Number of airport employees: *16*

The purpose of this interview is to gather detailed information to be used as a Case Example in support of the above referenced study. Interview responses together with responses given to the previously submitted survey will provide valuable information about your business continuity planning practices and how effective those practices have been in bringing the airport back to normalcy from a broad range of disruptions.

1. How do you manage bringing the airport back to normalcy after a disruption?

The Duluth Airport Authority (DAA) shared the disruption of freezing rain events around the busy travel time of Christmas. This disrupts flights (cancelations/delays) and traveler's schedules. The DAA staff assumes control of the situation and manages resources to correct as soon as possible.

2. Is there a key person/group involved in bringing the airport back to normalcy?

The DAA Operations Director, Airside Manager and Airfield Foreman are the key persons. The Airline Station Manager, Fixed Base Operator and Air Traffic Control Tower (ATC) may be included as a group for coordination efforts.

3. Has there been a critical incident where bringing the airport back to normalcy was a challenge?

   The ice event may disrupt the airport operations up to a couple of hours. Would a BCP/COOP have helped in this situation? It may but the DAA relies on its current Snow and Ice Control Plan and the Irregular Operations Plan (IROPS).

4. Describe the process involved.

   When the DAA experienced heavy ice on the airfield, their Snow and Ice Control Plan was followed. They begin by notifying the appropriate tenants and communicate with DLH ATC and issue the appropriate Notice to Airmen (NOTAM). The next step required them to address the ice. They switch normally used plow blades to a serrated blade to cut grooves into the ice in an attempt to soften or possibly break up. Sand is also applied in conjunction with an FAA approved dry chemical Cryotech NAAC®. The process is repeated until the ice breaks and is safely removed. During this process, the airline passengers are kept informed of schedule changes.

5. What kind of coordination is used?

   DAA staff communicates with DLH ATC, airline dispatch, airline local station manager.

6. What kind of cost is incurred?

   There are little direct coordination costs involved with this disruption. Direct costs relate to the snow/ice removal equipment: diesel, manpower, sand/NAAC.

7. How effective have current practices been regarding business continuity without plans and programs?

   For the most good. But they do rely on current FAA plans such as the snow and ice control plan and IROPS.

   How do you assess the effectiveness?

   Number of cancelations and significant delays measured, number of flight operations lost, and possibly the number of passengers re-routed to other airports.

8. What was the most recent significant airport disruption in the last five years?

   Airshows and VIP visits limiting certain airfield operations to the public.

   During this disruption, what recovery priority determinations were made (perhaps informally)?

   During these times, there is not much in recovery planning since they are scheduled events and will end at a pre-determined time.

   What were the essential, important, convenient, and non-essential functions impacted in this case?

   The Airshow or VIP event is determined to be the most essential with scheduled airline service adjusted/ accommodated to ensure little to no disruption of service. Non-essential functions would probably be general aviation operations unable to operate during these times. However, these events are generally scheduled in advance and coordinated through the NOTAM system.

   For each of these impacted airport functions, what was the maximum downtime in this case?

   VIP visits vary but generally a few hours. Airshows will affect a full weekend.

   How were human resources, physical plant and equipment, technology, processes, and other resources impacted in this case? How were they handled?

   Airshows and VIP visits require additional manpower to meet the event schedules. The airfield operations will be limited and landside issues such as spectator and parking facilities will be modified or created.

9. Are there any core airport functions that are contracted to commercial tenants or other agencies that may be outside the control of the airport? If yes, does the airport utilize any process, lease provision, or operating understanding with these entities that address dealing with recovering from disruptions?

   Yes. The DAA has an agreement with the 148th Air National Guard unit to provide emergency response services on the airfield. There is a use agreement between the DAA and the 148th to provide those services for the airport.

10. Have there been any other stakeholder coordination practices that have been effective in dealing with airport business disruptions?

    The DAA coordinates on a routine basis with affected airport tenants. Coordination meetings will be scheduled as necessary.

11. Are any core airport support functions covered by external or departmental business continuity practices off site? For example, if the airport is municipally owned, payroll functions may be handled at an off-location finance department.

    The City of Duluth provides payroll services.

12. How often are current airport business continuity practices, checklists, tools, or processes reviewed or updated?

    Current plans are generally reviewed annually.

13. What are the benefits to having some level of business continuity practices?

    Contingency planning assists staff with efficiency in demanding times. It provides guidance to determine the types and quantities of resources that may be needed.

14. What advice would you have to a small airport to develop business continuity practices or when contemplating creating a formal BCP?

    Reach out to larger airports or agencies that may have them in place and curtail the plan to meet the smaller airport's operations.

APPENDIX G

Sample 1—Airport Improvement Program Grant Oversight Risk Assessment, Sponsor Certification Checklist

FAA
Airports

AIP Grant Oversight Risk Assessment

Sponsor Certification Checklist

Scope

This checklist is for use by airport sponsors, who should review and complete all form sections below.

Purpose

This checklist helps the FAA decide if an airport sponsor has policies, procedures, and information technology infrastructure supporting the internal controls below. Once you complete the checklist, sign it and return a copy to the relevant FAA Field Office.

Airport sponsor's full name:

_____

Airports owned or operated by the sponsor:

Checklist

Section 1 – Sponsor Policies and Procedures

Check any box below that applies to your internal controls environment.

- ☐ **Procurement.** The sponsor has a documented Procurement Process.
  - ☐ Procurement process document outlines the roles and responsibilities of each individual involved in processing procurement transactions. This section should also include specific segregation of duties of individuals' responsibilities and necessary authorizations and approvals.
  - ☐ Procurement process document specifies which individuals have been authorized to approve procurement transactions.
  - ☐ Procurement process document outlines data retention requirements.
  - ☐ Procurement process document outlines purchase card usage and authorizations (if applicable).
  - ☐ Procurement process document outlines processes for goods and services receipt and acknowledgement.

- ☐ Procurement process document outlines processes for invoice reconciliations and exception handling.
- ☐ Procurement process document has been reviewed and updated within the last 3 years.

☐ **Grants Oversight.** The sponsor has a documented Grants Oversight Process.

- ☐ Grants Oversight process document outlines specific steps for gathering documents requested for grant applications. This includes the scope of project, cost estimates, projected timelines of completion, and necessary internal approvals. Process document also includes steps for validating the accuracy of requested documentation and process for submission to the grantor.
- ☐ Grants Oversight process document outlines roles and responsibilities for managing grant funds. This includes coordination and communication of progress reports and completion schedules with the grantor in accordance with grant specifications. Process document also includes detailed steps regarding the oversight, management, and proper usage of funds toward the awarded project.
- ☐ Grants Oversight process document outlines specific steps for grant closeout. This includes the preparation and submission of required FAA forms, progress reports, and other documents required by grant award. Process document also includes steps for validating the accuracy of required forms prior to submission to the grantor.
- ☐ Grants Oversight process document outlines specific steps for grant records management. This includes invoice and receipt retention, maintenance of all progress reports, time schedules, and any additional documentation in accordance with grant specifications.
- ☐ Grants Oversight process document has been reviewed and updated within the last 3 years.

☐ **Disbursement.** The sponsor has a documented Disbursement Process.

- ☐ Disbursement process document outlines the specific steps involved in the disbursement process. Steps should document the support required in order to make a disbursement. Example items include purchase order, invoice, and other necessary authorizations.
- ☐ Disbursement process document outlines which individuals have been authorized to release disbursements. This section should also include specific segregation of duties of individuals' responsibilities and necessary authorizations and approvals for disbursing funds.
- ☐ Disbursement process document outlines procedures for reconciliations.
- ☐ Disbursement process document has been reviewed and updated within the last 3 years.

- ☐ **Business Continuity.** The sponsor has a documented Business Continuity Process.
  - ☐ Business Continuity process document outlines contingency plans in the case of disaster.
  - ☐ Business Continuity process document outlines contingency plans in the event of resource turnover. This includes the loss of 2 or more key resources heavily involved in normal business operations, including leading teams, approving expenditures and procurement, and overseeing Sponsor projects.
  - ☐ Business Continuity process document outlines a list of emergency contacts in the case of disaster.
  - ☐ Business Continuity process document outlines data retention requirements (i.e. data backup requirements, storage requirements, etc.).
  - ☐ Business Continuity process document specifies instructions for resuming operations in the case of disaster.
  - ☐ Business Continuity process document has been reviewed and updated within the last 3 years.

Section 2 – Sponsor Information Technology Infrastructure

Check the **one** response below that **best** describes the current status of the Information Technology environment at the sponsor's airports named at the top of this form.

- ☐ **Sponsor uses only manual methods to conduct business** (Some examples follow)
  - Sponsor communicates with contractors via phone call or manual hand-written letters.
  - Sponsor keeps documentation by manual paper trail and uses storage cabinets.
- ☐ **Sponsor uses a mix of manual and electronic methods to conduct business** (An example follows)
  - Sponsor keeps some documentation in printed form and some as electronic files.
- ☐ **Sponsor uses only electronic methods to conduct business** (Some examples follow)
  - Sponsor keeps all documentation as electronic files.
  - Sponsor makes maximum use of electronic email and attachments.
  - Sponsor uses web conferencing software for online meetings.

Sponsor Certification & FAA Acceptance

I certify that the above information regarding the sponsor named above is accurate and represents the airport sponsor's existing internal controls.

Airport sponsor's signature: _____ **Date**: _____

I accept the certification submitted by the airport sponsor and believe it to be accurate based on my professional expertise.

Responsible FAA staff signature: _____ **Date:** _____

APPENDIX H

Sample 2—Continuity of Operations Planning Template Used by Seattle–Tacoma International Airport

Port of Seattle

Continuity of Operations Prepared

Last Updated

[DEPARTMENT NAME]

Continuity of Operations Plan

Last Revised: **[DATE]**
Revised by: **[NAME]**

Purpose

To ensure the **[DEPARTMENT]** department is operational at the essential functions level as quickly as possible to ensure recovery and the continuing operation of the Port of Seattle.

Scope

This Continuity of Operations Plan (COOP) outlines procedures to be followed when work group operations are interrupted and/or basic infrastructure is compromised.

Plan Administration & Maintenance

This plan will be revisited annually by **[PRIMARY COOP CONTACT] or [SECONDARY COOP CONTACT]** to ensure it is kept current. In addition whenever there is a staff change in our department, I will remove contact information for those who no longer work in our department and add contact information for those who do. I will also ensure that all staff in my department are aware of this plan and know how to access it. All new employees will be given a brief overview of COOP and our departments plan. For a copy of the current plan, group presentations, or any other additional questions, please contact *Kristine Ball in the Emergency Management Department*.

Port of Seattle
Continuity of Operations Prepared

Last Updated

Section 1: Succession/Delegation of Authority

Order of Succession/Delegation of Authority: in the **[DEPARTMENT]** department is as follows:

Succession:	**Name:** *First Last, Position*	**Role/Responsibility:**	**Contact Information:**	**Responsibility Area** *[location if applicable]*

Port of Seattle
Continuity of Operations Prepared

Last Updated

Section 2: Essential Functions / System Needs

Essential Functions are identified as those tasks that your work group conducts to ensure Business Continuity for the Port or dependent businesses; some of which depend upon the availability of specific technology systems, vital records, or data sources.

When completing the matrix below, include a complete list of systems required and specify the primary support entity for that system using the coding below:

Support Entities:

- I - Information and Communication Technology (ICT)
- M – Aviation/Seaport Maintenance
- V – Vendor
- W - External Web Service Provider
- O - Other
- U – Unknown

Essential functions for **[DEPARTMENT]** include: *(list in order of priority)*

Note: Restoration of common computing services (such as SharePoint, Outlook, Internet) will typically occur enterprise-wide				**CRITICALITY** **H – High** **M – Medium** **L - Low** **NA – Not Applicable**			
	Essential Function / Business Process	**Computer Systems Used (If Any)**	**Support Entity**	**Revenue Loss**	**Life Safety**	**Operational Impact**	**Regulatory Compliance**
1							
2							
3							
4							
5							
For the **essential functions** above, please specify any **Non-Computerized** objects or items required to make use of these systems during the first operational period. For example: Paper documentation, documents in file cabinets, desk-top devices, reference manuals, etc.							

Port of Seattle
Continuity of Operations Prepared

Last Updated

Section 3: Staffing and Resource Requirements

List the names of each Essential Employee in your work group that are needed to accomplish each **Essential Function listed in Section 2**.

Personnel and/or critical resources for **[DEPARTMENT]** include:
(Include any process or procedure necessary to acquire these resources)

Name - Position	Contact Info	Essential Function(s)	Required Resources

Port of Seattle
Continuity of Operations Prepared

Last Updated

Section 4: Facilities Planning

In the event that your **Office** cannot be occupied due to situation or damage, the backup plan for relocation of essential personnel and business continuity should be described below:

Essential Personnel and Contact Info	Primary Relocation Space	Secondary Relocation Space	Are accommodations in place? (Yes/No)		Have you tested this plan? (Yes/No)		Are you sure the space is available upon request? (Y/N)	

Last Updated

Section 5: Communciations Planning

Employees of the **[DEPARTMENT]** workgroup will communicate as follows
(consider the items listed below when creating your plan)

Who determines when to activate the COOP plan?

[ANSWER]

How is staff notified?

[ANSWER]

What is your back up if phone service is out?

[ANSWER]

How will you communicate during the course of the event?

[ANSWER]

How will you recall staff?

[ANSWER]

What are the pay implications for your staff?

[ANSWER]

Who/How will you track extra expenses for reimbursement if a Disaster is declared?

[ANSWER]

Port of Seattle
Continuity of Operations Prepared

Last Updated

Contact Information

Please provide a link here to your SharePoint site with internal contact information if you wish to not provide the information on a company wide basis in the table below. **[SHAREPOINT CONTACT INFORMATION]**

POS Dispatch/ Business Line	
ICT	
Employee Hotline	
Employee Services Homepage	www.portseattle.org/about/employeeservices

Name	Primary Contact Method	Secondary Contact Method	Other Contact Method	Special Training Certs/Licenses

Last Updated

Section 6: Key Business Contacts

Include vendors, tenants and other businesses that you have contracts with

For each contact listed include both a short description of what the vendor provides as well as instructions for how to order services (Account/Contract info)

Product / Service	Company Name	Contact Name	Phone Number	E-mail Address	Account Info

Port of Seattle
Continuity of Operations Prepared

Last Updated

Section 7: Evacuation

Each workgroup needs to know their evacuation plan and meeting area

- How is your workgroup notified to evacuate?
- Who do you contact if there is a need to evacuate your work area?
- How do you account for all of the employees in your workgroup?
- How do you know it is safe to reoccupy the facility?

Evacuation Sites		
Work Area/ Location	**Primary Evac Site**	**Secondary Evac Site**
Toll booths, Parking Terminal Building	*Northeast corner of the lot. (Supervisor may open toll gates to allow customers in vehicles to exit the area quickly).*	*Go to main terminal, North Lot, or as determined by Incident Command.*
Parking garage including Ground Transportation. Primary or secondary assembly area depending on your location	*(Depending on location at time of incident, go to the north or south lot. Bus Drivers – maintain radio contact and wait for instructions)*	*South or North lot.* *Bus Drivers – maintain radio contact and wait for instructions*
Airport Office Building	*Proceed to location as directed by the public address system. If the need to evacuate is immediate and no instructions are provided then proceed to primary assembly area located in the …..*	
Combined Communications & Control Center		
Carpenters, Auto Shop, Field Crew, Painters		
Boiler Room, Carpenter Shop (Load Dock)		
Conveyor Shop		
Electric Shop		
Credential Center Office, Mezzanine		
Load Dock		
Shelters and Vehicles	*Staffed locations remain at shelter or vehicle if safe to do so, or move to a safe distance from impacted area.*	*Keep a safe distance from impacted area while maintaining visual contact of entry control gates.*

Port of Seattle
Continuity of Operations Prepared

Last Updated

Section 8: COOP at a Glance

Essential Function	Required Personnel	Equip & Systems	Vital Records & Databases

APPENDIX I

Sample 3—FEMA Continuity Assistance Tool Overview

CONTINUITY ASSISTANCE TOOL OVERVIEW

PURPOSE

This Continuity Assistance Tool (CAT) provides guidance and assistance for States, Territories, Tribal, and Local Government Jurisdictions (collectively referred to herein as "organizations") to identify continuity program strengths and areas for improvement.

BACKGROUND

National Security Presidential Directive-51/Homeland Security Presidential Directive-20 (NSPD-51/HSPD-20) *National Continuity Policy* was issued by the President to establish and maintain a comprehensive and effective national continuity capability. The National Continuity Policy Implementation Plan (NCPIP) builds upon the Policy and provides guidance to executive departments and agencies and non-Federal Governments (including State, local, tribal, and territorial governments) on identifying and carrying out their Essential Functions to lead and sustain the Nation during a catastrophic emergency. The NCPIP also encourages coordination among Federal, State, local, tribal, and territorial governments and the private sector to achieve a comprehensive and integrated continuity capability. Through this collaborative effort, our national security posture can be enhanced to enable a more rapid and effective response to, and recovery from, a national emergency.

The Federal Emergency Management Agency (FEMA), in coordination with its non-Federal partners developed Continuity Guidance Circular 1 (CGC 1), *Continuity Guidance for Non-Federal Governments, States, Territories, Tribes, and Local Government Jurisdictions,* in July 2013 to provide operational guidance to implement the NCPIP. This assistance tool captures the key elements necessary for organizations to create a comprehensive continuity program and plan, as described in CGC 1, and provides a method to review those continuity programs and plans.

Continuity programs and operations are fundamental practices that allow critical services to remain available under all conditions. The CAT was created to establish industry-wide benchmarks for the management, overall performance, and readiness of organizations to respond to a continuity event. The tool allows for organizations throughout the United States to examine their continuity capability by utilizing an easy-to-use national and uniform method to identify gaps in continuity programs and justify the funding and resources needed for improvements. Through identifying and filling these gaps, viable continuity programs can be established to help keep organizations functioning during emergencies.

The CAT is useful for all organizations regardless of location, size and status of existing continuity programs or plans. The tool describes the elements necessary to establish and maintain a viable continuity capability and can assist with establishing a foundation and framework for building a comprehensive program. If an organization does not have an existing program, the CAT can be used as a checklist to create an initial continuity plan and program.

BENEFITS OF THE CAT

The CAT:

1. Allows for comprehensive continuity program review.
2. Defines/refines continuity program baseline for strategic planning to correct deficiencies and achieve the required capabilities.
3. Provides program orientation for new staff members and leaders.
4. Creates a framework for budget, staff, and resource justification.
5. Enables the development of plans to rectify deficiencies.

ABOUT THE CAT

The CAT process is designed to guide the operational readiness and capabilities of organizations to help ensure the performance of Essential Functions and services under any circumstance. The tool is divided into two continuity categories: (1) Elements of a Viable Continuity Capability and (2) Continuity Program Foundation. These categories are further grouped into **Continuity Management Functions (CMF)** that describes specific key components of continuity.

1. ELEMENTS OF A VIABLE CONTINUITY CAPABILITY

Continuity Guidance Circular 1 describes ten elements that are necessary, to establish and maintain a comprehensive and effective continuity capability. The ten elements of a viable continuity capability are:

- 1.1 Essential Functions
- 1.2 Orders of Succession
- 1.3 Delegations of Authority
- 1.4 Continuity Facilities
- 1.5 Continuity Communications
- 1.6 Essential Records Management
- 1.7 Human Resources
- 1.8 Test, Training, and Exercise Program
- 1.9 Devolution of Control and Direction
- 1.10 Reconstitution Operations

2. CONTINUITY PROGRAM FOUNDATION

An organization's resiliency is built upon a foundation of continuity planning and continuity program management. This foundation is comprised of (1) plans and procedures to help guide leadership during a crisis, (2) risk management initiatives to identify, control, and minimize the impact of uncertain events, (3) adequate budgeting and resource allocation to support resiliency efforts, and (4) operational phases that help guide implementation of the continuity plan during various phases of a continuity event.The four supporting components of a Continuity Program Foundation are:

- 2.1 Program Plans and Procedures
- 2.2 Risk Management
- 2.3 Budgeting and Acquisition of Resources
- 2.4 Continuity Plan Operational Phases and Implementation *(included as the separate Appendix A due to its unique nature)*

These CMFs are described in detail in CGC 1 (see Appendix B: References), and are summarized on pages v and vi. The guidance document addresses common attributes of continuity programs and provides detailed suggestions of how to create a viable continuity capability. However, some CMFs may not be appropriate for all organizations and may be excluded if they are not applicable.

Each CMF is subdivided into **Attributes**, and these attributes are further subdivided into **Characteristics. Attributes** are broad criteria by which the performance of a CMF in a particular area can be addressed. **Characteristics** are detailed criteria that further clarify the area being assessed.

The CAT questions are subjective in nature. Therefore, it is reasonable to expect some variability from organization to organization when characteristics are reviewed. This flexibility is acceptable, since no two organizations' continuity programs are identical.

Organizational leadership and other personnel supporting continuity plans and programs are encouraged to enroll in the Continuity of Operations Excellence Series. The series provides a curriculum for certification as either a Professional Continuity Practitioner (Level I) or Master Continuity Practitioner (Level II). This training will assist organizations develop and execute continuity functions. The Continuity Practitioner requirements list can be found in Appendix C. Additional continuity training information can be found at http://www.fema.gov/courses.

APPENDIX J

Sample 4—Continuity of Operations Planning Worksheets Used by Dallas/ Fort Worth International Airport

CONTINUITY OF OPERATIONS WORKSHEET

Department: _____

Division: _____

Prepared by: _____

Date: _____

Work Phone: _____

I. Please list each discrete function performed by this division/section of your respective department. For example: street maintenance, water and sewer repair, building inspection field services, fire rescue, traffic enforcement, etc. Attach additional pages if necessary.

Function

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

II. Next, list the above functions in ranked order from most to least important. After establishing a rank order for the functions, place to the right of each function one of the following criticality tiers (use below definitions to determine tier) and performance frequency interval (e.g., daily, weekly, etc.).

Tiers		
Tier Objective	Ratings	Recovery Time
1a	**CRITICAL** These functions have a direct and immediate effect on the airport's capacity to preserve life safety and protect property. These functions preserve the institution of the airport through command and control.	Between 0 and 4 hours
1	**URGENT** Can be delayed until Tier 1 activities are operational.	Between 4 and 24 hours
2	**IMPORTANT** Can be delayed until Tier 1 and 2 activities are operational.	Between 24 and 72 hours
3	**NECESSARY** Can be delayed until Tier 1, 2, and 3 activities are operational.	Between 72 hours and 1 week
4	**DELAYED** These functions can be delayed until Tiers 1, 2, 3, and 4 are operational.	Between 1 week and over 30 days

II (Continued).

Rank	Function	Tier	Frequency
Ex. 1	*Answer 9-1-1 and Non-emergency Calls for Police, Fire, EMS, and Security Services*	1a	Daily
1			
2			
3			
4			
5			
6			
7			
8			

Example 2: 2/ Filing FAA required, weekly status reports/(Necessary)/Weekly

3/ Public Relations (PR) visits to local schools/(Delayed)/Monthly

Note: for further guidance on characterizing programs by "criticality tiers" see last page of this document.

Please provide a brief description of those functions that you categorized as either critical or urgent. Then, in the right-hand columns, specify (1) how quickly you would need to resume that function following an emergency; (2) the peak time period for that function; and (3) the legal and/or licensure requirements (if any) that mandate/regulate the provision of that function.

Function	Description	Recovery Time Objective	Peak Time Period	Legal References and/or Licensure Requirements
Ex. 1 *Answer 9-1-1 and Non-emergency Calls for Police, Fire, EMS, and Security Services*	*Our communications center answers all incoming 9-1-1 and non-emergency lines for the DFW Airport DPS. We also receive calls relating to other airport departments, both during and after working hours.*	*<4 hours*	*24 hours per day/7 days per week*	*Yes–Federal and state laws, local ordinances, DFW DPS directives, SOPs and memos, and County 9-1-1 regulations. Yes–Six weeks with a communications training officer upon hiring; EMD certification; TDD training every six months, TCLEOSE Telecommunicator License.*

For those functions that you categorized as either critical or urgent, provide a description of the interim process (if any) that the function's personnel would use in an emergency situation so as to meet the function's essential objectives. To the right of that description, describe the resource requirements that would be needed to implement the interim process.

Function	Description of Interim Process	Resource Requirements
Ex. 1 Answer 9-1-1 and Non-emergency Calls for Police, Fire, EMS, and Security Services	*In the event of a loss of 9-1-1 phone service, there is a formal agreement that the Dallas police communications dispatch center will be routed our 9-1-1 calls.*	*In the event that our 9-1-1 lines should be routed to Dallas dispatch, the DFW DPS dispatch center would need to send one dispatcher to Dallas with a handheld radio or cell phone to assist Dallas in answering our lines.*

III. Departmental Succession During an Emergency

Please identify the department's highest-ranking official by name and title. Then, assign the order of succession should that official have an extended absence. (Note: please make sure to include potential successors' respective names and titles.)

Position	Title, Name
Highest Ranking	
Second-in-Succession	
Third-in-Succession	

IV. Key Personnel

Specifically identify those positions for which there is only one incumbent (i.e., jobs for which this department has only a single employee).

Job Title	Employee Name	Primary Phone	Secondary Phone

Example: Admin Assistant / John Smith / 555-555-5555 / 777-777-7777

V. For each position above, describe which current employee (if any) is cross-trained and capable of performing the basic functions of the position for a period of 60 days.

Job Title	Employee Name	Primary Phone	Secondary Phone

VI. Minimum Staffing per Shift to Continue Basic Operations

For each function listed in part II as either critical or urgent, state the minimum number and type of employees per shift that will allow continuation of at least a basic level of service (skeleton crew).

Function	Fewest Type and # of Personnel Needed
Ex. 1 Answer 9-1-1 and Non-emergency Calls for Police, Fire, EMS, and Security Services	*Telecommunicator, 2*

VII. Essential Equipment

For each function listed in part II as either critical or urgent, please list the corresponding equipment (including vehicles and computers) your personnel would need in order to carry out the particular function. (Note: see example below.)

Ex. 1

Name of Function:	*Answer 9-1-1 and Non-emergency Calls for Police, Fire, EMS, and Security Services*

Equipment	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number
9-1-1 Phone	2	AT&T tModel 3000	Positron Lifeline	AT&T Resolution Center Representative	
Alarm Monitor	1	Honeywell, at either main or backup center	Honeywell EBI	John Doe w/ DPS	

Name of Function: _____

Equipment	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number

Name of Function: _____

Equipment	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number

Name of Function: _____

Equipment	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number

Name of Function: _____

Equipment	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number

t

Name of Function: _____

Equipment	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number

VIII. Essential Software

For each function listed in part II as either critical or urgent, please list the corresponding software your personnel would need in order to carry out the particular function. (Note: see example below.)

Ex. 1

Name of Function:	*Answer 9-1-1 and Non-emergency Calls for Police, Fire, EMS, and Security Services*

Software	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number
TC911	2	Maintained, updated by TC911	Tarrant County	Jon Doe	
Computer Aided Dispatch	2	Tiburon 2000	Tiburon	Adam Smith w/ DPS	

Name of Function: _____

Software	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number

Name of Function: _____

Software	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number

Name of Function: _____

Software	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number

Name of Function: _____

Software	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number

Name of Function: _____

Software	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number

IX. Essential Other

For each function listed in part II as either critical or urgent, please list the corresponding miscellaneous items your personnel would need in order to carry out the particular function. (Note: see example below.)

Ex. 1

Name of Function:	*Answer 9-1-1 and Non-emergency Calls for Police, Fire, EMS, and Security Services*

Other	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number
Office Supplies	As needed	NA	OfficeMax	Office Max Representative	

Name of Function: _____

Other	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number

Name of Function: _____

Other	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number

Name of Function: _____

Other	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number

Name of Function: _____

Other	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number

Name of Function: _____

Other	Minimum QTY	Manufacturer Details, Model, or Version	Vendor Name	Contact Name	Contact Phone Number

X. Vital Files, Records, and Databases

For each function listed in part II as either critical or urgent, please list the corresponding vital files, records, and databases your personnel would need in order to carry out the particular function. (Note: see example below.)

Ex. 1

Name of Function:	*Answer 9-1-1 and Non-emergency Calls for Police, Fire, EMS, and Security Services*

Vital Files, Records, and Databases:				
Name	Format	Backed Up?	Available at Alternate Location(s)?	Notes (Description of Vital Records, Databases, or Files)
Resource Book	Hardcopy	Yes, to division laptop	Yes, on Airport LAN	Frequently used phone numbers, guidelines not found elsewhere, and other miscellaneous information
Communications Phonebook	Hardcopy	Yes, to division laptop	Yes, on Airport LAN	Comprehensive DPS personnel contact information and DFW tenant and external governmental agency contact information

Name of Function: _____

Vital Files, Records, and Databases:				
Name	Format	Backed Up?	Available at Alternate Location(s)?	Notes (Description of Vital Records, Databases, or Files)

Name of Function: _____

Vital Files, Records, and Databases:				
Name	Format	Backed Up?	Available at Alternate Location(s)?	Notes (Description of Vital Records, Databases, or Files)

Name of Function: _____

Vital Files, Records, and Databases:				
Name	Format	Backed Up?	Available at Alternate Location(s)?	Notes (Description of Vital Records, Databases, or Files)

Name of Function: _____

Vital Files, Records, and Databases:				
Name	Format	Backed Up?	Available at Alternate Location(s)?	Notes (Description of Vital Records, Databases, or Files)

Name of Function: _____

Vital Files, Records, and Databases:				
Name	Format	Backed Up?	Available at Alternate Location(s)?	Notes (Description of Vital Records, Databases, or Files)

XI. Additional Contacts and Vendors

For each function listed in part II as either critical or urgent, please list the corresponding contacts and vendors your personnel might need to contact in order to carry out the particular function. (Note: see example below.)

Ex. 1

Name of Function:	*K9/EOD (Operations)*

Additional External Contacts and Vendors:					
Company/External Contact Name	Main Phone	Contact Name	Contact Phone	E-mail Address	Description
DPS Canine Veterinary Svcs	555-554-5555	VCA Metroplex Animal Hospital	555-555-5555	vcahospitals.com	Veterinary service provider

Name of Function: _____

Additional External Contacts and Vendors:					
Company/External Contact Name	Main Phone	Contact Name	Contact Phone	E-mail Address	Description

Name of Function: _____

Additional External Contacts and Vendors:					
Company/External Contact Name	Main Phone	Contact Name	Contact Phone	E-mail Address	Description

Name of Function: _____

Additional External Contacts and Vendors:					
Company/External Contact Name	Main Phone	Contact Name	Contact Phone	E-mail Address	Description

Name of Function: _____

Additional External Contacts and Vendors:					
Company/External Contact Name	Main Phone	Contact Name	Contact Phone	E-mail Address	Description

XII. Primary and Alternate Locations

Where does your organizational unit (e.g., department, division, etc.) normally operate out of? In the event that your organizational unit cannot operate out of its normal location, where would it relocate to? (Note: relocation sites should, if at all possible, be able to provide the organizational unit with all the space and amenities necessary for the organizational unit to perform its critical and urgent functions.)

Location	Address
Ex. 1 *Primary*	*EOC/AOC, 2902 E. 28th St., DFW Airport, TX 75261*
Primary	
Alternate 1	
Alternate 2	

XIII. Authorization for Purchases/Payments

List all persons in this department authorized to approve purchases and to pay invoices. Are there at least three people (3 deep concept) authorized and trained for these critical functions?

Name	Title

XV. Emergency Contact Information

Is there a current list of all departmental employees with accurate home addresses and contact information? Is there a current list for other critical contacts (e.g., suppliers, other departments, outside agencies) for your department?

If so, please complete the following:

Type of Contact List (e.g., employees, contractors, etc.)	Who Presently Possesses and/or Maintains That List?

XVI. Emergency Notification Procedure

Please describe the procedure that your organizational unit would use in order to contact and/or recall employees in the event of an emergency.

_____

_____

_____

_____

XVII. Select Internal Call List

Lastly, please provide the emergency contact information for all of your division's managers and up, all the way up to your department Director. Please provide that information in the below spreadsheet.

First Name	Last Name	Title	Home Phone Number	Alternate Phone Number

Guidance on characterizing programs by criticality tiers (excerpt from current draft of COOP Basic Plan)

2.3.1 Guidelines/Criteria for the Prioritization of Mission Essential Functions

Mission essential functions enable the airport to exercise civil authority, maintain safety and well-being, and sustain the airport's industrial/economic base in an emergency.

To help prioritize functions, the airport has determined recovery time objectives (RTOs) for the airport's key functions. The RTO is the maximum period that a function or service can be interrupted before it must be restored to an acceptable level of operation.

The airport has established the following RTOs based on time criticality:

- Essential Service 1a - Critical recovery required between 0–4 hours
- Essential Service 1 - Urgent recovery required between 4–24 hours
- Essential Service 2 - Important recovery required between 24–72 hours
- Essential Service 3 - Necessary recovery required between 72 hours–1 week
- Essential Service 4 - Delayed recovery required between 1 week and over 30 days

Essential Service 1a: Critical Recovery 0–4 Hours

Restoring a minimum level of services must be initiated immediately to ensure continuous operation.

- Preserve life safety:
  - Ensure that employees and airport staff receive basic services of food, water, shelter, and emergency medical care.
  - Provide for the physical security of airport board employees and ensure that they receive basic emergency communications and services necessary to protect life.
  - Provide basic public safety services to airport employees necessary to protect life and maintain civil order.

- Command and control:
  - Ensure departments/personnel with emergency response functions operate under the Incident Command System (ICS) and NIMS compliance requirements.
  - Maintain communication to all departments within the DFW Airport.

- Airport board:
  - Maintain airport leadership and decision-making integrity.
  - Ensure that the airport's financial/procurement system supports the acquisition of supplies necessary to support mission-essential functions.
  - Secure vital records.
  - Notify senior officials required for the activation of the COOP plan and assign them to their reporting location.
  - Maintain operation of communication systems necessary to ensure effective communication to preserve life safety, protect property, and maintain governance.

Essential Service 1: Urgent Recovery 4–24 Hours

- Essential Service 1 functions must reach an operational status within 4 to 24 hours of COOP plan activation. Essential Service 1 functions must be able to be sustained for at least 30 days.

Essential Service 2: Important Recovery 24–72 Hours

- Essential Service 2 functions must reach an operational status within 24 to 72 hours of activation. Essential Service 2 functions must be able to be sustained for at least 30 days.

Essential Service 3: Necessary Recovery 72 Hours–1 Week

- Essential Service 3 functions support Tier 1a and 1. It is not necessary for Essential Service 3 operations to reach full operation within the first week following a disaster.

Essential Service 4: Delayed Recovery Between 1 Week to over 30 Days

- Essential Service 4 functions can be postponed until all functions in Tiers 1a, 1, 2, and 3 are fully operational.

Recovery Time Objectives Matrix

Tiers		
Tier	Ratings	Recovery Time Objective (RTO)
1a	**CRITICAL** These functions (or the lack thereof) have a direct and immediate effect on the airport's ability to preserve life safety and protect property. These functions preserve the institution of the airport through command and control.	Between 0 and 4 hours
1	**URGENT** Can be delayed until Essential Services 1a activities are operational.	Between 4 and 24 Hours
2	**IMPORTANT** Can be delayed until Essential Services 1a and 1 activities are operational.	Between 24 and 72 Hours
3	**NECESSARY** Can be delayed until Essential Services 1a, 1, and 2 activities are operational.	Between 72 hours and 1 Week
4	**DELAYED** These functions can be delayed until Essential Services 1a, 1, 2, and 3 are operational.	Between 1 week to over 30 days

When assigning an RTO for a mission essential function, consider the interdependencies of that function across other mission essential functions. If a certain function is necessary to keep another function operating, then it should have a shorter RTO. Such functions include but are not limited to IT systems, building maintenance, and human resources. Appendix B includes a list of mission essential functions sorted by their respective RTOs.

APPENDIX K

Sample 5—Continuity of Operations Planning for Minneapolis-St. Paul International Airport

CONTINUITY OF OPERATIONS PLANNING (COOP)

COOP Overview

Continuity of Operations is an initiative to ensure that the MAC is able to continue to perform its essential functions under a broad range of circumstances. It is an effort within individual departments and agencies to ensure continuity of their essential functions.

The COOP must:

- Be capable of being implemented with and without warning
- Be operational no later than 12 hours after activation
- Be capable of maintaining sustained operations for up to 30 days
- Include regularly scheduled testing, training, and exercising of personnel, equipment, systems, processes, and procedures used to support MSP during a COOP event
- Identify alternate facilities in areas where the ability to initiate, maintain, and terminate COOP is optimal
- Give consideration to options such as telecommuting, work-at-home, and shared facilities

During a COOP situation, employees will need to focus on maintaining essential functions. This focus will be disrupted as the employees are also concerned about their families' safety and security. MAC management should encourage all personnel to plan for their families' safety and security during COOP operations. All personnel should ensure their families have a "Go Kit" that is readily accessible in case of an emergency. At a minimum, the family Go Kit should include personal items and necessities (including medicines), financial and legal documents that cannot be replaced easily, and the name and phone number of an out-of-area contact.

During an emergency, employees and their families will appreciate knowing that the MAC is concerned for safety. The COOP program should include:

- Processes for activating an emergency information call-in number for employees to get information about airport operations, pay and benefits, and other items of interest
- A process for accounting for and tracking all employees. As the COOP situation progresses, it may be possible to expand operations. It is important to be able to account for and track employees so they can be reached if needed.
- Provisions for providing guidance and assistance to employees and their families. Anticipating questions and providing guidance will help employees focus on their work, while being assured that their families are taken care of.

Elements of a Viable COOP

1. Essential functions
2. Delegations of authority
3. Succession planning
4. Alternate facilities
5. Interoperable communications
6. Vital records and databases
7. Human capital

8. A test, training, and exercise program

9. Plans for devolution and reconstitution

Essential Functions

Essential functions are those functions that enable the MAC to provide vital services, exercise civil authority, maintain the safety of the general public, and sustain the economic base during an emergency. In other words, essential functions are an agency's business functions that must continue with no or minimal disruption.

The MAC determines what its essential functions are by considering its customers and their needs. Assigning a priority to customer needs helps to distinguish between essential and non-essential needs—and thus, the MAC's essential and non-essential functions. When identifying essential functions, the MAC should consider (1) functions that must be continued in all circumstances, and (2) those functions that cannot suffer an interruption for more than 12 hours. The MAC must be able to continue essential functions within 12 hours and be capable of sustaining essential functions for up to 30 days. In addition, any function required by law or Presidential Directive should be considered an essential function. Once all essential functions are identified, each function should be prioritized.

Delegations of Authority

Delegations of Authority are formal documents that specify the activities that those who are authorized to act on behalf of the MAC may perform. They document the legal authority for officials to make key policy decisions during a COOP situation. Delegations of authority are not exclusive to COOP but are necessary for day-to-day operations and should be determined before an emergency to ensure continued operations of critical functions.

All delegations of authority state specifically:

- The authority that is being delegated, including any exceptions
- The limits of that authority
- To whom the authority is being delegated (by title, not name)
- The circumstances under which delegated authorities would become effective and when they would terminate
- The successor's authority to redelegate those functions and activities.

Succession Planning

Succession to office is critical in the event the MAC's leadership is unavailable, debilitated, or incapable of performing their legally authorized duties, roles, and responsibilities.

Orders of succession provide for the orderly and predefined assumption of senior positions during an emergency in the event that any official is unavailable to execute his or her legal duties. Like delegations of authority, orders of succession are not merely a COOP function; they should be developed to support day-to-day operations and should be at least three deep.

Alternate Facilities

If COOP activation is required, there is a possibility that one of the MAC's operating facilities is unavailable and that essential functions may require relocating. A location other than the normal facility should be identified that can be used to carry out essential functions.

Interoperable Communications

Alternate communications provide the capability to perform essential functions until normal operations can be resumed. Interoperable communications must support the executive of the agency's essential functions, ensure the capability to communicate internally and externally, and permit access to data, systems, and services. They must also be redundant, available within 12 hours of activation or less, and sustainable for up to 30 days.

Vital Records and Databases

The MAC has documents, files, and other materials that are vital, including plans and directives, delegations of authority, orders of succession, legal and financial records, etc. Responsibility should be established and assigned to develop a records maintenance program and test the program to ensure it works as planned.

Human Capital

During COOP activation, the MAC will have to perform its essential functions with reduced staffing. The MAC must ensure that all personnel are adequately trained and cross-trained to enable the performance of all essential functions.

A Test, Training, and Exercise (TT&E) Program

A TT&E program should be a blend of test, training, and exercise events to ensure that it is comprehensive and reflects lessons learned from previous TT&E events.

Tests are conducted to evaluate capabilities, not personnel. From a COOP perspective, tests are an excellent way to evaluate functions such as communications connectivities, alert and notification procedures, and deployment procedures.

Plans for Devolution and Reconstitution

Devolution is the capability to transfer statutory authority and responsibility for essential functions from a primary operating staff and facilities to other employees and facilities. Devolution is sometimes called “fail over.”

Devolution addresses catastrophic or other disasters that render the MAC’s leadership and staff unavailable or incapable of performing essential functions from either its primary or alternate facilities.

Reconstitution is the process by which surviving and/or replacement personnel resume normal operations from the original or replacement primary operating facility. The MAC must identify and outline a plan to return to normal operations after senior management or its successors determine that reconstitution operations can begin.

APPENDIX L

Sample 6—Administrative Continuity Plan Used by Ohio State University Airport

THE OHIO STATE UNIVERSITY

OAA Airport Administration Continuity Plan

As of: July 31, 2015

Plan Roles	Name	Work Email	Contact Number (work)
Owner:			
Manager:			
Manager Alt:			
Reviewer:			

Plan Approval: June 07, 2012

Last Exercise		Next Exercise	
Date:	December 07, 2011	**Date:**	December 31, 2013
Type:	2. Table Top Read-Through	**Type:**	2. Table Top Read-Through

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Business Continuity Plan
Executive Summary

Scope
The Ohio State University has a responsibility to its students, faculty, staff, visitors, and community to ensure that it is prepared to react to and recover from man-made or natural disasters. Our ability to proactively mitigate and manage adverse consequences directly affects our long-term viability.

This *Business Continuity Plan* contains an organized set of information, decisions, and actions necessary for this Area to respond, assess, and resume essential and key *business* operations due to unplanned disruption.

- A Business Continuity Plan contains "documented procedures that guide organizations to respond, recover, resume, and restore to a pre-defined level of operation following disruption" (ISO 22313).

- The word "Business" is used as an all-embracing term for the operations and services performed by an organization in pursuit of its objects, goals or mission (ISO 22313).

Objective
Upon plan activation, the Continuity Team will act upon a set of pre-planned procedures to respond, assess, and formalize an action plan to resume business operations based on the incident at hand. Pre-approved business resumption strategies will immediately be acted upon to resume *essential business processes*. Action plans to resume remaining *key business processes* will be reported to the Crisis Management Team for approval. Once approved, the Continuity Team will carry out the resumption of *key business processes*.

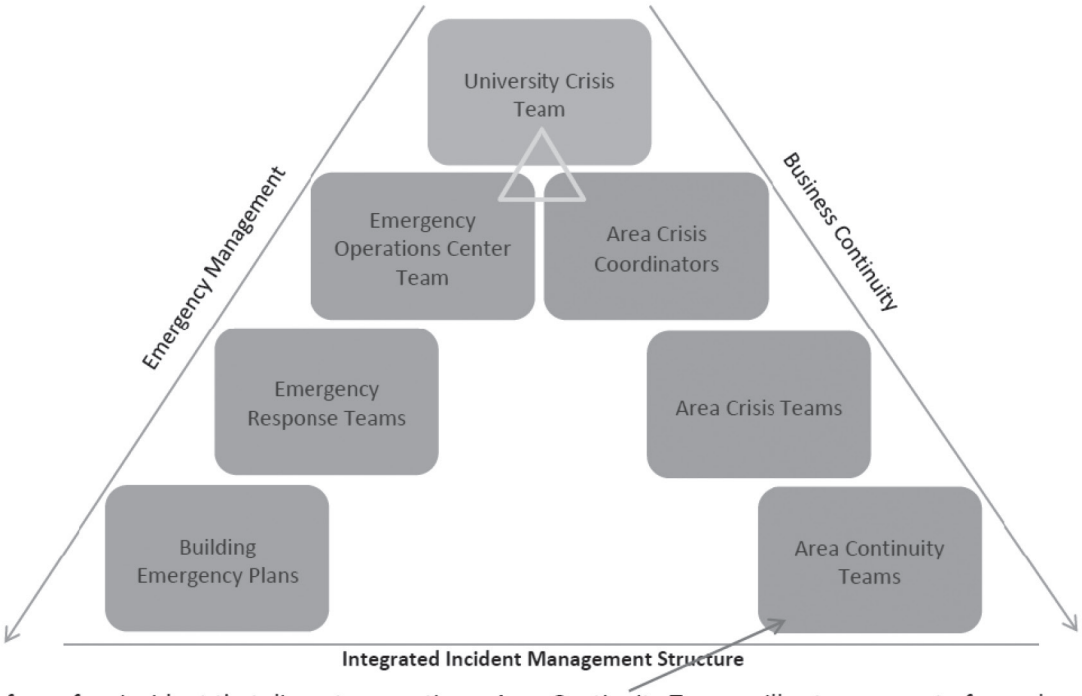
- Key Business Processes: Those processes identified as being required within a specified period of time, of which an extended interruption would cause unacceptable damage to the University Vision, Mission, Values, and/or Core Goals.

- Essential Business Processes: A sub group of Key Processes that, if disrupted, could endanger the safety and well-being of the campus population and/or physical plant.

Assumptions
- Life safety comes first
- The Plan covers a localized (not regional) incident
- The Plan covers business processes performed by this Area as identified in this plan
- An Area Crisis Team is available to review/approve action plans to resume essential and key processes
- An Area Crisis Coordinator is available to monitor area incidents and coordinate approved action plans with the University Emergency Operations Center
- IT Disaster and Systems Recovery Strategies are in place to recover Information Technology necessary to resume essential and key business processes within pre-specified time frames

Executive Summary

University Continuity Response Summary



In the face of an incident that disrupts operations, *Area Continuity Teams* will act upon a set of pre-planned activities to respond, assess impact, and formalize action plans to recover and resume Essential & Key Business Processes. Action plans will be reported to *Area Crisis Teams* for approval.

As requested, each *Area Crisis Team* Lead will report their intended plan of action to the *University Crisis Team* for pre-approval. (In extreme cases, the *University Crisis Team* may need to redirect resources towards resuming more critical university operations)

Once action plans are approved, *Area Crisis Coordinators* will communicate/coordinate approved *Area Crisis Team* recovery and resumption goals with the University *Emergency Operations Center Team*. The *Emergency Operations Center Team (in extreme cases)* will manage the incident/direct resources and regularly update the *University Crisis Management Team* on recovery and resumption progress.

- A Business Continuity Plan contains "documented procedures that guide organizations to respond, recover, resume, and restore to a pre-defined level of operation following disruption" (ISO 22313).

- Key Business Processes: Those processes identified as being required within a specified period of time, of which an extended interruption would cause unacceptable damage to the University Vision, Mission, Values, and/or Core Goals.

- Essential Business Processes: A sub group of Key Processes that, if disrupted, could endanger the safety and well-being of the campus population and/or facilities.

Teams and Locations

A summary of teams and locations in your plan.

LOCATIONS

Primary Site	■ AIRPORT ADMINISTRATION BUILDING

TEAMS

0. Academic Affairs Crisis Coordinator

Description: Monitors Area incidents and coordinates Crisis Managements goals with the University Emergency Operations Center

	Name	Work	Home	Cell	Alternate Phone
Crisis Coordinators	No personnel assigned to position				

Airport Administration Continuity Team

Description: Response Team key decision-makers and their alternates

	Name	Work	Home	Cell	Alternate Phone
1 Leadership					
2 Communications					
3 Human Resources					
4 Financials					
5 Logistics					
6 Damage Assessment					
7 Building Coordinator					

Area Continuity Team Standard Procedures

All Personnel	**1. Follow life safety procedures**	
Managers	a. Account for personnel and provide information to Human Resources & Communications Lead	
Communications	i. Track personnel, their locations, and contact information	
Human Resources	ii. Work with Communications Lead to locate remaining "unaccounted for" personnel	
Continuity Team Lead	**2. Activate continuity plan, notify Crisis Coordinator or Area Crisis Team, notify Communications Lead**	
Communications Lead	a. Notify Continuity Team, i.e. plan activation, first meeting time, location, conference call info	
Communications	i. Prepare and post initial communication on Web site, phone messages, email, etc.	
Logistics Lead	b. Prepare Department Emergency Operations Center and/or setup conference bridge	
Resumption Coordinators	c. Execute pre-approved resumption strategies for Essential Processes and/or prepare to report	
Damage Assessment	d. Assemble at impacted site, secure key items, estimate impact on operations, expected duration, etc.	
Continuity Team Lead	**3. Hold Continuity Team meeting in person and/or by conference call, develop action plan to resume work**	
Continuity Team Lead	a. Announce who will lead the incident management effort and brief personnel on basic facts	
Damage Assessment Lead	b. Review damage assessment results	
Damage Assessment	i. Brief personnel on incident details, current status, estimated duration, access restriction, etc.	
Financials	ii. Estimate financial impact, estimate funding needs, track expenditures, notify insurance	
Resumption Coordinators	c. Provide overview of process impact and action plan to resume work	
Logistics	i. Document list of resources required to resume work	
Communications	ii. Develop list of communication needs, i.e. vendors, customers, etc.	
Human Resources	iii. Work to address personnel issues, policies, and procedures (as needed)	
Continuity Team Lead	d. Finalize action plan to recover and resume operations/work, coordinate with Crisis Team (as needed)	
Communications	i. Prepare updated communication, i.e. location, hours of operations, estimated duration, etc.	
Communications	ii. Distribute time and location of next Continuity Team meeting (as needed)	
Continuity Team	**4. Execute action plan to resume operations/work**	
Logistics	a. Prepare work space in support of resumption activities, notify Information Technology (as needed)	
Continuity Team	i. Assist in obtaining work space resources (as needed)	
Logistics	b. Notify Continuity Team when workspace is ready for staff	
Communications	c. Communicate report to work schedule, hours of operation, shifts, etc.	
Resumption Coordinators	**5. Resume operations/work**	
Assigned Personnel	a. Report to work as scheduled, assess additional resource needs to resume work	
Logistics & Continuity Team	i. Obtain additional resources (as needed)	
Continuity Team Lead	**6. Report progress to Crisis Management Team (as needed)**	

Resumption Priority by Coordinator

Business processes listed by resumption objective.

Order	Process	Coordinator	Cell Phone	Home Phone	Resumption Obj.
1	**Accounts Receivable & Payable** OSU Airport Admin - Accounts Receivable & Payable *- Critical Delivery Period: Month End*				Within 24 Hours
2	**Human Resources** OSU Airport Admin - Human Resources *- Critical Delivery Period: Payroll Deadlines*				Within 24 Hours
3	**Payments & Deposits** OSU Airport Admin - Payments & Deposits				Within 1 Week

Call List

The call list (or lists) that will be used during the initial response period to notify, mobilize, and direct your key personnel.

Initial Call List -- OAA Airport Administration Continuity Plan

OSU Airport Admin Initial Call List

Name	*Work*	*Home*	*Cell*	*Alt Phone*	*Email*

Manager Call List -- OAA Airport Administration Continuity Plan

OSU Airport Manager Call List

Name	*Work*	*Home*	*Cell*	*Alt Phone*	*Email*

Contact List - Key External Employees

Key individuals (who are outside the department or area, but internal to the institution) who may need to be contacted.

OSU EMPLOYEES

Name	Work	Home	Cell	Alt. Tel	Email

Contact List - Department and Agency

Contact information for departments and agencies and their contacts / representatives.

OSU OCIO Telecommunications and Networking (UNITS) 614/292-5215

Phone	Alternate Phone	Fax	Email Address

Address:

Primary Contact: **Secondary Contact:**

Contact List - Vendors

This report shows all vendors and associated representatives that have been assigned to the plan.

National Intercollegiate Flying Association

Main Phone	Customer Service	Alt. Phone	Fax	Contract Number

Resumption Strategies

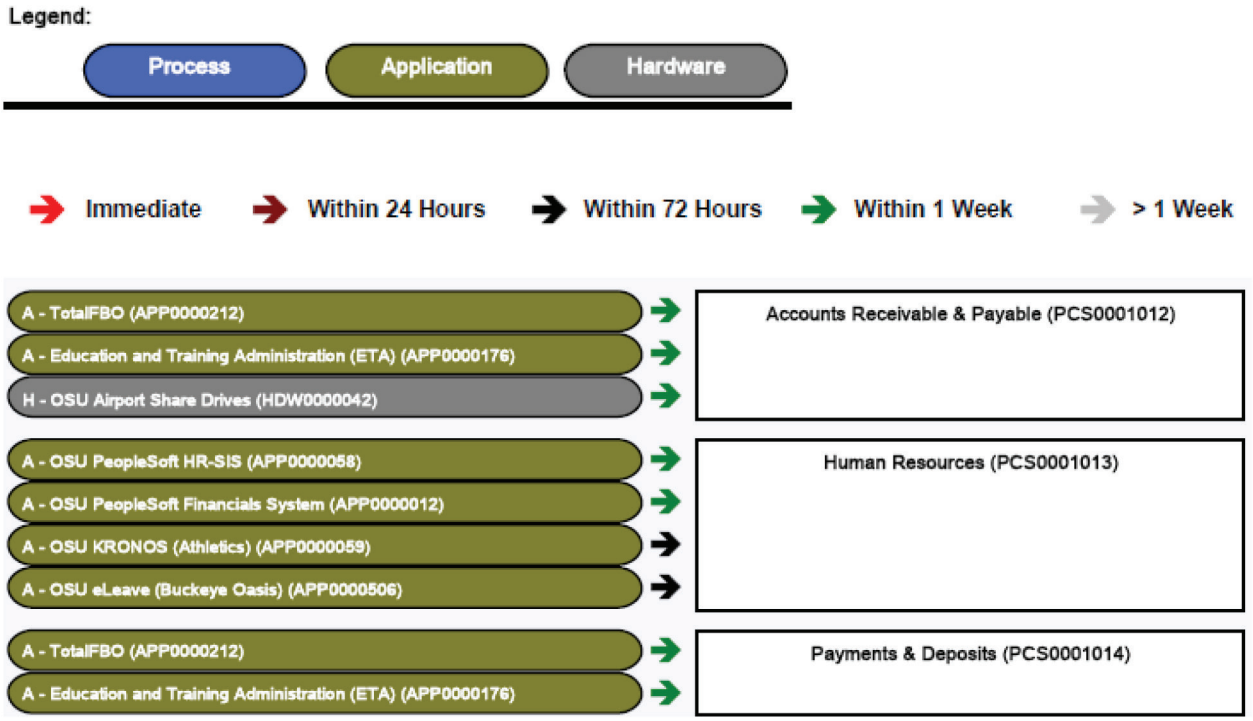
1. **Accounts Receivable & Payable [Within 24 Hours]**
   OSU Airport Admin - Accounts Receivable & Payable
   1. Loss of Staff > 60-80% (FTE 3)
      a. [redacted] will help cover process
      b. Review separation of duties
         i. Notify BOC
      c. Review and prioritize workload
      d. Transfer work to BOC
   2. Loss of equipment/system critical to process
      a. Total FBO
         i. Manually process as needed
      b. ETA
         i. Manually process as needed
   3. Loss of Facility
      a. Continue to process offsite
      b. Notify managers of lost work in process, resubmit records

2. **Human Resources [Within 24 Hours]**
   OSU Airport Admin - Human Resources
   1. Loss of Staff > 60-80% (FTE 1)
      a. [redacted] will cover process as needed
      b. [redacted] can cover, notify HR of separation of duties
   2. Loss of equipment/system critical to process
      a. PeopleSoft HR
      b. PeopleSoft Financials
         i. Time keeping entry delayed until system is restored
   3. Loss of Facility
      a. Continue to process offsite
      b. Notify managers to resubmit timekeeping records as needed

3. **Payments & Deposits [Within 1 Week]**
   OSU Airport Admin - Payments & Deposits
   1. Loss of Staff > 60-80% (FTE 2)
      a. [redacted] will help cover process
      b. Review separation of duties
         i. Notify BOC
      c. Review and prioritize workload
      d. Transfer work to BOC
   2. Loss of equipment/system critical to process
      a. Total FBO
         i. Manually process as needed
      b. ETA
         i. Manually process as needed
   3. Loss of Facility
      a. Continue to process offsite

Dependency Relationships by Process

This report graphically depicts a single core component with its up and downstream interdependencies.



Business Crisis and Continuity Management
Standard Roles & Procedures

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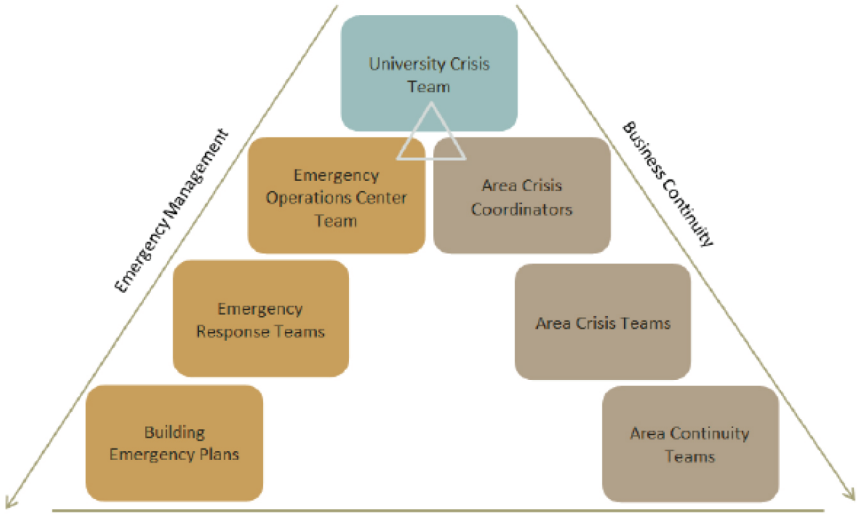
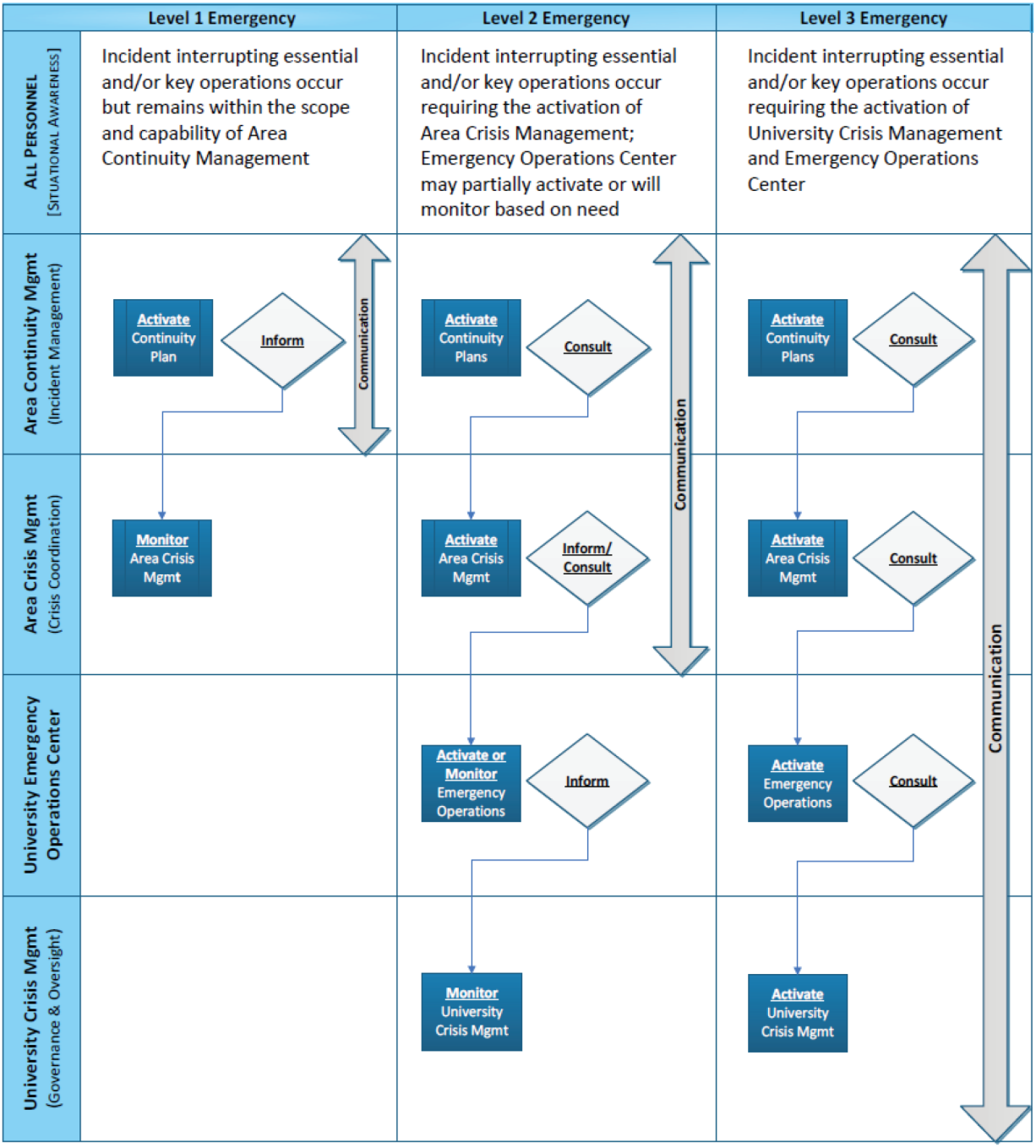


Standard Roles & Procedures

RESPONSE PROCEDURE SUMMARY

ALL PERSONNEL [SITUATIONAL AWARENESS]	**TRIGGER:** If you become aware of an incident, hazard, operating procedure, or other risk that has or could significantly disrupt/impact university operations ➢ **PRIORITY:** Life Safety First - 911 for Emergencies, Service2Facilities 292-4357, Public Safety 292-2121 ➢ **PROCEDURES:** Inform your Management, Area Continuity Team, or Area Crisis Coordinator, escalation will continue as needed ✓ Communicate: What, where, time, and estimated impact on operations ✓ Make sure: To get the reporting party's current location and contact information
Area Continuity Team (Area Continuity Plan)	**TRIGGER:** Incident interrupting essential and/or key operations to the extent that an Area Continuity Plan is activated ➢ **PROCEDURES:** Area Continuity Team Lead or Alternate will activate the Continuity Plan and notify their Area Crisis Coordinator or Area Crisis Team regarding plan activation ✓ Communications Lead or Alternate - Notify continuity team and distribute time + location of first continuity team meeting ✓ Continuity Team - Assess impact on operations, execute pre-authorized resumption strategies for essential processes, and develop action plan to resume key processes ✓ Continuity Team Lead or Alternate - Prepare to brief Area Crisis Team on current state of essential operations and action plan to resume remaining key operations
Area Crisis Team (Area Crisis Plan)	**TRIGGER:** Incident interrupting operations to the extent that an Area Crisis Plan is activated; otherwise Area Crisis Coordinator will monitor the incident ➢ **PROCEDURES:** Area Crisis Team Lead or Alternate will activate the Area Crisis Plan and follow the "Council of Deans Item on Emergency Notification" ✓ Crisis Coordinator or Alternate - Notify Emergency Operations Team, Area Crisis Team and Area Continuity Team(s), distribute time + location of first Area Crisis Team meeting ✓ Area Continuity Team Leads or Alternates - Brief the Area Crisis Team on current state of essential operations and action plan to resume remaining key operations ✓ Area Crisis Team Lead or Alternate – Approve action plans and prepare to brief University Crisis Team on current state of operations
University Crisis Team (University Crisis Plan)	**TRIGGER:** Incident interrupting operations to the extent that the University Crisis Plan is activated ➢ **PROCEDURES:** President, Provost or Alternate will activate the University Crisis Plan - Upon activation the University Crisis Team will take over incident oversight and governance ✓ University Emergency Operations Center - Notify University Crisis Team, Area Crisis Coordinators, and distribute time + location of first University Crisis Team meeting ✓ Area Crisis Team Leads or Alternates - Brief University Crisis Team on current state of operations ✓ The President, in consultation with the Secretary of the Board of Trustees, will decide how best to inform the Board
University Emergency Operations Team	**TRIGGER:** Incident interrupting operations to the extent that the University Emergency Operations Center (EOC) is activated ➢ **PROCEDURES:** Upon activation, the University Emergency Operations Center (EOC) will take over incident management, planning, coordination, and demand for resources ✓ University Crisis Team - Upon activation the University Crisis Team will take over incident oversight and governance - (ESF 20) ✓ Area Crisis Teams – Crisis Coordinator will liaison with the EOC (ESF 21-30) ✓ Area Continuity Teams – Will prepare to coordinate with EOC ESF's as instructed

PLAN ACTIVATION & COMMUNICATIONS FLOW DIAGRAM



* Crisis Management and/or Emergency Operations may activate based on any event that threatens to harm the organization, its stakeholders, or the general public

STANDARD ROLES & PROCEDURES

ALL PERSONNEL [SITUATIONAL AWARENESS]

TRIGGER: If you become aware of an incident, hazard, operating procedure, or other risk that has or could significantly disrupt/impact university operations

- **PRIORITY:** Life Safety First - 911 for Emergencies, Service2Facilities 292-4357, Public Safety 292-2121
- **PROCEDURES:** Inform your Management, Area Continuity Team, or Area Crisis Coordinator, escalation will continue as needed
  - ✓ Communicate: What, where, time, and estimated impact on operations
  - ✓ Make sure: To get the reporting party's current location and contact information

AREA CONTINUITY TEAM [AREA CONTINUITY PLAN]

AREA CONTINUITY LEADERSHIP

- **TRIGGER: Incident impacting operations to the extent that the continuity plan be activated**
  - ✓ PROCEDURE 1: Activate the Continuity Plan, notify Crisis Coordinator and/or Area Crisis Team
    - i. Confirm if Area Crisis Team will *activate* or Area Crisis Coordinator will *monitor* the incident
    - Work with Communications lead or alternate to notify Continuity Team
      - i. Communications will script messages, track notifications, distribute time + location of first meeting
        1. Based on need, coordinate getting the message out to:
           a. **Logistics** – Prepare the Department Emergency Operations Center for first meeting
           b. **Continuity Team** – Prep and attend first meeting
           c. **Damage Assessment** – Assess operating location(s) and prepare to report impact
           d. **Process Resumption Coordinators** – execute pre-approved strategies to recover essential operations as needed and/or prepare to report
           e. **Personnel** - Standby for further communications, stay home, report to, etc.
  - ✓ PROCEDURE 2: Hold first meeting in person or by conference call
    - Meeting process
      - i. Continuity Leadership
        1. Announce who will lead the incident management effort and brief personnel on basic facts
        2. Announce if the Area Crisis Team has been activated or is monitoring the incident
        3. Start the discussion on current state of operations – announce damage assessment lead
           a. Damage Assessment Lead or Alternate
              i. Brief personnel on incident details, current status, estimated duration, etc.
      - ii. Resumption Coordinators (by priority or management order)
        1. Process name(s) and who is taking the lead on Resumption (see Process Resumption Priority)
           a. Overview of process impact; what must be recovered/resumed and by when
              i. Current progress or when Resumption needs to start
              ii. Location resumption effort is at or can be performed
              iii. Q&A with Communications, HR, Financial and Logistics
  - ✓ PROCEDURE 3: Finalize an action plan to recover and resume operations
    - Continuity Leadership
      - i. Prepare and report to Area Crisis Team (as needed)
        1. Deliver action plan to Area Crisis Team and/or Area Crisis Coordinator
        2. Set regular reporting schedule

Standard Roles & Procedures

COMMUNICATIONS [ESF-15]

- ✓ PROCEDURE 1: Work with Continuity Lead or Alternate to execute communications as noted under Leadership Role
- ✓ PROCEDURE 2: Support department communications
  - ➢ Account for and track personnel, their locations, and contact information
    - i. Who has been notified and the type / level of information they have
    - ii. Who still needs to be notified and the information they should receive
  - ➢ Direct media inquiries to: _____
  - ➢ Develop scripts for static outgoing messages; setup schedule to review static messages
    - i. Main office line message
    - ii. Web site message, etc.
  - ➢ As needed, work with Logistics to bring staff into alternate work locations
    - i. Communicate time frames for reporting to alternate work location(s)
- ✓ PROCEDURE 3: Consider other communications needs
    - i. Maintain a method for contacting students, their contact information should not be in the continuity plan
    - ii. Be prepared to notify Vendors, Key Contacts, Customers, other OSU Departments, etc.
    - iii. Remind staff to update voice mail/out of office messages
    - iv. Notify mail room / postal / courier services of any address changes

HUMAN RESOURCES [ESF-5]

- ➢ Establish HR escalation path, remind personnel you are available
  - i. Administer personnel issues including Employee Assistance
  - ii. Consider all general response Team needs such as food, water, morale, counseling, etc.
  - iii. Consider child care, specialized medical, and other needs
  - iv. Work with central HR as needed to address issues, policies, and procedures
  - v. Work to arrange travel/transportation for staff as needed
  - vi. Procure additional staff as needed

FINANCIALS [ESF-5]

- ➢ Track expenditures related to incident
- ➢ Contact University Purchasing and or Business Office as needed
  - i. Determine how to handle any control issues / sign-off requirements
- ➢ Purchasing Cards
  - i. Increase P Card Limits
  - ii. Additional Cards / Replacements / Distribution
- ➢ Estimate the impact of incident on department finances
- ➢ Report potential insurance claims within 24 hours

LOGISTICS [ESF-7]

- ✓ PROCEDURE: As directed, prepare the Department Emergency Operations Center
  - ➢ Gain access to Emergency Operations Center and prepare it for first meeting
    - i. Insure adequate supplies are available for the Business Continuity Team
      1. Conference phone, power cords, white boards, etc.
  - ➢ Capture, review and coordinate resumption resource requirements
    - i. As needed: use *Process Resumption Resource Requirements*
      1. Review resource requirements with Process Resumption Coordinators
         a. Address issues with Continuity Team, Crisis Coordinator, or Emergency Operations Center
  - ➢ Guide the setup of an alternate work location
    - i. Gain access to alternate work location(s)
      1. Assess seating, workstations & equipment availability, work to procure additional as needed

Standard Roles & Procedures

2. Ensure appropriate personnel gain access to the alternate work location

ii. As needed, designate a temporary staging area; check-in, check-out
1. Work with Communications to bring staff into alternate work location

iii. Remain available for other logistics needs

DAMAGE ASSESSMENT [ESF-3]

- ✓ PROCEDURE: Assemble at primary site, secure key items, estimate impact on operations, report to Continuity Team
  - ➢ The primary objective is to determine how long the primary workspace will be unavailable
    - i. Establish contact with Building Coordinator or emergency personnel – gain access to facility
      1. Notify Business Continuity Team if delayed entry to facility –estimate access ETA
    - ii. Upon entry immediately
      1. Secure key file cabinets
      2. Lock the Safe
      3. Obtain PCard(s), keys, etc.
      4. Estimate loss of business resources / impact to operations, how long?
         a. Loss of workspace / supplies / damaged "work in process"
         b. Secure exposed vital records as soon as possible
         c. Verify the following: Phones, Local Area Network, Printing, Water, Etc.
    - iii. Prepare to report damage assessment results to Business Continuity Team
      1. Take photographs to document damage as needed

RESUMPTION COORDINATORS [CONTINUITY STRATEGIES]

- ✓ PROCEDURE 1: Upon notification of plan activation, execute pre-approved resumption strategies for essential processes
- ✓ PROCEDURE 2: Work with the Continuity Team to develop department action plan, execute approved resumption strategies
  - i. Assess impact on your process(s), determine what must be resumed and when it must be running- use *Process Resumption Priority by Coordinator*
  - ii. Determine if your estimated resource requirements are accurate – use *Process Resumption Resource Requirements* – (unless you have immediate needs, try to work with Logistics to obtain resources)
  - iii. Assess immediate communications needs, be prepare to notify recipients (unless your resumption effort has time sensitive and/or specific messages to deliver, try to work with Communications to get the message out)

AREA CRISIS COORDINATOR [AREA CRISIS MANAGEMENT REPRESENTATIVE ESF-21+]

- ➢ **Trigger: If you become aware of an incident that could significantly disrupt/impact operations**
  - ✓ PROCEDURE 1: Escalate to Area Crisis Team and/or University Emergency Operations Center, or monitor incident as needed
  - ✓ PROCEDURE 2: Upon Area Crisis Plan Activation, Liaison with Emergency Operations Center, script plan activation messages, notify Area Crisis Team and Area Continuity Team Leads or Alternates, distribute time + location of first Area Crisis Team meeting

Standard Roles & Procedures

AREA CRISIS TEAM [AREA CRISIS PLAN ESF-21+]

- **TRIGGER: Incident impacting operations to the extent that the Area Crisis Plan be *Activated*; otherwise Area Crisis Coordinator will *Monitor* the incident**
  - ✓ PROCEDURE 1: Area Crisis Lead or Alternate will activate the Area Crisis Plan and notify Area Crisis Coordinator or alternate
  - ✓ PROCEDURE 2: Follow the *COUNCIL OF DEANS ITEM ON EMERGENCY NOTIFICATION*
  - ✓ PROCEDURE 3: Hold first meeting in person or by conference call
    - Crisis Team Lead or alternate
      - i. Announce who will lead the crisis management effort and brief personnel on basic facts
      - ii. Announce if the University Emergency Operations Center has been activated or is monitoring the incident
      - iii. Discuss current state of operations – announce Continuity Team Leads
        1. **Continuity Team Leads report**
           - a. Brief Area Crisis Team on incident details and action plan(s)
             - i. Status, estimated duration, importance of resumption priority, issues, etc.
    - Area Crisis Team
      - i. Confirm or modify Area Continuity Team action plans and resumption priorities
        1. **Crisis Coordinator** will deliver/coordinate approved action plan(s) with Emergency Operations
      - ii. Set regular reporting/meeting schedule(s)
      - iii. Prepare to brief University Crisis Team

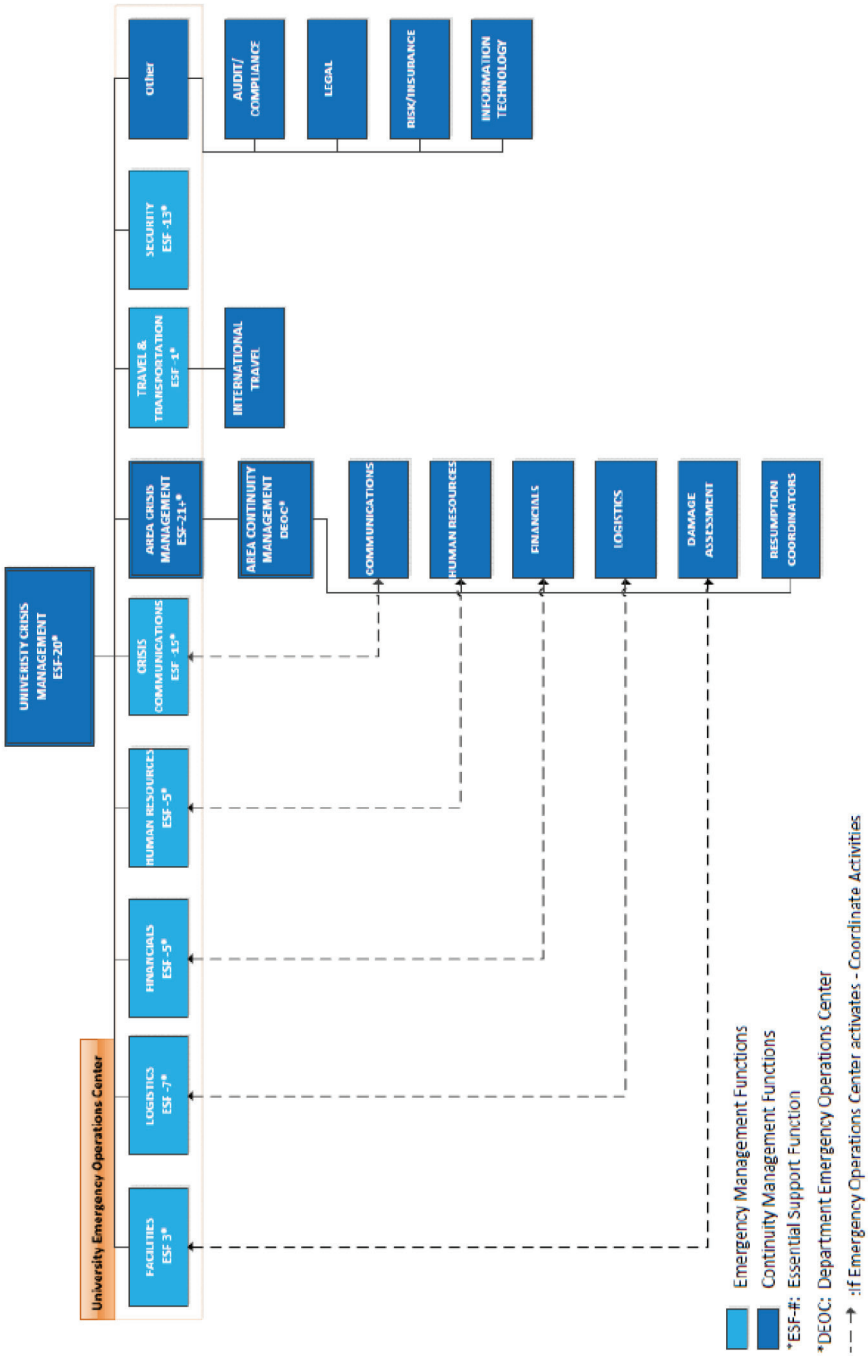
UNIVERSITY CRISIS TEAM [UNIVERSITY CRISIS PLAN ESF-20]

- **TRIGGER: Major Incident impacting University operations to the extent that the University Crisis Plan is activated; otherwise Area Crisis Coordinator and Emergency Operations will monitor the incident**
  - ✓ PROCEDURES: President, Provost or Alternate will activate the University Crisis Plan - Upon activation the University Crisis Team will take over incident oversight and governance
    - University Operations Center - Notify University Crisis Team and distribute time + location of first University Crisis Team meeting
    - Area Crisis Team Leads or Alternates - Brief University Crisis Team on current state of essential and key operations
    - The President, in consultation with the Secretary of the Board of Trustees, will decide how best to inform the Board

UNIVERSITY EMERGENCY OPERATIONS TEAM [EMERGENCY OPERATIONS ESF-1+]

- **PROCEDURES:** Upon activation, the University Operations Center will take over incident management –Essential Support Functions (ESF) will be activated as needed
  - ✓ University Crisis Team - Essential Support Function (ESF 20)
  - ✓ Area Crisis Teams - (ESF 21-30)
  - ✓ Area Continuity Teams – Prepare to coordinate with ESF's as instructed

INCIDENT MANAGEMENT STRUCTURE – CONTINUITY OF OPERATIONS



APPENDIX M

Sample 7—Line of Operations Continuity Plan Used by Ohio State University Airport

THE OHIO STATE UNIVERSITY

OAA Airport Line Operations Continuity Plan

As of: July 31, 2015

Plan Roles	Name	Work Email	Contact Number (work)
Owner:			
Manager:			
Manager Alt:			
Reviewer:			

Plan Approval: December 21, 2011

Last Exercise		Next Exercise	
Date:	December 21, 2011	**Date:**	December 31, 2013
Type:	2. Table Top Read-Through	**Type:**	2. Table Top Read-Through

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Teams and Locations

A summary of teams and locations in your plan.

LOCATIONS

Primary Site	■ AIRPORT OPERATIONS BUILDING
Emergency Operations Center	■ HANGAR 6
Recovery Site (Internal)	■ HANGAR 1, 2, & 3 *HANGAR 1*

TEAMS

0. Academic Affairs Crisis Coordinator

Description: Monitors Area incidents and coordinates Crisis Managements goals with the University Emergency Operations Center

	Name	Work	Home	Cell	Alternate Phone
Crisis Coordinators	No personnel assigned to position				

Line Operations Continuity Team

Description: Response Team key decision-makers and their alternates

	Name	Work	Home	Cell	Alternate Phone
1 Leadership					
2 Communications					
3 Human Resources					
4 Financials					
5 Logistics					
6 Damage Assessment					
7 Building Coordinator					

Area Continuity Team Standard Procedures

All Personnel	**1. Follow life safety procedures**	
Managers	a. Account for personnel and provide information to Human Resources & Communications Lead	
Communications	i. Track personnel, their locations, and contact information	
Human Resources	ii. Work with Communications Lead to locate remaining "unaccounted for" personnel	
Continuity Team Lead	**2. Activate continuity plan, notify Crisis Coordinator or Area Crisis Team, notify Communications Lead**	
Communications Lead	a. Notify Continuity Team, i.e. plan activation, first meeting time, location, conference call info	
Communications	i. Prepare and post initial communication on Web site, phone messages, email, etc.	
Logistics Lead	b. Prepare Department Emergency Operations Center and/or setup conference bridge	
Resumption Coordinators	c. Execute pre-approved resumption strategies for Essential Processes and/or prepare to report	
Damage Assessment	d. Assemble at impacted site, secure key items, estimate impact on operations, expected duration, etc.	
Continuity Team Lead	**3. Hold Continuity Team meeting in person and/or by conference call, develop action plan to resume work**	
Continuity Team Lead	a. Announce who will lead the incident management effort and brief personnel on basic facts	
Damage Assessment Lead	b. Review damage assessment results	
Damage Assessment	i. Brief personnel on incident details, current status, estimated duration, access restriction, etc.	
Financials	ii. Estimate financial impact, estimate funding needs, track expenditures, notify insurance	
Resumption Coordinators	c. Provide overview of process impact and action plan to resume work	
Logistics	i. Document list of resources required to resume work	
Communications	ii. Develop list of communication needs, i.e. vendors, customers, etc.	
Human Resources	iii. Work to address personnel issues, policies, and procedures (as needed)	
Continuity Team Lead	d. Finalize action plan to recover and resume operations/work, coordinate with Crisis Team (as needed)	
Communications	i. Prepare updated communication, i.e. location, hours of operations, estimated duration, etc.	
Communications	ii. Distribute time and location of next Continuity Team meeting (as needed)	
Continuity Team	**4. Execute action plan to resume operations/work**	
Logistics	a. Prepare work space in support of resumption activities, notify Information Technology (as needed)	
Continuity Team	i. Assist in obtaining work space resources (as needed)	
Logistics	b. Notify Continuity Team when workspace is ready for staff	
Communications	c. Communicate report to work schedule, hours of operation, shifts, etc.	
Resumption Coordinators	**5. Resume operations/work**	
Assigned Personnel	a. Report to work as scheduled, assess additional resource needs to resume work	
Logistics & Continuity Team	i. Obtain additional resources (as needed)	
Continuity Team Lead	**6. Report progress to Crisis Management Team (as needed)**	

* More detail on team roles and procedures can be found in the "Business Crisis and Continuity Management Roles and Procedures" document

Resumption Priority by Coordinator

Business processes listed by resumption objective.

Order	Process	Coordinator	Cell Phone	Home Phone	Resumption Obj.
1	**Daily Aircraft Operations** Receiving, Truck Fuel checks, Fuel Farm Checks, ramp checks, hangars, flight board schedule, flight traffic schedule, etc.				Immediately
2	**Customer Service** Corporate, Non-Corp, Transient aircraft traffic operations				Immediately
3	**Flight School Service** Flight School aircraft traffic operations				Within 48 Hours

Resumption Strategies

1. **Daily Aircraft Operations [Immediately]**
   Receiving, truck fuel checks, fuel farm checks, ramp checks, hangars, flight board schedule, flight traffic schedule, etc.
   1. Loss of Staff > 60-80% (FTE 9)
      a. Review schedule and prioritize work
      b. Contact Mark Truman for assistance
      c. Contact other FBO's for assistance as needed
   2. Loss of equipment/system critical to process
      a. Tugs (4)
         i. Can operate with 1 with reduced service levels
         ii. Contact Eagle Manufacturing Aero Specialties for replacement
      b. Fuel trucks (4)
         i. Contact Garsite
      c. Ground Power Units (3)
         i. Contact Eagle Manufacturing Aero Specialties for replacement
   3. Loss of Facility
      a. Relocate operations to Hangar 6
      b. Establish radio communications with operations
      c. Contact critical vendors for additional equipment as needed
      d. Recreate flight board schedule
      e. Review schedule and prioritize work
      f. Notify operations regarding operating capabilities
      g. Notify base corporate customers regarding situation

2. **Customer Service [Immediately]**
   Corporate, Non-Corp, Transient aircraft traffic operations
   1. Loss of Staff > 60-80% (FTE 9)
      a. Continue process at reduced service levels
   2. Loss of equipment/system critical to process
      a. Loss of AIM (Airport Information Management System)
         i. Contact Mike Eppley for contact information
      b. Nextel System
         i. Assign a student runner for temporary communications
         ii. Notify Dale for assistance in restoring system
         iii. Go to walkie talkie system as needed
   3. Loss of Facility
      a. Continue process offsite

3. **Flight School Service [Within 48 Hours]**
   Flight School aircraft traffic operations
   1. Loss of Staff > 60-80% (FTE 9 & ~8 Students)
      a. Continue process at reduced service levels
      b. Students can perform duties as assigned
   2. Loss of equipment/system critical to process
      a. See Operations Strategies
   3. Loss of Facility
      a. See Operations Strategies

Call List

The call list (or lists) that will be used during the initial response period to notify, mobilize, and direct your key personnel.

Call List -- OAA Airport Line Operations Continuity Plan

Airport Line Operations Initial Call List

Name	*Work*	*Home*	*Cell*	*Alt Phone*	*Email*

OSU Airport Manager Contact List -- OAA Airport Line Operations Continuity Plan

OSU Airport Manager Contact List

Name	*Work*	*Home*	*Cell*	*Alt Phone*	*Email*

Contact List - Key External Employees

Key individuals (who are outside the department or area, but internal to the institution) who may need to be contacted.

OSU EMPLOYEES

Name	Work	Home	Cell	Alt. Tel	Email

Contact List - Department and Agency

Contact information for departments and agencies and their contacts / representatives.

OSU Airport

Phone	Alternate Phone	Fax	Email Address

OSU Airport ACT Tower CAB

Phone	Alternate Phone	Fax	Email Address

OSU Airport Customer Service

Phone	Alternate Phone	Fax	Email Address

OSU Airport Flight Education

Phone	Alternate Phone	Fax	Email Address

OSU Airport Line Operations

Phone	Alternate Phone	Fax	Email Address

OSU Don Scott Airport

Phone	Alternate Phone	Fax	Email Address

Contact List - Vendors

This report shows all vendors and associated representatives that have been assigned to the plan.

Aero Specialties Inc. [redacted]

Main Phone	Customer Service	Alt. Phone	Fax	Contract Number

Address:

Garsite [redacted]

Main Phone	Customer Service	Alt. Phone	Fax	Contract Number

Address:

Resumption Resource Requirements

Resources necessary for the successful execution of continuity strategies (communications, IT applications and/or system needs, workstations, phone lines, etc.)

OAA Airport Line Operations Continuity Plan

Resources Needed by Entire Plan

WORKSTATIONS REQUIRED

Type	Total
Standard PC	1

TELECOMMUNICATIONS REQUIRED: NO TELECOM REQUIREMENTS IDENTIFIED

Standard PC	Immediate	4 Hours	8 Hours	24 Hours	48 Hours	72 Hours	1 Week	2 Weeks	> 2 Weeks
				1					

Resources Requirements by Process

1) Daily Aircraft Operations — Resume: Immediately

@ AIRPORT OPERATIONS BUILDING — Process Recovery Site — @ HANGAR 6

APPLICATION DEPENDENCY

Application Name	Description	Owner	Needed
TotalFBO	Airport specific software to handle sales transactions, accounting, and information analysis needs	Airport IT	Within 24 Hours

2) Customer Service — Resume: Immediately

@ AIRPORT OPERATIONS BUILDING — @

3) Flight School Service — Resume: Within 48 Hours

@ AIRPORT OPERATIONS BUILDING — @

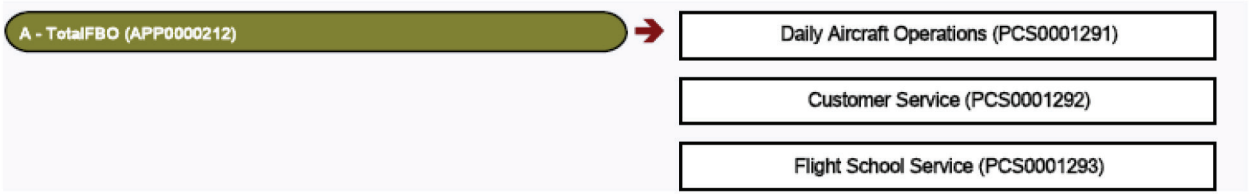
Dependency Relationships by Process

This report graphically depicts a single core component with its up and downstream interdependencies.

Legend:

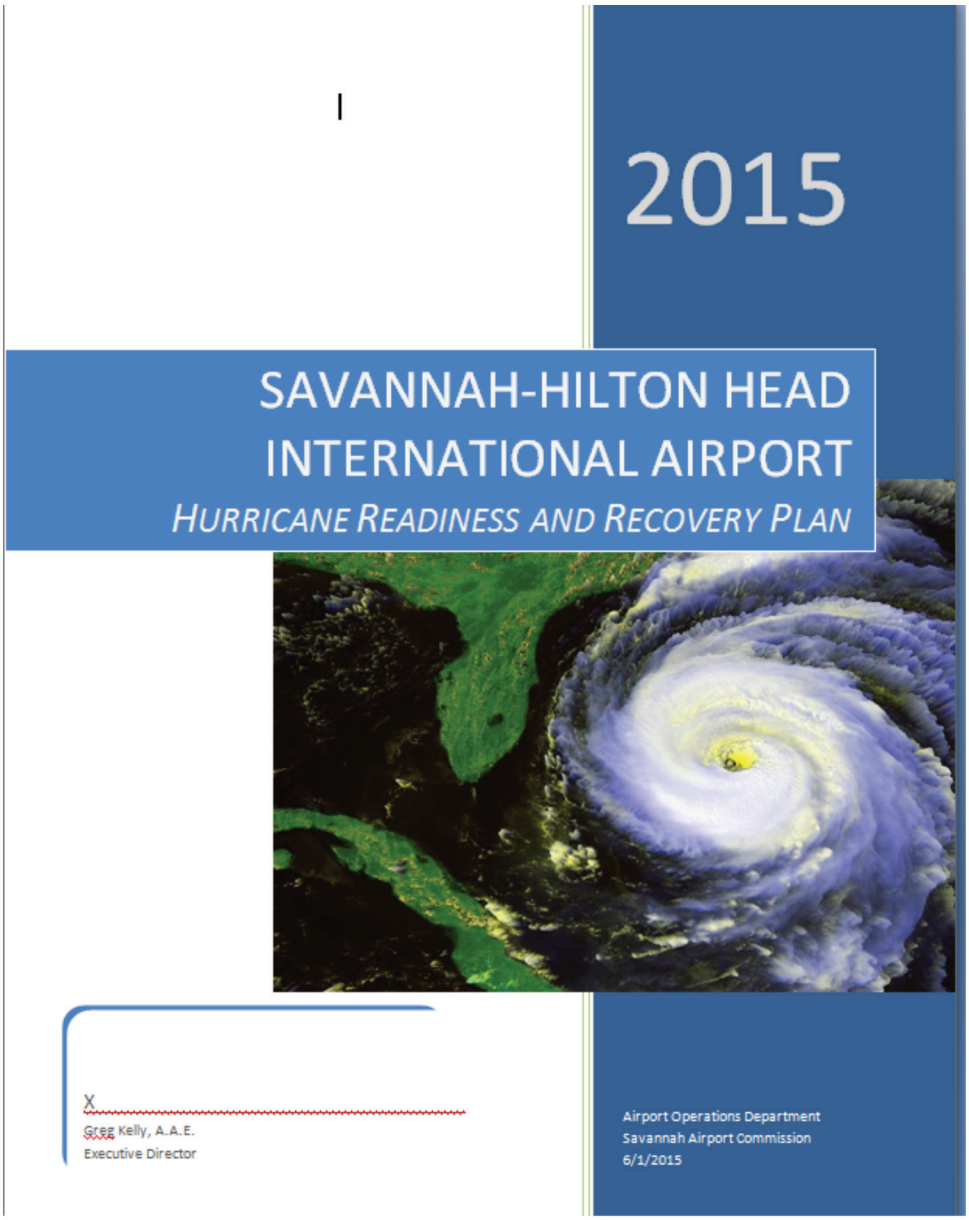
Process | Application | Hardware

Immediate | Within 24 Hours | Within 72 Hours | Within 1 Week | > 1 Week



APPENDIX N

Sample 8—Hurricane Plan Addressing Business Continuity Planning/ Continuity of Operations Planning for Savannah/Hilton Head International Airport



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PART III - RECOVERY FROM THE STORM

NOTE: Keep records of all labor and material costs resulting from hurricane damage. Where possible, submit work orders to document requests for maintenance support and document labor hours and costs. Record damage and recovery efforts by an individual assigned to capture digital / still photos accompanied by a scribe to document damage, date, and time to ensure timely processing of insurance claims.

OPCON <1> **INITIAL RECOVERY**

Operations

- ✓ Brief FAA and TSA-FSD on the conditions of the airport (Exhibits J-1, J-2).
- ✓ Notify TSA of any Changed Condition Affecting Security.
- ✓ Deploy Mobile Command Post and establish Incident Command.
- ✓ Develop back-up security program in the event power is not restored or access control system fails. Coordinate with APSD.
- ✓ Establish the Emergency Operations Center in the APSD training room, designate staffing, provide three laptops, and coordinate with the Mobile Command Post.
- ✓ Obtain airfield condition report from Airfield Operations.
- ✓ Obtain status of airfield lighting, fixtures and other airfield needs for the Bridge Line call.
- ✓ APSD to verify staffing and equipment assessment of ARFF.
- ✓ Contact Ga. Air Nat'l Guard for access to unleaded and diesel fuel.
- ✓ Distribute 800 MHZ radios to key personnel.
- ✓ Establish time and location for daily briefings and SEADOG and/or Recovery Team Conference Call.
- ✓ Establish quarters for recovery teams and include team leaders in the Recovery Team Conference Calls.
- ✓ Establish a schedule for deployment of recovery teams and an exit strategy for recovery teams during bridge line calls. Post in the EOC.
- ✓ Establish staging area for hurricane relief operation to accommodate cargo aircraft and 18-wheelers.

- ✓ Coordinate with Georgia Power for damage assistance and restoration of power.
- ✓ Contact Petroleum Recovery Services (843) 469-1474 and have ramp underground diesel storage tank, Jet A fuel tanks and airfield vault diesel tank tested for contaminants.
- ✓ Contact fuel providers for the resumption of delivery of Jet A.
- ✓ Request assistance from GDOT to ensure that all Jet A and fuel deliveries arrive unimpeded.
- ✓ Coordinate with CEMA and other agencies involved in recovery.
- ✓ Coordinate with Hunter Army Airfield for the reception of Federal and State officials.
- ✓ Develop a Contingency Plan in the event HAAF is unable to accommodate the reception of Federal and State officials.

Maintenance

- ✓ Evaluate condition of the Fuel Farm and connect the generator.
- ✓ Verify the availability and quality of well water for the ice machine.
- ✓ Determine location of debris piles and advise the EOC.
- ✓ Barricade downed power lines.
- ✓ Provide generator power and 500 gal potable water supply container to the ice machine.
- ✓ Provide generator power to the HMSHost warehouse (Building 560).
- ✓ Provide generator power to the Dewar's kitchen (Concourse).
- ✓ Shut off water supply lines to public areas and post warnings.
- ✓ Clear debris from Airways Avenue and Davidson Drive to allow access to the terminals.
- ✓ Coordinate the posting of stop signs and directional signs on barricades with APSD where stop signs and traffic lights are down.
- ✓ Dump debris in designated dumpsites, separating wood, trees and shrubs, from construction material such as aluminum, steel, and concrete. Notify EOC of location of designated dumpsites.
- ✓ Position the 1,000 KVW generator at the hotel designated by the Executive Director.
- ✓ Mount the ham radio and satellite phone antennas.

Airfield Operations

- ✓ Conduct complete airfield inspection. (Lights, pavement erosion, fences etc.)
- ✓ Contact Ga. Air Nat'l Guard for assistance in removing debris from the airfield. Heavy Equipment will be staged on the Air Dominance Center ramp.

- ✓ Determine the operational status of the ATCT and advise Operations.
- ✓ Make all necessary repairs to runways, taxiways and apron areas.
- ✓ Clear debris and haul to designated dump.
- ✓ Issue NOTAM's and arrange with ATCT for relief flight clearances.
- ✓ Provide a complete list of airfield lighting, fixtures, or other items requiring replacement; advise AF and ATCT. Deliver the completed list of needs to EOC prior to the Bridge Line call.
- ✓ Coordinate with Operations for the staging of hurricane relief operations for cargo aircraft and 18-wheelers.

Airport Public Safety Department

- ✓ Test communications with the Airport Fire Department, CEMA and other agencies involved in the recovery.
- ✓ Verify ARFF is at the required staffing levels and assessment of equipment is reported. Report staffing levels and equipment assessment to Airport Operations.
- ✓ Secure Airways Avenue
- ✓ Establish Mobile Command Post.
- ✓ Establish Incident Command and designate a Safety Officer.
- ✓ Secure the Airfield
- ✓ Contact the GaANG 165th Air Wing Security Police for airfield support.
- ✓ Establish communication through the fixed satellite phone in dispatch in the event land- lines and Nextel communications are out of service.
- ✓ Utilize the Ham Radio should satellite communications fail.
- ✓ Secure public access roads to the terminal until cleared by the Executive Director.

Purchasing

- ✓ Accept / log inbound relief supplies and store in Purchasing.

Administration

- ✓ Executive Director and Commissioners review the need to meet with Congressional Representatives in Washington, D.C.
- ✓ Determine status of employees.
- ✓ Contact Savannah Recovery Crew using Exhibit I.

Information Technology

- ✓ Placeholder.

NOTE: Keep records of all labor and material costs resulting from hurricane damage. Where possible, submit work orders to document requests for maintenance support and document labor hours and costs. Record damage and recovery efforts by an individual assigned to capture digital / still photos accompanied by a scribe to document damage, date, and time to ensure timely processing of insurance claims.

OPCON <2> SECONDARY RECOVERY

Operations

- ✓ Determine the overall condition of the terminal and note damage.
- ✓ Custodial supervisor to determine extent of water saturation to the carpet and determine whether or not an industrial service is required.
- ✓ Contact Chatham County Mosquito Control for support against mosquito related issues.
- ✓ Establish a program for environmental services based on existing conditions.
- ✓ Arrange for contractors to make functional repairs.
- ✓ Request the Department of Natural Resources conduct an environmental and animal assessment on the airport.
- ✓ Coordinate with TSA and ensure EDS and Screening equipment is operational and can be calibrated.
- ✓ Reestablish security measures in preparation of the resumption of scheduled passenger service.
- ✓ Test the access control system and verify function of cameras.
- ✓ Contact Airline GM's as to the resumption of air service.
- ✓ Contact all tenant managers (rental cars, HMSHost, Paradies and the beauty shop) as to the expected resumption of commercial air service.

Maintenance

- ✓ Determine general condition of the terminal, noting all damage.
- ✓ Board up broken windows.
- ✓ Remove standing water.
- ✓ If water is found within the terminal, expect problems with mold, fungus and other related issues associated with standing water. Evaluate carpet replacement and report findings to Director of Operations.
- ✓ Remove locks and clamp devices from jet bridges and ensure they are properly aligned.
- ✓ Bury dead animals in non-saturated soil.
- ✓ Arrange for contractors to make repairs.
- ✓ Remove fallen/damaged exterior light fixtures/signs to maintenance area for repairs.
- ✓ Inspect and clean up any debris at TSA Security Checkpoint as well as EDS and remove visqueen.
- ✓ Position remote air conditioning units and large fans near the Concourse.

Airport Public Safety Department

- ✓ Patrol and secure residential, industrial, and airfield tenant areas.
- ✓ Contact Sapp's to remove damaged vehicles to a lot designated by the APSD.
- ✓ Patrol and secure parking decks and parking lots.
- ✓ Coordinate issuance of NOTAM's with Airfield Operations Manager.
- ✓ Designate locations for FEMA and Red Cross.
- ✓ Brief incoming Relief LEO Recovery Teams and designate quarters.
- ✓ Hire additional security personnel if LEO support is unavailable.
- ✓ Post "Condemned – Do Not Enter" signs on buildings condemned by Engineering or URS. The buildings will be spray painted with a large red X.

Administration

- ✓ Notify insurance companies
- ✓ Contact airline managers to determine status of the resumption of flights

- ✓ Contact airline general managers and determine if a Critical Response Team is available for support
- ✓ Designate a Purchasing employee to pick up supplies for administrative purposes

Engineering

- ✓ Establish buildings that are unsafe for occupation and spray paint a red X over the doors.
- ✓ Once buildings are inspected and or condemned, report status to Executive Director and Airport Operations.
- ✓ Coordinate terminal repairs with URS consultant and maintenance.

Information Technology

- ✓ Placeholder.

NOTE: Keep records of all labor and material costs resulting from hurricane damage. Where possible, submit work orders to document requests for maintenance support and document labor hours and costs. Record damage and recovery efforts by an individual assigned to capture digital / still photos accompanied by a scribe to document damage, date, and time to ensure timely processing of insurance claims.

OPCON <3> REPAIRS AND FINANCIAL RECOVERY

Operations

- ✓ Review URS Consultants plans for terminal repairs and coordinate with Engineering.
- ✓ Review all mission numbers, recovery team invoices and verify against laptop data for accuracy.
- ✓ Transfer hurricane data storage to Accounting.
- ✓ Schedule internal and external lessons learned hurricane briefings and make adjustments to the hurricane plan.

Maintenance

- ✓ Verify that work orders associated with hurricane recovery have been isolated from pre-hurricane work orders.
- ✓ Verify work orders within the system are accurate; contain date, time and description of work performed.
- ✓ Attempt to sell debris to an independent salvage company.
- ✓ Maintenance Planner to coordinate repairs through URS and Engineering.

Airport Public Safety Department

- ✓ Conduct an assessment and determine the number of stop signs, traffic lights, road signs, speed limit signs and detour signs require replacement. Order for overnight delivery.
- ✓ Submit work order for Grounds to install signage and list as a priority.
- ✓ Prepare to dismantle the barricades at the direction of the Executive Director and coordinate with Maintenance.
- ✓ Submit expenses associated with the hurricane such as overtime, additional security personnel, barricades, and road signs. Ensure documentation exists in the database to substantiate expenses.

Administration

- ✓ Conduct review with CEMA to determine the flow of reimbursable expenses associated with the hurricane.
- ✓ Cross reference mission numbers with expenses from recovery teams and prepare for submission to FEMA.
- ✓ Sort pictures of hurricane damage to the respective reimbursable expense and submit to FEMA. Ensure date, time and location of picture is documented.
- ✓ Provide ledger to document the date of reimbursement

Engineering

- ✓ Review requirements necessary to obtain FAA Disaster Relief Grants.

- ✓ File the necessary documents to obtain FAA Disaster Relief Grants.
- ✓ Coordinate with URS consultant to ensure terminal repairs/construction meet the required standards.

Information Technology

- ✓ Placeholder.

EXHIBIT A

FUEL STORAGE CHECKLIST

Description	Location	Quantity	Status
Jet A Storage I, II, III, IV & V	Fuel Farm	30,000 each	_____
Above Ground Tank	Fuel Farm	1,000 Waste Jet A	_____
Above Ground Tank	Bldg. 130	1,000 Diesel	_____
Above Ground Tank	Bldg. 130	1,000 Unleaded	_____
Underground Tank	Airfield Lighting Vault	500 Diesel	_____
Emergency Generator	Bldg. 400	2,500 Diesel	_____
Above Ground Tank	Operations Facility	2,000 Unleaded	_____
Above Ground Tank	Operations Facility	2,000 Diesel	_____
Above Ground Tank	Operations Facility	500 Diesel	_____

GENERATORS

1989 Kohler	Bldg. 130	30kW	Stationary
1987 Onan	Bldg. 130	50kW	Stationary
1997 CAT	Airfield Vault	250kW	Stationary
1994 CAT	Terminal	600kW	Stationary
1999 Honda	Grounds	2,500W	Portable
1999 Porter Cable	Bldg. 130	2,500W	Portable
1999 Excel	Freight Bldg.	5,000W	Portable
2000 CAT	Freight Bldg.	57kW	Portable
2001 Dayton	APCOA	10kW	Stationary
2000 Olympian	Parking Deck	60kW	Stationary
2006 Cummins	Operations Facility	350kW	Stationary
2006 Cummins	North Parking Deck	250kW	Stationary
2007 Powerpro	Operations Facility	5,000W	Portable
2008 Powermate	AOA Gate 1	5,000W	Portable

Air Conditioning Units

2 x 2 ½ ton units on flatbed

EXHIBIT B

EMPLOYEE BRIEFING SHEET

1. Employee evacuation procedures.
2. Hurricane supplies.
3. Family care.
4. Return to work.
5. Traffic control points
6. Payroll schedule.
7. Employee support by SAC during recovery efforts.
8. Satellite Phone Numbers

EXHIBIT C

HURRICANE SUPPLY INVENTORY

Desired quantities for the following will be determined at Phase I by Public Safety and Maintenance.

Qty.	Desired	Description	Location	Qty.	Desired	Description	Location
1-Ea		Husqvarna Chain Saw	Purchasing	<1-Case		6 Volt Lantern Batteries	Purchasing
4-Ea		Stihl Chain Saws	Purchasing	16-Ea		6 Volt Lanterns	Purchasing
4-Ea		Spare Stihl Chains	Purchasing	1-Case		D-Cell Batteries	Purchasing
1-Ea		Spare Stihl Bar	Purchasing	1- Case		C-Cell Batteries	Purchasing
3-Ea		Cases 2Cycle Oil	Purchasing	1- Case		AL-AAA Batteries	Purchasing
2-Ea		Gals Bar/Chain Oil	Purchasing	1- Case		AL-AA Batteries	Purchasing
4-Ea		1Gal Gas Cans	Purchasing	1- Case		9 Volt Transistor Batteries	Purchasing
13-Ea		5 Gal Gas Cans	Purchasing	100-Ea		Sheets 1/2" Plywood	North Parking Deck
100-Ea		Cases Bottle Water	Purchasing	100-Ea		16' 2x4's	North Parking Deck
1-Ea		Weather Radio	Purchasing	300-Ea		Sand Bags	Grounds
23-Ea		Mattresses	Purchasing	1,000 Ft		#10 SO Elec. Cord	Purchasing
23-Ea		Pillows	Purchasing	10-Ea		120 Volt Male Elec. Plugs	Purchasing
23-Ea		Bed Sheets	Purchasing	10-Ea		120 Volt Female Elec.Plugs	Purchasing
23-Ea		Blankets	Purchasing	3-Ea		150 Amp Jet bridge fuses	Purchasing
20-Ea		Rolls of Duct Tape	Purchasing	3-Ea		5 Amp Bag lift Fuses	Purchasing
17-Ea		Rolls of Plastic	Purchasing	3-Ea		1 Amp Bag lift Fuses	Purchasing
2 pair		Size #9 Rubber Boots	Purchasing	4-Ea		Mops	Purchasing
1- Pair		Size #10 Rubber Boots	Purchasing	4-Ea		Mop Buckets	Purchasing
3-Pair		Size #12 Rubber Boots	Purchasing	5-Ea		First Aid Kits	Purchasing
6 pair		Size #11 Rubber Boots	Purchasing	2-Ea		Shop Vacs	Purchasing
53-Ea		5 Gal Drip Buckets	Purchasing	10-Ea		Jet bridge tie-down sets	Purchasing
5 pair		Rain Suits	Purchasing	200 Ft		5/16" Link Chain	Purchasing
1-case		Insect Repellent	Purchasing	4-Ea		5/16" Chain Binders	Purchasing
1-Ea		35 Gal Water Drums	Purchasing	8-Ea		5/16" Grab hooks	Purchasing
1-Ea		55 Gal Water Drums	Purchasing	5-Ea		Porta-Band Spare Blades	Purchasing
2-Ea		Igloo Water Coolers	Purchasing	8-Ea		19' x 29' Tarps	Purchasing
1-Ea		Ice Chests	Purchasing	5-Ea		11' x 14' Tarps	Purchasing
400-Ea		Shot For Nail Gun	Purchasing	2-Ea		Packages of Bungee cords	Purchasing
3-Ea		50 Lb. Box of #8 Nails	Purchasing	500' Spool		1/4" Poly Rope	Purchasing
2-Ea		50 Lb. Box of #16 Nails	Purchasing	13-Ea		Cases of MRE's	Purchasing
3-Ea		Boxes of Screws	Purchasing	1-Ea		Boxes of dust masks	Purchasing
4-Ea		Case's 30# motor oil	Purchasing	13-Ea		Packs of Drinking Cups	Purchasing
2-Ea		Cases Gatorade	Purchasing	3-Ea		Packs of plastic ware	Purchasing
6-Ea		36" Floor Fans	Purchasing	2-ea		Boxes of garbage bags	Purchasing
9-Ea		Back Braces	Purchasing	24-Ea		Assorted canned meats	Purchasing
24-Pr		Gloves	Purchasing	?- Cans		Assorted canned goods	Purchasing
4-Ea		20'x40' pole tent	Purchasing				

EXHIBIT D

SAFETY COMMITTEE MEETING CHECKLIST

The intent of this meeting is to update all tenants of the progress related to Hurricane _____ and discuss preparations and recovery actions associated with the airport terminal and properties.

AGENDA

- ✓ Updated Advisory and Hurricane Tracking
- ✓ Projected Landfall and Effects of the Storm
- ✓ Designated Equipment Storage Areas
- ✓ Time Table for Storing Equipment
- ✓ Fire Department Briefing
- ✓ Airport Public Safety Briefing
- ✓ Emergency Support Function Vehicles
- ✓ Flight Schedules
- ✓ Jet Bridges
- ✓ Terminal Ride-Out
- ✓ Airfield Recovery
- ✓ Terminal Recovery
- ✓ Satellite Phone Numbers
- ✓ Traffic Control Points

EXHIBIT E

RIDEOUT CREW BRIEF

When possible, employees without dependent family obligations or responsibilities should be selected for the ride-out crew.

- ✓ Family care
- ✓ Mission
- ✓ Ride-out Crew personal essentials
  - Toiletries
  - Bed Linens
  - Soap
  - Towels
  - Wash cloths
  - Change of clothes
  - Cash
  - Required medication
  - Eye care and associated items
- ✓ Assigned duties of ride-out crew
- ✓ Release and Return to Duty instructions
- ✓ Inoculations
- ✓ Satellite Phone Numbers

EXHIBIT E-1

RECOVERY CREW REQUIREMENTS BY DEPARTMENT

The following is a listing of general position requirements for the Ride-Out and/ or Recovery Crew. The Executive Director of the Savannah Airport Commission reserves the right to add or delete positions as operational necessity dictates.

Position Station	Personnel required	Duty
Executive Director or Assistant Executive Director	1	Operations
Director of Operations or Senior Operations manager	1	Operations
Executive Secretary	1	Operations
Director of Finance and Administration	1	
Accountant	1	Operations
Engineer	3	Operations
Chief of Police or Captain	1	Operations
Police Officers	All	Terminal
Communications Specialists	3	Terminal
Security Programs Manager or Security Manager	1	Operations and Chatham EOC
Airport Operations Manager	2	Operations
Facilities Manager	1	Operations
Airfield Operations Supervisor	1	Operations
Airfield Operations Personnel	4	Operations
Electronics Technician	2	Operations
Skilled Craftsman	1	Operations
Semi-Skilled Craftsman	1	Operations
Maintenance	4	Operations
Purchasing Agent	1	Operations
Purchasing Runner	1	Operations
Equipment Mechanic	1	Operations
Custodial Supervisor	1	Operations
Custodian	4	Operations
Grounds Manager	1	Operations

Grounds	4	Operations
Administration Clerk	1	Operations

EXHIBIT F

ADDITIONAL RESOURCES

Consult the following tenants who will make noted resources available during the hurricane and recovery stages.

1.)	Food & Utensils	HMSHost
2.)	Heavy Equipment	Ga. Air Nat'l Guard, JCB
	Supplies and staged Municipal Equipment	
3.)	Building Supplies	Home Depot
4.)	Combat Readiness Training Center	Jet A – 50,000 Gallons Diesel- 10,000 Gallons Unleaded - 10,000 Gallons
5.)	Unleaded and Diesel Fuel	(DK Patel) Airport Shell Station Unleaded - 8,000 Gallons Diesel - 4,000 Gallons

EXHIBIT G

TENANT RIDEOUT CREW

TENANT NAME _____

LOCATION / RIDE OUT CREW _____

TENANT MGR. NAME _____

PHONE CONTACT _____

NAME	HOME PHONE	CELL / PAGER

PAGE ____ OF ____

EXHIBIT H

SAVANNAH AIRPORT COMMISSION RIDEOUT CREW

NAME	HOME PHONE	CELL / PAGER

PAGE ____ OF ____

EXHIBIT I

Recovery Crew Contact List

TENANT NAME _____

LOCATION / RIDE OUT CREW _____

TENANT MGR. NAME _____

PHONE CONTACT _____

NAME	HOME PHONE	CELL / PAGER

PAGE ____ OF ____

EXHIBIT J

CertAlert

DOT/Federal Aviation Administration, Southern Region Airports Division,
Airport Certification Safety Team (ASO-620), P.O. Box 20636, Atlanta, Georgia 30320

Issued June 9, 2011 — Number SO-11-02

This CertAlert pertains to:
All 14 CFR part 139 Airport Operators
Attention: Airfield Operations Department

Hurricane Field Condition Report

June 1st marked the beginning of hurricane season. During times of emergencies, the FAA and other government agencies need to know the status of your airport. We need this information to respond to the event and provide you our support. Procedures for reporting information to us will be the same as we did last year. Attached is a Hurricane Field Condition Report form that you can use to email or fax information to us. In the event you cannot use email or do not have access to a fax machine, you may report information to us by telephone at one of our phone numbers listed on the "How to Report" attachment.

Additionally attached is a contact information sheet that we update during our annual inspections. We developed this contact sheet since communications are not always possible during a hurricane or other emergencies.

If your telephone numbers or personnel have changed recently and your inspection was held anytime between October 2010 and April 2011, please fill out another contact information sheet and email it back to us as soon as possible so we can update our records.

Thank you for your cooperation.

Attachments:

- Hurricane Field Condition Report
- How to Report
- Airport Contact Information Sheet

Hurricane Field Condition Report

Airport Name: _____

Date & Time of this information: _____

1. Is the **AIRPORT** OPEN or CLOSED? If closed, when do you expect to reopen?

2. What **RUNWAY**(s) are OPEN /CLOSED?
   (Summarize runway status, including basic open/closed information, as well as damage (e.g., flooding or debris). Also include any available information on ramps and taxiways. Include projected return to full operations if available).

3. What **DAMAGE** occurred at your airport?

4. Estimated DAMAGE **COSTS** - per element (for example, terminal roof $25K, runway lights $5K). (Summarize damage or lack thereof, as applicable, to the physical plant of (if in separate building): terminal, and support buildings).

5. Status of your **ARFF** vehicle & staffing.
   (Summarize Aircraft Rescue & Fire Fighting (ARFF) capabilities; include information on ARFF crew availability, equipment, supplies, etc.)

6. How many **DAYS** of fuel is on hand? (Rough estimate is okay)
   JET-A?: _____
   Avgas?: _____

7. What is the status of **power** and **airfield lighting**?
   What is the status of your **ENGINE GENERATORS**;
   Airfield (all runways?): _____
   Fuel farms / FBOs: _____
   Terminal Bldg: _____

8. What are your **AIRPORT** Staffing levels, operations & maintenance (% of Normal Level)

9. **NOTAMS**? Please update your NOTAMS - Coordinate with ATCT and Tech Ops.

10. What is the status of air carrier operations?

Airport Contact Information Sheet

Return to:
ASO-620
FAA Southern Region, Airports Division
P.O. Box 20636, Atlanta, GA 30320
FAX 404-305-6730

Date: _____

Airport Name: _____ Identifier: _____

Address: _____

_____

_____

_____

Director/Manager

Name: _____ Phone: _____

Cell: _____

Fax: _____

e-mail: _____

Assistant Director/Manager

Duty Operations (after hrs contact)

Name: _____ Phone: _____
Cell: _____
Fax: _____
e-mail: _____

Maintenance Manager

Name: _____ Phone: _____
Cell: _____
Fax: _____
e-mail: _____

ATCT Cab

Name: _____ Phone: _____
Cell: _____
Fax: _____
e-mail: _____

Other

Name: _____ Phone: _____
Cell: _____
Fax: _____
e-mail: _____

Other

Name: _____ Phone: _____
Cell: _____
Fax: _____
e-mail: _____

EXHIBIT K

IMPORTANT NUMBERS TO KNOW

SEADOG / FAA Bridge line Passcode XXXX

Web: http://seadogops.wordpress.com/

Twitter: @SEADOGops

_____

_____

_____

EXHIBIT L
TRAFFIC CONTROL POINTS

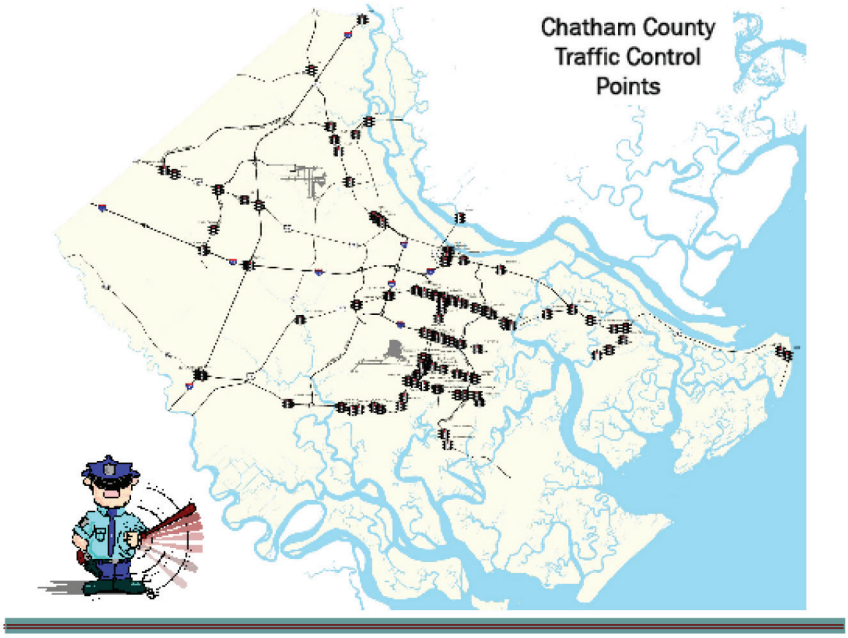
CEMA SIGNAL Page 18

Mind the Gap

Dustin Hetzel, Emergency Management Specialist, CEMA
ESF 13: Law Enforcement

This 2011 Hurricane Season, the Chatham Emergency Management Agency (CEMA) met with Emergency Management Program partners to discuss evacuation Traffic Control Points (TCP). From these meetings, partners verified intersections throughout the County that most likely would require a law enforcement presence during an evacuation to ensure the orderly flow of traffic over the evacuation period. The verified locations are recorded in a table and plotted on a map. As part of the verification process, 12 hour staffing levels were also evaluated for each location and compared to the staffing ability of each jurisdiction. The result of the comparison identifies a gap in staffing.

For example: The municipality FAKE-TOWN has 15 TCPs. Each of these 15 TCPs requires two people per 12-hour shift to ensure traffic flow and staff safety. This results in a TCP staffing need of 30 persons every 12-hour shift. If FAKE-TOWN can only dedicate 6 people per 12-hour period, the comparison tells us we have a gap of 24 people for those TCPs. For planning purposes, we are aware that staffing resources will be required in FAKE-TOWN to manage the evacuation process efficiently and safely. Augmentation from external entities will be coordinated through the Chatham Emergency Operations Center and requests routed to the State Operations Center.



APPENDIX O

Sample 9—H1N1 Business Plan Addressing Business Continuity Planning/ Continuity of Operations Planning for Savannah/Hilton Head International Airport

I. INTRODUCTION

The Savannah/Hilton Head International Airport H1N1 Business Plan is modeled on guidance recommended by the U.S. Department of Health and Human Services, the Centers for Disease Control and Prevention (CDC), and the U.S. Department of Homeland Security. The Savannah Airport Commission recognizes the airport of this community plays a key role in protecting employees' health and safety by limiting the negative impacts on the individual, the community, and the nation's economy. It is for this reason the Executive Director of the Savannah Airport Commission has published a related H1N1 Business Plan.

II. PLANNING for FALL and WINTER INFLUENZA

SEASON

The CDC anticipates communities may be severely affected by the 2009 fall and 2009/2010 winter due to wider transmission and greater impact. Seasonal influenza viruses may run concurrent with the H1N1 contributing to varying levels of severity requiring organizations to respond in a flexible manner to varying levels of an outbreak. The Savannah Airport Commission will continuously monitor national and international data disseminated by the CDC and take the appropriate action.

Our core H1N1 Business Plan involves four principles designed to decrease the spread of influenza and lower the impact of influenza in the workplace.

- Reducing transmission among staff
- Protecting individuals who are at increased risk of related complications
- Maintaining business operations
- Minimizing adverse affects on other entities in the community

The strategy associated with the H1N1 Business Plan involves an evaluation process based on the following key indicators.

- The severity of the disease (hospitalization and death rates) in the community
- The extent of the disease in the community
- The amount of worker absenteeism for tenants and Commission employees
- Impact of the disease on workforce populations that are vulnerable and at high risk
  - Pregnant women
  - Employees with chronic medical conditions
- Other factors that may affect employees' ability to get to work
  - School closures or dismissals
  - High levels of illness in children

PREPAREDNESS AND RESPONSE

The Savannah Airport Commission's Preparedness and Response to the H1N1 Business Plan involves two possible Operational Conditions (OPCON). OPCON 1 is a continuation of the current level of severity of influenza as was observed during the spring and summer of 2009. OPCON 2 is a more severe outbreak. The Executive Director of the Savannah Airport Commission will establish the respective OPCON based on data from the CDC, CEMA, and other sources.

OPCON 1

- The Director of Operations or his or her designee will conduct an OPCON 1 H1N1 briefing to all Savannah Airport Commission employees.
- The Marketing Department will advise airline tenants, concession tenants, and lessees that the Executive Director has implemented OPCON 1.
- Establish normal influenza absenteeism rates and begin to track variances above the norm.
- Employees are encouraged to get vaccinated against influenza.
- Employees at higher risk for complications from influenza, to include pregnant women, employees with chronic lung disease, diabetes, and diseases that suppress the immune system, should check with their health care provider if they become ill.
- Assess essential business functions and determine at what threshold of absenteeism airport functions may be affected.
- All individuals exhibiting influenza symptoms should stay home and away from the workplace and will not return until 24 hours after the fever is resolved.
- Ensure health practices such as hand washing and covering coughs and sneezes are in place.
- Employees who are well but have an ill family member at home with influenza should monitor their health daily and not report to work if they exhibit symptoms of influenza.
- Routine cleaning of commonly touched surfaces will be performed by Environmental staff.

OPCON 2

- The Director of Operations or his designee will conduct an OPCON 2 H1N1 briefing to all Savannah Airport Commission employees.
- The Marketing Department will advise airline tenants, concession tenants, and lessees that the Executive Director has implemented OPCON 2 .
- Review influenza absenteeism rates and meet with the Executive Director to determine a projection of the absenteeism rate.
- Each Department Manager will provide the Director of Operations or his designee with adverse functionality conditions of their Department based on current absenteeism trends.
- The Executive Director and Director of Operations in coordination with the CDC and CEMA will review data and determine the functional level of the airport based on absenteeism rates.
- The Executive Director will implement policy associated with work eligibility based on symptoms and CDC or Health Department recommendations as well as return to work policy.
- The Executive Director or his designee may require social distancing (non-contact with other employees within a given distance) to include reassignment of work space.
- Conference rooms will be closed with the exception of Executive use.
- The Executive Director or his designee may implement work-from-home strategies to maintain functionality of the airport.
- Employees who exhibit flu-like symptoms are encouraged not to travel and are not permitted to travel on behalf of the Savannah Airport Commission.

APPENDIX P

Sample 10—Irregular Operations Plan Addressing Business Continuity Planning/Continuity of Operations Planning for Savannah/Hilton Head International Airport

2013

SAVANAH – HILTON HEAD INTERNATIONAL AIRPORT

IRREGULAR OPERATIONS (IROPS) PLAN

X

Greg Kelly, AAE
Acting Executive Director

Airport Operations Department

Savannah Airport Commission

8/1/2013

SAVANNAH / HILTON HEAD

INTERNATIONAL AIRPORT

Irregular Operations Plan

Revised August 1, 2013

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IF YOU RUN OUT OF GATES	5
CANCELLATIONS	6
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SAVANNAH / HILTON HEAD

INTERNATIONAL AIRPORT

Irregular Operations Plan

Revised August 1, 2013

IROPS MENTAL CHECKLIST

- ✓ *Did the Airline notify dispatch?*
- ✓ *Have the Operations Manager and On-Call been advised?*
- ✓ *Has TSA been notified?*
- ✓ *Has CBP been notified?*
- ✓ *Where will you put the airplane?*
- ✓ *Are the fuel trucks still active?*
- ✓ *Has HMSHost and Paradies been advised?*
- ✓ *Do they intend to offload?*
- ✓ *Are there more diversions on the way?*
- ✓ *Where can I put the next one?*
- ✓ *Is the TSA checkpoint Screening Manager aware?*
- ✓ *Is the Environmental Services crew keeping up?*
- ✓ *Do the passengers need anything special?*
- ✓ *Do the flight crews need anything special?*
- ✓ *If it's an international flight, where will you put the passengers if it offloads, and who will escort them?*
- ✓ *When can we expect them to depart?*

SAVANNAH / HILTON HEAD

INTERNATIONAL AIRPORT

Irregular Operations Plan

Revised August 1, 2013

DIVERSIONS

INTERNATIONAL PROCDURES HIGHLIGHTED BLUE

APSD DISPATCH/COMM. CENTER

- Notify TSA for each diversion.
- Advise CBP that diversions are occurring and international arrivals are possible.
- Notify CBP for all international diversions.
- Notify the On-Call Manager or Director.
- Notify the On-Duty Operations Manager.
- Dispatch an officer (or officers) to monitor activity.
- Review the Diversion Gate Chart (Exhibit A1 & A2) and assign a gate.

OPERATIONS

- Verify the gate assignment is the best fit for the particular aircraft type.
- Verify the availability of fuel for "gas & go" flights.
- Notify TRACON at 964-3740 if four or more diversions are expected.
- Notify Director of Marketing/Public Relations if diversion activity merits.
- Check the status of airports flights are diverting from / holding for, and evaluate the potential of additional aircraft.
- Determine where the next diversion(s) will park; advise Dispatch.
- Determine whether crews intend to offload passengers.
  - If yes, advise HMS Host manager to extend normal food service hours in concourse.
- Advise TSA Screening Manager that checkpoint hours may need to be extended based on diverted and/or delayed flight activity.

SAVANNAH / HILTON HEAD

INTERNATIONAL AIRPORT

Irregular Operations Plan

Revised August 1, 2013

- Ensure the Environmental Services crew is keeping the concourse and restrooms in neat and sanitary condition.
- Locate the airline Manager / Supervisor, determine if there are any passengers or flight crew have any special needs (diapers, baby food, Tylenol, etc.).
  - Help them procure those items if absolutely necessary.
- Hold existing airport staff on duty or call in additional staff to assist if volume demands.
- Monitor the "big picture."
- Prepare an area and restrooms for the offload of international passengers.
- Hold-over existing staff or call in additional staff if necessary.

AIRPORT POLICE

- Secure the aircraft and gate until CBP arrives and provides handling instructions. Depending on the length of the delay, CBP may also authorize the following:
  - Passengers stay aboard the aircraft but are permitted to step into the jet bridge (typical).
  - Cordon-off the gate hold room with stanchions and permit passengers to disembark, under guard, into the terminal (infrequent).

MAINTENANCE

- Prepare to adjust/bypass jet bridge limit switches on un-leased or rarely operated jet bridges.
- Prepare HVAC and seating in the International Hold Room.
- Prepare 15- and 30-passenger vans for use.
- Stay in contact with the Operations Manager or On-Call; await instructions.

- If instructed, use stanchions to cordon-off the restrooms adjacent to gates 5 (men's) and/or 6 (ladies') as Customs Sterile areas as specified by CBP.
- Assist airline staff in escorting passengers to and from the restroom as instructed by CBP personnel.

IF YOU RUN OUT OF GATES

APSD DISPATCH/COMM. CENTER

- Check PASSUR, FlightAware, and/or FAA (www.fly.faa.gov) to determine ground stop update times, EDCT times, or overall departure prognosis for holding aircraft.
- Using PASSUR data, determine holding times of aircraft still holding on the movement area or ramp.

OPERATIONS

- Contact other airlines to verify if other hubs and/or flight activity are impacted. **Use other airlines' gates if they will otherwise be vacant.**
- Recommend use of the hardstand locations listed in Exhibit A2.
- Locate compatible mobile passenger stairs for servicing hard-stand aircraft. (Current inventory: AA – 2 x ERJ stairs, UA – 1 x ERJ stairs, US – 1 x NB stairs ≤B737, DL – 1 x NB stairs ≤B757.)
- If hard stands are full and aircraft are waiting on the movement area :
  - Verify availability/capability of Green Stripe personnel to provide airfield escort.
  - **Brief all parties** involved of the required airfield escort procedure **prior to** authorizing aircraft servicing.

- Coordinate with the airline Manager or Supervisor to establish a timeline for delivery of water, ice, catering, special needs items, and lavatory service.
- Work with airlines to reposition idle aircraft to remote parking so that holding aircraft may deplane.
- If a suitable gate is not expected to be available within the required time **and** if the airline Manager requests, advise Maintenance to bring 15- and 30- passenger vans to begin delivering passengers to the terminal in accordance with the "3 Hour Rule."

- Coordinate with airline operations and dispatch offices to ensure all parties are aware of the airport/airfield-parking situation, communicate the disposition of the passengers involved, and the airport's ability/inability to handle additional volume.

CANCELLATIONS

- Determine the availability of RON kits from airlines, ability of carriers to share if necessary, or the ability of Paradies to remain open extended hours to make basic toiletries available.

- If after normal operating hours, during seasonal periods, or during major airport outages when hotel space may become scarce, consider procurement cost of pillows, blankets, etc. if passengers expect to be stranded in the airport overnight.

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INTERNATIONAL AIRPORT

Irregular Operations Plan

Revised August 1, 2013

INTERNATIONAL HOLD ROOM PROCEDURES

- Ensure that passenger escort / control adheres to CBP instructions.
- Evaluate practicality of relocating passengers to the International Hold Room

PROLONGED INTERNATIONAL DIVERSION HOLDS

- Passengers should be re-located to the International Hold Room beneath gates 5 and 6 if passenger volume and/or delay length dictate.
- The Airline will staff the international Hold Room and provide for basic passenger comforts and informational updates.
- The Airline is responsible for providing adequate escort to passengers while they are present in or transiting across the sterile and/or secured area.

IF ENTRY SCREENING MUST TAKE PLACE

- The International Hold Room should be setup to resemble the FIS diagram (Exhibit B) as closely as is practicable.
- Airline staff should be located in the breezeway at checked luggage claim and entrance, at the podium as passengers exit the screening positions, and at the baggage re-check area.
- It shall be the airlines' responsibility to provide adequate escort to passengers while they are present in or transiting across the secured area.
- Airport staff should be positioned at areas surrounding baggage claim and baggage re-check areas to support airline staff in escorting passengers while they are in the secured area.

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INTERNATIONAL AIRPORT

Irregular Operations Plan

Revised August 1, 2013

- The airline will display checked luggage in the mid-concourse breezeway.
- Passengers will reclaim their checked luggage and proceed from the breezeway into the queue area via that single door at the SW corner of the FIS.
- After clearing either CBP initial, secondary, or private screening, passengers will proceed toward the passenger seating area, restroom escort door, or exit based on their needs.
- Exiting passengers will drop their cleared checked luggage outside in the baggage re-check area for display at the appropriate baggage carousel.

CHECKED LUGGAGE MUST NOT BE ALLOWED INTO THE STERILE AREA!

- Communicate with airline staff to determine the need for and possibility of obtaining special needs items such as baby formula, diapers, medical items, etc. Assist in procurement if required.

SAVANNAH / HILTON HEAD

INTERNATIONAL AIRPORT

Irregular Operations Plan

Revised August 1, 2013

UNLEASED GATES

7	ERJ-135, -140, -145 CRJ-100, -200, -700		RJ'S ONLY
9	ERJ-135, -140, -145 CRJ-100, -200, -700 EMB-170, -175, -190 ALL TURBOPROPS (no line)	DC-9, 717 (all series) MD-80 (all series) 737 (all series) A319, A320, A321	NEAREST TO DELTA
10	ERJ-135, -140, -145 CRJ-100, -200, -700 EMB-170, -175, -190 ALL TURBOPROPS (no line)	DC-9, 717 (all series) MD-80 (all series) 737 (all series) A319, A320, A321 B757 (w/ or w/o winglets)	NEAREST TO US AIRWAYS
3	ERJ-135, -140, -145 CRJ-100, -200, -700 EMB-170, -175, -190 ALL TURBOPROPS (no line)	DC-9, 717 (all series) MD-80 (all series) 737 (all series) A319, A320, A321 B757 (w/ or w/o winglets)	NO 757 IF 767 ON 1
2	ERJ-135, -140, -145 CRJ-100, -200, -700 EMB-170, -175, -190 ALL TURBOPROPS (no line)	DC-9, 717 (all series) MD-80 (all series) 737 (all series) A319, A320, A321	CAN PARK TWO 50 SEATERS OR ONE 50 + ONE 70 SEATER
1	ERJ-135, -140, -145 CRJ-100, -200, -700 EMB-170, -175, -190 ALL TURBOPROPS (no line)	DC-9, 717 (all series) MD-80 (all series) 737 (all series) A319, A320, A321 757-200, -300 (w/ or w/o winglets) 767-200, -300 767-400 on dashed line	SAVE FOR 767'S IF 757 ON 3, USE DASHED LINE FOR 767
8	ERJ-135, -140, -145 CRJ-100, -200, -700 EMB-170, -175, -190 ALL TURBOPROPS (no line)	DC-9, 717 (all series) MD-80 (all series) 737 (all series) A319, A320, A321 B757 (w/ or w/o winglets)	JETBRIDGE INOP HARD STAND ONLY

SAVANNAH / HILTON HEAD

INTERNATIONAL AIRPORT

Irregular Operations Plan

Revised August 1, 2013

LEASED GATES

CAN BE USED BY OTHER AIRLINES IN EMERGENCIES

4	ERJ-135, -140, -145 CRJ-100, -200, -700 EMB-170, -175, -190		
5	ERJ-135, -140, -145 CRJ-100, -200, -700 EMB-170, -175, -190 ALL TURBOPROPS (no line)	DC-9, 717 (all series) MD-80 (all series) 737 (all series) A319, A320, A321 B757 (w/ or w/o winglets) (no line)	
6	ERJ-135, -140, -145 CRJ-100, -200, -700 EMB-170, -175, -190	DC-9, 717 (all series) MD-80 (all series) 737 (all series) A319, A320, A321	
11	ERJ-135, -140, -145 CRJ-100, -200, -700 EMB-170, -175, -190 ALL TURBOPROPS (no line)	DC-9, 717 (all series) MD-80 (all series) 737 (all series) A319, A320, A321 B757 (w/ or w/o winglets)	DELTA
12	ERJ-135, -140, -145 CRJ-100, -200, -700 EMB-170, -175, -190 ALL TURBOPROPS (no line)	DC-9, 717 (all series) MD-80 (all series) 737 (all series) A319, A320, A321 B757 (w/ or w/o winglets)	
13	ERJ-135, -140, -145 CRJ-100, -200, -700 EMB-170, -175, -190 ALL TURBOPROPS (no line)	DC-9, 717 (all series) MD-80 (all series) 737 (all series) A319, A320, A321 757-200, -300 (w/ or w/o winglets) 767-200, -300 767-400 on dashed line 777-200, A330-200, -300 on dashed line STAIRS ONLY	DELTA
14	ERJ-135, -140, -145 CRJ-100, -200, -700 EMB-170, -175, -190 ALL TURBOPROPS (no line)	DC-9, 717 (all series) MD-80 (all series) 737 (all series) A319, A320, A321 757-200, -300 (w/ or w/o winglets) 767-200, -300	
15	ERJ-135, -140, -145 CRJ-100, -200, -700 EMB-170, -175, -190 ALL TURBOPROPS (no line)	DC-9, 717 (all series) MD-80 (all series) 737 (all series) A319, A320, A321 757-200, -300 (w/ or w/o winglets) 767-200, -300, -400 777-200, A330-200, -300 STAIRS ONLY	DELTA

SAVANNAH / HILTON HEAD

INTERNATIONAL AIRPORT

Irregular Operations Plan

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AIRCRAFT WINGSPAN CHART

Turboprop		
Fairchild / Dornier	Do328	68'10"
Saab / Fairchild	Saab 340	70'4"
ATR	ATR42, 72	80'7"
Bombardier	Dash 8-100, -200	84'11"
Bombardier	Dash 8-300	90'
Bombardier	Dash 8-400	93'2"
Regional Jet		
Embraer	ERJ-135, -140, -145	65'9"
Embraer	EMB-170, -175	85'4"
Embraer	EMB-190, -195	94'3"
Canadair/Bombardier	CRJ100, 200	69'7"
Canadair/Bombardier	CRJ700	76'3"
Canadair/Bombardier	CRJ705, 900	81'6"
Canadair/Bombardier	CRJ1000	85'11"
Narrowbody		
Douglas	DC-9-50	93'5"
Boeing	717	93'5"
McDonnell/Douglas	MD-80 (all series)	107'8"
Boeing	737-300, -400, -500	94'9"
Boeing	737-700, -800, -900	117'5"
Airbus	A320, A321	111'11"
Boeing	757-200, -300	124'10"
Widebody		
Boeing	767-200, -300	156'1"
Boeing	767-400*	170'4"

APPENDIX Q

Sample 11—Continuity of Operations Plan Used by Fort Lauderdale Executive Airport

I. Executive Summary

Mission Essential Functions are those functions that provide vital services, exercise civil authority, maintain safety and well-being of the public, and sustain the industrial and economic base. The Mission Essential Functions detailed in Section V must be performed by the Airport Division (the Division), under all circumstances and are prioritized so that personnel know which activities should be performed first. The Alternate facility can support the Mission Essential Functions of the Fort Lauderdale Executive Airport.

The Division leases, develops, operates, maintains, and promotes Executive Airport and Industrial Airpark to provide the greatest benefit to the community and the highest return of revenue with surplus revenue used for capital improvements. The Division also develops, operates, and promotes the Downtown Fort Lauderdale Helistop.

Fort Lauderdale Executive Airport serves over 150,000 aircraft operations per year, currently making it one of the busiest general aviation airports in the country. Over 700 aircraft are based at Executive Airport.

This general aviation facility has the capacity to serve all aircraft other than scheduled airlines. Designated by the Federal Aviation Administration as a general aviation reliever facility for Fort Lauderdale-Hollywood International Airport, the Airport is situated on approximately 1,000 acres.

The Downtown Fort Lauderdale Helistop is designed to accommodate intermediate category general aviation helicopters used by corporate and charter operators with a maximum takeoff weight of 11,900 pounds and a maximum rotor diameter of 46 feet. The Helistop features a landing area and one helicopter parking position on a 14,500 square-foot elevated platform. A fully furnished lobby located just below the elevated platform on the sixth floor of the garage provides travelers with a comfortable area to converse and conduct short business meetings. The lobby serves as a meeting room/pilot briefing area and has access to plentiful parking and convenient ground transportation. The platform is wheelchair accessible by elevator from the lobby level. The Helistop opened in June 2002 and operates 24 hours a day, seven days a week, with no fees to users. The lobby is available 24 hours per day with advance reservations.

The state-of-the-art facility is situated above the City Parking Garage in the heart of Fort Lauderdale, three miles north of Fort Lauderdale-Hollywood International Airport and six miles south of Fort Lauderdale Executive Airport. Miami International Airport is 25 miles to the south and easily accessible by air.

II. Introduction

This COOP contains the strategy and program management concepts that will be used to ensure and improve upon the City of Fort Lauderdale's COOP capabilities. The guidance included in this plan meets all requirements of Federal Preparedness Circular (FPC) 65, Federal Executive Branch Continuity of Operations, the organization's Strategic Plan, and Executive Order Number 12656.

III. Purpose

COOP planning is a good business practice and part of the fundamental mission of agencies as responsible and reliable public institutions. Today's changing threat environment and recent emergencies, including localized acts of nature, accidents, technological emergencies, and military or terrorist attack-related incidents, have increased the need for COOP capabilities and plans that enable agencies to continue their essential functions across a broad spectrum of emergencies. This environment, coupled with the potential for terrorists' use of weapons of mass destruction, has emphasized the importance of COOP plans that ensure continuity of essential government functions across all levels of local, state, and federal government.

The Airport Division is comprised of 18 full time personnel and one to two interns. Public Works personnel, though not directly employed by the Airport, help maintain the Airport. This COOP meets all requirements to support the Division's need to continue its essential functions under all conditions in accordance with FPC 65.

IV. Applicability and Scope

The purpose of the COOP Plan is for the Airport Division to have detailed proactive procedures and responsibilities for protecting employees, facilities, equipment, tenants, and the general public from harm brought on by natural or man-made acts. The plan includes a full spectrum of potential threats, including:

- Airfield power outage
- Headquarters building incapacitation
- Aircraft Incident or Accident
- Acts of Nature

The COOP Plan is vital in the continued operation of the Fort Lauderdale Executive Airport. In case of a catastrophic event, it is vital that the essential function of Compliance and Safety Inspections of the Airport continues. The COOP Plan includes coordinating with Public Works and Engineering to obtain the operational status of runways and roadways as soon as possible to ensure emergency landing facilities are available.

V. Essential Functions

Priority	Essential Functions
1	**Compliance and Safety Inspections** - Provide for the safety and security of Airport and Downtown Helistop; Ensure compliance with Federal, State, and Local standards; Conduct inspections to ensure proper safety, maintenance, and operation of facilities, including air traffic control and customs coordination and Aircraft Rescue and Fire Fighting.
2	**Facilities Management** - Management of runways, taxiways, and airport and helistop infrastructure.
3	**Property Management** - Negotiate and administer land leases for properties on the Airport and in the Industrial Airpark and ensure tenant lease compliance. Collect rent and ensure taxes are paid.
4	**Planning and Development** - Plan for future development; Coordinate with the FAA and FDOT and administer Federal and State grants; Market and promote the Airport, Industrial Airpark, and Helistop; and Minimize negative impacts on the community resulting from Airport operations.

VI. Authorities and References

City Emergency Operations Center (EOC):

COOP Leadership

Department Head –

Division COOP Coordinator –

Airport Manager

Assistant Airport Manager

Airport Operations Supervisor

Functions Not Managed

- Air Traffic Control: The Airport is open 24 hours a day with a 24-hour FAA Air Traffic Control Tower. Phone: ; Fax:
- Customs & Border Protection (CBP): A United States Customs facility is located on the east side of the Airport to clear international arrivals. Service is available seven days a week from 8a.m. until 9 p.m. Phone: ; Fax:
- ASOS weather - FAA offers an automated weather station providing winds, visibility, temperature, dew point, and altimeter setting for the conditions at Executive Airport. Pilots can listen to broadcast weather conditions by calling (954).

- Police - The Fort Lauderdale Police Department has a Substation (954) located on the Airport, in charge of the facility and the surrounding neighborhoods. AlliedBarton Security (954) provides 24-hour contracted security for the Executive Airport and Industrial Airpark property. The Broward County Sheriff's Department (954) also maintains its Special Operations Unit, helicopter unit, marine patrol, bomb squad, and canine unit at Executive Airport.

Tenants

- Banyan Air Service, Inc. - Services offered within the Banyan complex include 24-hour fuel services, rental cars, piston and turbine maintenance, avionics repairs and installation, propeller repairs and overhaul, parts and accessory sales, a pilot shop, aircraft charter, interior refurbishment, aircraft sales, flight training, and hangar storage, and is an AVfuel distributor.
- Aero Toy Store/Executive Jet Center - Aero Toy Store specializes in corporate jet aircraft transactions, sales, purchases, trades, acquisitions, sales management, financing, leasing and leaseback, and complete aircraft management services. Executive Jet Center, the adjoining FBO, offers full- service avionics and a Phillips 66 distributor.
- W Aviation - A full-service FBO providing Jet A and Avgas. Services include DTN Weather, catering, and rental cars. Also available on the property are piston aircraft maintenance and charter services.
- Sano Aviation - A full-service FBO providing a variety of services such as aircraft fueling (Exxon), maintenance, paint & interior, hangar & ramp parking, jet charter, air ambulance, and sales & leasing.
- Sheltair Aviation Facilities, Inc. – Sheltair provides aircraft hangars, property leasing, and office space leasing. Telephone:
- World Jet, Inc. - Services provided by World Jet include avionics and maintenance. World Jet also provides complete charter service from single engine to jet to helicopter. Other services available include a Chevron distributor and gourmet catering. Also, rental cars are on premises.
- JM Family Enterprise - Corporate Aviation Dept.
- Buehler Aviation - Facilities management for the Broward Sheriff's Office.
- Ross Southern Properties - Aviation facilities management for Windsor Jet Management and Mach-One Jet Services.
- AOG Aircraft Service, Inc. - Aircraft Service and repair.
- Zeley Aviation - Aviation Facilities Management.

VII. Concept of Operations

A. Phase I: Activation and Relocation

0–12 Hours

- Notify alternate facility manager of impending activation and relocation requirements.
- Notify affected local, regional, and state agencies.
- Activate plans to transfer to alternate facility.
- Instruct advance team to ready alternate facility.
- Notify division employees and contractors regarding activation of COOP plan and their status.
- Assemble documents/equipment required for essential functions at alternate facility.
- Order needed equipment/supplies.
- Transport documents and designated communications.
- Secure original facility.
- Continue essential functions at regular facility, if available, until alternate facility is ready.
- Determine location of operations and support teams.
- Activate advance, operations, and support teams as necessary.
- Hook-up backup generator.
- Evaluate condition of the Facility/Airfield.
- Debris check.
- Determine if all or part of the airport needs to be closed.
- Develop timeframes and go-forward plan.

24–48 hours

- Preparation of Helistop site to accept incoming administrative staff.

48 hours +

- Relocation of Administrative staff to Helistop. Install additional computers, phones.
- Order general office supplies.
- Relocation of Operation staff to AES or Helistop, as appropriate.
- Communicate to Airport Tenants.
- If long-term, consider and explore leasing space at the Airport.

1. Decision Process

When a State of Emergency is declared and under the direction of the City Manager, the COOP Plan would be activated. The Airport Manager is responsible for conducting all actions, as needed, to allocate and mobilize transportation needs of the Airport. The Airport Manager will also coordinate with Public Works and Engineering to obtain the operational status of runways and roadways to ensure emergency landing facilities are available.

The Airport Manager will be responsible to activate the part of the COOP Plan that is limited to the Division of Executive Airport the Airport.

2. Alert, Notification, and Implementation Process

Airport Operations personnel are responsible for responding to Airport emergencies such as aircraft alerts, incidents, fuel spills, airfield electrical outages, gate failures, and non-emergency calls from Airport tenants during and after normal business hours. The Airport contracts an answering service company that captures the information from the caller, which is then forwarded to Airport operations personnel by text messaging to cell phones.

The Airport Operations personnel will respond by phone and handle the caller's request or concern in the appropriate manner. It is a requirement of the contract that the answering service company have a back-up generator as well as an alternate location in case they experience an emergency.

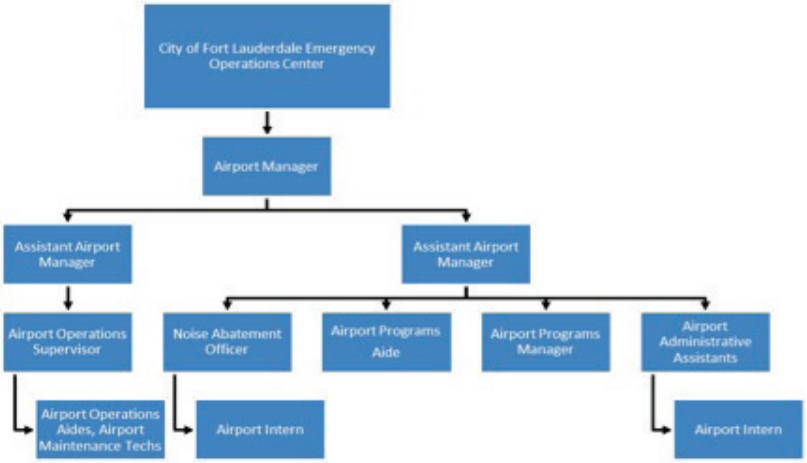
NOTAM – A "Notice to Airmen (NOTAM)" is created and transmitted by government agencies under guidelines specified by Annex 15: Aeronautical Information Services of the Convention on International Civil Aviation. A NOTAM is filed with an aviation authority to alert aircraft pilots of any hazards en route to or at a specific location. The Airport has the authority to provide relevant NOTAMs to pilots. This is accomplished by fax and/or email nationwide.

Local information is issued though Notices, which are sent by fax and/or email.

Airport Call Tree for Emergency Situations

As shown below, the Airport notification call tree operates with a top-down approach. If initial knowledge of a situation requiring activation of the COOP occurs at a point other than to the EOC, the person with initial knowledge will notify the person immediately above him or her in the call tree.

Airport Call Tree



3. Leadership

a. Orders of Succession

Procedure for designated officials when faced with the issue of succession:

- Coordinate with the Director of Transportation & Mobility before taking over the role.
- Once approval is provided then follow-up with the EOC to inform them of your interim role.

Condition in which succession will take place and notification:

- Conditions: Office head is unable to perform their duties or unavailable.
- Notification will be provided as detailed above; either by phone, email, or in person.

Revise orders of succession are reviewed and revised promptly as changes occur. The Department head is responsible for ensuring they are revised appropriately.

Responsibilities of successors:

- Plans, organizes, directs, supervises and coordinates subordinate personnel in the operation and maintenance of the Fort Lauderdale Executive Airport and Helistop.
- Ensures safe and efficient operation of the Airport and Industrial Airpark and City owned helicopter-landing facility.
- Serves as staff liaison between the City and the Federal Aviation Administration, Florida Department of Transportation, and other similar organizations.
- Coordinates with other departments to obtain necessary support activities such as security, engineering services financial and accounting services, airport property maintenance, legal services, etc.
- Makes recommendations and decisions regarding operational maintenance policies, expenditures, plans, and other administrative matters as they affect the division to include preparation and administration of the division budget.

AIRPORT DIVISION ORDER OF SUCCESSION

Order of Succession	**Title**
1	Airport Manager
2	Assistant Airport Manager
3	Assistant Airport Manager
4	Operations Supervisor
5	Noise Abatement Officer

b. Delegations of Authority

Due to the requirements of operating an Airport, the delegation of authority is limited to the successors for making key decisions regarding the operation, closure, and opening of the Airport.

c. Devolution

Personnel can be transferred from the Airport Administration Building to the Downtown Helistop, if needed. In the event that the Helistop is inoperable, trailers could be brought in to house workers temporarily. If the situation is long term, space at the Airport could be leased.

AIRPORT DIVISION ESSENTIAL FUNCTIONS, LEADERSHIP, AND STAFFING REQUIREMENTS

Essential Function	Criticality by Function 1-Critical 2-Medium 3-Low	Team Leader Title	Alternate Team Leader Title	Staffing Requirement
Compliance and Safety Inspections	1	Airport Manager	Assistant Airport Manager	6 (Airport Manager, Assistant Airport Manager, Airport Operations Supervisor and 3 Airport Operations Aides)
Facilities Management	3	Airport Manager	Assistant Airport Manager	12 (Airport Manager, 2 Assistant Airport Managers, Airport Operations Supervisor, 3 Airport Operations Aides, Administrative Assistant I, Electrician. 3 Airport Maintenance Technicians)
Property Management	3	Airport Manager	Assistant Airport Manager	7 (Airport Manager, 2 Assistant Airport Managers, Administrative Assistant II, Administrative Assistant I, Administrative Aide, Senior Accounting Clerk)
Planning and Development	3	Airport Manager	Assistant Airport Manager	7 (Airport Manager, 2 Assistant Airport Managers, Administrative Assistant II, Administrative Assistant I, Administrative Aide, Senior Accounting Clerk)

B. Phase II: Alternate Facility Operations

- 24–48 hours
  - ACTION: Preparation of AES or Helistop site to accept incoming administrative staff.

- 48 hours +
  - Relocation of Administrative staff to AES or Helistop.
  - Install additional computers, phones.
  - Order general office supplies.
  - Relocation of Operation staff to AES or Maintenance Building E (Old
  - Maintenance).
  - Communicate to Airport Tenants.
  - If long term, consider and explore leasing space at the Airport.

1. Mission Critical Systems

System Name	Current Location	Other Locations
Instrument Landing System Application	Fort Lauderdale Executive Airport – Airfield Fort Lauderdale, FL 33309	
Computers	Fort Lauderdale Executive Airport Fort Lauderdale, FL 33309, Fort Lauderdale Executive Airport AES Facility Fort Lauderdale FL 33309 & Downtown Helistop Fort Lauderdale, FL 33301	

System Name	Current Location	Other Locations
Phones	Fort Lauderdale Executive Airport Fort Lauderdale, FL 33309, Fort Lauderdale Executive Airport AES Facility Fort Lauderdale FL 33309 & Downtown Helistop Fort Lauderdale, FL 33301	
Security Gates Access	Fort Lauderdale Executive Airport – Various locations around the Airport Fort Lauderdale, FL 33309	

2. Vital Files, Records, and Databases

Vital records and databases necessary for performing mission essential functions have been identified.

Vital records and database backup strategy is maintained by the City's Information Technology Department.

All business documentation and files that would be necessary for resumption and recovery purposes are backed up and stored/located safely away from the primary facility using a rotation schedule that minimizes data loss.

All computer files that are required to be implemented prior to resumption of the current operating environments and/or that support time-sensitive business operations are backed up daily. This information is rotated to a safe off-site location according to a schedule that minimizes data loss and the effort to reconstruct production environments. The timing of the off- site rotation and retention are approved by Information Technology Department management and are considered sufficient to minimize the re-entry/re-construction of data and the recreation/ forward recovery of files to current status.

Separate master copies of all operating system and specific application program software, together with copies of all applicable hardcopy documentation and operating manuals are maintained.

Appropriate individual(s) prepare backup copies of all electronic files on a regular (e.g., not less than weekly) basis, maintain copies of all required references and hardcopy files, and store the backup copies in a secure off-site location.

Vital File, Record, or Database	Form of Record (e.g., hardcopy, electronic)	Pre- positioned at Alternate Facility	Hand Carried to Alternate Facility	Backed up at Third Location
Security Gates	Electronic	No	Yes	Yes
Emergency Contact List	Hardcopy and Electronic	Yes	No	N/A
Emergency Procedures	Hardcopy and Electronic	Yes	No	N/A
Emergency Purchase Orders	Hardcopy and Electronic	Yes	No	N/A
Building Layout	Hardcopy and Electronic	Yes	No	Scanned Layout of Building in Drive G/ Emergency Information
Cyborg (Payroll)	Hardcopy and Electronic	Yes	No	IT responsibility
BuySpeed (Procurement)	Hardcopy and Electronic	Yes	No	IT responsibility
Lease Database	Electronic	Yes	Yes	Yes
Lease Documents	Hardcopy and Electronic	No	Yes	Yes

C. Phase III: Reconstitution

Redeployment plan to phase down alternate facility operation and return operations, personnel, records, and equipment to the primary operating facility:

- Coordinate with facility manager responsible for alternate location
- Coordinate with the EOC
- Maintain detailed records during the transition timeframe

Reconstitution plan informing all personnel, including non-deployed personnel, that the need for the continuity of operations no longer exists, and provide instructions for resumption of normal operations:

- Coordinate with the EOC
- Ensure the plans are communicated to all department/agency employees
- Provide written instruction where possible

Reconstitution plan for an orderly return to the normal operating facility, or movement to other temporary or permanent facility(s) using a phased approach if conditions necessitate:

- Determine if the move should be phased
- Determine necessary resources to perform the move
- Identify the steps needed to execute the move

Conduct a review of COOP plan execution and effectiveness.

VIII. COOP Planning Responsibilities

Responsibility	Position
Update COOP plan annually.	The Administrative Assistant II would update the plan with the assistance of the Division
Update telephone rosters monthly.	Administrative Aide/Operations
Review status of vital files, records, and databases.	Administrative Assistant I, Administrative Aide, Senior Accounting
Develop and lead COOP training.	Airport Operations Supervisor
Plan COOP testing and training.	Airport Operations Supervisor

IX. Logistics

A. Alternate Location

City of Fort Lauderdale facility best suited for the department to relocate to for COOP purposes:

- Helistop or AES serves as alternate facility for Airport.
- Airport is alternate facility for Helistop Plans for reception and the processing of COOP personnel.
- The Downtown Helistop alternate site is a secured area.
- The staff would be informed of the code to enter the facility.

Plans include guidance for accounting for personnel:

- Executive Airport staff total is 17.
- The immediate supervisor would be responsible for accounting for the personnel that are responsible to report to them.

Alternate facility(s) is located enough distance from any vulnerable areas or facilities:

- The Executive Airport is located in the north area of the City and the Administration Building is on the north side of the Airport.
- The first alternate facility is on the north side of the Airport, while the second alternate facility is located in the downtown area of the City.

Alternate facility(s) has the ability to run emergency power to allow essential functions and operations to continue in any environment:

- There is a backup generator available to hook up to the first alternate facility and there is a backup generator at the second alternate facility.

A signed MOU/MOA exists if the alternate facility is not owned or leased by the department/agency:

- The alternate sites are Airport facilities and agreement is not required.

Department/agency has addressed the use of virtual offices as an alternate facility:

- This has been addressed and is a possibility.
- Satellite phones and laptops are available.
- At times, some employees have worked from home.

Department/agency identified all alternate facilities and provided the necessary data concerning the facility(s) to COOP coordinator:

- The Executive Airport plan has been provided to the COOP coordinator.

B. Interoperable Communications

Note: After a hurricane, the tower staff could be provided with one radio to ensure airport staff communications with the tower.

Necessary communications media likely to be available and needed in an emergency situation and identify concerns:

- The COOP Coordinator and the Key Internal Contacts will communicate by cell phone and hand-held radio (key people responding in field and during emergency)
- Department heads will communicate by personal cell phone with employees in their respective departments.
- The COOP Team will then access the amount of City employees able to report to work.

The level of efficacy will depend on the number of employees available to work.

Redeployment plans to phase down alternate facility operation and return operations, personnel, records, and equipment to the primary operating facility, when appropriate:

- During Emergency situations City-wide Employee Information Line is activated.
- Satellite phones have been purchased.

Reconstitution plan informing all personnel, including non-deployed personnel, that the need to COOP no longer exists, and providing instructions for resumption of normal operations:

- During Emergency situations, citywide emails are used to inform City Employees.
- Department heads will communicate by personal cell phone with employees in their respective departments.
- There is a City web site that could be used as well.

Satellite phones have been purchased for redundant communications systems for use in COOP implementation and operations within 12 hours of COOP activation and sustained for up to 30 days.

Communications Best Practice

- Redundant communications systems for use in COOP implementation and operations within 12 hours of COOP activation and sustained for up to 30 days are available to be put in place.
- Communications and systems interoperability with existing field infrastructures are available to be implemented as required.
- Validation of internal and external communications capabilities at alternate facilities completed at least quarterly.
- Satellite phones have been purchased to communicate with COOP personnel, other employees, leadership, and other elements, to include bureaus, regions, and field offices.

X. Test, Training, and Exercises

- Preventive maintenance and testing is completed every month for the back-up generators to ensure that the equipment is in a constant state of readiness.
- Annual meetings are held for staff to familiarize them with their role and responsibilities during an emergency.
- Aircraft Recognition Training of ARFF (Aircraft Rescue Fire Fighting) personnel quarterly.
- Working on plans for Airport disaster tabletop exercise.

XI. Multi-Year Strategy and Program Management Plan

The single critical essential function for the Airport is Compliance and Safety Inspections. The Airport's primary goal is to operate, maintain, and improve the Airport and Downtown Helistop in a manner that optimizes safety,

security and efficiency. During an emergency, it is vital for the Airport to continue to operate. The Airport COOP Plan consists of a full spectrum of scenarios that threaten the continued Airport operation, such as the following:

- Airfield power outage
- Headquarters building incapacitation
- Aircraft Incident or Accident
- Acts of Nature

COOP equipment and resources are assessed at least once a year with the development of the annual budget. The construction of a new Airport LEED Certified Maintenance Building was completed in 2010. The building is able to store equipment during a storm and can be used as an alternate facility for the Airport.

The Multi-Year Strategy and Program Management Plan (MYSPMP), including essential functions and supporting activities, shall be reviewed annually, and depending on the changes, will be either updated or rewritten to ensure the MYSPMP contains the most current information. This review shall be complete no later than June 30th of each year.

XII. COOP Plan Maintenance

The entire COOP Plan is reviewed and updated annually. This includes key evacuation routes, roster and telephone information, as well as maps and room/building designations of alternate locations. Debriefings are conducted after each incident/event.

XIII. Operational Checklists

Monitoring Checklists

√	Responsible	Incident	Activity
		All	Alert Fort Lauderdale Emergency Manager, COOP Coordinator and appropriate vendors/ agencies of potential situation
		All	Alert internal information technology and telecommunications staff of potential situation
		All	Assemble information on alternative strategies and make recommendations.
		All	Contact City of Fort Lauderdale COOP Coordinator to specify COOP needs and relocation requirements
		All	City of Fort Lauderdale COOP Coordinator assigns COOP location.
		All	Contact appropriate management at COOP location and coordinate for possible relocation to alternate facility. Note: COOP coordinator can perform this function for the department. If the department performs this function then the COOP coordinator should be made aware of the call status.
		All	Coordinate with county, state, or Federal government officials and representatives as necessary. Note: This should be handled by the EOC and other City representatives who already have this as an assigned duty.
		All	Create a tentative schedule and planning guide for your department. Pay particular attention to critical mission essential function needs.
		All	Gather intelligence.
		All	Participate in internal departmental meetings.
		All	Prepare for possible utilization of response resources and any city-to-city or bilateral-aid agreements.
		All	Prepare to establish preliminary communications, infrastructure, etc., at COOP facility.
		All	Pre-position resources as appropriate.
		All	Review availability of resources, supplies, equipment and other items required for the potential emergency.
		All	Solicit information from other critical function groups.
		All	Arrange for the repair of any inoperable equipment.
		All	Clean and organize all appropriate areas.
		All	Contact critical vendors and get up-to-date emergency contact numbers or procedures required.
		All	City Manager determines need for staffing of EOC and assigns a staff level representative to EOC for the emergency.

√	Responsible	Incident	Activity
		All	Place all chargeable equipment on charge.
		All	Encourage critical function employees to take action as early as possible to ensure the safety of their families. Secure homes and possessions.
		All	Have readily accessible, all forms and documents necessary to justify claims under
		All	Public Law 93-288 in the event the area is declared a "major disaster"
		All	Have readily accessible, evacuation and recovery teams.
		All	Implement department COOP plan.
		All	Make initial contacts.
		All	Participate in functional and/or departmental incident briefing(s).
		All	Prepare shift schedule and duty shift schedule.
		All	Provide and have available a list of all COOP personnel in service during the emergency.
		All	Review the department function of COOP and identify areas of deficiency and report to department head.
		All	Update list of important phone numbers.
		All	Check fuel levels in all vehicles.
		All	Have available cellular phone bank with numbers and assignments.
		All	Ensure drinking water, food, first aid and rescue equipment/supplies are staged.
		All	Ensure that a reliable communications system exists.

Preparing for Hurricane

√	Responsible	Incident	Activity
		Hurricane	Check all supplies on the hurricane checklist.
		Hurricane	Make sure all key personnel have adequate raingear.
		Hurricane	Check supplies in emergency kits. (I.e. first aid kits, flashlight batteries, etc.)
		Hurricane	In advance, check fuel level and order fuel delivery to fill the Emergency Generator Diesel tank for the Airfield Electrical vault.
		Hurricane	Fill the Emergency Generator Diesel tank at the Administration building with the spare fuel tank on the Dodge truck.
		Hurricane	Fill Diesel fuel trailer.
		Hurricane	Fill all Operations vehicles with fuel.
		Hurricane	Check Building E for any loose debris and have it removed.
		Hurricane	Make sure all phone lists are updated and make 20 extra quick-reference, laminated cards.
		Hurricane	Issue Airport NOTICE to all tenants for hurricane season preparations.
	Airport Operations	Hurricane Watch	Give current phone number cards to Fire, Police, Tower, Public Services Foreman, Airport Crew Leader, and US Customs.
	Airport Operations	Hurricane Watch	Check fuel levels in Airfield Electrical vault and Administration building Emergency Generator tanks and test run.
	Airport Operations	Hurricane Watch	Make sure all personnel have adequate rain gear and boots.
	Airport Operations	Hurricane Watch	Check emergency briefcase and put new batteries in the flashlights and in all pagers.
	Airport Operations	Hurricane Watch	Turn off observation area radio.
	Airport Operations	Hurricane Watch	Secure or store any objects or equipment at Building E.
	Airport Operations	Hurricane Watch	Issue Airport NOTICE to all tenants on the possibility of a hurricane strike.
	Airport Operations	Hurricane Watch	Relocate Maintenance vehicles to Kaplan garage.
	Airport Operations	Hurricane Watch	Elevator – do not shutdown or change any key switches.
	Airport Operations	Hurricane Watch	Unplug all equipment and move as much equipment (computer, monitors, radios, keyboard, speakers, fax, printer, & supplies) away from windows and cover in plastic and/or place in cabinets & closets. Secure all doors and windows.

√	Responsible	Incident	Activity
	Maintenance	Hurricane Watch	Take down all small windsocks including the Observation Area.
	Maintenance	Hurricane Watch	Take down flags at Administration building, US Customs, and 21st Street Entrance.
	Maintenance	Hurricane Watch	Check condition and supplies of extension cords, ropes, chains, and chain saw.
	Maintenance	Hurricane Watch	Fuel all airport vehicles, external transfer fuel tank, tractors, gas cans, and emergency generator lights.
	Maintenance	Hurricane Watch	Secure or store any debris at Building E.
	Maintenance	Hurricane Watch	Install hurricane shutters on windows 4, 5, & 6 at Customs.
	Maintenance	Hurricane Watch	Install hurricane shutters on Administration building except for front doors.
	Maintenance	Hurricane Watch	Install sandbags along exterior door of large conference room.
	Maintenance	Hurricane Watch	Install and close all shutters at Building E.
	All personnel	Hurricane Watch	If an employee is on a local vacation they need to call in and find out if their assistance is needed.
	All personnel	Hurricane Warning	If the City issues a statement that non-essential personnel may leave, they may do so after their area is secured.
	Essential personnel	Hurricane Warning	Some essential personnel may leave after all preparations are completed.
	Essential personnel - Administration	Hurricane Warning	Change voice mail on the main number to inform caller if they need FLL to hang up and call 954-and if they need FXE to hang up and call 954-. If City Phone Network is not working the fax line may be used, 954-.
	Essential personnel - Administration	Hurricane Warning	Turn off power and unplug electrical cords from wall and any uninterruptible power supply (UPS) devices on computer/office equipment.
	Essential personnel - Administration	Hurricane Warning	If necessary move equipment into an interior room and cover with plastic.
	Essential personnel – Airport Operations	Hurricane Warning	Coordinate with vendor to reposition a piece of equipment to the airport to assist in removing debris after the storm.
	Essential personnel – Airport Operations	Hurricane Warning	Send notice to tenants to secure all loose debris and properly secure aircraft that will be remaining.
	Essential personnel – Airport Operations	Hurricane Warning	Issue Airport NOTICE to all tenants for U.S. Customs and Airport closure times.
	Essential personnel – Airport Operations	Hurricane Warning	Issue NOTAM for U.S. Customs closure time.
	Essential personnel – Airport Operations	Hurricane Warning	Notify U.S. Customs of closure time.
	Essential personnel – Airport Operations	Hurricane Warning	Give an Administration building prox-card to the Tower so the controllers on duty have a safe place to go.
	Essential personnel – Airport Operations	Hurricane Warning	Inspect Airport leasehold area for any loose objects debris and recommend having it stored away or secured properly.
	Essential personnel – Airport Operations	Hurricane Warning	Issue the Security Manager a city radio and affirm that guards can leave the Airport when Tower closes.
	Essential personnel – Airport Operations	Hurricane Warning	Have Security patrol hangar and ramp areas and report unsecured objects or debris.
	Essential personnel – Airport Operations	Hurricane Warning	Have Security remove all traffic cones and plastic bollard covers around the airfield.
	Essential personnel – Airport Operations	Hurricane Warning	Fill all water kegs with ice & water and make sure there are enough water jugs in the break room.
	Essential personnel – Airport Operations	Hurricane Warning	Move deck-mounted fire extinguishers into elevator
	Essential personnel – Airport Operations	Hurricane Warning	Remove windsock & anemometer & repeater
	Essential personnel – Airport Operations	Hurricane Warning	NOTAM Windsock out of service and Helistop closed
	Essential personnel – Airport Operations	Hurricane Warning	Change outgoing message announcing Helistop closure

√	Responsible	Incident	Activity
	Essential personnel – Maintenance	Hurricane Warning	Install shutters on Building E and U.S. Customs windows.
	Essential personnel – Maintenance	Hurricane Warning	Take down center field windsock.
	Essential personnel – Maintenance	Hurricane Warning	Reposition equipment stored inside Building E to allow for equipment that is stored outside to be moved inside Building E.
	Essential personnel – Maintenance	Hurricane Warning	Install the broom on the tractor and check its operation.
	Essential personnel – Maintenance	Hurricane Warning	Position tractors around storage shed for added protection from the wind.
	Essential personnel – Maintenance	Hurricane Warning	Refuel all spare tanks, equipment, and vehicles.
	Essential personnel – Maintenance	Hurricane Warning	Install shutters on the glass doors and remaining windows at U.S. Customs.
	Essential personnel – Maintenance	Hurricane Warning	Remove large signs from vehicular gates.
	Essential personnel	Hurricane Warning - Final Preparations	Chain lock all vehicular gates in open position. Turn Vault generator switch to off.
	Essential Personnel	Hurricane – During Storm	A minimum of one person from Operations and one other Airport staff member will be required to stay at the Admin building during the storm.
	Essential Personnel – Airport Operations	Hurricane – During Storm	NOTAM issued to close the Airport once the sustained winds reach 50 mph and the tower closes.
	Essential Personnel – Airport Operations	Hurricane – During Storm	Put all gates in manual operation mode and shut off the power.
	Essential Personnel – Airport Operations	Hurricane – During Storm	Airport Operations to monitor Airport conditions and report to Airport Manager.
	Essential Personnel – Airport Operations	Hurricane – During Storm	Write down significant activity hourly on Hurricane Log.
	Essential Personnel – Airport Operations	Hurricane – During Storm	Adjust fax machine for incoming calls.
	Essential Personnel – Management	Hurricane – After the storm	Management – All must report to office to assess damage and discuss recovery plans.
	Essential Personnel – Airport Operations	Hurricane – After the storm	Assess the needed equipment and personnel to remove debris from the runway and taxiway system.
	Essential Personnel – Airport Operations	Hurricane – After the storm	Open runways and taxiways as debris is removed and areas are inspected. Cancel NOTAMs.
	Essential Personnel – Airport Operations	Hurricane – After the storm	Assess the needed equipment and personnel to clear airport roadways.
	Essential Personnel – Airport Operations	Hurricane – After the storm	Check both generator fuel levels and order fuel, if necessary.
	Essential Personnel – Airport Operations	Hurricane – After the storm	Minimize electrical load on generator to conserve fuel.
	Essential Personnel – Airport Operations	Hurricane – After the storm	Check lighting circuits and establish the repair priorities for the electrician.
	Essential Personnel – Airport Operations	Hurricane – After the storm	Have Security check that all vehicle gates are operational.
	Essential Personnel – Airport Operations	Hurricane – After the storm	Put up flags at Administration, Customs, and 21st Ave Entrance.
	Essential Personnel – Airport Operations	Hurricane – After the storm	Inspect Helistop deck & stairwells
	Essential Personnel – Airport Operations	Hurricane – After the storm	Cancel NOTAMs
	Essential Personnel – Airport Operations	Hurricane – After the storm	Check elevator & handrail operations
	Essential Personnel – Airport Operations	Hurricane – After the storm	Re-install windsock

√	Responsible	Incident	Activity
	Essential Personnel – Airport Operations	Hurricane – After the storm	Position fire extinguisher carts on Helistop deck
	Essential Personnel – Airport Operations	Hurricane – After the storm	Place normal outgoing telephone message
	Essential Personnel – Maintenance	Hurricane – After the storm	Clear debris from the main runway and one taxiway to and from Building E first. The rest can be done when sufficient equipment and personnel are present.
	Essential Personnel – Maintenance	Hurricane – After the storm	Trash should be hauled to Building E and dumped in the trash yard. • Clear debris from roadway to establish access to Commercial Blvd. Remove debris from perimeter road and put in piles to be picked up by bulk trash.
	Essential Personnel – Maintenance	Hurricane – After the storm	• Electrician to repair electrical circuits as assigned by Operations

COOP Activation Checklists

√	Responsible	Activity
		Alert Fort Lauderdale Emergency Manager, COOP Coordinator and appropriate vendors/agencies of potential situation. EOC will alert Broward County.
		Alert all field personnel that department is evacuating the building.
		All personnel will gather and leave the building together to the pre-established meeting point for pick up and transport.
		Arrive at alternate site.
		Determine equipment, personnel, etc. that are available for response from within the municipality.
		Determine how mission essential functions can and be operational within 12-hours activation timeline requirement.
		Distribute handheld radios to and make an emergency notification over the radio.
		Do a count on the number of handheld radios being distributed.
		If possible organize COOP kits before leaving building.
		Make one final announcement over the air to advise all field personnel that department is leaving the building(s).
		Notify contacts about the transfer.
		Notify key staff.
		Notify staff about the situation and give them a cell phone number to contact in case of line problems.
		Notify the COOP site contact that department is mandated to evacuate the Building and provide an ETA for departure if possible.
		Once at the evacuation site, 0-12 Hours • Notify alternate facility manager of impending activation and relocation requirements. • Notify affected local, regional and state agencies. • Activate plans to transfer to alternate facility. • Instruct advance team to ready alternate facility. • Notify department employees and contractors regarding activation of COOP plan and their status. • Assemble documents/equipment required for essential functions at alternate facility. • Order needed equipment/supplies. • Transport documents and designated communications. • Secure original facility. • Continue essential functions at regular facility, if available, until alternate facility is ready. • Determine location of operations and support teams. • Activate advance, operations, and support teams as necessary. • Hook-up backup generator. • Evaluate condition of the Facility / Airfield. • Debris check. • Determine if all or part of the airport needs to be closed. • Develop timeframes and go-forward plan.

√	Responsible	Activity
		Airport Call Tree for Emergency Situations • 2 Assistant Airport Managers, Administrative Assistant II, and Administrative Assistant I call Airport Manager. If unable to contact then call next available. • Noise Abatement Officer calls Assistant Airport Manager. If unable to contact, call other Assistant Airport Manager and then Airport Manager. • Airport Programs Aide calls Noise Abatement Officer. If unable to contact, call Assistant Airport Manager, then other Assistant Airport Manager, and then the Airport Manager. • Airport Operations Supervisor calls Assistant Airport Manager. If unable to contact, then call other Assistant Airport Manager and then Airport Manager. • 3 Airport Operation Aides call Airport Operations Supervisor. If unable to contact, then call Assistant Airport Manager, then other Assistant Airport Manager and then Airport Manager. • Administrative Aide, Senior Accounting Clerk call Administrative • Assistant I. If unable to contact, then call Assistant Airport Manager, and then other Assistant Airport Manager and then Airport Manager.

√	Responsible	Activity
		Roll call to all department resources.
		Send out a staff page notifying all staff personnel of the situation and reasons for the evacuation: Example: "Emergency Evacuation total radio and computer failure effective in approximately 30 minutes."
		Verify with COOP Coordinator and Emergency Manager of the evacuation.
		Gather, record, and distribute all available spare radios, chargers and batteries.
		Assign liaison personnel and/or representative to EOC.
		Conduct damage assessment of primary operating facility.
		Coordinate with partners.
		Decision on activation, evacuation of primary site and mobilization
		Develop and prioritize strategies for initial response actions for mobilizing resources
		Ensure vehicles are fueled and in a state of readiness and that spare fuel and lubricants are stored in a safe location
		Notify and mobilize all personnel, facilities, and physical resources likely to be needed based on the emergency circumstances.
		Participate in functional and/or departmental incident briefing(s)
		Understand emergency classification and threat/classification level for development of activation and response
		Collect and forward situation information to the City EOC
		Coordinate as necessary with city emergency manager for activation and staffing of EOC.
		Mobilize and deploy resources available to the City
		Perform necessary actions to provide resources to assist with recovery operations
		Determine equipment, personnel, etc. that are available for response from within the municipality
		Implement predetermined cost accounting measures for tracking overall personnel, equipment, supplies and other costs incurred during COOP actions.
		Preposition anticipated recovery resources to the nearest staging area(s) as needed.
		Reassess priorities and strategies according to the most critical of the function's needs.
		Take necessary action to protect functions emergency supplies and equipment.
		Track committed resources for possible redeployment and other purposes
		Activate utilization of departmental and city response resources and any city-to-city or bilateral-aid agreements.
		Continue execution of new and ongoing mission assignments to provide required functional resources.
		Coordinate with county, state, or Federal government officials and representatives as necessary.
		Establish communications with appropriate field personnel for coordination of response efforts.
		Pre-position response resources
		Report to COOP facility
		Assist in post-emergency operations as directed by the EOC

√	Responsible	Activity
		Activate all elements of COOP to ensure operations capable at COOP facility for minimum of 30 day timeframe
		Daily submission of situation reports (or updates to EOC for SitRep) as required for department.
		Determine primary operating facility restoration and code adherence upgrade requirements
		Establish communications with EOC from COOP and field locations
		Estimate timeframe for completion of restoration of primary operating facility
		Resume normal operations after emergency subsides
		Updates of all reports (as necessary)

Recovery Checklists Restoration and Resumption

√	Responsible	Activity
		Designate space for salvageable materials to be relocated and protected.
		Determine method to move unsalvageable items to make ready for facilities cleanup.
		Coordinate with Facilities to obtain written authorization prior to removing anything.
		Coordinate with Facilities on the developing of an estimated time needed to repair the facility or to acquire a new facility.
		Maintain an adequate level of support team coverage to support all business operations.
		Maintain an adequate coverage to sustain operations.
		Maintain communication with the continuity organization.
		Clean and/or decontamination of the building.
		Repair and/or restore the building or construct/acquire of a new facility.
		Replace the contents of the building.
		Coordinate the relocation and/or migration of business operations, support and departments from temporary facilities to the repaired or new facility.
		Activate and mobilize the continuity teams needed to begin essential function continuation or recovery.
		Notifying and informing Department clients and management of the situation.
		Alerting employees, contractors, vendors and other key organizations to the situation and their role during Resumption and Recovery.
		Assess review and assembly of vital records. Determine if any records have been lost or destroyed.
		Determine applications recovery timelines.
		Determine needs for cleaning and repairing or replacing furniture and equipment and for restarting nonessential equipment, processes, and systems.
		Resorting, organizing, and indexing salvaged records and information;
		Re-shelving or re-filing salvaged records and information.
		Assess damage to records and information and document the nature and extent of damage.
		Stabilize the situation.
		Prepare and pack records for recovery.
		Transport records to recovery site.
		Begin appropriate records salvage procedures.
		Begin restoration procedures.
		Arrange for trauma management support or other counseling resources for employees. The Center for Mental Health Services provides disaster relief and mental health resources.
		Verify the health, safety and security of your facility.
		Check with local code officials to identify building-code requirements for repairs, new construction, or demolition.
		Prioritize order of resuming operations, and identify obstacles such as downed utility lines, contamination, and building safety.
		Verify the operational state of key suppliers and subcontractors, and develop procedures for quickly procuring critical machinery, equipment, software and materials.
		Protect facilities from intruders and malicious mischief.
		Assess exposures in the event of unintended use or occupancy of the facilities (i.e., shelter). NIOSH Shelter Checklist details assessment criteria should facilities be used to house employees or other individuals.
		Provide appropriate training for employees operating outside of their normal duties.

√	Responsible	Activity
		If a flood (or other applicable situation) screen employees for risk factors such as heart conditions, asthma, compromised immune systems and allergies to mold and dust.
		Conduct a thorough facility assessment. The American Society of Safety EngineerNews (ASSE) offers a business resumption safety checklist.
		If a flood situation: Assess the additional hazards presented by flood cleanup activities. NIOSH Hazards of Flood Cleanup details the work-related hazards involved in flood cleanup activities. CDC Worker Safety After a Flood highlights safety issues after a flood. OSHA Flood Cleanup provides information on flood-water issues and how to protect oneself. OSHA Cleanup Hazards details cleanup procedures after aflood.
		Review CDC and EPA precautions for electrical hazards, fungi & mold, and carbon monoxide
		Recover vital records.
		Advise employees of any health, safety and security concerns within the facilities.
		Clean and repair or replace damaged furniture and equipment.
		Resort, organize, and index salvaged records and information.
		Reshelf or re-file salvaged records and information.
		Evaluate disaster response and recovery activities and make appropriate changes to the plan.
		Monitor affected areas of the city for any continuing problems.
		Monitor daily changes in conditions and immediate dangers posted on the web sites of the Centers for Disease Control and Prevention, the Federal Emergency Management Agency, and the Environmental Protection Agency.
		Activate operations phones, as required.
		Advise EOC of activation status.
		Assign security to the COOP location entrance (as needed).
		Brief department personnel on situation as they arrive.
		Check current weather conditions.
		Configure computer backup solution to ensure COOP activities are backed up
		Evaluating alternate site equipment and network service for the necessary enhancements to support time-sensitive application recovery.
		Configure computer security.
		Create facility layout based on the activation
		Determine room setup requirements based on type/level of activation.
		Distribute stationery supplies to each desk.
		Evaluate additional hardware needs
		Evaluate communications needs
		Inspect generator, antennas, food and water stocks and fuel supply.
		Install computer hardware/software/printers
		Install fax
		Install phones
		Install printers, fax machines, other office equipment
		Install telecommunications requirements for media, other communications needs
		Install televisions other equipment as needed
		Inventory supplies and determine additional needs
		Map phone numbers to functions/titles/people
		Mount displays per floor plan.
		Notify first-shift assignees, as required.
		Order additional supplies as needed
		Place supplies in appropriate areas
		Post required signs Doors Elsewhere as needed
		Receive briefing from Communications or other agency personnel on situation.
		Review operating procedures.
		Setup required seating arrangements and develop seat assignment

√	Responsible	Activity
		Setup (if needed) table at door with Sign in sheet Fax Telephone
		Test external communications
		Test hardware/software
		Test internal communications Radio Cellular Fax Telephones
		Test printers, fax, other office equipment
		Verify computers are turned on and functioning properly.
		Verify radios and other communications equipment is turned on and functioning properly.

XIV: Alternate Location/Facility Information

Equipment and Materials On hand

Equipment	Equipment	Quantity Have
Fort Lauderdale Executive Airport Administration Building	TV Digital Camera Computers Phone Laptop Satellite Phones Radio Fax Machine Aviation Radio ARFF Fire Truck (located FS#53) Vehicle Hurricane Supplies TV Battery operated	2 4 22 22 2 4, 2 Activated/2 Stand By 8 1 11 1 3 Listed in the SOP Need
Alternate Facility/ Downtown Helistop 201 SE 2 Ave, 6th Floor, Fort Lauderdale, FL 33301 954-	Phone Computer Fax Machine TV	1 1 1 1
Airport Equipment & Service Facility (AES Building) 2020 Executive Airport Way Fort Lauderdale, FL 33309	Phone Computer Backhoe Backhoe Attachments: Grappler Forks Mower Grader Mower Tractor Bush Hog Mobil Generator Message Board 500 gallon Fuel Trailer Light Tower/Generator Trailer/Chemical Clean-up Runway X Closure Towable Boom Lift All Terrain Utility Vehicle/Mule Vehicle Golf Cart	3 1 1 1 1 1 1 2 3 2 4 3 1 6 1 2 1 2 1 2

Plans for ordering of necessary equipment/supplies not already in place:

- All equipment/supplies not in place will be acquisitioned through the EOC
- The EOC will prioritize and respond to resource requests based on overall availability and needs analysis
- If other departments in the region can provide assistance this will be coordinated through the EOC.

XV: Maps and Evacuation Routes

(See Standard Operating Procedures)

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APPENDIX R

Sample 12—Airport Initial Response Actions Used by Watsonville Municipal Airport

_____ Municipal Airport

"*EMERGENCY EVENT… INITIAL ACTIONS*"

READ THIS BEFORE THE INCIDENT OR ACCIDENT… There are various roles for various players:

Municipal Airport manages on-going operations, notifies FAA/NTSB if warranted and addresses the media.
Police Department makes initial assessment; if required secures the area, engages with Airport Staff
First Alarm supplements Police to keep on-lookers and spectators at safe distances.
Fire Department prevents or suppresses fires; keep area contained and safe for recovery.
Paramedics (may be with Fire Dept.) deal with injuries; medical is their responsibility.

If runway is affected: clearing and reopening the runway as soon as possible, upon FAA/NTSB release of the aircraft, is **MANADATORY.** On field FBOs may handle aircraft retrieval, but also accept potential liability.

WHEN EMERGENCY EVENT OCCURS:

(1) **Call 911;** if position known report via Airport Grid Map (reverse) and **GIVE GRID LOCATION**
(2) First deal with the emergency (injuries, rescue, fire, etc.)
(3) **Call Airport Mgr/Airport Ops Sup (see numbers below)**
(4) Can't contact Airport Management? Call **FAA Duty Officer** _____ Explain situation; request Duty Officer alert FSDO and NTSB.
(5) Access the **EMRG EVENT KIT** (in Airport Vehicles and Unicom Room).
(6) Be sure you have: Handheld Radio, Emergency Vest, Camera, Flashlight and Fire Extinguisher(s).
(7) Divide initial response team effort into **two (2) roles: On-Site and Unicom;** see below.
(8) **On-Site Personnel** (goes to accident site)
   a. Use Airport Vehicle (EMRG EVENT KIT accessible?)
   b. City Agencies play a defined role; know them! (You did read the **Red Section** above, correct?)
   c. Evaluate: **Minor** is non-life threatening, no injuries, no fire; ***MAJOR*** is injuries, potential fire.
   d. Take notes for **First Responders;** brief them on arrival; assist as requested

Unicom Personnel (stays in office)
   e. CTAF announcement if appropriate (i.e. runway closure)
   f. **Issue NOTAM,** _____, if appropriate
   g. Contact FBOs, if appropriate, for potential recovery team
   h. Ensure on-going operations continue as best as possible
   i. Prepare for Media questions (refer them to web site for basic info)

AIRCRAFT RECOVERY GUIDELINES

(1) Five things must happen before aircraft removal:
   I. Call FAA_____ **to confirm removal** of a damaged aircraft is approved.
   II. Fire Department **must give OK** to remove aircraft.
   III. On-Site Airport Personnel must **take photos, before any aircraft is relocated.**
   IV. **Owner/Operator must indicate** when, how, and where the aircraft will be moved and stored.
   V. If aircraft is going into a building on the field, **fuel must be drained and verified as drained.**
(2) **Only after FAA/NTSB clearance** does aircraft move.
(3) The **aircraft operator responsible for aircraft removal** and agreement with FBO moving aircraft.
(4) Emergency Responders (Fire and Police) **stay on site until released** by Airport Management.

NUMBERS:

Airport (1) _____ FBO (1) _____
Airport (2) _____ FBO (2) _____
Airport (3) _____ FBO (3) _____

Revision: July 2015

APPENDIX S

Sample 13—Sample Standard Operating Procedures Used by Lakeland Linder Regional Airport

Severe Weather Alert

SOP 7
Revised: 06/31/2015

PURPOSE: The purpose of this Standard Operating Procedure is to outline the procedures for Airport Staff in the event they have been notified that severe weather is anticipated to impact the Airport.

OVERVIEW: Upon notification of a severe weather alert Airport Staff will make every effort, based on availability of time and staff, to notify tenants and the traveling public of the expected weather conditions.

The Airport reserves the right to amend this SOP as it determines necessary and in the interest of the health, safety and welfare of Airport personnel / property and its tenants and the public.

PROCEDURE:

1. For Hurricanes follow the Airport's Hurricane Plan.
2. Reference the Airport's Emergency Plan Chapter 3 Section 4 – Natural Disasters / Hurricanes / Floods for additional information. This SOP is not intended to supersede the Airport Certification Manual or Airport Emergency Plan.
3. Upon initial notification, the Airport Operations Department shall:
   a. Conduct an airfield inspection ensuring that all personnel are taking shelter, loose equipment has been secured, aircraft are properly tied down and/or secured inside a hangar, and that hangar doors are properly closed and secured.
   b. In the event unattended aircraft, an open hangar, or exposed equipment are found, staff will attempt to contact the owner by phone and advise them of the impending severe weather.
4. Upon initial notification, the Airport Administration will send out a "Severe Weather Alert".
   a. The template is saved under Z:\TENANT MEMOS
   b. Using the template copy the National Weather Service issued alert into the body of the text which can be found here:

      http://alerts.weather.gov/cap/wwaatmget.php?x=FLC105&y=1

   c. Save the Severe Weather Alert as "Year-Month-Date Severe Weather Alert" under Z:\TENANT MEMOS then file under the appropriate year.
   d. Open up Outlook and select new mail message.
   e. Using the Tenant Database copy the primary e-mail addresses for each tenant/company into the BCC section of the e-mail.
   f. Next select and copy the entire severe weather alert message and paste it into the body of the e-mail.
   g. Ensure that everything is accurate and lined up properly then send the message.
5. Once the threat of severe weather has passed and/or the storms have subsided, Airport Operations will conduct a Special Inspection of the Air Operations Area and Airport Property for any storm damage in accordance with the ACM.

(o/c)
OPERATIONS MANAGER

APPENDIX T

Basic Template for Initial Development of General Aviation, Small Hub, and Non-Hub Airport Business Continuity Plan/Continuity of Operations Plan

Name of Airport: _____

Adoption Date: _____

Most Recent Update: _____

Purpose

The purpose of this plan is to define the recovery processes necessary to restore the _____ airport's critical operational and business functions under all threats and conditions.

Scope (*applicability of the plan to the airport*)

This plan applies to the functions, operations, and resources necessary to ensure the continuation of the _____ airport's essential functions in the event its normal operations are disrupted. The plan was approved and adopted on _____ and is applicable to those persons or agencies tasked within the plan.

Assumptions (*underlying assumptions made during the planning process*)

In developing this plan, the following was considered: (*Example Assumptions*)

- An airport analysis was conducted to determine essential functions and prioritize recovery actions and identify resources needed to recover from and continue operations of those functions after disruptions.
- There should be compatibility with (airport governance entity) existing continuity plans or processes.
- Functions not within the airport's control have been considered with appropriate contractors, leaseholders, tenants, government entities, or agencies.
- Employees' safety and well-being is a primary operating assumption during plan activation.
- _____ airport may have a requirement to purchase business interruption (BI) insurance and has consulted with its risk manager or the risk manager of the city or county government.
- (insert any other relevant planning assumptions)

Distribution List (*identify airport BCP/COOP holders*)

Name, Title, and Organization	Date	Number of Copies	Method of Delivery

BCP/COOP Leadership Team (*Example Team*)

- Airport Manager _____
- Assistant Airport Manager _____
- City/County Manager _____
- Department Head _____
- Airport Operations _____

Essential Functions (*main activities needed to run airport operations and business components*)

Essential Function (main activity): _____

Steps (description of how this activity is performed): _____

_____

_____

_____

Special Skills Required to Operate the Function (*training, licenses, certifications, etc.*):

_____

_____

_____

Main Contact: _____

Phone: (cell/home): _____

E-mail: _____

Time Sensitivity for Recovery of the Function:

☐ Critical < 0–12 hours

☐ Important 24–48 hours

☐ Urgent 12–24 hours

☐ Low 48+ hours

Essential Function (*main activity*): _____

Steps (*description of how this activity is performed*): _____

_____

_____

_____

_____

Special Skills Required to Operate the Function (*training, licenses, certifications, etc.*):

_____

_____

Main Contact: _____

Phone: (cell/home): _____

E-mail: _____

Time Sensitivity for Recovery of the Function:

☐ Critical < 0–12 hours

☐ Important 24–48 hours

☐ Urgent 12–24 hours

☐ Low 48+ hours

Essential Function (*main activity*): _____

Steps (*description of how this activity is performed*): _____

_____

_____

_____

_____

Special Skills Required to Operate the Function (*training, licenses, certifications, etc.*):

_____

_____

Main Contact: _____

Phone: (cell/home): _____

E-mail: _____

Time Sensitivity for Recovery of the Function:

☐ Critical < 0–12 hours

☐ Important 24–48 hours

☐ Urgent 12–24 hours

☐ Low 48+ hours

Essential Function (*main activity*): _____

Steps (*description of how this activity is performed*): _____

_____

_____

_____

Special Skills Required to Operate the Function (*training, licenses, certifications, etc.*):

_____

_____

Main Contact: _____

Phone: (cell/home): _____

E-mail: _____

Time Sensitivity for Recovery of the Function:

☐ Critical < 0–12 hours

☐ Important 24–48 hours

☐ Urgent 12–24 hours

☐ Low 48+ hours

Essential Function (*main activity*): _____

Steps (*description of how this activity is performed*): _____

_____

_____

_____

_____

Special Skills Required to Operate the Function (*training, licenses, certifications, etc.*):

_____

Main Contact: _____

Phone: (cell/home): _____

E-mail: _____

Time Sensitivity for Recovery of the Function:

☐ Critical < 0–12 hours

☐ Important 24–48 hours

☐ Urgent 12–24 hours

☐ Low 48+ hours

Essential Function (*main activity*): _____

Steps (*description of how this activity is performed*): _____

_____

_____

_____

_____

Special Skills Required to Operate the Function (*training, licenses, certifications, etc.*):

_____

_____

Main Contact: _____

Phone: (cell/home): _____

E-mail: _____

Time Sensitivity for Recovery of the Function:

☐ Critical < 0–12 hours

☐ Important 24–48 hours

☐ Urgent 12–24 hours

☐ Low 48+ hours

Essential Function (*main activity*): _____

Steps (*description of how this activity is performed*): _____

_____

_____

_____

Special Skills Required to Operate the Function (*training, licenses, certifications, etc.*):

_____

_____

Main Contact: _____

Phone: (cell/home): _____

E-mail: _____

Time Sensitivity for Recovery of the Function: _____

☐ Critical < 0–12 hours

☐ Important 24–48 hours

☐ Urgent 12–24 hours

☐ Low 48+ hours

Essential Function (*main activity*): _____

Steps (*description of how this activity is performed*): _____

_____

_____

_____

_____

Special Skills Required to Operate the Function (*training, licenses, certifications, etc.*):

_____

_____

Main Contact: _____

Phone: (cell/home): _____

E-mail: _____

Time Sensitivity for Recovery of the Function:

☐ Critical < 0–12 hours

☐ Important 24–48 hours

☐ Urgent 12–24 hours

☐ Low 48+ hours

(*Insert Additional Essential Functions as Needed*)

Concept of Operations (*guidelines for using the plan*)

Roles and Responsibilities (*identify recovery organization*)

(*Example Organization*)

• Leadership Team _____

• Crisis Management Team _____

• Business Recovery Teams (*for each essential function*) _____

_____

_____

Position	Responsibilities

Plan Activation

When a State of Emergency is declared by the (*appropriate official*) or under conditions that it is determined by the _____ that an incident has or will occur that will result in the interruption of essential airport functions, the BCP/COOP will be activated.

Alert and Notification

(*Section identifies general notification procedures to follow when responsible parties have knowledge of a situation requiring activation of the BCP/COOP. This sometimes involves a call tree with a top-down approach. If utilized, the person notifies the individual immediately above him or her.*)

Recovery Function Prioritization (*listing of airport essential departments and functions with general prioritization*)

Prioritization	Essential Functions
1	
2	
3	
4	

Functional Recovery Plans (*recovering identified essential functions—complete this for each essential function*)

Function Description (*provide general description of the airport department and function*)

Essential Function (*Main Activity*): _____

Recovery Prioritization: _____

Recovery Time Sensitivity: _____

Human Resources

The following identifies the person responsible—as well as an alternate—for performing this main activity:

Personnel	Name	Title	Telephone	Certifications
Lead Person				
Alternate Person				

Critical Resources

The following identifies critical support resources including technology and systems required to perform this function:

Item	Location	Quantity	Model Version	Vendor	Alternate Vendor	Alternate Ways to Perform Activity

Essential Records

Vital records and databases needed to continue and complete the essential function are as follows:

Document/File Database	Location	Form (Electronic/ Paper)	Prepositioned at Alternate Facility (Y/N)	Ability to Recreate (Y/N)	Supports What Main Activity?

Alternate Locations

The locations that all or part of the business or operational function can be relocated to the following:

Location Name	Address	Relocation Phone	Additional Information	Relocate or Alternate Way to Transfer Work

Delegation of Authority/Succession

In the event that the lead person for the function is unable to perform leadership duties or is unavailable, designated successors are as follows: (*Coordination with the _____ will be accomplished when possible and notification provided to the appropriate parties.*)

Positon	Designated Successors
	1.
	2.
	3.

Communications

Employee Contacts

Name	Position (Role)	Phone (Home/work/ cell)	E-mail	Accommodations/ Needs

Communications Systems (*list communications that will be used to contact employees, contractors, and tenants during the business and operational recovery process*):

Communication System	Support Activity	Current Provider	Alternate Provider	Specifications and Notes
(Ex. – E-mail)				
(Ex. – Text)				
(Ex. – Cell phone)				

Vendors, Suppliers, and Relocation Contacts *(suppliers of key support equipment*)

Company	Contact	Phone	E-mail	Service	Account

Devolution of Control and Direction (*transferring authority to other employees and facilities if the airport or essential functions within the airport cannot continue to be conducted there*) (*Describe how essential functions and responsibilities will be transferred in the event that disruptions are significant enough to prohibit the Leadership Team and staff from supporting the essential function*.)

Reconstitution (*returning airport/function to normal after disruption has ended*)

The (*Ex. Business Continuity Team Leader*) will be responsible for all phases of the reconstitution process and will determine the status and time required for the impacted function to return to normal operations and location. Appropriate assessments of impacted functions and locations will be coordinated with emergency responders or other agencies as required and completed prior to re-establishing normal operations.

Plan Testing, Training, and Exercises (*how tested and improvements incorporated*) (*Describe how airport staff will be trained on the plan, training schedule, and how improvements will be integrated into the plan*.)

Plan Review and Maintenance (*when will the plan be reviewed and process to update*) (*Describe the schedule for administrative review of plan, how updates will be incorporated.*)

ANNEX A. Functional Checklists (*provide simple checklists for any functions as desired*)

ANNEX B. Stakeholder Recovery (*attach other plans as applicable*)

APPENDIX U

Checklist for Business Continuity Plan/Continuity of Operations Plan Development for General Aviation, Small Hub, and Non-Hub Airports

Action	Applicable	Completed
PLANNING CONSIDERATIONS		
Determine if the governing entity (city, county) of the airport has a BCP/COOP requirement or planning in place. If so, how can the airport access existing plan or participate?		
Evaluate how functions not within the airport's control will be incorporated into the plan with both internal and external stakeholders.		
Assess compatibility of the plan and planning process with the airport's governance entity's existing plans and procedures.		
Consider employees' safety and well-being through planning process.		
Consider any additional insurances that may be required for the business and service interruptions identified.		
Ensure that the airport's mission and values are central to the business continuity planning process.		
Consider looking at how other airports are addressing business continuity to determine if tools or processes can be adapted to meet needs.		
PRELIMINARY STEPS		
Identify a BCP coordinator and/or team with defined roles and responsibilities.		
Perform analysis of likely threats and assess risks of disruptive incidents impacting the airport.		
Consider the impact of predicted risks on resources including personnel, plant and equipment, technology, and processes.		
Identify internal and external stakeholders and role in planning process.		
Determine scope of plan and how it applies to the airport and overall organization including stakeholder functions.		
Determine objectives of the plan and how deeply the airport desires to address functions or if the plan will narrowly define continuity for specific threats.		
Ensure that executive level senior management supports development of the plan.		
Ensure adequate funding to the meet scope and objectives of the plan as identified by the planning team.		
Consider tools to be used in the process and whether a stand-alone BCP will be developed or continuity addressed through other functional plans and processes.		

Action	Applicable	Completed
PLAN DEVELOPMENT		
Identify and define planning assumptions based on the airport's unique circumstances. Involves determining underlying considerations to guide the planning process.		
Identify essential functions that are critical to the normal operation and business processes of the airport.		
Analyze what combination of human resources, plant and equipment, technology, and processes are needed to make essential functions work.		
Evaluate time sensitivity of identified functions and begin prioritization.		
Evaluate recovery priority; for example, is the function considered critical, important, convenient, or non-essential?		
Inventory resources against essential functions and determine if additional resources will be needed to address and recover from disruptions.		
Address what the airport will do in the event of disruption and guidelines for using the plan including short-term versus long-term actions.		
Determine chain of command and authorization to initiate and control.		
Determine how the airport will provide alert and notification after plan initiation.		
Develop a contact information list for personnel and resources.		
Evaluate alternate resources locations, vendors, or ways to perform the activity.		
Develop a communications plan—internal, external, media, social media.		
Evaluate essential records and databases and how to continue and complete the activity if disrupted as well as use at alternate location.		
Consider an alternate location for the function including primary and secondary locations.		
Determine the lines of succession and process for delegation of authority.		
Evaluate communications systems including alternate methods as required.		
Develop a list of vendors and suppliers of key support supplies or equipment, including day and night contact information.		
Consider the process for devolution of control if other employees or facilities are required.		
Determine the process of returning the airport or function to normal after the disruption has ended.		
Consider IT requirements for all phases of BCP, including manual processes if needed.		
PLAN IMPLEMENTATION AND INTEGRATION		
Practice effective communication with key internal and external stakeholders and sustain relationships with those stakeholders.		
Encourage personal preparedness for employees and their families.		
Evaluate documentation—insurance, liability, record keeping.		
Determine the role of NIMS principals and use of Incident Command System through addressing incidents with Incident Action Plan.		

Action	Applicable	Completed
Validate the recovery capabilities of suppliers and vendors identified in the BCP.		
Develop staff awareness of the BCP and recognize change that may require update to continuity planning.		
PLAN TESTING		
Develop a schedule to test train and exercise on BCP and procedures.		
Determine types of plan testing to use, including exercise of particular plan components up to and including full plan training.		
Implement and exercise/drill to test your plan, and revise periodically.		
Develop an after-action follow-up post-exercise/event procedures.		
Develop a process for applying lessons learned to the plan.		
PLAN MAINTENANCE		
Develop a schedule for administrative review/update of the plan.		
Provide periodic update and revision of the plan based on the training and exercise program and changes to the airport or key stakeholders.		

Abbreviations used without definitions in TRB publications:

A4A	Airlines for America
AAAE	American Association of Airport Executives
AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
ACI–NA	Airports Council International–North America
ACRP	Airport Cooperative Research Program
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
DHS	Department of Homeland Security
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
HMCRP	Hazardous Materials Cooperative Research Program
IEEE	Institute of Electrical and Electronics Engineers
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute of Transportation Engineers
MAP-21	Moving Ahead for Progress in the 21st Century Act (2012)
NASA	National Aeronautics and Space Administration
NASAO	National Association of State Aviation Officials
NCFRP	National Cooperative Freight Research Program
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
PHMSA	Pipeline and Hazardous Materials Safety Administration
RITA	Research and Innovative Technology Administration
SAE	Society of Automotive Engineers
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005)
TCRP	Transit Cooperative Research Program
TEA-21	Transportation Equity Act for the 21st Century (1998)
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation

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