Issues with Airport Organization and Reorganization

DETAILS

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AIRPORT COOPERATIVE RESEARCH PROGRAM

ACRP **SYNTHESIS 40**

Issues with Airport Organization and Reorganization

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

The ACRP was authorized in December 2003 as part of the Vision 100-Century of Aviation Reauthorization Act. The primary participants in the ACRP are (1) an independent governing board, the ACRP Oversight Committee (AOC), appointed by the Secretary of the U.S. Department of Transportation with representation from airport operating agencies, other stakeholders, and relevant industry organizations such as the Airports Council International–North America (ACI-NA), the American Association of Airport Executives (AAAE), the National Association of State Aviation Officials (NASAO), and the Air Transport Association (ATA) as vital links to the airport community; (2) the TRB as program manager and secretariat for the governing board; and (3) the FAA as program sponsor. In October 2005, the FAA executed a contract with the National Academies formally initiating the program.

The 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.

Research problem statements for the ACRP are solicited periodically but may be submitted to the TRB by anyone at any time. It is the responsibility of the AOC to formulate the research program by identifying the highest priority projects and defining funding levels and expected products.

Once selected, each ACRP project is assigned to an expert panel, appointed by the TRB. Panels include experienced practitioners and research specialists; heavy emphasis is placed on including airport professionals, the intended users of the research products. The panels prepare project statements (requests for proposals), select contractors, and provide technical guidance and counsel throughout the life of the project. The process for developing research problem statements and selecting research agencies has been used by TRB in managing cooperative research programs since 1962. As in other TRB activities, ACRP project panels serve voluntarily without compensation.

Primary emphasis is placed on disseminating ACRP results to the intended end-users of the research: airport operating agencies, service providers, and suppliers. The ACRP produces a series of research reports for use by airport operators, local agencies, the FAA, and other interested parties, and industry associations may arrange for workshops, training aids, field visits, and other activities to ensure that results are implemented by airport-industry practitioners

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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
Transportation
Research Board

This report provides airport managers with effective practices airports use to help manage their organizations to best meet the changing needs of the aviation industry. It examines relevant organizational design in the academic literature, along with current trends and practices in airport management.

Twenty-two airport managers representing 36 airports answered an extensive questionnaire that elicited information about their unique experiences with organizational change, and five case studies were chosen for further exploration.

Kimberly A. Kenville, Ph.D., C.M., Kim Kenville Consulting, Grand Forks, North Dakota, and James F. Smith, Ph.D., P.E., Smith-Woolwine Associates, Floyd, Virginia, 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.

CONTENTS

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.

ISSUES WITH AIRPORT ORGANIZATION AND REORGANIZATION

SUMMARY

Today's airport managers face unprecedented political, environmental, and economic pressures. In many cases, traditional organizational structures no longer address the complex nature of airport management. This lack of congruence between policy and practice is triggering widespread reevaluation of organizational planning. To develop an optimal structure, it is useful to examine past and current practices in operational design and explore sensible, effective approaches to organizational change.

This project provides airport managers with improved tools to help manage their organizations to best meet the changing needs of the aviation industry. It examines relevant organizational design in the academic literature, along with current trends and practices in airport management. Twenty-two airport managers representing 36 airports answered an extensive questionnaire that elicited information about their unique experiences with organizational change, and five case examples were chosen for further exploration. A discussion and synthesis of the literature with real-world experience, along with a "flight plan" detailing successful strategies, aims to support airport leaders as they strive to best align personnel and thrive in today's rapidly changing environment.

Organizations can determine the best fit by considering the key elements of work specialization, departmentalization, chains of command, span of control, centralization, and formalization in tandem with observations and assessments of current practice. Examining the nature of the industry (e.g., formal, mechanistic, regulated), the type of employees (e.g., management, workers), along with mission and vision, can help airports find their most advantageous structure.

Organizational structures range from functional, centralized, and hierarchical to more free-flowing, decentralized, and collaborative: boxes and straight lines yield to circles and arrows. Over the past two decades, new approaches have been gaining support, such as team-based, modular, organizational network analysis, and boundaryless organizational design.

This report provides airport operators with a synthesis of methodologies, processes, and factors to develop, implement, and evaluate organizational structures; a discussion of the advantages, disadvantages, constraints, risks, and opportunities of traditional and alternative organizational concepts and frameworks; and selected examples and lessons learned from five airports that recently implemented substantial changes in their organizational structure.

Several issues were evident throughout the research: a clear vision and strategic plan was critical in driving any organizational change. Endorsement from the governing entity was essential; the primary role of the leadership was to involve key employees in determining the type of organizational structure that would best serve the new strategic business objectives. An overarching theme in each case example interview was that it takes time to initiate and implement organizational change, so patience needs to prevail, and the small successes should be celebrated along the way.

Although the airport managers' experience and insights often matched best practices in the literature, there is no "one size fits all" approach. Each approach has advantages and disadvantages, and each airport faces unique local, state, and federal obligations and pressures. Strong, informed leadership and vision, coupled with a patient and informed approach, can drive positive, effective change.

CHAPTER ONE

INTRODUCTION

BACKGROUND

> Organizational design is a complex and difficult task, yet it is one of the most important tasks untaken by CEOs and their senior management teams. Successful design of an organization requires deeply understanding the context for which the organization is being designed—the environment in which the firm competes, and the business strategies and models it will use to compete, and the capabilities it needs to compete (Beckman 2009).

Over the past decade, most airports have faced many new challenges, such as irregular operations, increased competition, changing regulatory issues, and increasing economic pressures. These challenges have provided opportunities for management to review current business strategies and adjust organizational structures to best meet their core business strategies.

External pressures have triggered changes in operations; in some cases, changes in business models and strategies have led airports to remain self-sustaining organizations that are flexible during times of change. In other cases, however, airports are struggling to meet the challenges of this era of rapid change. To make the best decisions before embarking on restructuring an airport, it is useful to examine past and current practices in operational design and observe real-world approaches to organizational change. Airports may find that they need to update their organizational structure as a result of political, environmental, or economic triggers. Articulating business goals and developing an effective strategic plan can lead airport operators to examine and modify their organizational structure. A well-understood and effective organizational structure can provide much-needed support for airports seeking to meet strategic, operational, and business goals while facilitating successful delivery of core services.

According to Droege (n.d.), "changing an organization's structure is a daunting managerial task, and the immensity of such a project is at least partly why organizational structures change infrequently" (para. 4). It is a daunting but necessary task that requires sound leadership and high-level collaboration. Many airports are examining their internal organizational structure to rebalance workloads and identify possible outsourcing opportunities to attain greater efficiencies. Some are finding that their original organizational chart needs to be completely overhauled.

This project aims to facilitate and support the change process by providing airport managers with specific, effective organizational practices to meet their strategic, operational, and business goals and delivery of core services in a time of changing needs within the aviation industry. Key points from current academic literature regarding organizational structures and design features are explained, and a discussion of a survey completed by 22 airport operators representing 36 airports follows. Five in-depth case examples further illustrate specific triggers, processes, and challenges learned during the change process. Finally, a practical flight plan of critical considerations synthesizes the current literature, survey data, and case example information as it affects real-world practice, providing busy airport leaders with a helpful guide to follow as they navigate organizational change.

STUDY METHODOLOGY

A questionnaire (see Appendix A) was designed to elicit information from airport operators. Airport executives were asked to identify their type of governance structure, their current type of organizational structure, the number of employees in their workforce, which employees or job functions were outsourced, and how they defined and determined organizational effectiveness and efficiency.

Twenty-two executives representing 36 airports completed surveys (Appendix B); all surveys were completed, yielding a 100% response rate. The airports ranged in size from 7 to 1,850 employees and represented each type of governance structure in each category of the National Plan of Integrated Airport Systems (NPIAS).

After the survey data were analyzed, five airports were selected for more detailed examination. All five airports had experienced a recent significant change in organizational structure and were willing to share lessons learned, along with advice to those initiating change in organizational structure and design. The five case example airports or airport systems are as follows:

1. Metropolitan Nashville Airport Authority — medium hub

2. Louisville Regional Airport Authority — small hub/significant cargo
3. Salt Lake City International Airport (city) — large hub
4. Rapid City Regional Airport (city) — non hub
5. Colorado Springs Airport (city) — small hub

CHAPTER TWO

LITERATURE REVIEW

This literature review summarizes current practices in organizational design. It includes an investigation of organizational structures that have evolved over the past 100 years of management science. Advantages and disadvantages of each structure are reviewed, yielding useful approaches for airport managers facing structural change in their organizations. Barriers to change, the informal relationships that exist within organizations, and the impacts of change on organizational culture are also discussed.

Most of the literature surrounding organizational design is centered on for-profit private organizations concerned with product sales or geographic markets. As a result, several limitations exist. First, few examples of organizational or structural change at airports have been published. Most organizations initiate changes and then keep moving toward their goals, often without reflecting on or documenting the process. Further, few or no industries function similarly to airports, with their unique stakeholder groups and governance structures, so it is difficult to draw correlations between organizational changes in other industries and airports. The largest deficiency in the literature is a general lack of assessment metrics to gauge effectiveness.

THEORY OF ORGANIZATIONAL STRUCTURE

Greenberg and Baron (2008) describe an organization as a meaningful combination of groups and individuals working together purposefully to meet the goals of the organization, as opposed to a haphazard collection of people. "Organizational structure" is defined as "the way an organization arranges people and jobs so that its work can be performed and its goals can be met" (Droege n.d.). According to Robbins and Judge (2009), six key elements that managers need to address when creating an organizational plan are work specialization, departmentalization, chain of command, span of control, centralization/decentralization, and formalization (see Table 1).

Work specialization, or division of labor, refers to a worker's ability to concentrate on a specific task and become a specialist. Generally, this term is used to describe which activities in an organization will be subdivided into separate jobs or broken down into steps by separate individuals (Robbins and Judge 2012). For example, in airports, work specialization would include airfield maintenance, snow removal, and airside and landside operations.

TABLE 1
KEY DESIGN QUESTIONS AND ANSWERS FOR DESIGNING THE PROPER ORGANIZATIONAL STRUCTURE

The Key Question	The Answer Is Provided by
1. To what degree are the activities subdivided into separate jobs?	Work specialization
2. On what basis will jobs be grouped together?	Departmentalization
3. To whom do individuals and groups report?	Chain of command
4. How many individuals can a manager efficiently and effectively direct?	Span of control
5. Where does decision-making authority lie?	Centralization/ decentralization
6. To what degree will there be rules and regulations to direct employees and managers?	Formalization

(*Source*: Robbins and Judge 2009, p. 519).

Departmentalization is the grouping of specialized workers who perform certain similar tasks. Most people view this type of grouping as functional work groups, where organizations group workers around certain departments or functions of the organization, such as accounting, human resources, and engineering (Robbins and Judge 2012).

The concept of **chain of command** dates back to ancient history and was once a basic cornerstone of organizational design; however, today it appears increasingly irrelevant (Robbins and Judge 2012). Chain of command refers to an unbroken line of authority extending from the top to the bottom of the organization. Today, the concept of authority is understood more as the rights inherent in a managerial position rather than the right to give orders and expect compliance. Currently, discussion of theories is taking a backseat to examining the real-world practice of chain of command and authority within the multiple challenges arising from the growth of information technology.

Span of control refers to how many employees a manager can oversee efficiently and effectively; this "span" determines the number of levels of management that an organization may need. Most experts agree that the wider the span of control,

the less management will be required, and the more efficiency should be realized in terms of number of employees. On the other hand, a negative outcome of a wider span of control is that the manager provides less direct supervision and leadership to subordinate employees (Robbins and Judge 2012). Discussions about span of control center on issues regarding the autonomy of the worker and the nature of the work performed.

Centralization refers to the degree to which decision making is concentrated at a single point in the organization. If lower-level employees are allowed to make decisions, then more decentralized decision making occurs. More companies are allowing employees to exercise increased decision-making discretion because they are "close to the action" and have detailed knowledge of the situation, resulting in quicker, more effective problem solving (Robbins and Judge 2012).

Formalization refers to the degree of standardization of jobs within an organization. When formalization is high, employees have a minimal amount of discretion and decision-making authority, clear lines of accountability and assessment, explicit job descriptions, and clearly defined procedures. When formalization is low, employee job behaviors are less "programmed," with higher degrees of autonomy and discretion in decision making (Robbins and Judge 2012). Typically, a split is evident in the "routineness" of a position, and labor agreements have an impact on the degree of formalization within a company.

An airport can determine its most appropriate type of organizational strategy and structure by considering the key elements of work specialization, departmentalization, chain of command, span of control, centralization, and formalization in tandem with observations and assessments of current practice. Examining the nature of the industry (e.g., formal, mechanistic, regulated) and the type of employees (e.g., management, workers), together with adhering to mission and vision, can help airports discover, describe, implement, and sustain their optimal organizational structure.

Types of Organizational Structure

This section introduces several types of organizational structure described in current business literature. Different designs are explained, along with the general advantages and disadvantages of each. As organizations strive to graphically represent the connections needed to carry out their core services, they are finding that conventional hierarchical structures often inhibit or confuse autonomy and teamwork both within and outside of the organization. As a result, boundaries on organizational charts are becoming less rigid and more fluid.

Organizational structures range from conservative, centralized, and hierarchical to more free-flowing, decentralized, and collaborative: boxes and straight lines yield to circles and arrows. Each structure on the spectrum, from functional to division based to matrix, has advantages and disadvantages that airport managers can weigh when considering new approaches to organization.

Functional organizations follow the most basic design, grouping employees who all perform the same job function into departments, such as accounting and finance, human resources, airport operations, engineering and planning, and public safety. Within functional organizations, highly skilled or specialized individuals perform only the tasks assigned to them and do not cross over into another function (see Figure 1).

FIGURE 1 Functional organizational chart (*Source*: http://christianchurchdevelopment.files.wordpress.com/2008/10/struct.jpg).

> Functional structures typically are more hierarchical; maximize functional performance; and cultivate specialists in the job ranks. However, they can restrict the organizational view; create slower response times to changes in the working environment; and lead to poor accountability between functional units, as hierarchical chain of command travels "up one silo and down another" (Gupta 2009, para. 6).
>
> Functional structures appear most effective for smaller organizations with few products; smaller operations neutralize the limited view of an organization. Functional design is also effective when the industry is relatively stable and has routine technologies with little probability of emerging competition (Gupta 2009).

Division-based organizations have teams organized in a set of divisions, or centered on a particular line of business. Each division corresponds to the product or service provided by the organization, and typically is self-contained (Gupta 2009). A divisional structure is less hierarchical and is designed by regrouping the functions into a structure following the lines of business of the organization (see Figure 2).

Since each unit is self-contained, divisional organizational structures benefit from clear accountability in the unit, departmental coordination, potential for broader skill development, and resiliency during uncertainty. However, divisional structures have their drawbacks, including resource duplication among units, possible inhibition of career growth and specialization, difficulty in integrating different product lines without discontinuance, and creation of divisional affiliations, which can hamper cross-training and awareness of the "big picture" (Gupta 2009). Product or divisional structures are most effective for large corporations and for those in competitive or uncertain external environments.

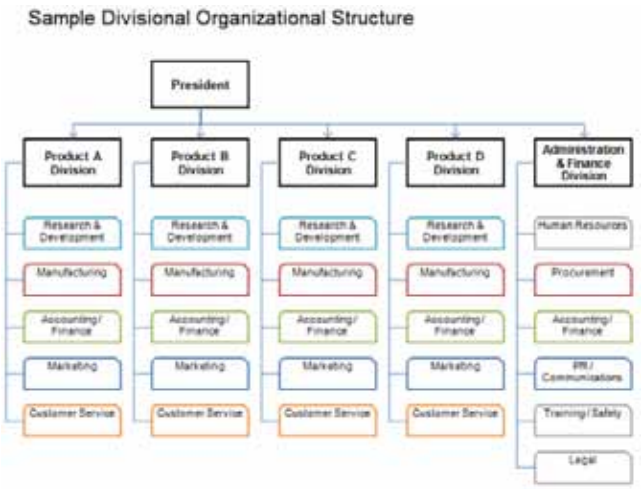

FIGURE 2 Sample divisional organizational chart (*Source*: http://images.vertex42.com/ExcelTemplates/orgcharts/divisional-corporate-organizational-structure.gif).

Matrix organizations were developed when previous structures did not meet some organizations' needs. The matrix structure combines elements of both functional and divisional structures. Its strength lies in combining functional specialists and much-needed resources required to meet the entities' core competencies. This structure breaks the unity of command concept, and employees typically have two bosses, reporting to one functional and one divisional supervisor, as shown in Figure 3 (Robbins and Judge 2012).

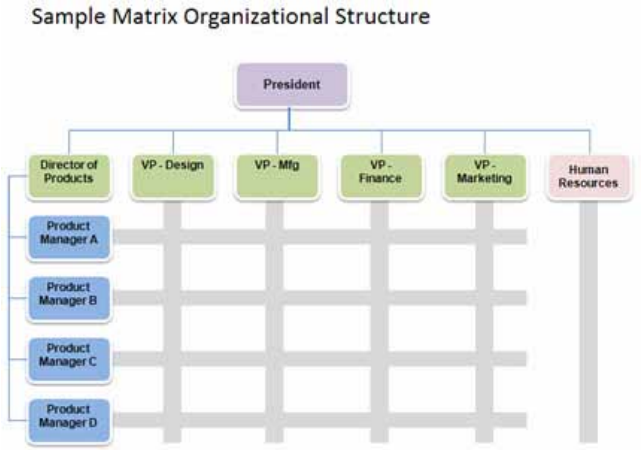

FIGURE 3 Sample matrix organizational chart (*Source*: http://images.vertex42.com/ExcelTemplates/orgcharts/matrix-organizational-structure.gif).

One advantage of this structure is that it nurtures the development of highly specialized employees and encourages resource sharing (Droege n.d.). The main disadvantage is a lack of clear reporting structures, accountability, and resource allocation. Management following the matrix structure must set clear procedures and policies to avoid conflicts and power struggles (Robbins and Judge 2012).

Some organizations establish self-directed work teams or cross-functional teams that span the organization's functional areas. For example, in an airport setting, a cross-functional team could develop and implement the capital improvement plan. Many organizations have embraced work teams, as they improve motivation and promote effective communication skills by expanding the scope of employees' jobs and their involvement in planning (Droege n.d.).

Over the past two decades, new approaches have been developed and are gaining support, such as team-based, modular, organizational network analysis, and boundaryless organizational design.

Team-based organizations normally are structured around product development and are integrated with project managers and administration (see Figure 4). The teams are parallel to one another and do not reflect a hierarchical platform, but do share integration, focusing on specific processes instead of individual jobs (Greenberg and Baron 2008).

FIGURE 4 Team-based organizational chart (*Source*: Minneapolis Parks Department (http://www.minneapolisparks.org/graphics/about/mprb-organizational-chart.jpg).

A **modular** or **network organizational plan** is based on outsourcing noncore functions of the business (see Figure 5). A central hub of core functions is surrounded by networks of outside specialists that can be added and subtracted as needed, similar to some health care systems in which doctors and specialized labs are contracted with independently and used as needed (Greenberg and Baron 2008).

The **organizational network analysis** approach depicts processes and a set of tools, revealing networks and patterns

of relationships between individuals and entities. Research by Novak et al. (2011, p. 34) asked workers which coworkers were essential for providing information to do their work or help them meet their client's needs. The 36 respondents said that they spoke with 536 unique individuals, indicating that while boundaries or functions may be in boxes and lines on an organizational chart, workers generally move across the structure to fulfill their daily responsibilities (see Figure 6).

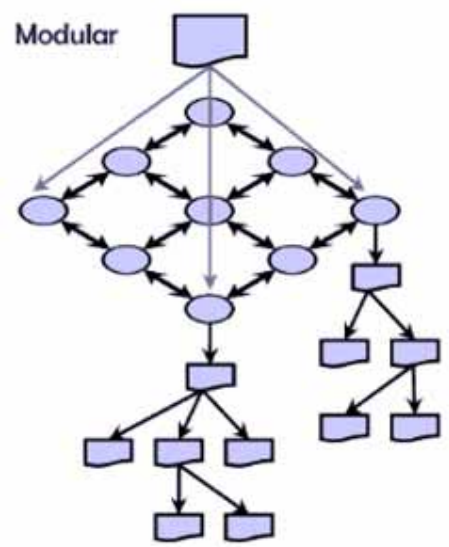

FIGURE 5 Modular or networked organization (*Source*: http://www.daaq.net/old/site_design/index.php?page=site+structures&parent=the+web+project&printme=true).

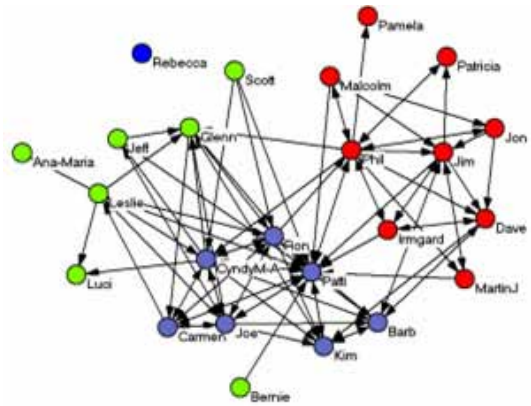

FIGURE 6 Sample of Organizational Network Analysis (*Source*: http://www.byeday.net/ona.htm).

For example, many department heads have much more interaction with administrative support from across the organization. The organizational network analysis system has the look of a broad pattern of connections that are rarely noted on a traditional organizational chart, but nonetheless exist in real-world practice. One key finding is that "effective knowledge-based organizations are highly interactive, collaborative, interdependent, aligned and focused. Knowledge-based work is less reliant on rules-based work; it requires an ongoing series of interactions" (Novak et al. 2011, p. 36). This chart uses dots to represent key positions within the organization and lines to depict interactions between other workers inside and outside the organization necessary to complete their work.

Boundaryless organizations practice "business without barriers." With no formal chain of command, span of control, or rigid departments, these organizations empower teams of employees. Jack Welch, former General Electric chief executive officer (CEO), was a strong proponent of this design, which was implemented to rid the organizations of the "that's not my job" approach that often accompanies formal hierarchical structures. According to Greenberg and Baron (2008), for this type of organization to achieve success, there need to be high levels of trust, high skill levels, and employees who can operate with little or no managerial guidance. This type of structure requires breaking down both external and internal barriers.

Organizational Chart

The organizational chart is a graphic representation of an organization's internal structure that shows connections between different departments, division, or teams. Organizational charts are tools that help organizations avoiding confusion and illustrate unit interrelationships (Greenberg and Baron 2008). Creating an organizational chart is one of the more challenging tasks that management faces. Many organizations believe that they can just copy the chart of a similar company, but a copycat approach rarely proves fruitful, because each entity has its own nuances. During the past century, management science literature has shown that "one best way" does not exist, and companies have to develop their own designs tailored to their unique circumstances and needs. Several new organizational environmental and cultural developments have emerged to help firms compete more effectively while continuing to fulfill their mission and vision.

Organizational Environmental Considerations

Organizational design is defined as "the process of coordinating the structural elements of organizations in the most appropriate manner" (Greenberg and Baron 2008, p. 598). Several approaches to organizational design exist, differing in their degree of formalization and decision making. While structure is important to design, so too is the environment in which the company must operate. Environmental factors worth consideration are the organization's strategy, size, technology (i.e., how the organization transfers input into outputs), and environmental stability (Robbins and Judge 2012).

According to Robbins and Judge (2009), "structure and strategy should be closely linked, more specifically—structure should follow strategy" (p. 534). The structure of an organization works to help it achieve its overall objectives, or mission. If management makes significant changes to the strategy, then the structure should be modified to accommodate and support the change.

Three distinct business strategy approaches are innovative, cost-minimization, and imitator strategies. Innovative strategies typically follow an organic or loose structure with low specialization and formalization to let the company progress; an example is the Internet giant Google. Organizations that follow a cost-minimization strategy typically have a highly mechanistic structure with tight controls, high specialization, high formalization, and centralized decision-making authority. Most imitator strategies follow a general mix of organic and mechanistic control mechanisms (Robbins and Judge 2009).

The size of an organization influences its structure. Large entities, typically employing more than 2,000 people, tend to become more specialized into departments with more vertical levels and procedures and processes, much like large hub airports.

Technology, or the process of how companies transfer inputs into outputs, also dictates aspects of organizational structure. According to Robbins and Judge (2009), "routine tasks are associated with taller and more departmentalized structures, which have centralized authority": these organizations also tend to have rule manuals, job descriptions, and other formalized documents (p. 537). Airports favor more departmentalized structures and centralized authority, in large part owing to the regulatory nature of the business.

An organization's environment is defined as the entities or forces outside the organization that may affect its performance, including "suppliers, customers, competitors, government regulatory agencies, public pressure groups, and the like" (Robbins and Judge 2009, p. 537). An organization's environment can be evaluated regarding its capacity to support growth, its volatility, and its degree of complexity. Robbins and Judge (2009) observe that the "more scarce, dynamic and complex the environment, the more organic the structure should be. The more abundant, stable and simple the environment, the more the mechanistic the structure will be" (p. 539).

Organizational Culture

The definition of organizational culture "refers to a system of shared meanings held by the members that distinguishes the organization from other organizations" (Becker 1982). In a nutshell, culture is a set of key characteristics that an organization values. Seven dimensions capture the essence of organizational culture: innovation and risk taking, attention to detail, outcome orientation, people orientation, team orientation, aggressiveness, and stability (Robbins and Judge 2009, p. 552). An important distinction in the literature is that organizational culture is a descriptive term and is not to be confused with job satisfaction, which is an evaluative term. Normally, a dominant culture expresses the core values of an organization, which are held by the majority. However, subcultures may also develop within organizations. Subcultures tend to exist along departmental lines to reflect common problems, situations, or experiences that employees have faced (Robbins and Judge 2009).

An organization's culture has many functions. It can enhance the stability of the organization's social system (Robbins and Judge 2009). It can have a boundary-defining role, convey a sense of identity, and facilitate commitment to something larger than individual workers' self-interest. "Culture is the social glue that helps hold the organization together by providing appropriate standards for what employees should say and do, and it serves as a sense-making and control mechanism that guides and shapes the attitudes and behavior of employees" (Robbins and Judge 2009, p. 555).

A study of 230 organizations from around the world found that strong and positive aspects of culture that are critical to success are empowering employees, having a team orientation, having a clear strategic direction and intent, and having a strong and recognizable vision (Denison et al. 2004).

Informal Organizational Groups

Informal groups are quite different from the traditional or formal groups that exist within an organizational structure. These are alliances that are not formally structured or organizationally determined; they arise naturally in the work environment and usually stem from a need for social contact (Robbins and Judge 2009). Informal groups develop from employees having regular contact through breaks, lunch, and outside interests. They can take on subclassifications and be organized as command, task, and interest or friendship groups.

Command groups develop because members have a relationship in their direct report status. Task groups form because people perform similar tasks within the organization, interest groups usually arise from a shared interest in a specific objective, and friendship groups often form through social contact. There appears to be no exact pattern explaining why people join groups, but the literature points to several factors influencing group participation: security, status, self-esteem, affiliation, power, and goal achievement (Robbins and Judge 2009). Upper management can benefit from understanding that within the identified culture and formal structure, other levels of group affiliation contribute to the organization.

POSSIBLE INDICATORS FOR AN ORGANIZATIONAL CHANGE

According to the Three Sigma Corporation, the following items may indicate that an organization is in need of an organizational redesign:

- The organization's strategy or strategic direction has changed;

- New skills and capabilities are needed to meet current or expected operational requirements;
- Accountability for results is not clearly communicated and measureable, resulting in subjective and biased performance appraisals;
- Parts of the organization are significantly over- or understaffed;
- Organizational communications are inconsistent, fragmented, and inefficient;
- Technology and/or innovation are changing workflow and production processes;
- Significant staffing increases or decreases are contemplated;
- Personnel retention and turnover problems are significant;
- Workforce productivity is stagnant or deteriorating; and
- Morale is deteriorating (Three Sigma, Inc. 2002).

These factors were used to establish the online survey questions to initiate the discussion of whether or not an airport manager had undertaken any type of organizational changes or redesign. This would signal that airports face types of organizational and business challenges similar to those that other businesses have faced.

METRICS FOR ASSESSING ORGANIZATIONAL DESIGN

How organizations actually assess the success or failure of changing their structure is not well documented. Even though no specific metric can gauge the overall success of an organizational redesign, pre- and post-metrics can be helpful in measuring the effectiveness and efficiency of any proposed change.

Robbins and Judge (2009) define organizational effectiveness as the achievement of an organization's goals, and organizational efficiency as the ratio of effective output to the input required to achieve it. A useful analogy is "a hospital is *effective* when it successfully meets the needs of its clientele, and it is *efficient* when it can do so at a low cost" (p. 27). Common measures of organizational efficiency include return on investment, profit per dollar of sales, and output per hour of labor (Robbins and Judge 2009).

ACRP Report 19A: Resource Guide to Airport Performance Indicators is a robust guidebook for determining metrics for assessing each functional area and type of work an airport offers. The guide identifies 29 Core Airport Performance Indicators (APIs) and 132 Key Departmental APIs distributed among 23 functional areas of an airport. This resource can be accessed at http://www.trb.org/ACRP/Public/ACRP.aspx.

OTHER INDUSTRY TRENDS IN ORGANIZATIONAL DESIGN

Trends in industries other than transportation were studied. Private for-profit, city services, and health care industries were examined to find approaches to organization that would yield useful strategies for the airport industry.

Airports are public service entities that serve as an access point to the private air transportation industry, thus providing a service to the public. Airports have no control over the "product, price, or place" of air transportation. Transit authorities often control the mode and type of equipment and employ workers to maintain control over the entire operation. This puts airports squarely in the middle of a private for-profit sector.

Cities provide services to their citizens with an internal or external workforce and then capture revenues by means of taxing authority. This sector has little in common with airports.

The health care industry and the airport industry share a common 24/7 operation and service platform, but no other meaningful parallels in organizational operations were found. For example, one for-profit health care provider examined had nearly every function of its organization contractually linked as separate business units to the hospital, while most health care systems have professional management and all functions held internally. Airports tend to follow this model of professional staff, with all of the departmental functions found within.

ORGANIZATIONAL CHANGE

John P. Kotter, in his seminal work *Leading Change* (1996), discusses why organizations change, how the change process can be successfully navigated, and what errors can occur. Sometimes "change just happens," but most changes are planned and require goals and strategies to initiate the process. Organizations need to adapt when competitors introduce new products or services, government agencies enact new laws, or environmental changes take place (p. 621). Robbins and Judge (2009, p. 621) assert that "if an organization is to survive, it must respond to changes in its environment."

Just as an organization's success or failure is the result of actions employees take or fail to take, planned change is concerned with changing the behavior of groups of individuals working in the organization. Figure 7 shows the evolution of the process of change and how the flow can best be managed (Kotter 1996). The eight sequential steps are natural but necessary stages in the change process, and organizations that fail often do so because of the pressure to produce, which causes them to rush the process and skip steps.

When Kotter (1996) analyzed successful cases of organizational change, two clear patterns emerged. First, useful change tends to be associated with a multistep process that creates power and motivation sufficient to overwhelm

all sources of inertia. Second, change is never employed effectively unless it is driven by high-quality leadership, not just excellent management; this essential distinction is illustrated repeatedly when leaders speak of significant change (p. 20).

FIGURE 7 Kotter's Eight-Stage Process of Creating Major Change (*Source*: http://3.bp.blogspot.com/-dPdlugG7Tnc/Tb92avD3NsI/AAAAAAAAAFg/MlVXyC9np2E/s1600/kotter4.gif).

A good rule of thumb, according to Kotter (1996), is that " whenever you hear of a major restructuring, reengineering, or strategic redirection in which step one is to change the culture, you should be concerned that it might be going down the wrong path" (p. 156). Change in an organization needs to be *anchored in* the culture. Kotter observes that change—

- Comes last, not first: most alterations in norms and shared values come at the end of the transformation process;
- Depends on results: new approaches usually sink into a culture only after it is clear that they work and are superior to old methods;
- Requires a lot of talk: without verbal instruction and support, people are often reluctant to admit the validity of new practices;
- May involve turnover: sometimes the only way to change a culture is to change key people; and
- Makes decisions regarding succession crucial: if promotion processes are not compatible with new practices, the old culture will reassert itself (p. 157).

EXTERNAL FACILITATOR/CONSULTANT

Some studies recommend the use of an external facilitator or consultant to assist in building a new vision for the organization and embarking on reaching that new vision. Although the literature had scant information on external facilitators, most appeared to agree that external support is helpful for gathering information from current employees. External facilitators can also bring specific expertise to the organization, with a larger network of opportunities and experiences of successes and failures of past organizational structures and changes.

BARRIERS TO ORGANIZATIONAL CHANGE

Internal and external factors can hinder the success of an intended change. Administratively, labor relations may force the changes to be formalized and protracted. Inherent barriers may exist with the organization's governance structure. Internally, culture can be a liability when the shared values of the employees are not in sync with the organization's overall vision (Robbins and Judge 2009).

Change must not be used to create an alternate pathway to avoid conflict in the organization. Any impending conflicts should be resolved prior to the change process; otherwise, they may persist after the change has been enacted. Kotter (1996) also notes eight errors that may affect organizational change:

- Allowing too much complacency;
- Failing to create a sufficiently powerful coalition;
- Underestimating the power of vision;
- Undercommunicating the vision by a factor of 10, or 100, or 1000;
- Permitting obstacles to block the new vision;
- Failing to create short-term wins;
- Declaring victory too soon; and
- Neglecting to anchor changes firmly in the corporate culture (p. 16).

These all-too-common errors can have serious consequences. New strategies may fail and employees may not fully buy into the process; however, with skill and awareness these errors can be avoided or mitigated. The key to success, according to Kotter, lies in "understanding why organizations resist needed change, what exactly is the multi-state process that can overcome destructive inertia and, most of all how the leadership that is required to drive that process in a socially healthy way means more than just good management" (p. 16).

The literature review identified important issues in organization design, as well as several different organizational templates. Environment and culture play crucial roles in the structural design of the entity and the introduction of change management. A leader needs to follow a prescribed "flight plan" in order to effect change in a positive, healthy, and meaningful way. Barriers or pitfalls will need to be overcome, and management may need to mitigate errors along the way. Strong leadership with a clear vision leads to effective change.

CHAPTER THREE

SURVEY RESULTS

INTRODUCTION

An online survey format was chosen to elicit basic information about current airport organizational structures and to what extent airport managers have faced business challenges that required them to perform an in-depth review of their strategic plans and adjust their organizational structures. Airports are often placed in their own category of industry, as they both serve the public and act as a business. The survey allowed the research team to further delve into the manager's decision-making process and develop the case examples and critical issues for airport organizational change.

Twenty-two surveys were completed, representing 36 airports nationwide. Some entities manage a system of airports, which was noted in the survey questionnaire. Sixty-three percent (14) of the respondents represent a single airport, and the remaining eight are from multisystem airports that usually manage one large or medium-size hub and one to two general aviation airports in the surrounding area. Several airports use or purchase administrative services from their jurisdiction or other service units.

The predominant governance structure listed by 12 respondents was airport/port authority. Seven airports are owned by the city, two by the county, and one by both the city and the county.

Respondents were asked to self-report the number of full-time equivalents (FTEs) under their direct supervision, excluding any outsourced employees or employees not on the airport premises. As expected, there was wide disparity in the answers, as shown in Table 2.

TABLE 2
NUMBER OF EMPLOYEES (FTES) AT AIRPORTS SURVEYED

Number of FTEs	Number of Airports
7–85 employees	10
121–400 employees	7
567–1,850 employees	5

Source: Survey results.

Airports that outsource or use/purchase services from their jurisdictions tend to have fewer FTEs, perhaps owing to their governance structure. In the lower FTE grouping, many airports in the non/small hub size have 20 to 30 employees and use some services from their jurisdictions.

Nine airports reported no use/purchase of any services from their jurisdictions, while the remaining airports outsource or use/purchase some services. Table 3 shows the main categories of outsourced employees.

TABLE 3
CATEGORIES AND NUMBER OF AIRPORTS THAT UTILIZED OUTSOURCED EMPLOYEES

Department Type	Number of Responses
Accounting/Finance/Legal	11
Law Enforcement	9
Human Resources	8
Information Technology	7
Aircraft Rescue and Firefighting	6

Source: Survey results.

Other service areas outsourced by one or two airports were bus, custodial, parking, and shuttle services.

Twenty-one of 22 airport managers reported that they utilize a functional organization structure in which employees are grouped by job function; that is, finance, administration, operations, public safety, maintenance, or development.

Eighteen airports responded that they underwent a partial or total change in organizational structure during the past decade. Only four airports did not report any changes. Questions about triggers that initiated an organizational change were developed from the literature that discussed reasons why leaders change organizational plans. Table 4 presents the answers. Respondents were able to "check all that apply," indicating that several triggers were identified simultaneously.

Of the 18 respondents who reported an organizational change in the previous several years, 12 stated that their airport had conducted some type of organizational analysis before the change, and seven used an internal review and staff study. The remaining five sought assistance from an external source.

TABLE 4
TRIGGERS FOR ORGANIZATIONAL REDESIGN (CHECK ALL THAT APPLY)

Reason	Number of Respondents
1. Functional reassignment	15
2. Strategic or strategy change	10
3. Accountability	9
4. Workload issues (under/over)	9
5. New skills/abilities to meet new operational requirements	8
6. Morale	3
7. Financial restructuring	2
8. Communication	1
9. Political climate or key stakeholders	1
10. Departure of key personnel	1

Source: Survey results.

Respondents were asked to explain how their airports defined and measured the term "organizational efficiency." The following list summarizes the survey results.

Self-reported Definitions and Metrics for Organizational Efficiency (number of respondents in parentheses).

- Effectively maximizing operations with the fewest resources possible (8)
- Productivity (5)
- Achieving financial goals or maintaining low operating expenses as expressed in cost per enplaned passenger (CPE) (4)
- Continuous Improvement Management Systems (1)
- Return on investment (1)
- Balanced scorecard and strategic priorities dashboard (1)
- Adoption of various policies and procedures (1)
- Employee empowerment (1)
- Ability to make decisions at the "speed of business" (1)
- Benchmarking (1)
- Cross-training (1)
- General term not measured (1)

The predominant theme among respondents was that they were "doing more with less." In the aerospace industry, the standard business model for the preceding decade has been to lay off, cross-train, and outsource many of the main functional job classifications at most airports, creating increased workloads for the employees of many smaller "spoke" airports. Airports also frequently referred to rising CPE, a financial ratio airlines and airports use when comparing costs, as a trigger for change. Continuous Improvement Management Systems were also cited as a useful measure for assessing efficiency.

Respondents were asked to indicate how their airports define "organizational effectiveness" and how it is measured. The following list provides the survey results.

Self-reported Definitions and Metrics for Organizational Effectiveness (number of respondents in parentheses)

- Organizational efficiency (7)
- Employee morale (3)
- Customer satisfaction (2)
- Tenant satisfaction (2)
- Clearly delineated roles and responsibilities (1)
- Optimal utilization of staff (1)
- Strong accountability (1)
- Measurement of results (1)
- Speed, clarity, and high level of service (1)
- Meeting or exceeding mission requirements (1)
- Utilizing a team approach (1)
- Communication (1)
- Achieving results (1)
- Productivity (1)
- Communicating with and educating stakeholders (1)
- Safety (1)
- Financial performance (1)
- General term, not measured (1)

The majority of respondents saw little difference between effectiveness and efficiency, and none made distinctions as to how their airport defined or measured these two terms. Many defined optimal use of resources and doing more work with less staff as operating efficiently. Respondents tend to measure effectiveness by assessing employee morale. One respondent summed up the responses well:

> Efficiency and effectiveness are quite similar, and while loosely measured, really come down to the perception of value; employees can provide greater value to an organization than just simply providing a function that could be contracted out.

When respondents were asked how frequently they evaluated their organizational structure, 15 indicated "when the need arises" and five indicated "each year." When asked which criteria are normally used in the overall evaluation of the organization's structure, the responses varied (see the following list).

Evaluation Criteria of the Airport's Organizational Structure (number of respondents in parentheses)

- Executive-level decision based on strategic business plan (6)
- Assessment of whether the structure is providing value for the airport (3)
- Changes in workload owing to regulatory issues (2)
- Alignment with functional requirements/resources (2)
- Nothing formal (1)
- Staff balancing (1)
- Skills assessment by the CEO (1)
- Observing weaknesses (1)
- Zero-based budgeting approach (1)

- Areas of improvement in customer satisfaction (1)
- Benchmarking in region (1)

COMMON THEMES

Each of the airports surveyed supplied its organizational chart. As the data demonstrate, nearly all airports studied employ a functional organizational structure where jobs are separated by department, largely functioning as independent silos with main departments such as operations, maintenance, finance, administration, and development. When represented graphically, these functions do not cross one another and have clear lines of authority. Larger airports appear to exercise larger spans of control.

A predominant theme arose from the relationship between the organizational structure and the actual number of FTEs. Airports that are non/small hub and have municipal governance structures tend to be able to purchase and use certain services, such as accounting, legal, aircraft rescue, firefighting, and law enforcement, thus reducing the number of FTEs. Outsourcing gives smaller airports more human resources and budget flexibility, resulting in more concise organizational charts that focus on operations and maintenance. Conversely, authority-owned airports appear to "own" all of the functional areas of their organization and tend to have less outsourcing and more FTEs. This correlation between authority and number of FTE prevails regardless of airport size.

In their organizational charts, most airports follow the functional model. However, the majority of written organizational charts are not meeting the existing need for crossover at certain levels of finance, administration, customer service, and human resources. For example, the operations department interfaces with accounting regarding purchases, or with human resources when individuals need to be evaluated, hired, or fired. This universal element of day-to-day business practice is almost never represented in the airports' organizational charts. A one-dimensional organizational chart no longer suffices for most organizations, so new approaches need to be considered in order to achieve an optimal fit between organizational guidelines and actual practice.

In summary, what is most likely occurring in the real world of airport management are matrix-type structures where departments interact with other functional areas of an airport to afford organizational flexibility. The disparity between conventional organizational charts and actual practice is driving much-needed change. This phenomenon is explored in more depth in the following case examples, based on individual qualitative interviews with airport managers. Each airport in the case examples had specific instances where their process followed guidelines the current literature, and each airport had nuances that were not found in the literature.

CHAPTER FOUR

CASE EXAMPLES

Five airports were chosen for further illustration based on the surveys. The airports were chosen because of their size, governance structure, reported structural redesign, and the lessons each airport learned in the process. Responses were voluntary and reported by the interviewees. The following respondents indicated that their organizational structures were redesigned in part or whole in the past few years and are highlighted in the five airport case examples:

1. Metropolitan Nashville Airport Authority — medium hub
2. Louisville Regional Airport Authority — small hub/ significant cargo
3. Salt Lake City International Airport (city) — large hub
4. Rapid City Regional Airport (city) — non hub
5. Colorado Springs Airport (city) — small hub

These case examples are not to be viewed as absolute; they provide further exploration of the specific change indicated in their organizations.

METROPOLITAN NASHVILLE AIRPORT AUTHORITY—NASHVILLE INTERNATIONAL AIRPORT (KBNA)

2010 NPIAS categorization	Medium hub
Governance structure	Airport authority
Number of airports	2
Full-time equivalents	271
Outsourced job functions	None
Union	No
Changes in organizational structure	Yes, partial, certain departments or divisions
Organizational analysis	As needed
Consultant	No, internal analysis
Time frame for change	6 to 9 months for single change, longer if multiple
Metric for assessment	None used
Contact	Amy Armstrong, Chief People Officer

The Metropolitan Nashville Airport Authority uses a continuous improvement management system in its day-to-day operations and long-term strategic plans. The leadership team at the airport regularly deploys rapid action teams (RATs) to develop appropriate strategies in response to problems. The RATs involve management from all ranks and divisions to create a continuous improvement team-based culture at the airport; this team-based approach is used to invest in the culture and create change when needed. Nashville crosses over traditional "boxes" on the organizational chart to reflect this culture. Nashville changed its organizational structure throughout the past several years when it was appropriate and needed.

Triggers That Guided the Organizational Redesign

- Succession planning, impending CEO retirement
- Development of a wider span of control for the leadership team
- Leadership development—senior management found that they could gain greater depth and scope of the operations by swapping positions.

Benefits of the Organizational Redesign

- Established new processes and procedures
- Developed RATs through the continuous improvement methodology
- Established specific person on staff to guide and oversee the process
- Established a team-based culture of continuous improvement that
  - Identifies the issue;
  - Develops a functional team of leaders and nonleaders; develops new thoughts and processes;
  - Embeds the employees in the process;
  - Further develops culture;
  - Develops leaders among the employees; and
  - Gives employees ownership of the process.

Drawbacks of the Organizational Redesign

- There was too much dependence on particular personnel to guide the process; the skills to manage the change could have been borne by more than one person in the organization.

- A perception arose that using continuous improvement system tools slowed down both improvement and learning cycles.
- At times, there were unrealistic expectations for change.

Lessons Learned and Sage Advice to Airport Executives

- Buy-in is needed from management and the workforce—this complex process cannot be mandated.
- This process can use up a lot of time and person hours, so management must support the culture of continuous improvement.
- Existing culture could be assessed before implementation to build consensus with employees.
- As appropriate, both leadership and nonleadership personnel would be included in RATs.
- Standardized Continuous Improvement Management System deployment (training, etc.) may not work, so a flexible approach may be warranted.
- Outside consultants can be helpful, as employees often open up and discuss important issues in their presence.
- It is important that managers strive to achieve small successes first to improve morale and buy-in.
- Organizational charts are to be changed as needed and appropriate.
- Management needs to be mindful that change is a process, and it takes time.

Nashville International Airport's process for affecting change through its Continuous Improvement Management System has allowed it to set up a process to effectively manage and mitigate issues within the organization. Its process is to identify the issue, assemble a RAT with differing layers of employees to facilitate ownership of the change process, find workable solutions, and monitor the processes that accompany the change. It has used outside consultants to facilitate when needed. The process needs to be approved by top management, and participants need to be patient. The airport emphasized the need to strive for small successes before total change is celebrated. Table 5 summaries the reorganization process at KBNA.

TABLE 5
REORGANIZATION AT METROPOLITAN NASHVILLE AIRPORT AUTHORITY—NASHVILLE INTERNATIONAL AIRPORT (KBNA)

Trigger(s)	Process Used	Time Frame	Metric
Succession Planning Leadership Development	Rapid action teams	6 to 9 months	None used

Source: Survey and interview results.

LOUISVILLE REGIONAL AIRPORT AUTHORITY—LOUISVILLE INTERNATIONAL STANDIFORD FIELD (KSDF)

2010 NPIAS categorization	Small hub
Governance structure	Airport authority
Number of airports	2
Full-time equivalents	184
Outsourced job functions	None
Union	No
Changes in organizational structure	Yes, total organization
Organizational analysis	Yearly
Consultant	No, internal analysis
Time frame for change	3 years (total organizational redesign) (2003–2006)
Metric for assessment	Reduced labor costs because of shift to a public safety department and reduction of overall workforce
Contact	Charles "Skip" Miller, A.A.E., Executive Director

The Louisville Airport Authority board asked the newly hired executive director to examine issues pertaining to the airport's organizational structure, including a large number of pending retirements and long-term succession planning. The existing structure appeared to lack divisional continuity and identification of dysfunction in the reporting structure, and the board wanted to streamline the airport's cost structure and optimize personnel utilization. The total transition reduced the workforce from 209 to 184 in 3 years' time.

Triggers That Guided the Organizational Redesign

- Board questions about organizational structure
- Need for optimization of personnel (reduction in FTEs)
- Succession planning
- Impending retirements
- Divisional continuity

Benefits of the Organizational Redesign

- Staff turnover resulted in the remaining staff becoming more skilled and resilient.
- Some previous positions went unfilled.
- A cost/benefit return was realized by reducing FTEs.
- Airport rescue and firefighting/law enforcement (ARFF/LE) was reorganized to a public safety divi-

sion with a higher level of training and job satisfaction, cross-utilization, and upward mobility.
- The organization now hires more slowly and carefully.
- A more beneficial culture was established during the change process.

Drawbacks of the Organizational Redesign

- Employee change can be emotional.
- Difficult periods of adjustment occurred during the process because the divisions were not fully functioning at the start, so they had to jump on the learning curve.
- Completing the change process took longer than anticipated, but the time spent was a worthwhile investment in the future.

Lessons Learned and Sage Advice to Airport Executives

- Managers need to cultivate patience, persistence, and perseverance.
- Conflict is a natural consequence of change, and should not be feared or avoided; commitment to the plan and keeping an eye on the end result will help managers weather the inevitable conflicts that arise: "Even when we stumble, we are still moving forward."
- Board buy-in is essential to the process because organizational change takes time.
- To effectively change an organization's culture,
  - Develop a committee composed of a director, representative(s) from human resources, and two authority board members;
  - Maintain a practical, realistic vision;
  - Focus on long-term goals and plans;
  - Be aware of financial implications, such as costs and future savings; and
  - Establish comprehensive employee training for succession and reduction of silos.

The Louisville Airport Authority went through a total organizational redesign with support from the board. The executive director was tasked to examine divisional continuity between the departments. An internal group consisting of the director, human resource manager, and two board members was assembled to guide the change. The director used cost/benefit return and personnel utilization as a metric to hire and retain employees more slowly and carefully and build resilience in the workforce. The main challenge facing the group was maintaining core services during the transition. Having a clear vision in mind coupled with long-term goals and patience with the process were driving factors for success. It is imperative to stay the course and not force the change too quickly. Table 6 summaries the reorganization process at KSDF.

TABLE 6
REORGANIZATION AT LOUISVILLE REGIONAL AIRPORT AUTHORITY—LOUISVILLE STANDIFORD FIELD (KSDF)

Trigger(s)	Process Used	Time Frame	Metric
Reduction of FTEs			Reduction of workforce = 25 employees
Divisional Continuity	Team of executive, human resources, and two board members	3 years—total organization redesign (2003–2006)	Creation of Public Safety Department, reduction of workforce
Succession Planning			New human resources processes developed

Source: Survey and interview results.

SALT LAKE CITY INTERNATIONAL AIRPORT (KSLC)

2010 NPIAS categorization	Large hub
Governance structure	City-owned
Number of airports	3
Full-time equivalents	575
Outsourced job functions	Human resources, ARFF, general counsel, custodial, busing
Union	Specialist level and below
Changes in organizational structure	Yes, partial departments/ divisions
Organizational analysis	As needed
Consultant	No, internal
Time frame for change	1 year for single change (2010)
Metric for assessment	Labor cost savings
Contact	Randall D. Berg, A.A.E., Director of Operations

In 2010, Salt Lake City International Airport (SLC) was embarking on a $1.8 billion expansion, and the airport divisions were asked to find efficiencies in personnel and resources to offset the cost of the reconstruction. The airport purposefully implemented a flat hierarchical organizational structure divided into divisions. Each of the eight division directors has equal access to the airport's executive director, which enhances the organization's flexibility and agility. As part of the efficiency effort, 50 shuttle bus drivers were outsourced from the operations department to a contracted service provider. The airport maintained communication with and provided equity and job protection for the employees involved in the transition, and ensured job security with increased wages to offset a slightly smaller benefit package. The transition lasted about 1 year.

Triggers That Guided the Organizational Redesign

- $1.8 billion construction project
- Need for improved personnel and resource efficiency

Benefits of the Organizational Redesign

- Matched employee skill sets with jobs, created job enlargement and specialization activities
- Reduced the supervision ratio (number of employees under each supervisor)
- Brought job titles up to date
- Reclassified employees as the result of human resources evaluations; made operations/ARFF/police department more cohesive

Drawbacks of the Organizational Redesign

- The airfield/terminal division was divided up and terminal activities were moved to landside, which resulted in some natural attrition and regrouping of employees (6 to 9 months' transition).
- Some employees had difficulty with the change and with being transferred to a different division.

Lessons Learned and Sage Advice to Airport Executives

- Make sure the hard decisions made are right for the organization.
- Leave personalities and emotions out of the process.
  - Be fair, honest, and equitable.
  - The director's involvement should be personal and candid.
  - Change in structure needs to happen internally; do not delegate a redesign.
- Always look for the right way to do the job, even if it makes the job more difficult.

TABLE 7
SALT LAKE CITY INTERNATIONAL AIRPORT (KSLC)

Trigger	Process Used	Time Frame	Metric
Personnel and Resource reduction/efficiencies	Operations director	1 year (2010)	Reduction of force in outsourcing bussing function
			Natural attrition in airside/landside/terminal operations changes

Source: Survey and interview results.

Operational changes at the Salt Lake City International Airport were largely complete when the remainder of the organization was asked to find certain efficiencies. There had been some regrouping of employees within operations as well as moving the busing activities to an outside service contractor. As with all change, some employee issues surfaced; it is important to be fair and equitable and work with employee groups personally. Airports undergoing organizational change are urged to keep the organization's hierarchy lean, to work with conflict as it happens, and to make decisions which are right for the organization. Table 7 summaries the reorganization at KSLC.

RAPID CITY REGIONAL AIRPORT (KRAP)

2010 NPIAS categorization	Non hub
Governance structure	City-owned
Number of airports	1
Full-time equivalents	23
Outsourced job functions	Law enforcement, information technology, human resources, ARFF (seven full-time), legal
Union	Yes—maintenance and ARFF
Changes in organizational structure	Yes, total organization
Organizational analysis	Yearly
Consultant	No, internal analysis
Time frame for change	4 years, total change (2007–2011)
Metric for assessment	Workload smoothing, reduction of overtime
Contact	Cameron Humphries, A.A.E., Executive Directors

During a review of the human resource allocation at the Rapid City Regional Airport, it became apparent that in some cases individual job responsibilities and decision-making authority were too broad and in other cases too narrow, creating poor distribution of workload, required training, and skill sets. Further investigation exposed problems with the organizational structure itself: it was misaligned with its stated core competencies of safety and security, facility maintenance and repair, and administration.

Under the existing structure, safety and security responsibilities were broadly distributed among the staff, but there was no central point of responsibility; the administration functions did not effectively support the needs of the airport and requirements of federal and state grant programs. The more technical aspects of maintenance and repair were outsourced to such an extent that there was little resident knowledge: what knowledge there was resided only in employees' memories. In short, the airport's organizational structure did not focus employee responsibilities, training, supervision, and advancement on its core functions.

Armed with this insight, the executive director began a process to better align the organizational structure with the airport's core competencies. It was determined that the redesigned structure would (1) create divisions within the airport that aligned with its core competencies, (2) delegate decision-making authority and oversight responsibility for each division, (3) appropriately redistribute personnel, workload, and responsibilities throughout the divisions, and (4) build job descriptions, training programs, job management tools, record-keeping, and evaluation programs that support employee acquisition, training, retention, and advancement. Once the template for the new organizational structure was established, implementation began. The entire transition took place over a 4-year period.

Triggers That Guided the Organizational Redesign

- Poor distribution of workload, required training, and skill sets
- Organizational structure not aligned with core competencies
- No central point of responsibility for most important functions of safety and security
- Little resident knowledge of airport systems
- Limited training programs

Benefits of the Organizational Redesign

- Airport divisions now focus on a single core competency, vastly improving distribution of workload, responsibilities, management, and oversight of the airport.
- A more specialized workforce now has stronger skills sets, is better trained, and has more experience to perform assigned duties.
- Employee acquisition, training, and advancement are improved.

Drawbacks of the Organizational Redesign

- There was employee resistance to removing empires and "moving cheese."
- Fewer generalists exist, and fewer individual employees have a broad knowledge of the airport.
- More cross-divisional communications are necessary to coordinate activities.

Lessons Learned and Sage Advice to Airport Executives

- Believe in the overall vision, stick with it, and make it expandable to avoid repeating the entire process.
- Substantive change is a long-term project, so set priorities and create actionable steps.
- Work hard to gain broad support for the plan.
- Recognize obstacles and prepare for them in advance.

This 4-year change was led with several elements in mind: to concentrate on the airport's core competencies and services delivered, to increase employee training and opportunity, and to develop a set of work processes for the departmental employees. An overarching theme was the need to keep the process flexible, so that steps do not have to be repeated with each element of change. Broad support at the upper levels for the vision and goals of the planned change enhanced the success of the project. Table 8 summarizes the reorganization at KRAP.

TABLE 8
REORGANIZATION AT RAPID CITY REGIONAL AIRPORT (KRAP)

Trigger(s)	Process Used	Time Frame	Metric
Misaligned with core services	External team evaluated job functions in maintenance department	4 years, total redesign (2007–2011)	Reduction of overtime
Workload distribution	Director, senior staff and maintenance chiefs, and redivided workload for more efficiency in workload and hours		Workload smoothing
Better training in departments			Better training and advancement opportunities

Source: Survey and interview results.

COLORADO SPRINGS AIRPORT (KCOS)

2010 NPIAS categorization	Small hub
Governance structure	City-owned
Number of airports	1
Full-time equivalents	121
Outsourced job functions	ARFF
Union	No
Changes in organization structure	Yes, total organization
Organizational analysis	Yearly
Consultant	No—internal analysis
Time frame for change	3 years (2003–2006)
Metric for assessment	Not quantifiable, what worked for the organization
Contact	Mark Earle, A.A.E., Aviation Director

Beginning in 2003, an organizational structure change was developed by the aviation director and supported by city government. It was found that the traditional organizational structure of the airport was not conducive to fostering cooperative relationships with the airport's business partners and stakeholders, and would not meet the future needs of the

airport's fast-growing capital development program [Airport Improvement Program (AIP) and non-AIP]. The goal of the reorganization effort was to create a structure that could simultaneously improve the airport's commercial and general aviation operations, develop a 1,000-acre business park, and effectively serve as landlord for a 2,000-acre Air Force base with 12,000 based military and civilian contract personnel.

Triggers That Guided the Organizational Redesign

- Strained relations between airport management and the airport's primary business partners and stakeholders led to a push by city leadership to change the culture of the organization. New management was put into place, leading to a comprehensive review and redesign of the organization.
- Specific factors included the need to improve relationships with stakeholders and business partners in the commercial and general aviation sectors, a push to reenergize a flagging business park development effort, and a desire to leverage the relationship between the airport and its military tenant to the best advantage for the community, the airport, and the Department of Defense.
- Management recognized that the airport's future goals would involve a significant, ongoing planning and development effort that would require the creation of a new division within the organization.
- A need existed to flatten the organization to improve efficiency and communications between leadership and the workforce.
- Management recognized and accepted that the reorganization effort would involve sensitive conversations with the city regarding organizational ties between the airport and general city government agencies responsible for finance, human resources, information technology, fleet, and other centralized services.

Benefits of the Organizational Redesign

- Political side supportive of change and efforts to move the airport to the next business level
- Flattened hierarchy
- Better internal alignment of the work units
- Increased efficiency, workflow, and communication in internal and external relationships
- The fact that the airport now has its own fleet and information technology divisions and administers more of its own human resources and financial management
- Planning process simplified, allowing for greater operational flexibility and a more focused business development effort

Drawbacks of the Organizational Redesign

- Negative aspects occurred only during the change process, and were not the final result. While the change process was well received internally, some divisions within the general city government were at first resistant to the evolving relationship.

Lessons Learned or Sage Advice to Airport Executives/ Consultants

- Have a clear picture of the direction of the organization and how the structural change will lead there. Keep the final goals in mind throughout the process.
- Create an overall plan, but be flexible, as better approaches can evolve during the process.
- Phase the plan to ease the impact on those who are going through the changes.
- Ensure that political support is lined up before initiating change.
- Keep in mind that short-term criticism and individual resistance are inevitable reactions to change.

As a result of the restructuring efforts, three assistant manager positions were created for the Operations/Maintenance, Planning/Development and Finance/Administration divisions. Under each of these divisions lie the functions for each unit. This internally driven change took about 3 years and was welcomed by the existing staff; it has been identified as enhancing the culture at the airport. Table 9 summaries the reorganization at KCOS.

TABLE 9
REORGANIZATION AT COLORADO SPRINGS AIRPORT (KCOS)

Trigger(s)	Process Used	Time Frame	Metric
Improved relations with major stakeholders and business community	Airport director with political buy-in	3 years (2003–2006)	Identification of goals, new alignment of personnel to meet strategic goals
Flatten organizational structure			

Source: Survey and interview results.

CHAPTER FIVE

CRITICAL CONSIDERATIONS

The guiding principle from the synthesis panel is that "a well-understood and effective organizational structure can greatly assist an airport in meeting strategic, operations and business goals and facilitate delivery of core services."

In the development of this section, information was gathered from the surveys, and subsequently five airports were chosen for more in-depth review and presented as case example illustrations. Within these illustrations, critical information regarding organizational redesign emerged. Because each airport has individual traits, each airport will have a unique set of circumstances and issues to address. Examining academic theory together with real-world experience can help airport managers ask and answer the best questions along the path of an organizational change.

Airports tend to operate in highly regulated environments within overarching governance structures, and are tied to a sometimes volatile air transportation industry and global economy. The majority of the airports surveyed use a functional, hierarchical structure of organizational design, which increases functional performance and cultivates specialists among departments. Within each airport environment, meaning both the location and the industry, as noted by Robbins and Judge in 2009, "structure and strategy should be closely linked—structure should follow strategy" (p. 534).

Each of the case examples yielded practices found in the literature. They highlighted the need for a vision for change closely aligned with a change in the airport's business strategy. Other factors that parallel the literature are the necessity of identifying the size of the organization (large hub versus general aviation airport), of improving the airport's access to technology, and of ensuring environmental stability before embarking on organizational change. Several of the case example airports indicated a need expressed in the literature for operating efficiencies such as combining departments and removing "silos" to redistribute the workload within the airport.

Another area of design that appeared to be a constant among all of the airports was the organization's culture. As Kotter (1996) explains, changes in the culture do not precede but rather follow changes in organization; as new processes and procedures emerge, the culture of the organization shifts with the new structure.

Although difficult to quantify, each airport indicated positive shifts in the culture. As described by Denison et al. (2004), positive aspects of culture critical to success are empowering employees, having a team orientation, focusing on a clear strategic intent, and maintaining a strong and recognizable vision. Each case example airport and many of the 17 other survey respondents reported that they adhered to a strong vision, and created teams of employees to direct and communicate impending changes to the organization. Most of the airports indicated a strong commitment from their political or board entities as well. The case example airports expressed a need for building teams to initiate, develop, communicate, and assist with the change. They also mentioned a need to maintain a sustained vision, and to celebrate the small successes along the way.

Another area of congruency between the literature and practice was "key indicators for an organizational redesign" as found in The Three Sigma, Inc. (2002). As indicated in Table 4, all of the airports surveyed reported similar factors that triggered structural change, and echoed the earlier discussion that structure must follow strategy. The top triggers for reassessing organizational plans were functional reassignment, strategic or strategy change, accountability, workload issues, and new skills and abilities needed to meet operational requirements.

Kotter's work on leading change is a useful guide, as it lists common errors made during a planned change. Each of the airport case examples reaffirmed Kotter's assessment and signaled the items on his list as areas to avoid.

Further research is needed to determine appropriate and mutually agreed-upon performance metrics. Many organizations will take a snapshot of performance, but that is rarely compared to a pre/postchange event. The case example airports looked at employee costs, or the reduction of employee costs in the form of reduced overtime. They reported that the culture was changed within the organization and is now better, which indicates positive movement, but no objective measurement of improvement exists. It is difficult to assert that a change was effective without some type of measurement system. As mentioned in the literature review, airport managers can benefit from utilizing *ACRP's Guidebook on Airport Performance Indicators* more intentionally during the change process.

Patience and persistence are essential during reorganization. Issues that trigger the need for change may be temporarily exacerbated by employee and organizational uncertainty, and the process may be highly emotional for many employees. However, managers and employees cannot allow fear of conflict to derail their efforts. A primary role of airport leadership is to provide a strong, pertinent strategic vision coupled with a high degree of empowerment and clear communication about the airport's future to help everyone cope with change.

CHAPTER SIX

FLIGHT PLAN FOR ORGANIZATIONAL REDESIGN

The following "flight plan" evolved from reviewing the current literature in tandem with the survey and case example interviews regarding organizational structure, design, culture, and change management. This checklist of potentially helpful steps was developed to help airport executives, their governing boards, and personnel involved in deploying planned changes in strategy to improve the success of the organization.

Flight Plans for Organizational Review/Redesign

1. Review the airport's vision, mission, and business strategy (strategic objectives) and determine the core competencies.

2. Define what is triggering a need to change.

3. Determine what needs to be changed, or validate the existing structure.

4. Gain support/endorsement for undertaking the process from the governing entity.

5. Develop a strategic vision/intent for the change with a realistic time frame.
   a. Case examples illustrate that minor changes take about 1 year and major changes take about 3 to 5 years.
   b. Conduct informal consultation with peer airport manager to assess intended change and time frame across peer group experiences.

6. Choose a metric for assessment pre/postchange.
   a. The current organizational culture should be described to facilitate postchange assessment.
   b. *ACRP Report 19A* provides examples of how to apply different types of APIs.

7. Assemble a team for the redesign.
   a. Consider hiring an external facilitator/or organizational consultant.
      i. Outside consultants can provide
         1. A fresh perspective,
         2. A realistic, objective assessment, and
         3. Robust experience.
   b. Consider key staff from different levels of the organization.
      i. Encourage organization-wide buy-in.
         1. Expand awareness of the informal organizational structure.
            a. Two case examples indicate that employee teams can be used effectively in the change process.
            b. Surveys indicate a wide use of yearly internal organizational analysis.
            c. Determine if new processes and procedures need to be developed.
   c. Communicate and educate key staff who are not serving on the redesign team regarding
      i. Communication processes
      ii. Informal organizational structure
      iii. Time frame for change
      iv. Expected outcomes
      v. Organizational culture

8. Review with the design team the different theoretical organizational structures such as
   a. Functional
   b. Line of business
   c. Matrix
   d. Team based
   e. Network analysis

9. Determine which organizational structure would best suit the entity and identify changes (#2) and "buckets of work" to be developed and divided among the employee groups.
   a. Review literature.
   b. Review critical considerations learned from surveys and case examples.
   c. Review barriers to implementation.
      i. Administrative
      ii. Organizational
         1. Formal
         2. Informal

10. Implement the change.
    a. Stay focused on mission and vision.
    b. Celebrate small successes.

11. Develop or redesign processes/procedures to facilitate organizational changes.
12. Continue training and education for staff.
13. Assess culture and allow for a feedback loop from employees.
14. Revisit the triggering variable and evaluation of the chosen metric to assess change.

CHAPTER SEVEN

CONCLUSIONS

This report provides airport operators with a synthesis of

- Methodologies, processes, and factors to evaluate, develop, and implement organizational structures, including guidelines for evaluating the effectiveness of an existing or changed organization;
- Advantages, disadvantages, constraints, risks, and opportunities of alternative organizational concepts and frameworks (e.g., functional, customer-centric, facility-based, product-based); and
- Selected examples and lessons learned illustrating how methodologies and frameworks have been applied in the airport industry.

Embarking on a singular or organizational-wide change in strategy and structure is a complex process. The constraints of organizational design can be found in areas of governance structure, size of the organization, and labor agreements; these areas need individualized attention by the management team. The literature and five case example illustrations all signal that strategy drives change.

The primary triggers for airports to change their structure are functional reassignment, strategic change, accountability, workload issues, and the need to upgrade employee skills and abilities to meet operational requirements. Another factor triggering change that emerged from the case examples is the pressure to reduce or combine positions to gain better workload distribution, or simply to reduce the total workforce.

Although airports may choose from a number of organizational structure types, most airports employ the functional structure of dividing personnel between departments according to the type of work performed, allowing specialization. Currently, most airports do not depict the prevalent practice of cross-utilization of administrative components on their organizational charts.

Twenty-two airport executives responded to the electronic survey, from which five airports were chosen for further review and illustration. Each of the five airports had undergone singular or entire organizational changes in the past few years. The interviewees made several salient points. First and foremost, it is fundamental to establish a clear vision. Change takes time, so patience and persistence are essential; celebrating small successes along the way improves morale and increases momentum. Second, most of the airports found it beneficial to build a team within upper management and board members to guide changes and develop the new structure, as buy-in from the board is central to success, and management needs to be deeply involved in the entire process. One case example airport and four survey airports utilized an outside consultant to facilitate discussion among employee groups.

The data elicited from the questionnaires and the case examples provide a snapshot in time and do not represent the entire industry. The case examples illustrate specific challenges that five airports faced as they navigated their own unique process of organizational change. Each case example illustrates that strong, informed leadership and vision drive positive, effective change.

One literature and data gap is the lack of assessment metrics. It was first assumed that changes in an organization would be data driven; however, some of the changes appear to be difficult to measure, or have no appropriate and mutually accepted measurement. Airports often reported that no quantitative measurement was conducted pre- or postchange, and provided a qualitative assessment that the change was better for the organization. Self-reported assessments such as these lack the validity of an established metric. ACRP has produced a guidebook on Airport Performance Indicators that could be more widely utilized in the industry to gain a better understanding of how to measure and assess an airport's performance.

Clearly, there is no "one size fits all" approach. Managers cannot simply copy another airport's organizational chart and make it their own. Rather, they need to create a new strategy wherein they optimally align the airport's core services and competencies and place employees where they will be best able to make a meaningful contribution to the organization.

Great pressures call for great measures. Airport managers can be proactive in the face of rapid change. A focused review of current practices, together with a thoughtful analysis of internal and external organizational issues, can help airport managers create organizations that will rise to meet the known challenges of today and be prepared for the unknown challenges of tomorrow.

GLOSSARY

Continuous Improvement Management System: A business management strategy originally developed by Motorola in 1986. It seeks to improve the quality of process outputs by identifying and removing the causes of defects (errors) and minimizing variability in manufacturing and business processes. It uses a set of quality management methods, including statistical methods, and creates a special infrastructure of people within the organization.

Cost per passenger enplaned: The airport's costs (expenses) divided by the total number of passengers boarded (enplaned) to determine the cost per passenger enplaned.

Organizational chart: A diagram showing the formal structure of an organization, indicating lines of communication and reporting.

Organizational design: The process of coordinating the structural elements of an organization in the most appropriate manner.

Organizational network analysis: A method for studying communication and socio-technical networks within a formal organization. A quantitative technique for creating statistical and graphical models of the people, tasks, groups, knowledge, and resources of organizational systems. Based on social network theory, and, more specifically, on dynamic network analysis.

Organizational structure: The formal configuration between individuals and groups with respect to the allocation of tasks, responsibilities, and authorities within organizations.

Return on investment: Metric used to measure per-period rates of return on dollars invested in an economic entity.

ACRONYMS

AAAE	American Association of Airport Executives
AIP	Airport Improvement Program
API	Airport Performance Indicator
ARFF	Aircraft rescue and firefighting
CEO	Chief executive officer
CPE	Cost per passenger enplaned
FTE	Full-time equivalent
GA	General aviation
LE	Law enforcement
NPIAS	National Plan of Integrated Airport Systems
RAT	Rapid action team

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APPENDIX A

Survey Questionnaire

Airport Organization Questionnaire

The survey is designed to aid the researchers in identifying Airport Organizational Structures that meet the strategic, operational and business goals and facilitate delivery of core services.

The term "organizational structure" refers to the formal configuration between individuals and groups with respect to the allocation of tasks, responsibilities and authority within organizations (Greenberg and Baron 2008). This structure is usually depicted visually through the organizational chart so that one can view the intended relationships. The aggregate information gathered in this research process will be de-identified, unless you are willing to participate further.

The objective(s) of this research effort is to provide airport operators with a synthesis that identifies:

- Methods, processes and factors used to develop, implement and evaluate organizational structures including how to evaluate the effectiveness of existing or changed organizational structures
- Advantages, disadvantages (lessons learned), and possible constraints to organizational concepts and frameworks (functional, product, facility, or customer centric)
- Selected case examples of the above in practice within the airport industry.

1 Within your organization, how many airports are managed?

a. 1

b. 2

c. 3

d. 4+

2. What is the governance/ownership structure of your airport/organization?

3. What is the airport's 3-letter identifier, if multiple airports, please list all?

4. If you are connected to a specific jurisdiction, do you use/purchase any services from your jurisdiction, or outsource any of the following functions?

a. ARFF

b. LE

c. IT

d. HR

e. Other (please explain):

5. Number of full-time equivalent (FTE) employees under the direct supervision of the airport (i.e., exclude municipal employees not on the airport premises or any outsourced employees).

6. How would you classify the current structure of your organizational?

a. Functional organization: employees are divided into groups by the job functions the perform

b. Product organization: self-contained divisions that are responsible for everything to do with a certain product or group of products

c. Customer-centric

d. Facility-based: landside, airside, facilities

e. Other (please explain):

7. Have you changed the structure of organization in the last 10 years?

a. Yes—total organizational structure

b. Yes—partial, certain departments/divisions

c. No

8. If "yes" to Question 7, what were the triggers/events to precipitate change (check all that apply)?

a. Financial restructuring

b. Functional reassignment

c. New skills and capabilities needed to meet operational requirements

d. Accountability

e. Workload issues/staffing (over – under)

f. Communication issues

g. Morale

h. Political climate or key stakeholders

i. Strategic or strategy change

j. Other (please explain):

9. Did the organizational restructuring follow

a. Job functions

b. Activities/lines of business

c. Customer satisfaction

d. Markets

e. Other (please explain):

10. Did your airport complete any type organizational analysis to study the need for change prior to the reorganization?

a. Yes

b. No

11. If yes to Question 10, provide a brief explanation of what it entailed, and did the current staff have input, and was it conducted internally, or were outside consultants used in the process.

12. Many organizations cite a need to achieve Organizational Efficiency and Effectiveness.

a. Describe what **Organizational Efficiency** means to YOUR airport and how is it measured.

b. Describe what **Organizational Effectiveness** means to YOUR airport and how is measured.

13. How often do you evaluate your organizational structure?

a. Yearly

b. Every 5 years

c. When the need arises

d. Have not evaluated it

e. Other

14. If yes to Question 13, what criteria are used in the evaluation process?

15. Would you be willing to be further interviewed for this ACRP Synthesis project? If so, please list your contact information.

Thank you for your participation in this research effort.
Kim Kenville, Ph.D., C.M. (Kim Kenville Consulting)
James F. Smith, Ph.D., P.E. (Smith-Woolwine & Associates)

APPENDIX B

Airport Respondents

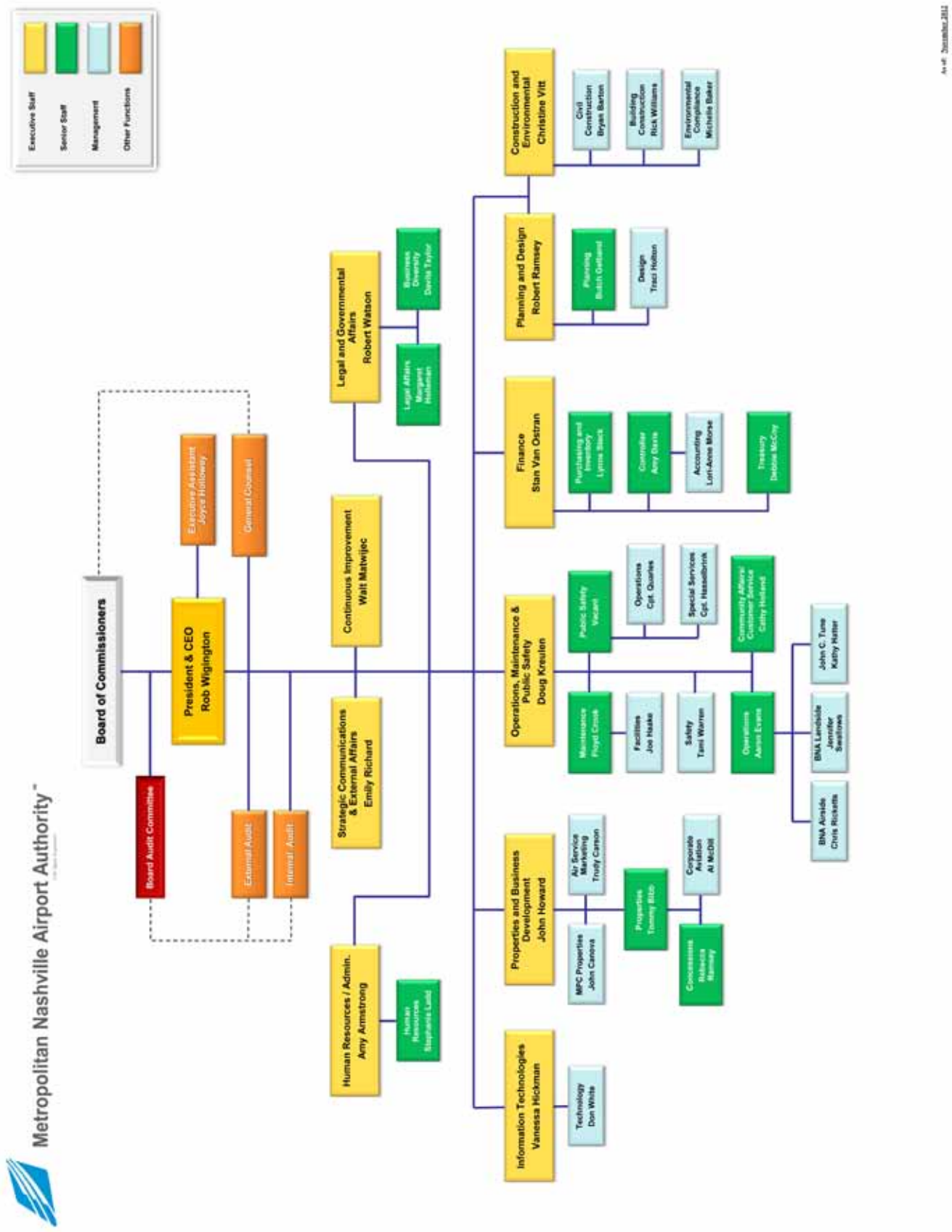
Airport Name	Identifier	NPIAS	Governance	Region
1. Outagamie Regional Airport	ATW	Non hub	County	Great Lakes
2. Bismarck Municipal Airport	BIS	Non hub	City	Great Lakes
3. Dallas-Ft. Worth Int'l. Airport	DFW	Large	Authority/Corp.	Southwest
4. Kissimmee Gateway Airport	ISM	GA	City	Southern
5. Louisville Regional Airport	SDF	Small	Authority	Southern
a. Bowman Field	LOU	GA	Authority	Southern
6. Fargo Hector Int'l. Airport	FAR	Small	Authority	Great Lakes
7. Lexington Blue Grass Airport	LEX	Small	County Corp.	Southern
8. Minot International Airport	MOT	Non hub	City	Great Lakes
9. Sioux Falls Regional Airport	FSD	Non hub	Authority	Great Lakes
10. Saskatoon, Canada	YXE	Small	Authority	Canada
11. Spokane International	GEG	Small	City/County	Northwest Mtn.
a. Felts Field Mtn.	SFF	GA	City/County	Northwest
12. Rapid City Regional Airport	RAP	Non hub	City	Great Lakes
13. Columbus Regional Airport	CMH	Medium	Authority	Great Lakes
a. Rickenbacker	LCK	GA	Authority	Great lakes
b. Bolton Field	TZR	GA	Authority	Great Lakes
14. Phoenix Sky Harbor International	PHX	Large	City	Western Pacific
a. Deer Valley Airport	DVT	Reliever	City	Western Pacific
b. Goodyear	GYR	Reliever	City	Western Pacific
15. Snohomish County/Paine Field	PAE	GA	County	Northwest Mtn.
16. Salt Lake City International	SLC	Large	City	Northwest Mtn.
a. Salt Lake City Airport II	U42	GA	City	Northwest Mtn.
b. Tooele Valley Airport	TVY	GA	City	Northwest Mtn.
17. San Diego International Airport	SAN	Large	Authority	Western Pacific
18. Nashville International Airport	BNA	Medium	Authority	Southern
19. Toronto Pearson Int'l. Airport	YYZ	Large	Authority	Canada
20. Colorado Springs Airport	COS	Small	City	Northwest Mtn.
21. Minneapolis–St. Paul Int'l. Airport	MSP	Large	State/Authority	Great Lakes
a. St. Paul Downtown	STP	Reliever	State/Authority	Great Lakes
b. Flying Cloud	FCM	Reliever	State/Authority	Great Lakes
c. Anoka County–Blaine	ANE	Reliever	State/Authority	Great Lakes
d. Lakeville	LVN	Reliever	State/Authority	Great Lakes
e. Crystal	MIC	Reliever	State/Authority	Great Lakes
f. Lake Elmo	21D	Reliever	State/Authority	Great Lakes
22. Southwest Florida International Airport	RSW	Medium	Authority	Southern
a. Page Field	FMY	GA	Authority	Southern

Note: GA = general aviation.

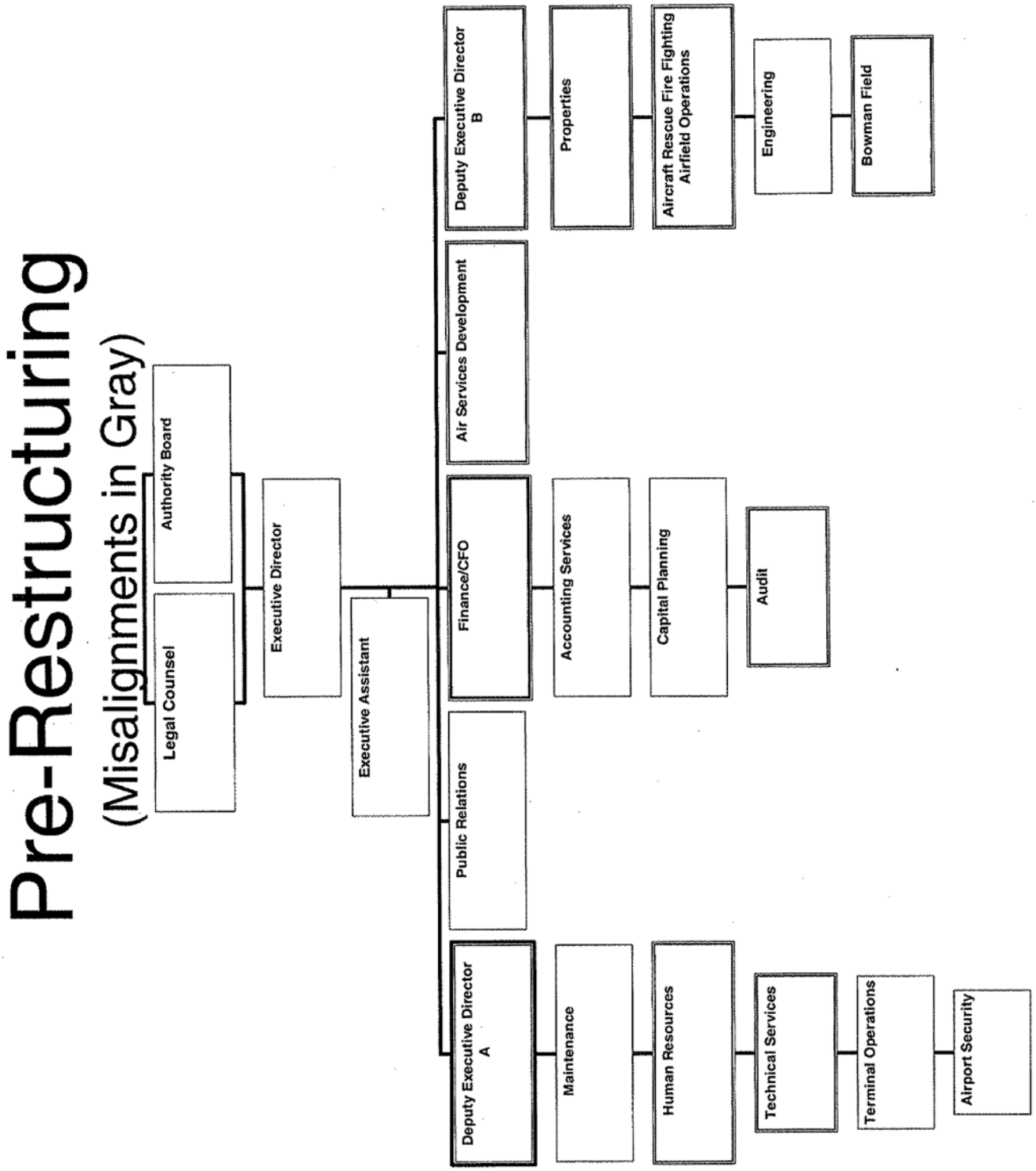
APPENDIX C

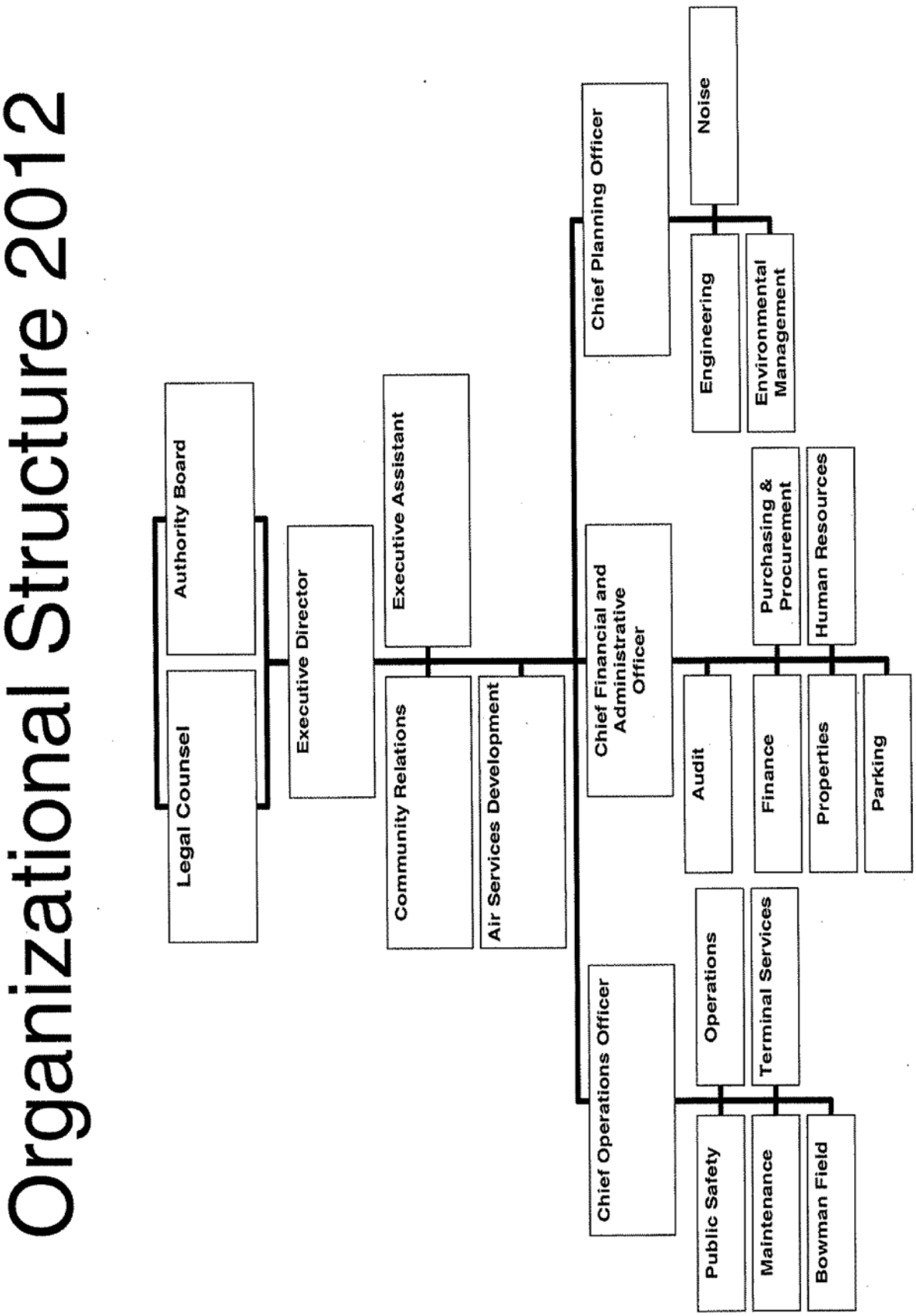
Airport Organizational Charts

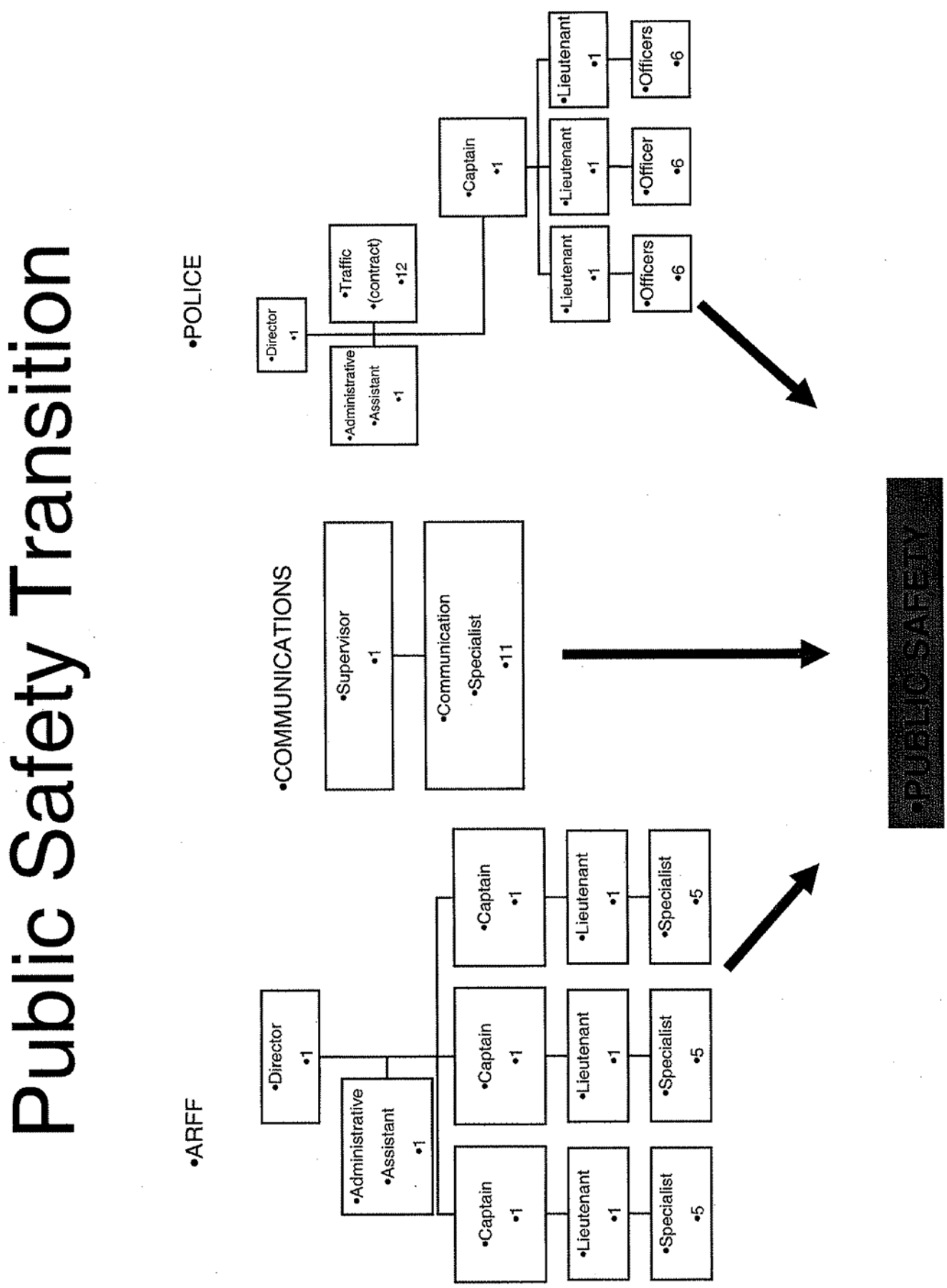
Many airport executives sent their current organizational charts to the researchers when the initial call for research began. Those charts are held electronically as part of this synthesis project and can be found at www.trb.org, search on “ACRP Synthesis 40,” under Appendix C.

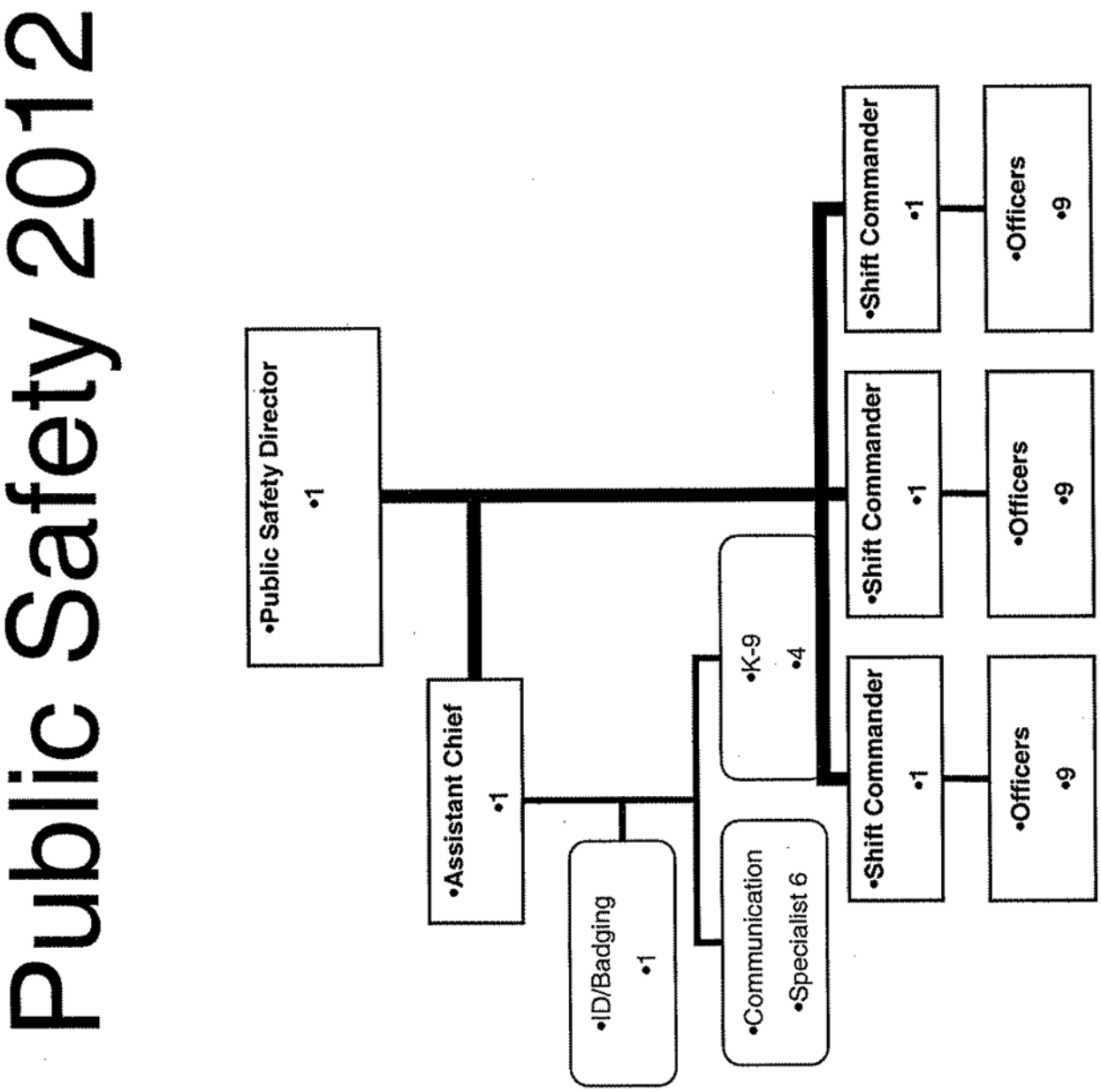


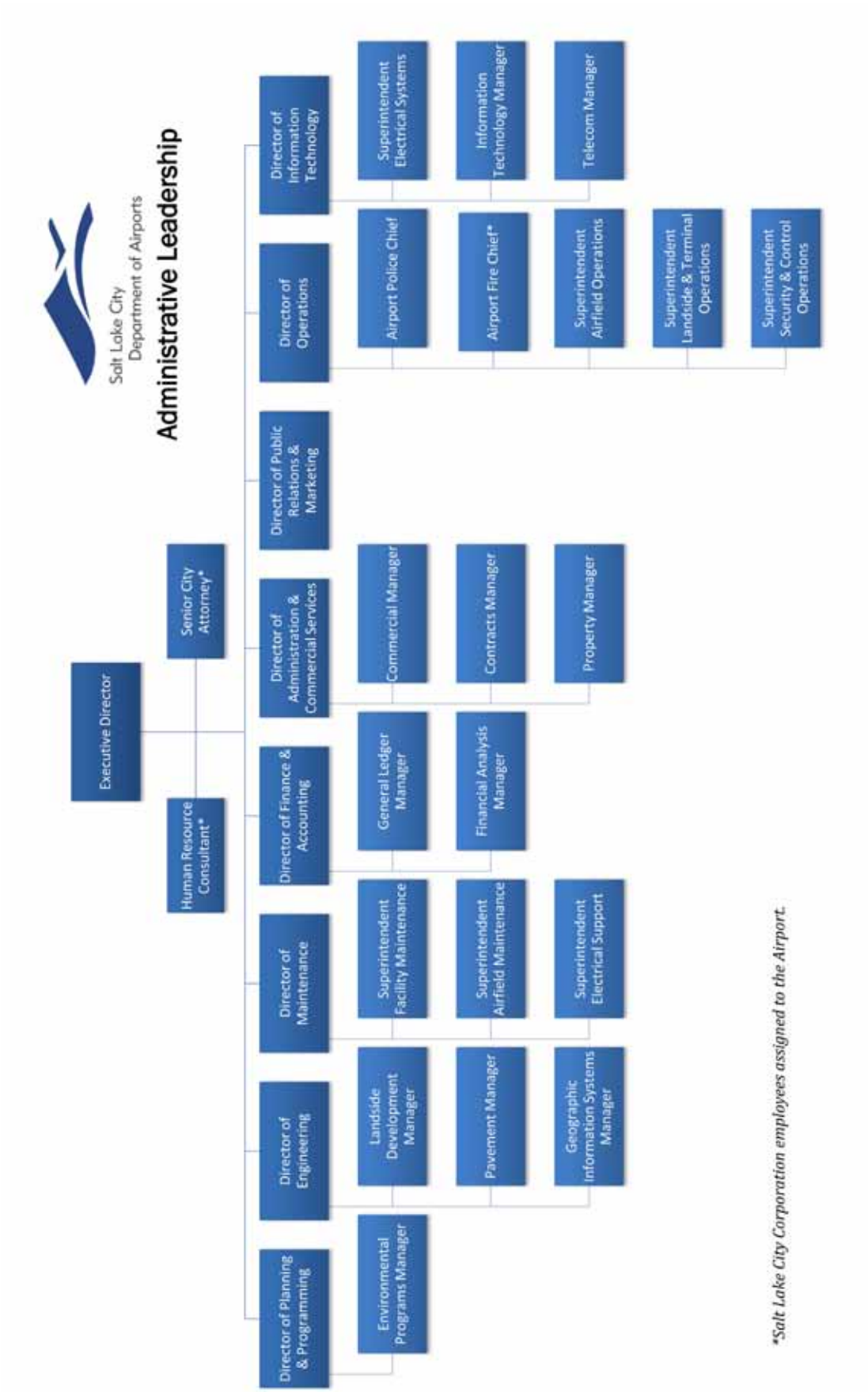
Organizational Structure
Louisville Regional Airport Authority
Louisville, Kentucky

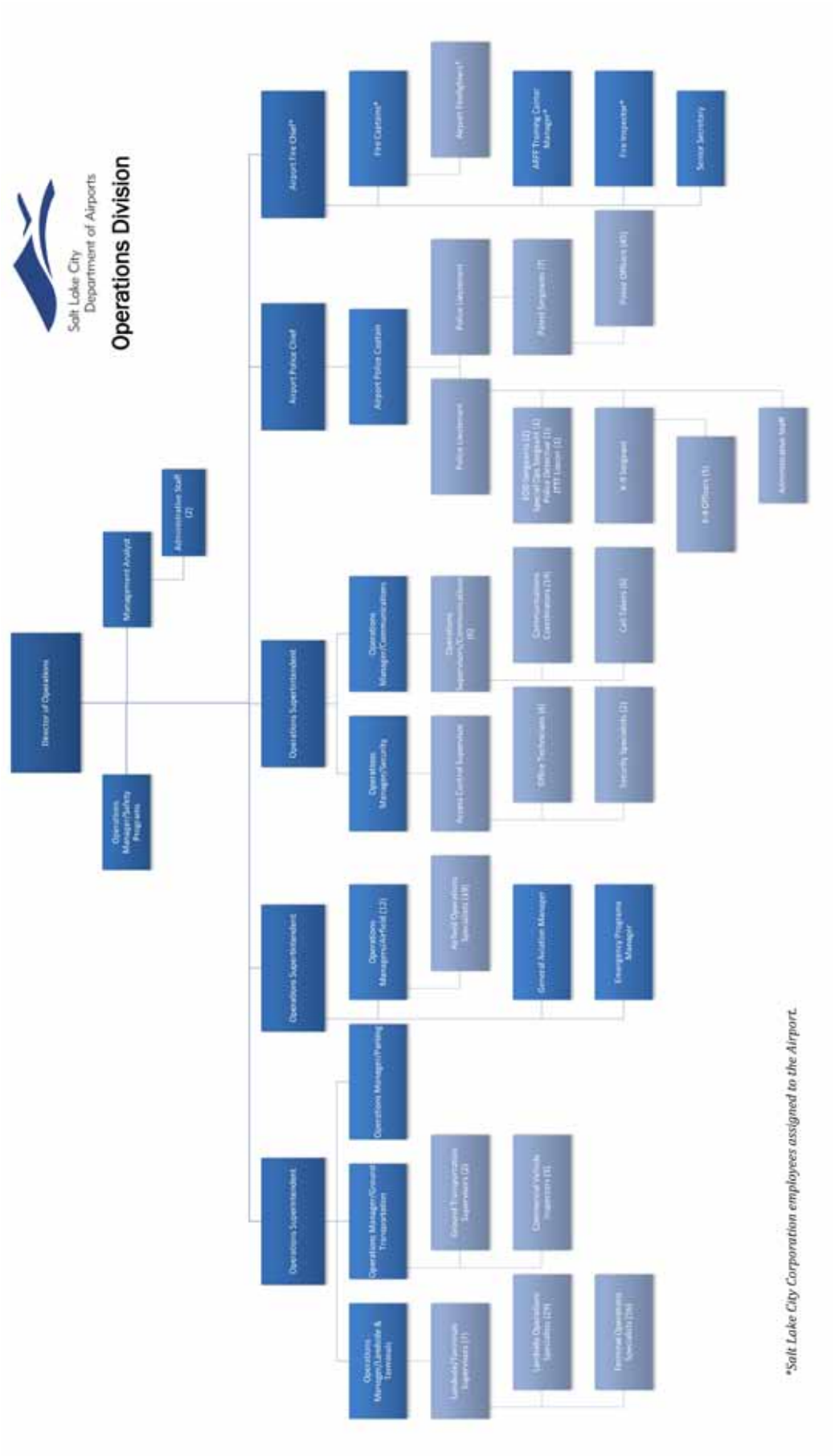


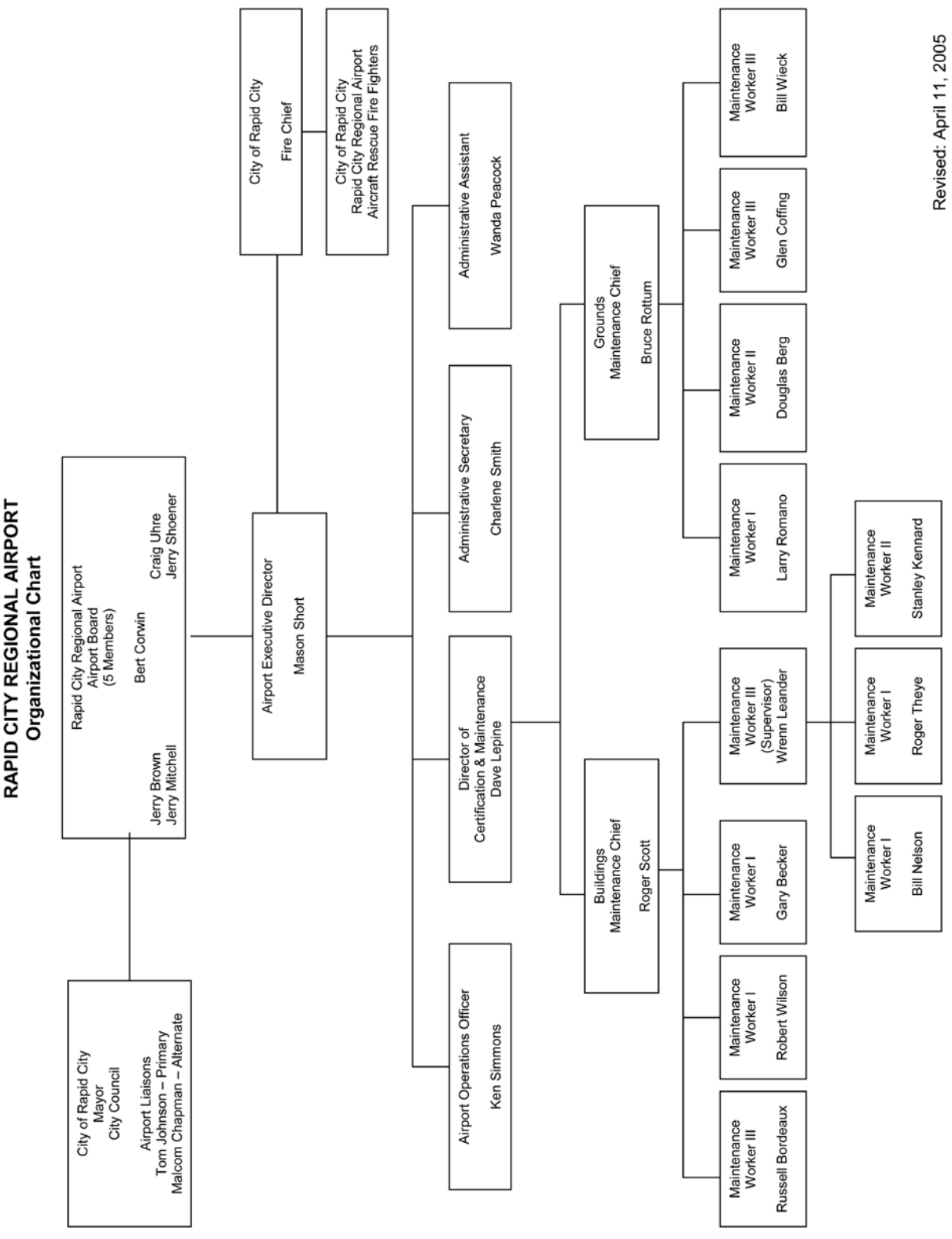


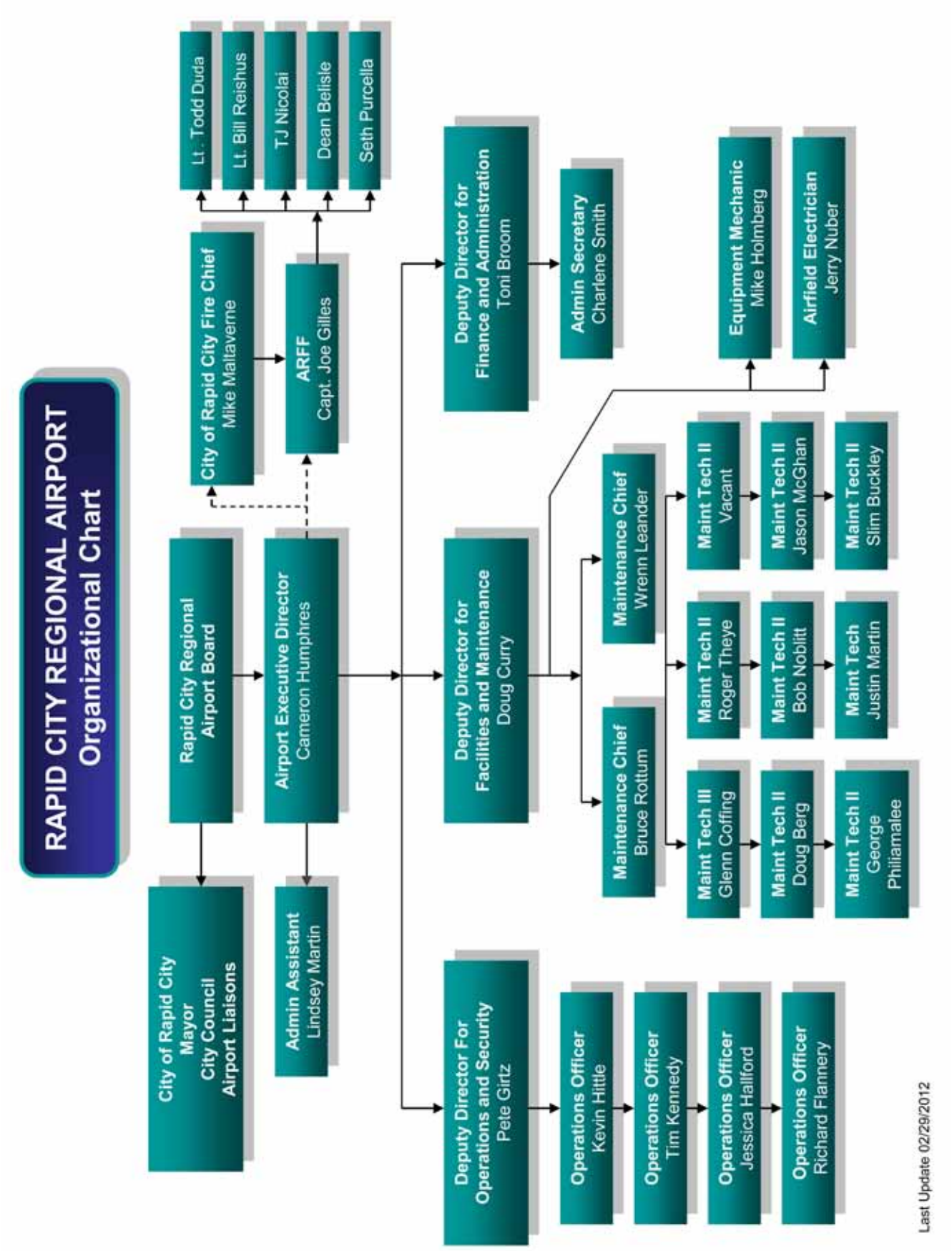


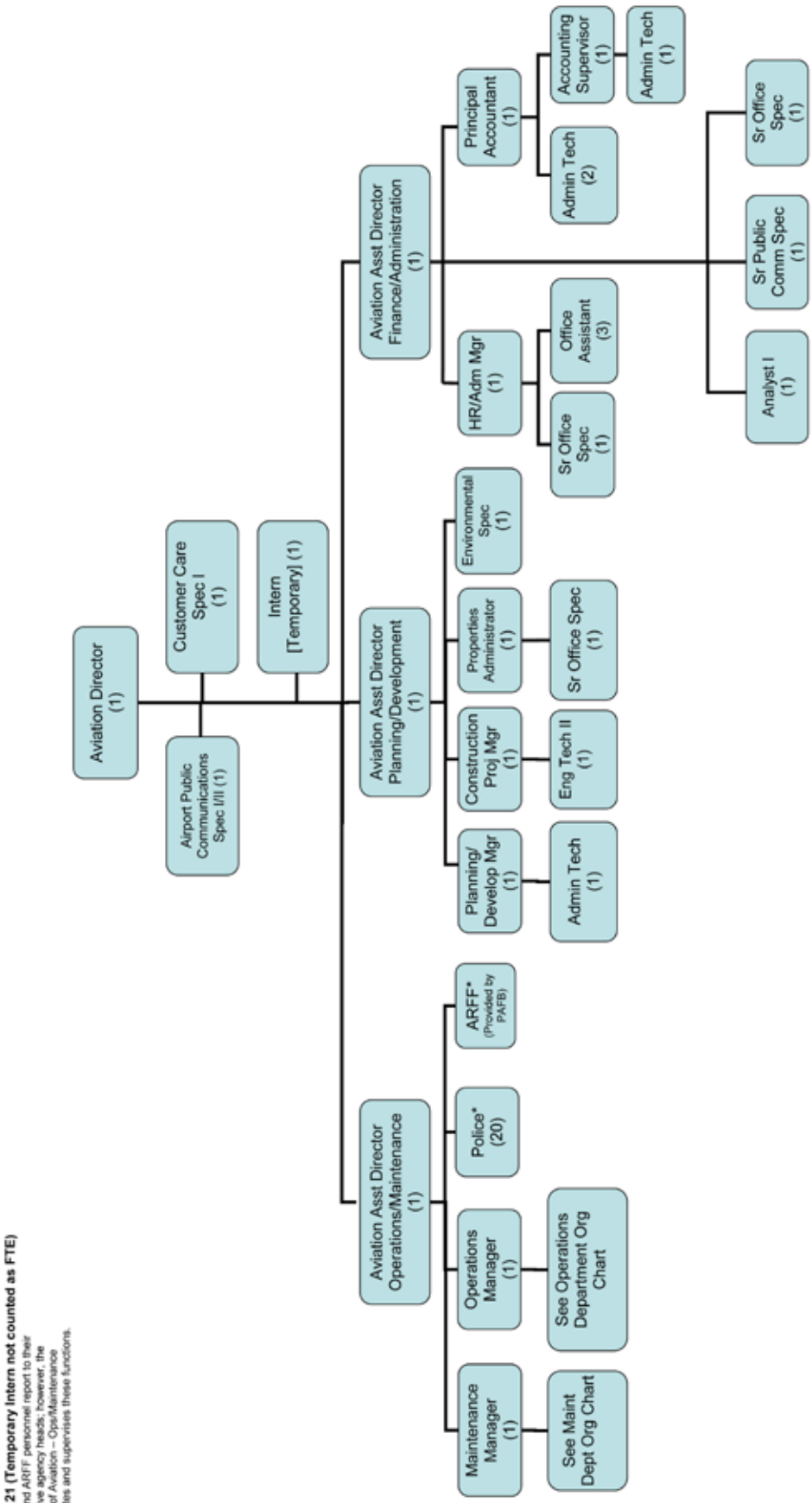


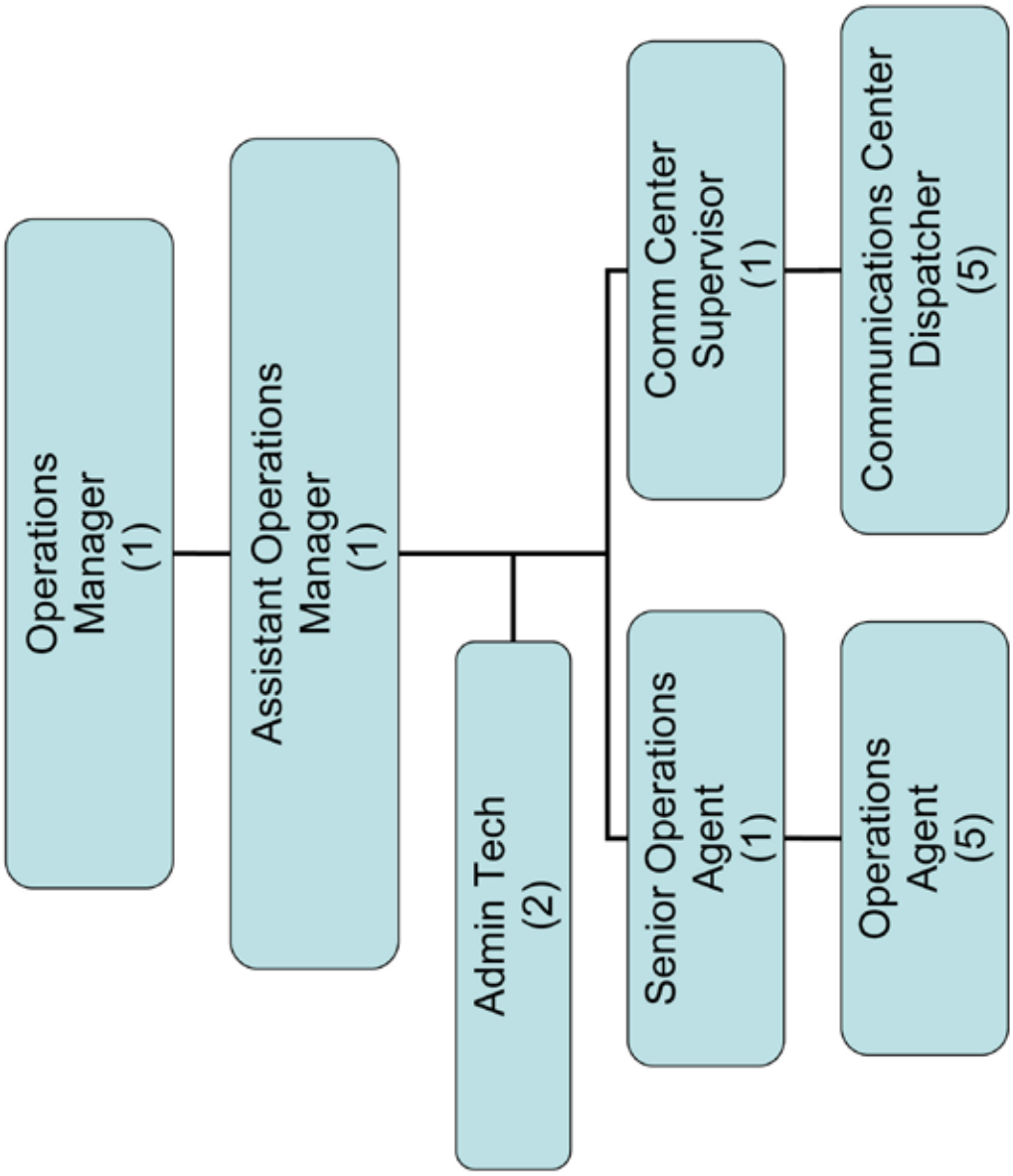












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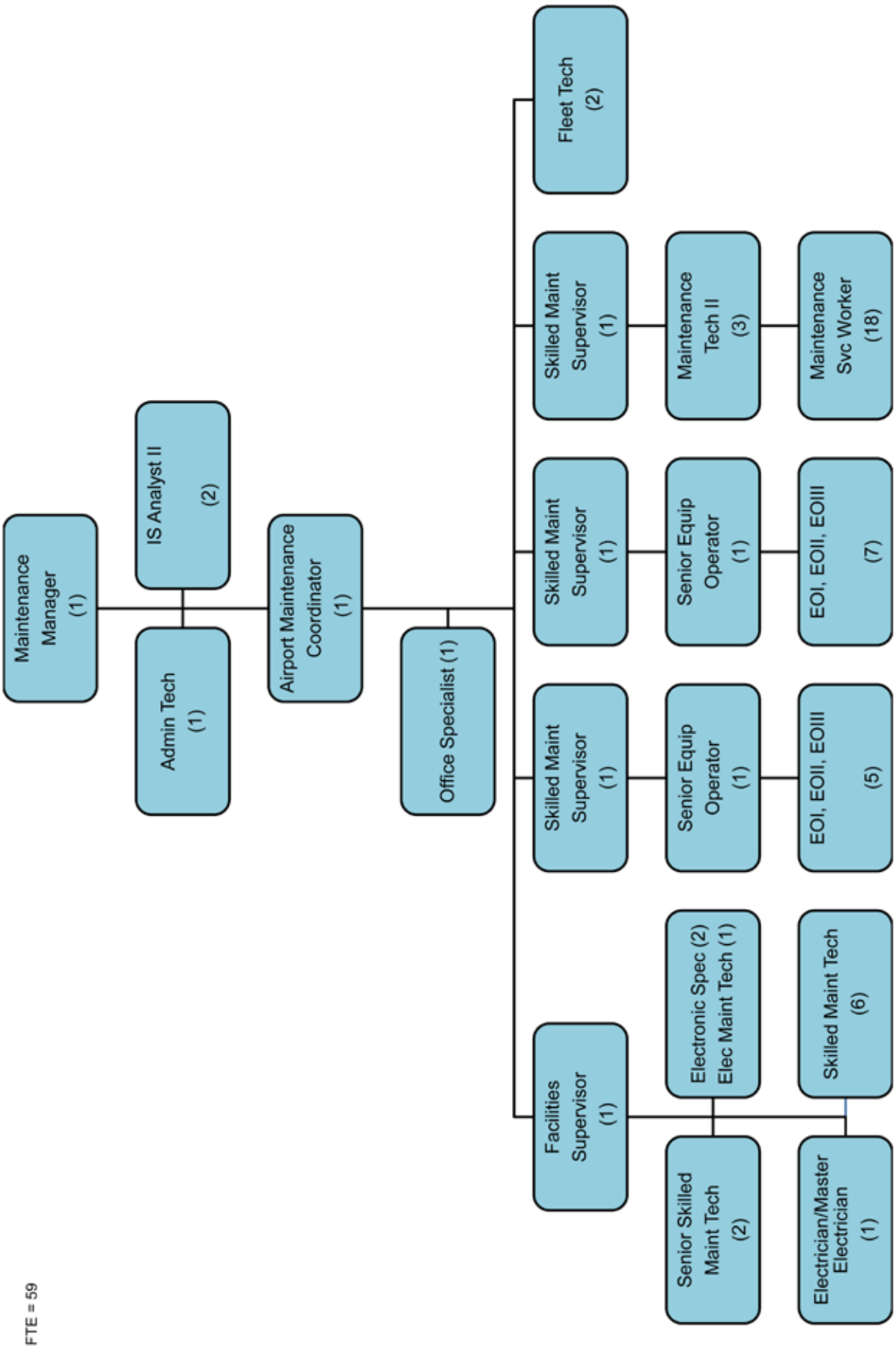
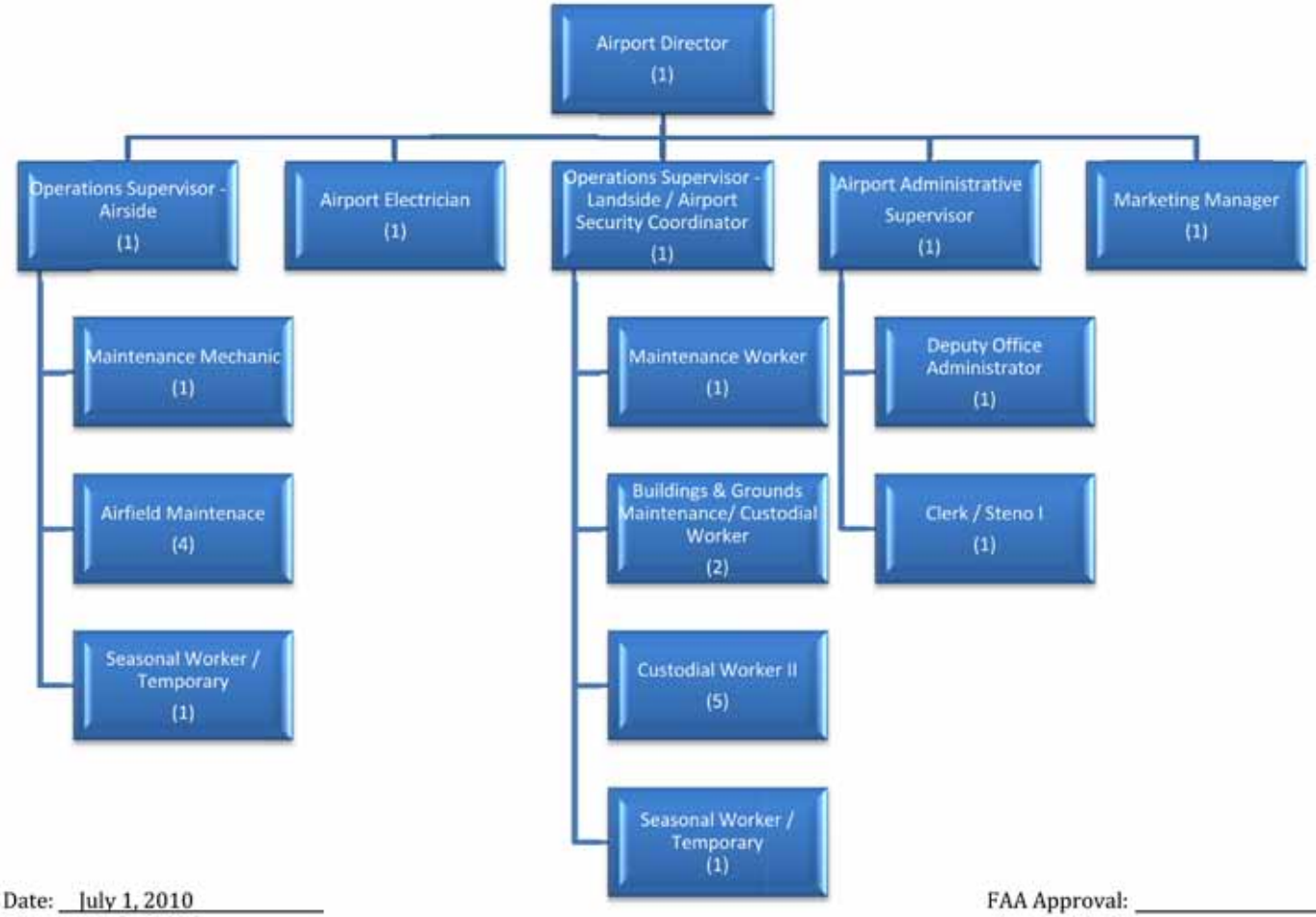


ACM
APPENDIX - 9

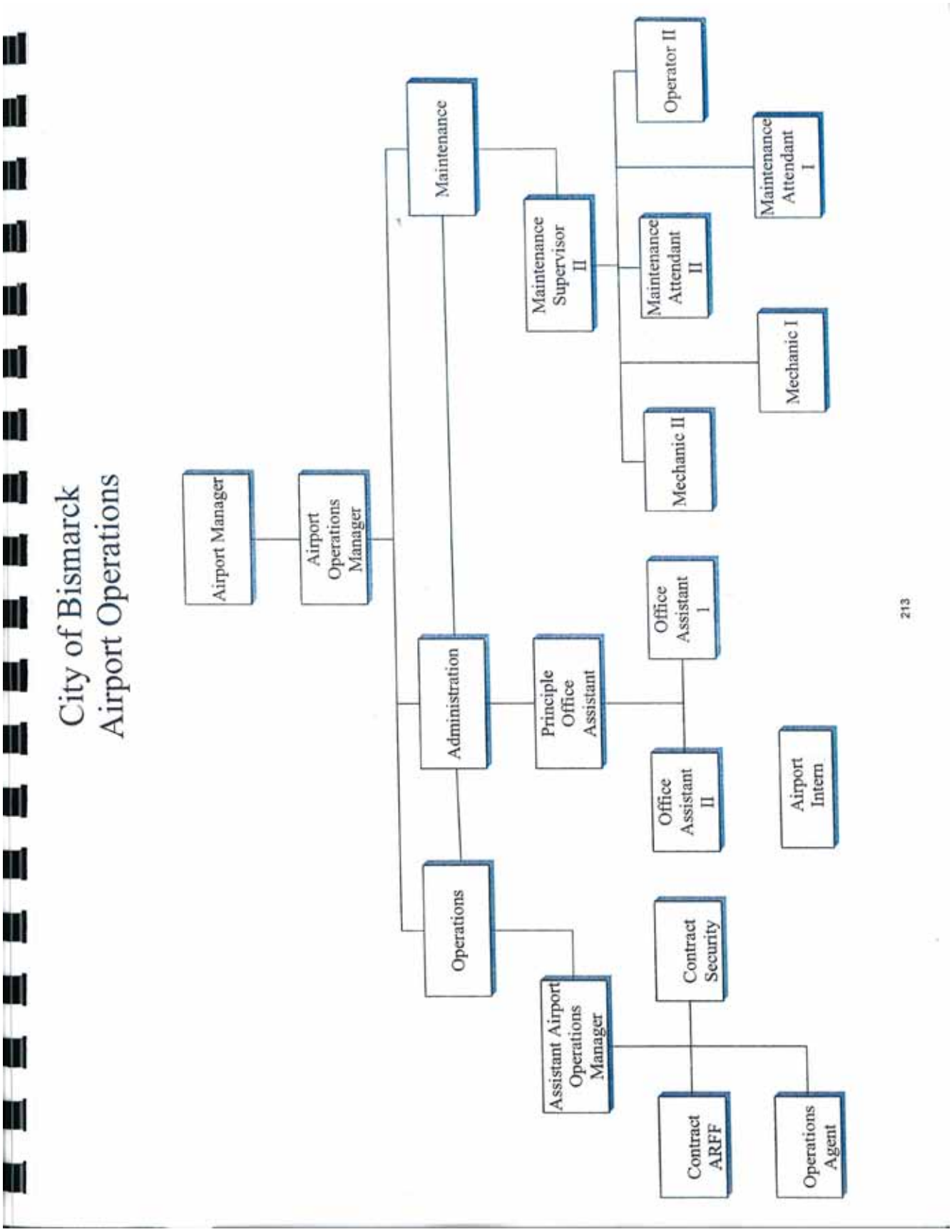
Outagamie County Regional Airport
Appleton Wisconsin
ATW

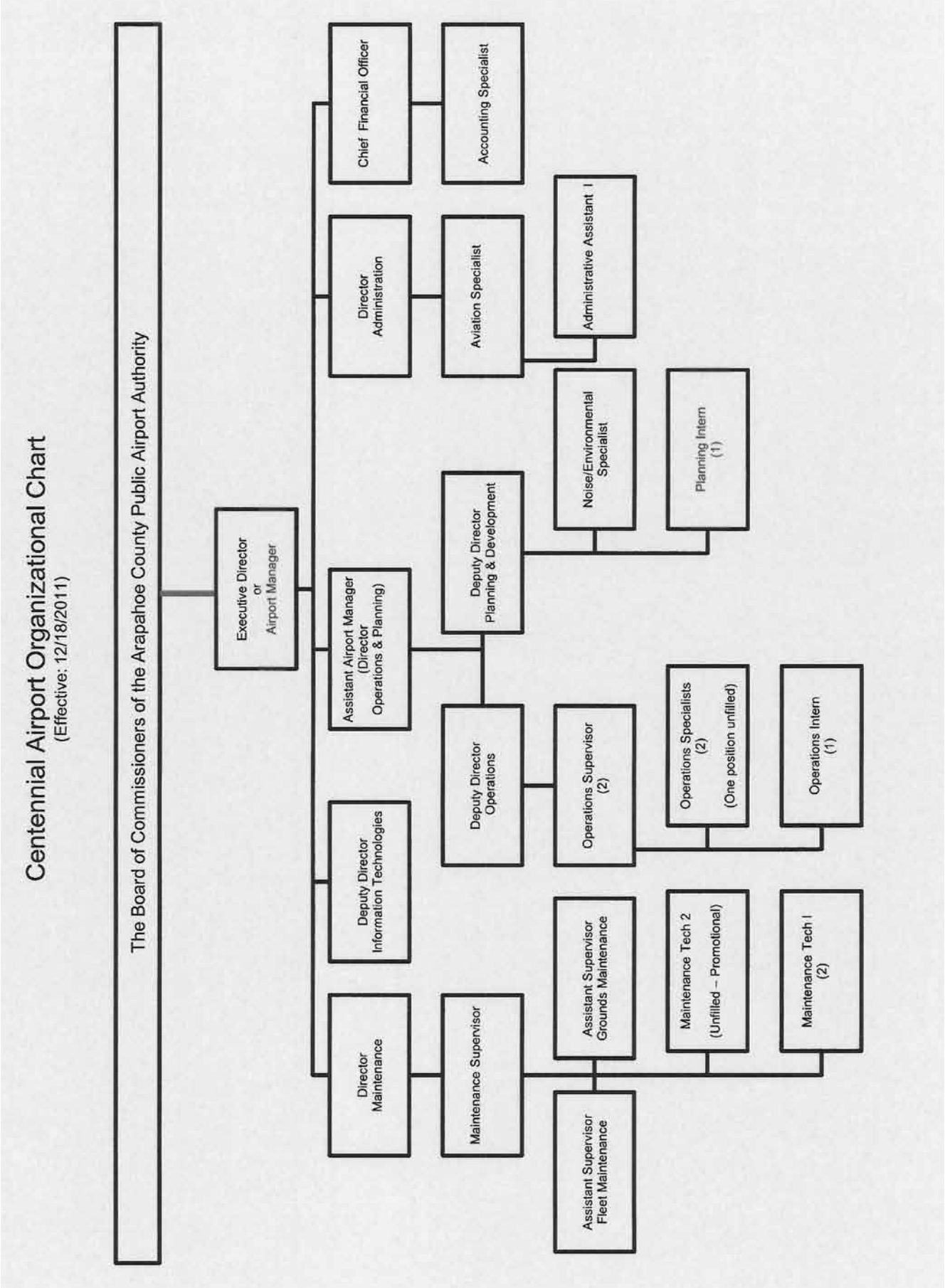
TABLE OF ORGANIZATION

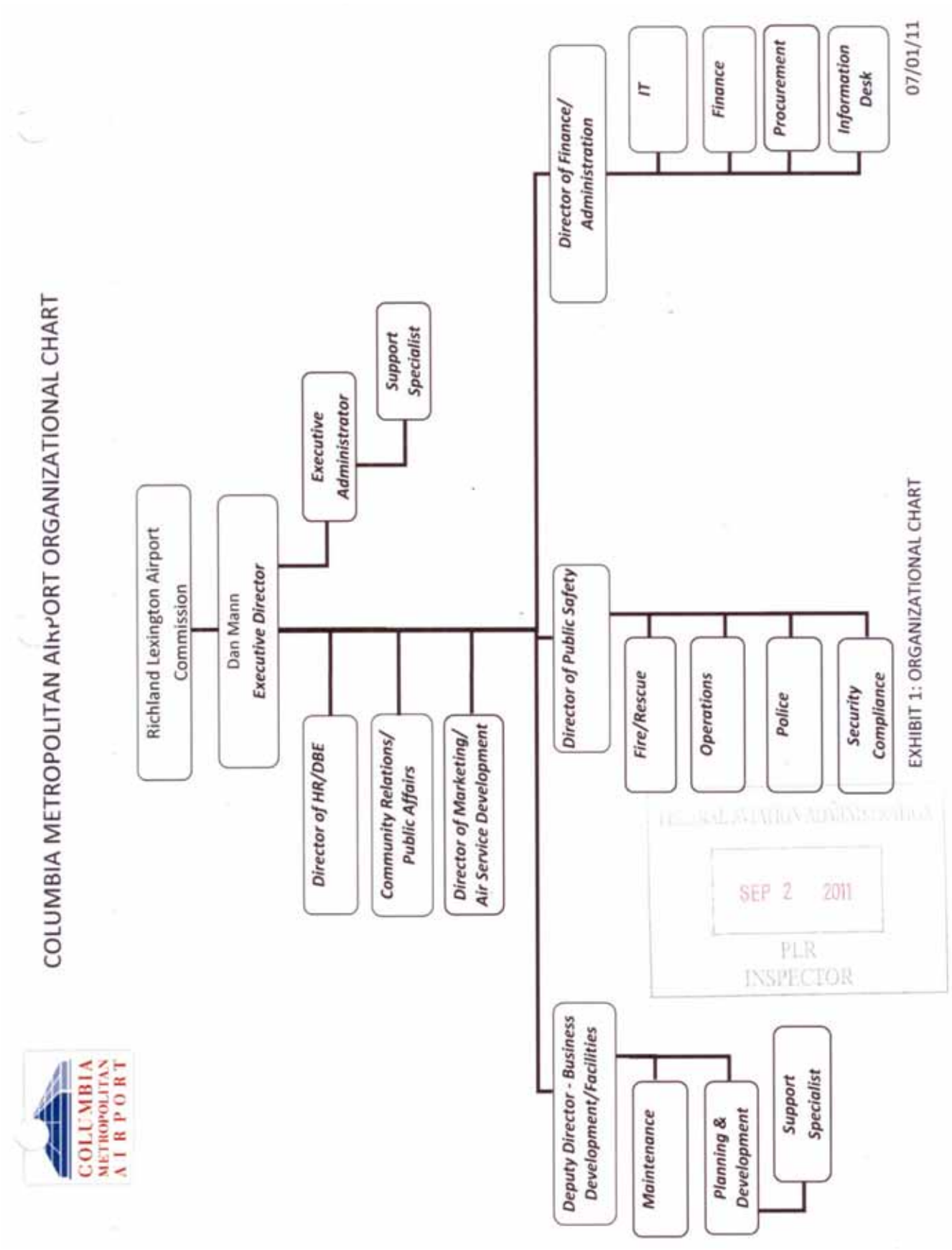


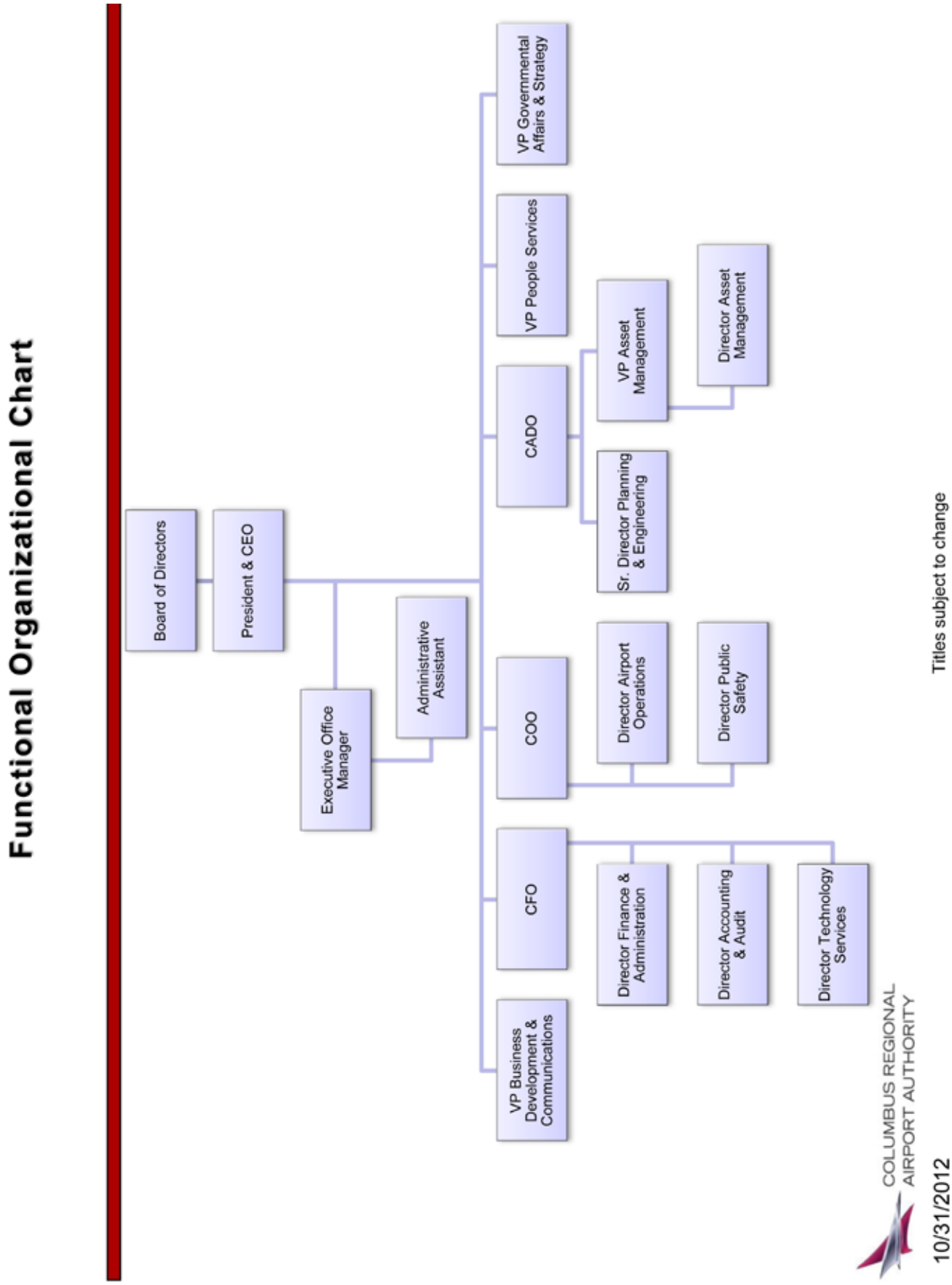
Original Date: July 1, 2010
Revision Date: July 1, 2010

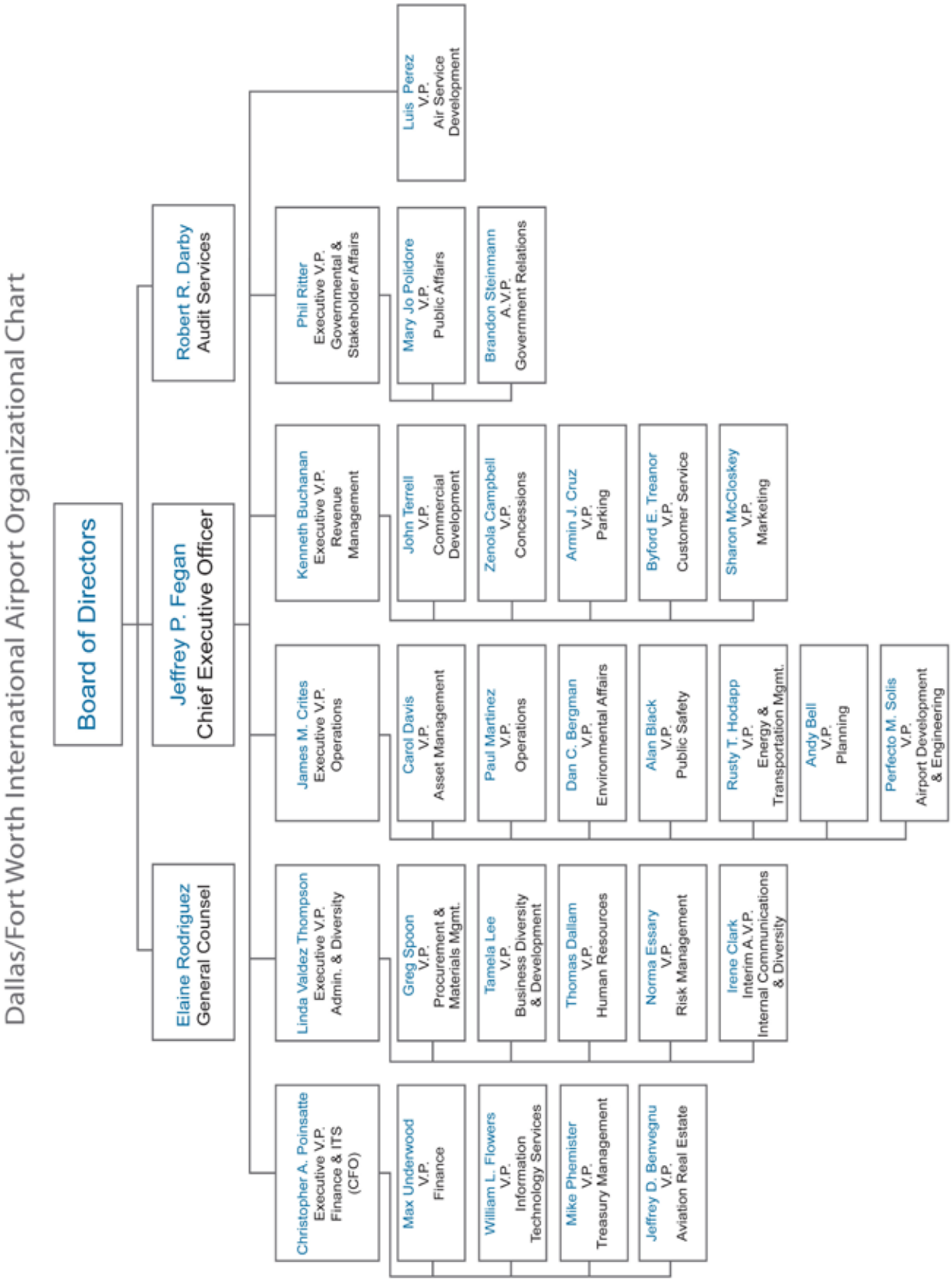
FAA Approval: _____
Approval Date: _____

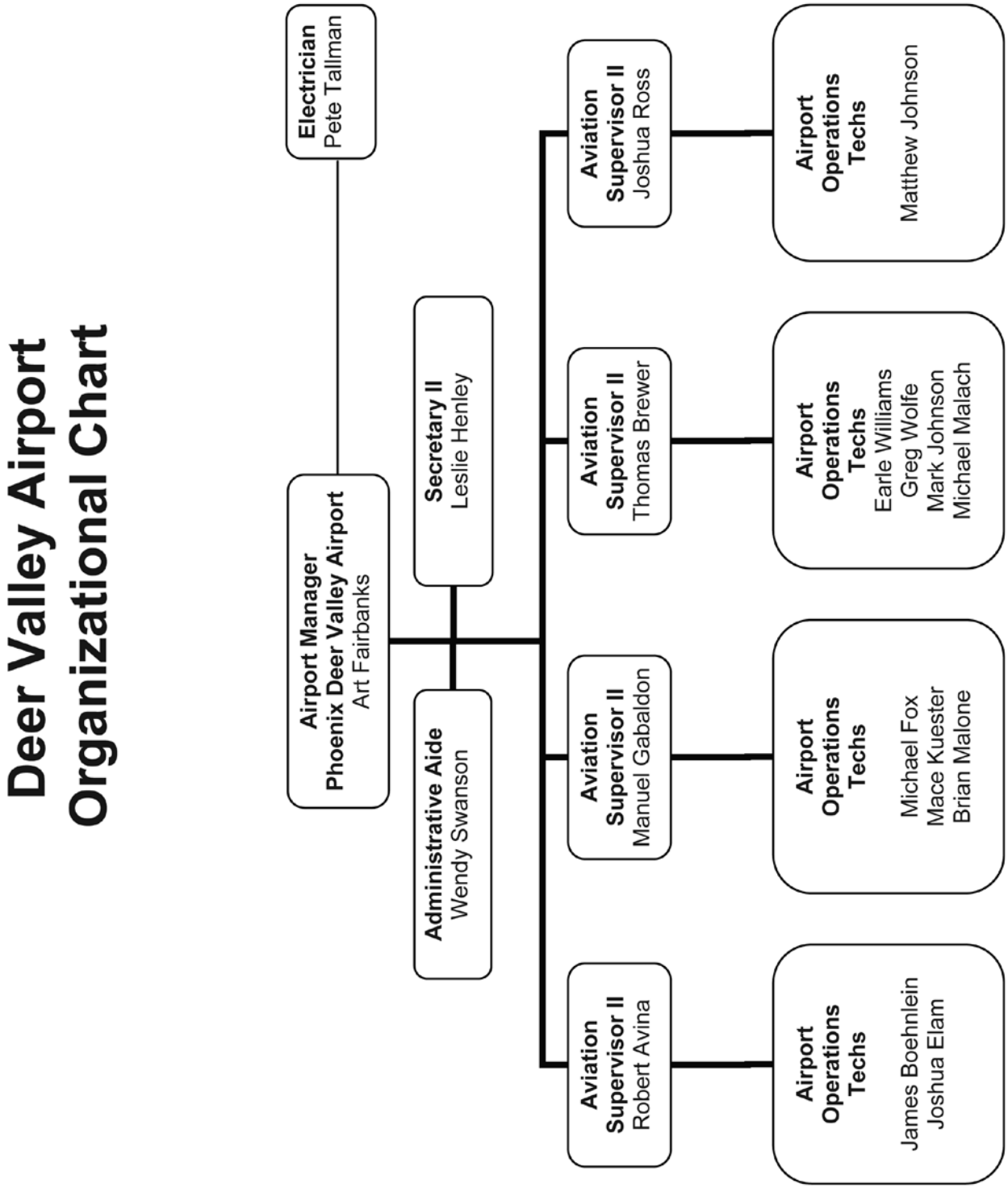


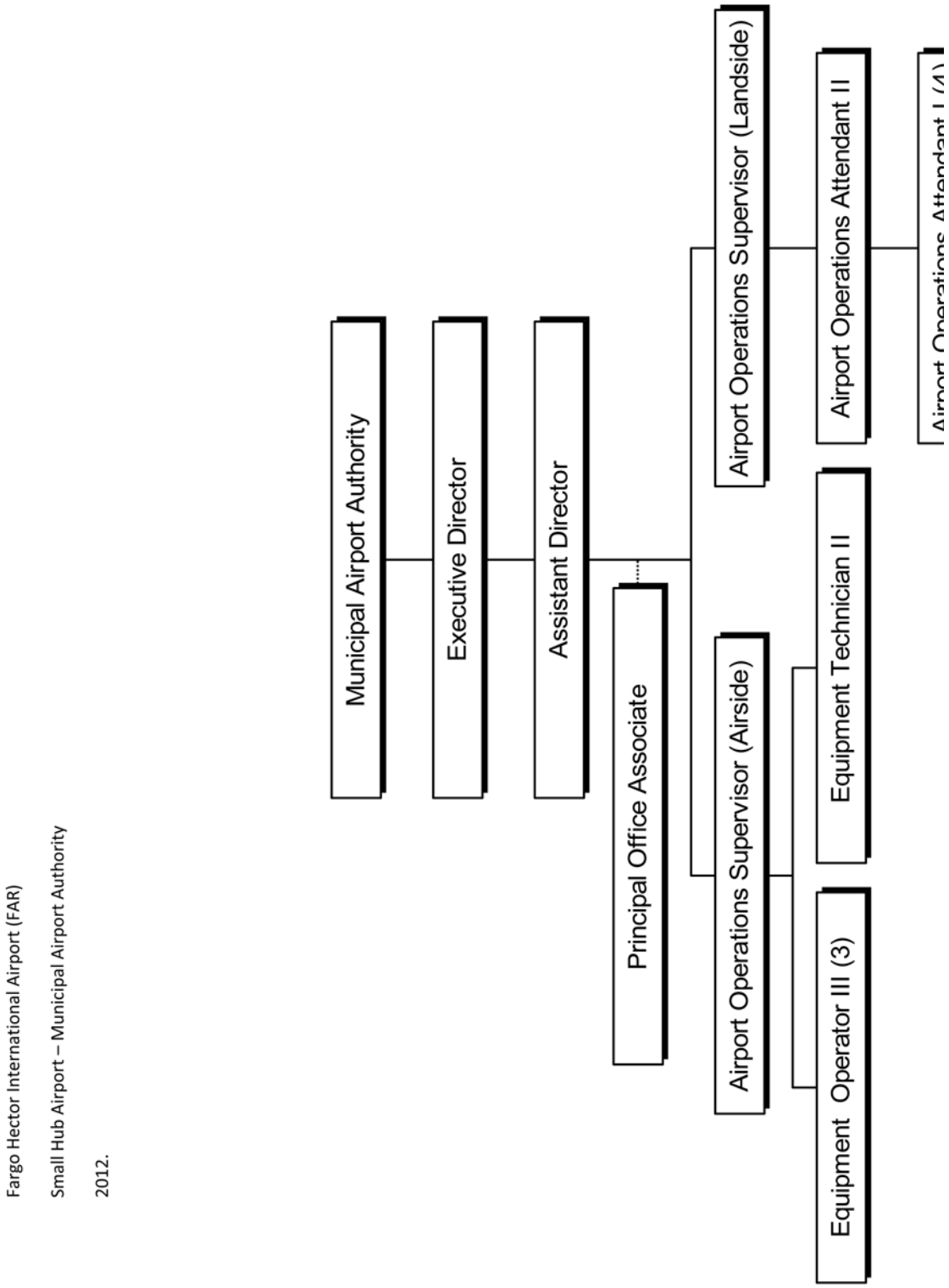








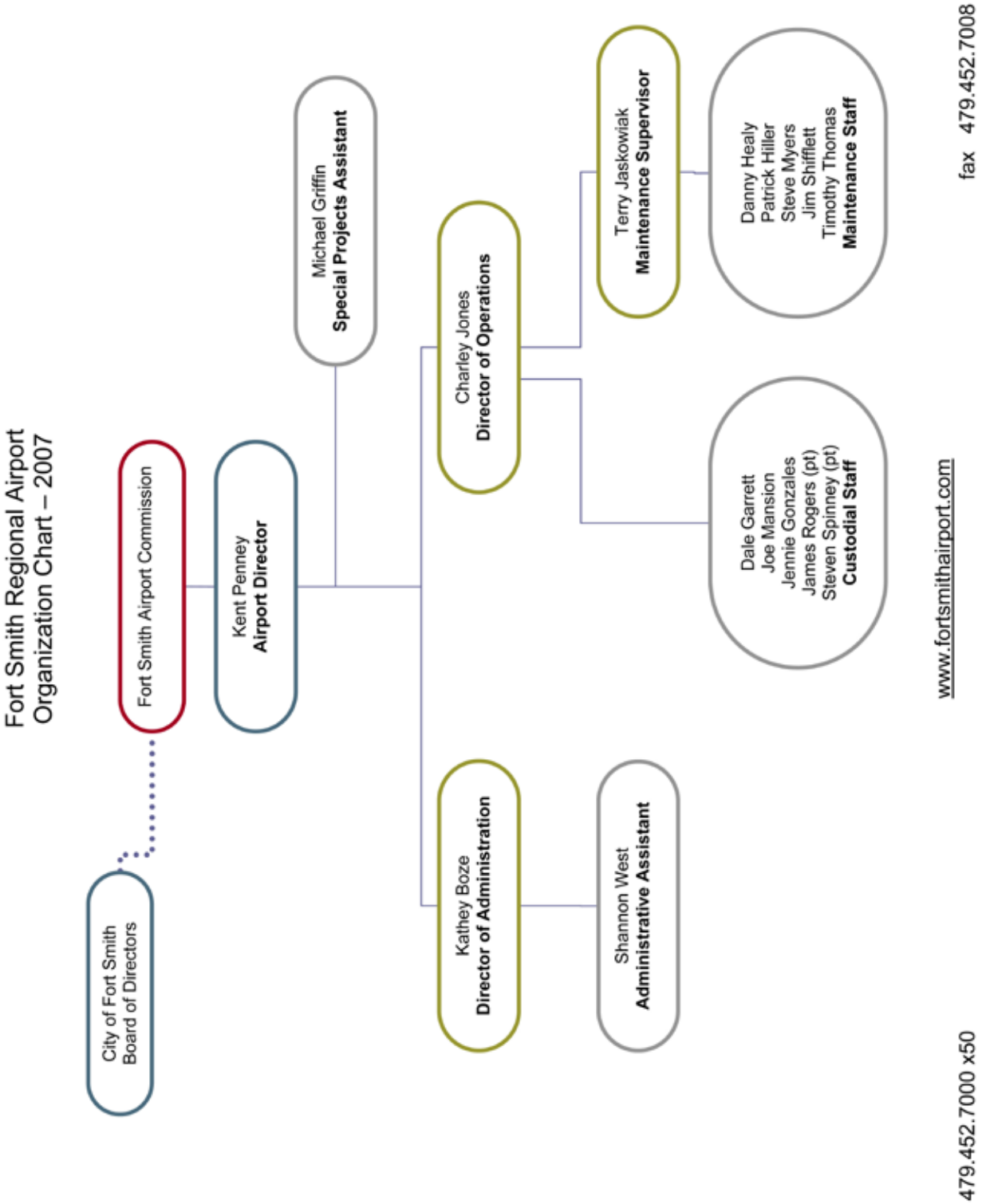




Fargo Hector International Airport (FAR)

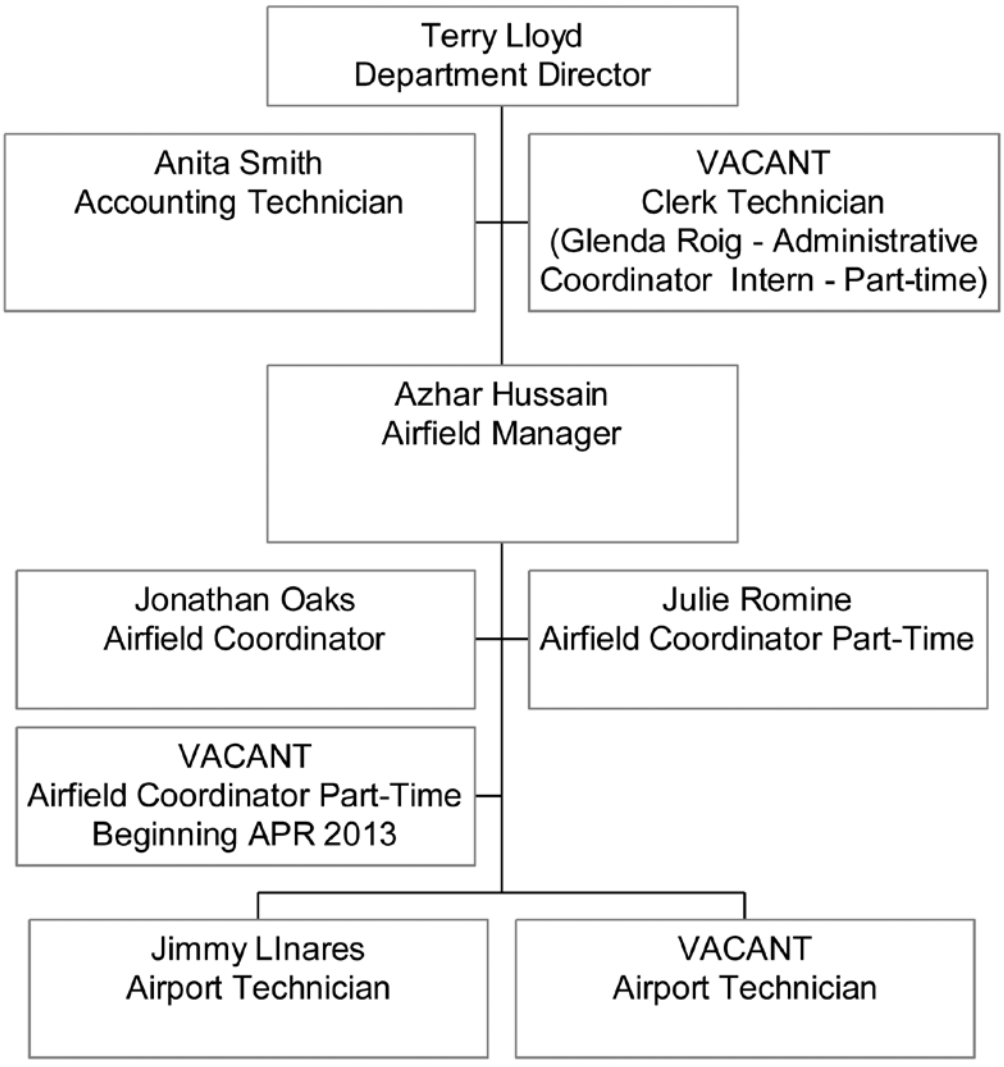
Small Hub Airport – Municipal Airport Authority

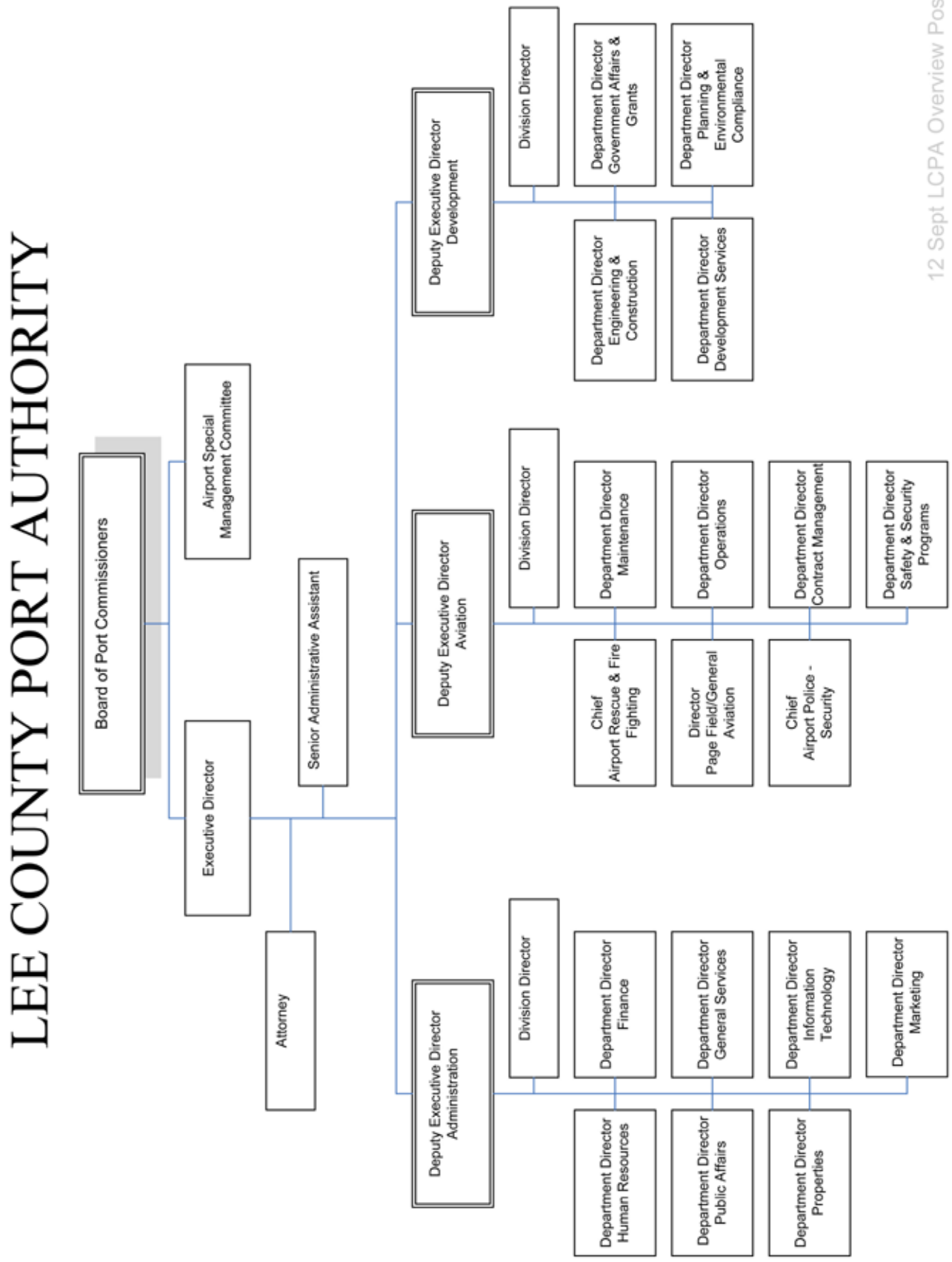
2012.



FY2012-13
Page

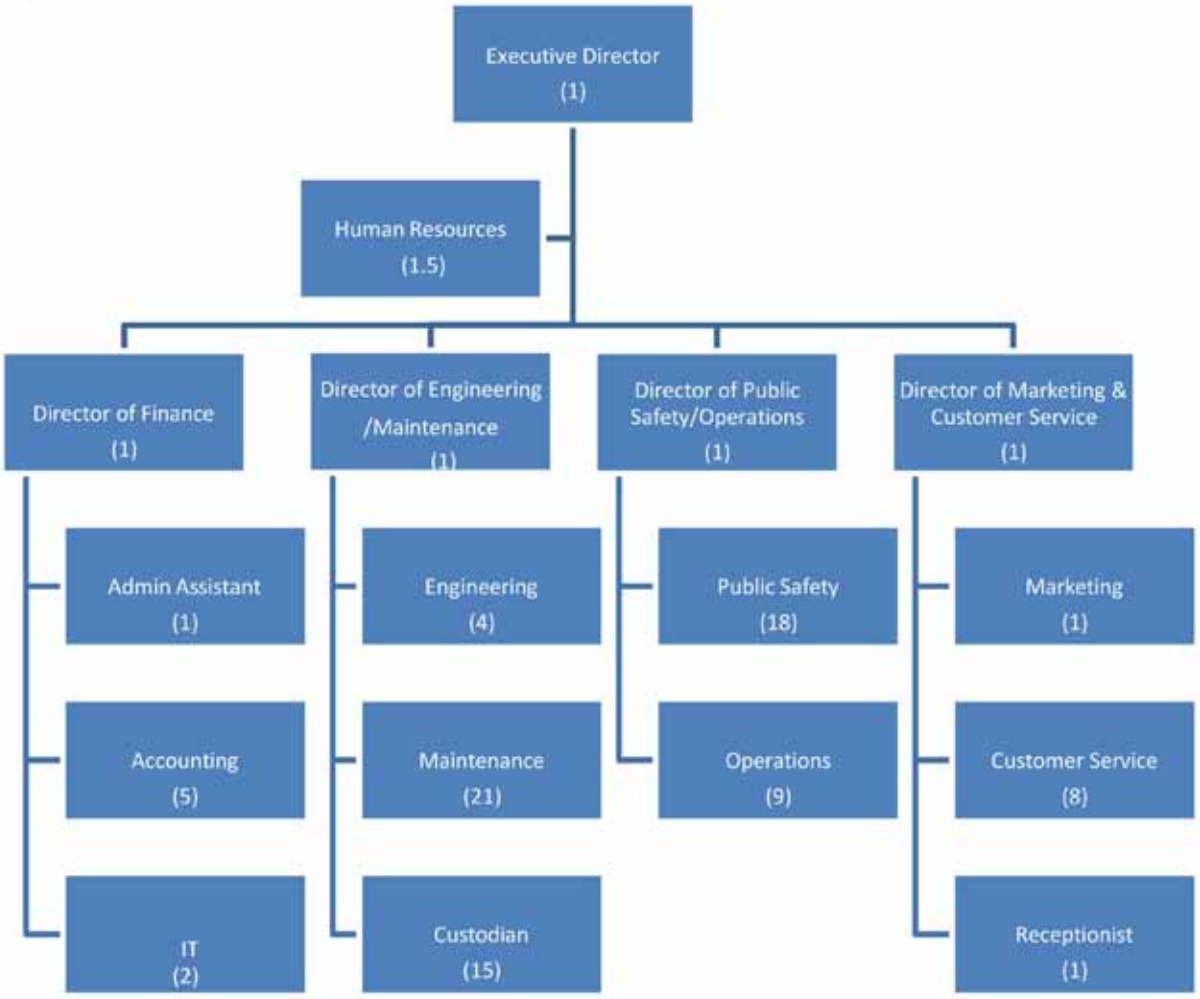
CITY OF KISSIMMEE
KISSIMMEE GATEWAY AIRPORT
ORGANIZATION CHART

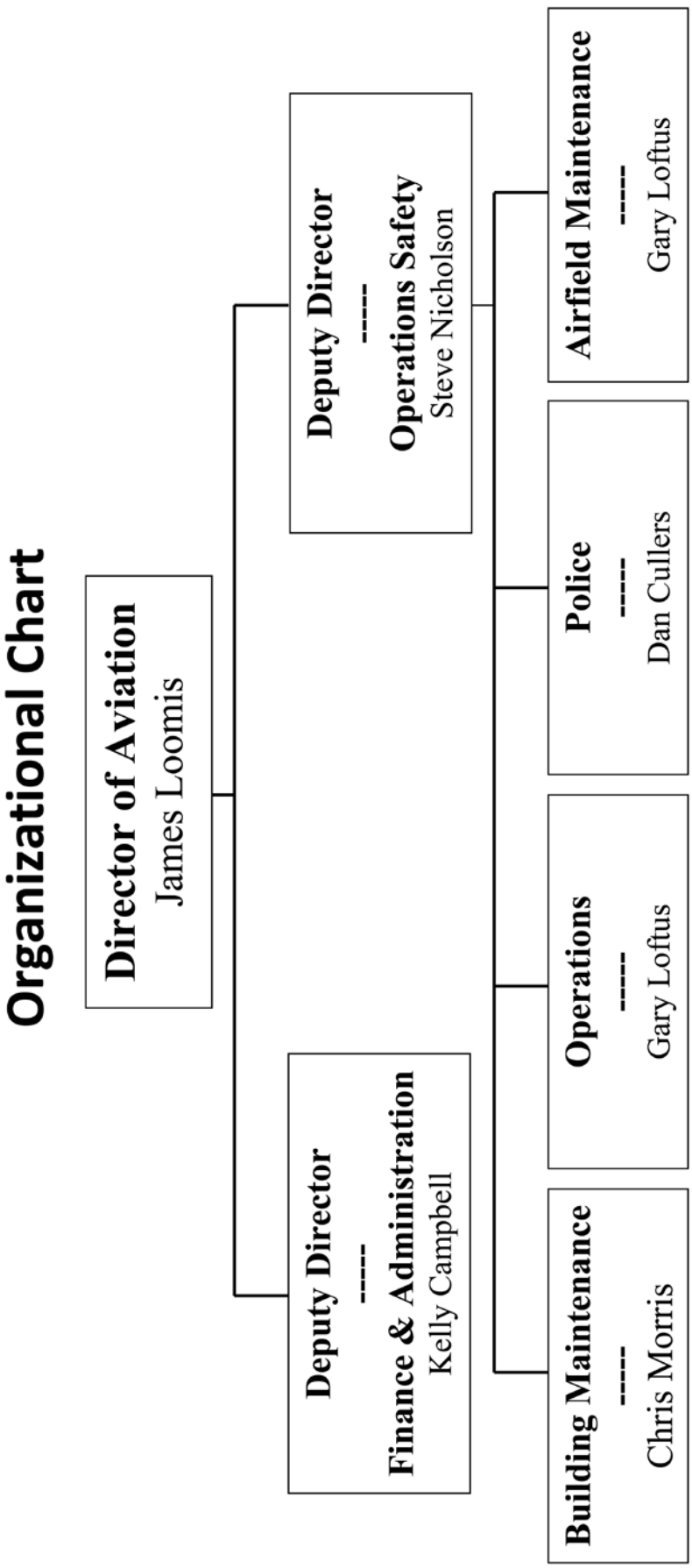


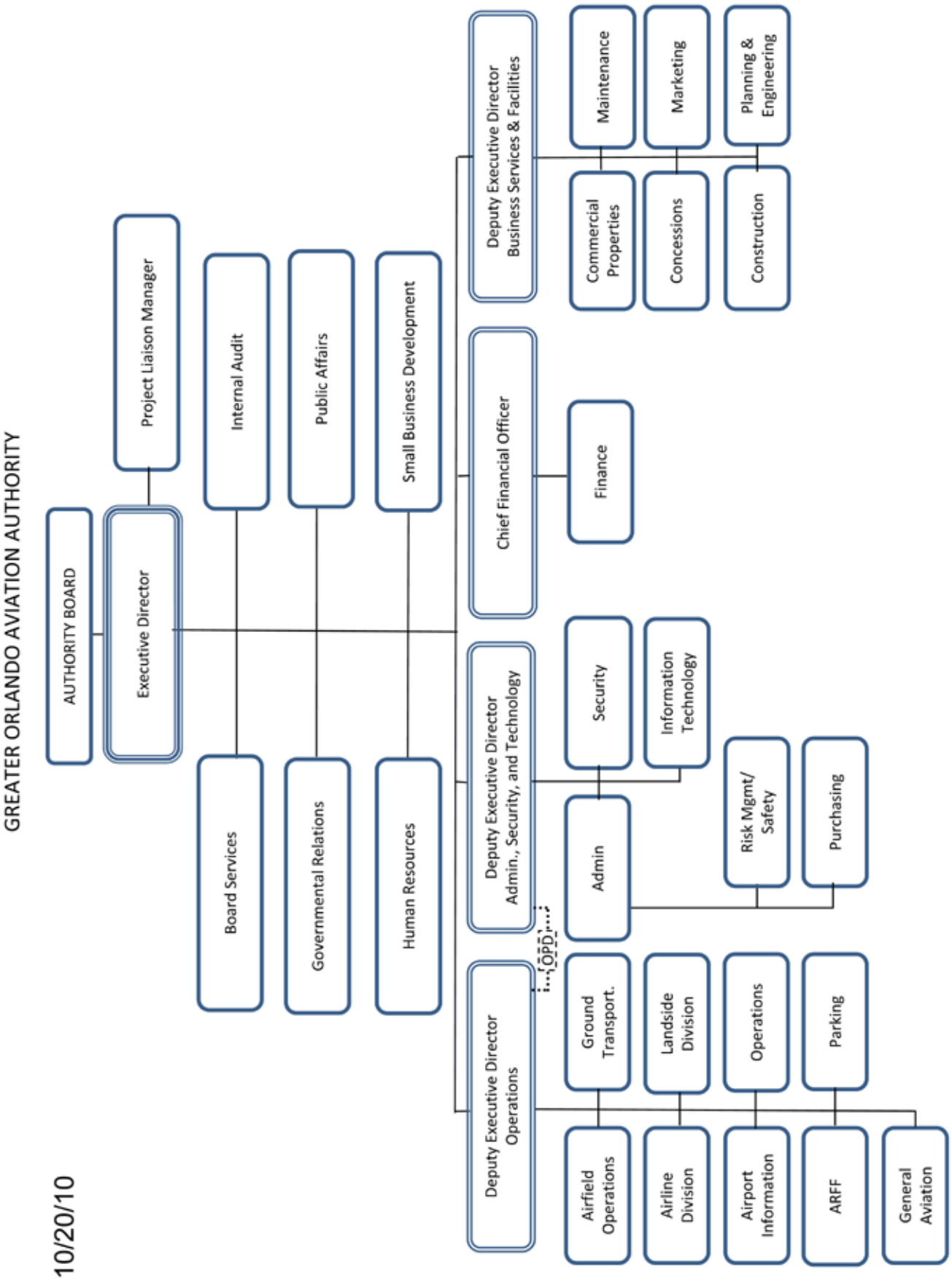


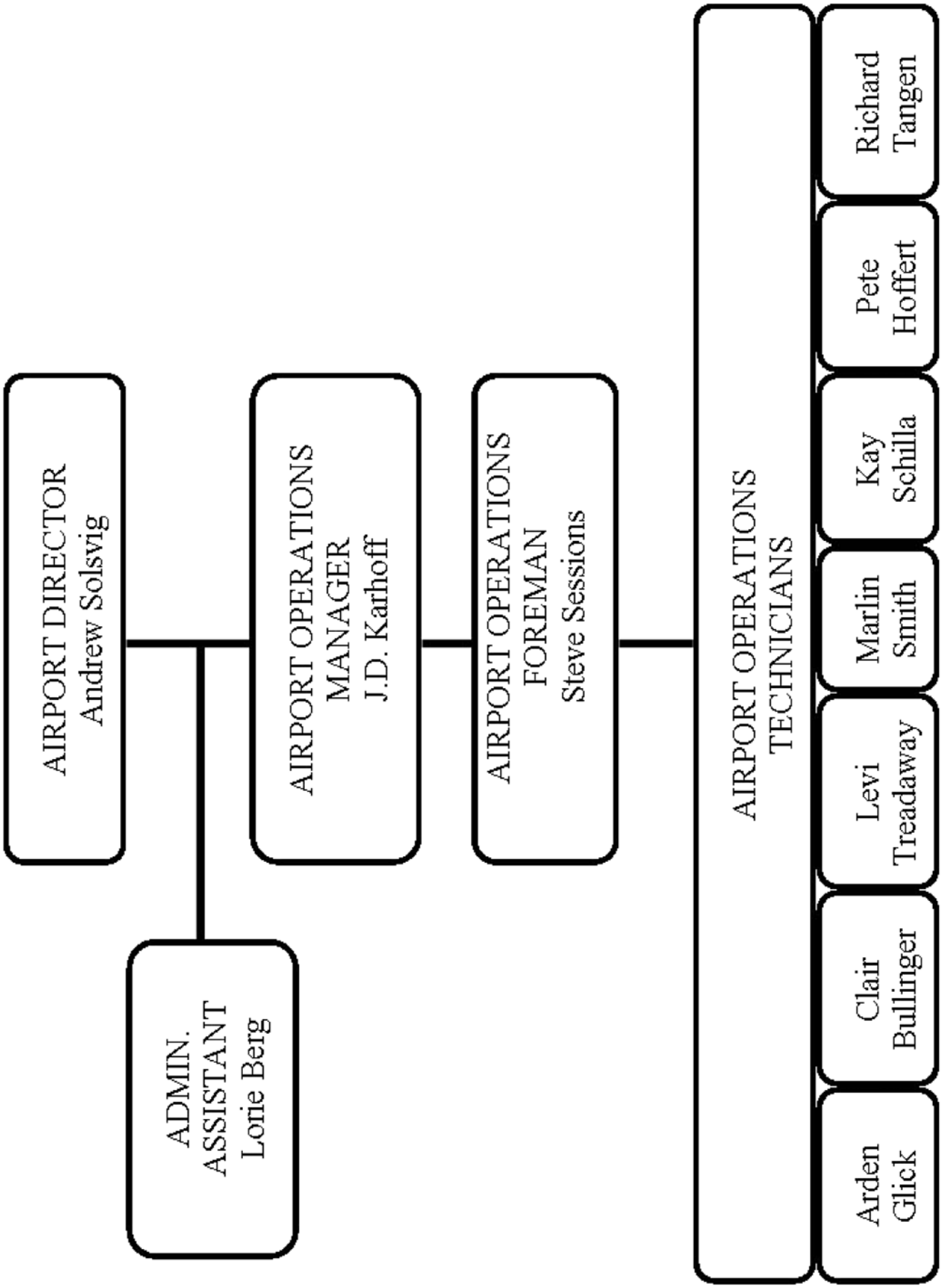
Lexington-Blue Grass International Airport

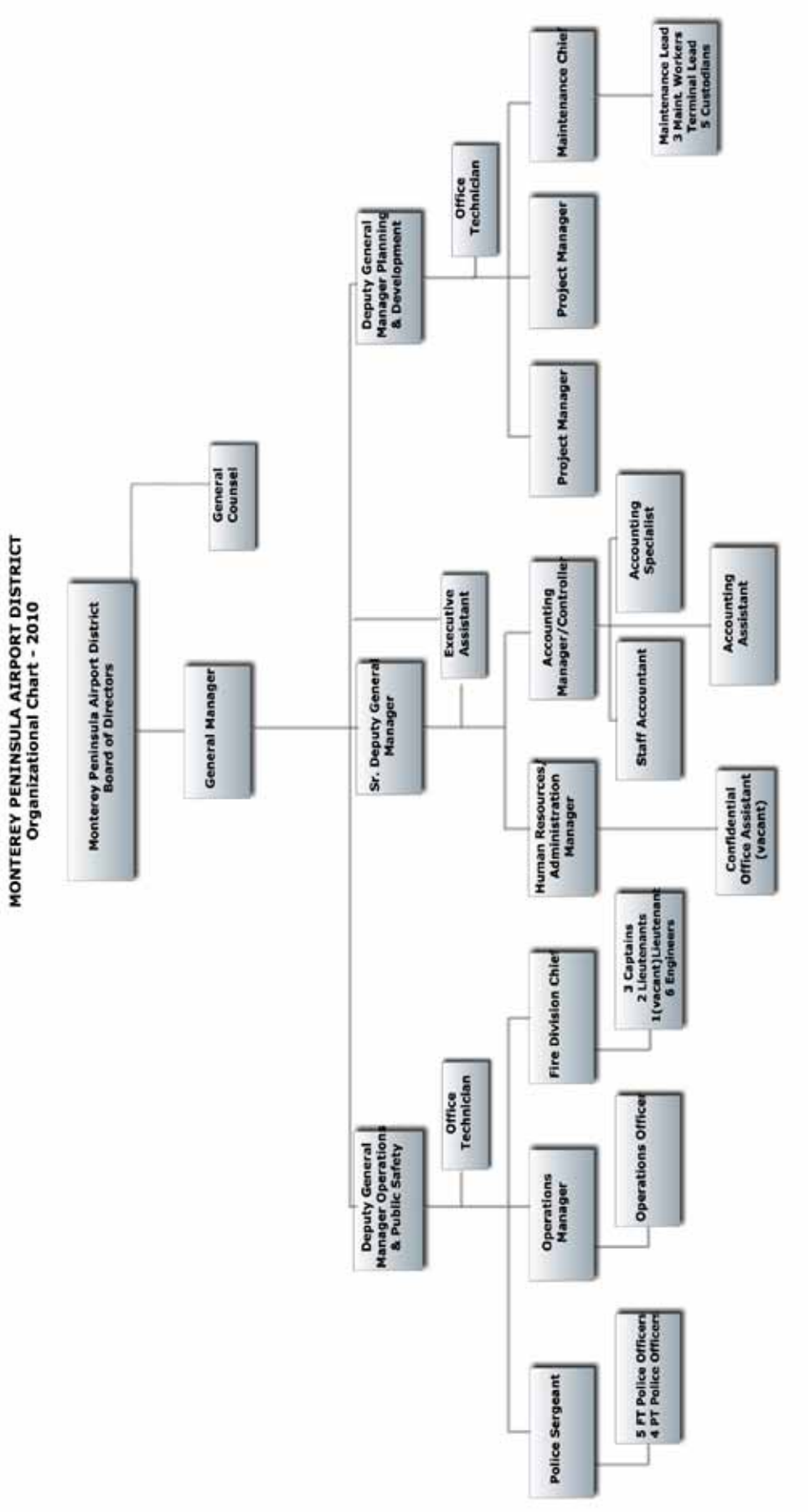
Eric Frankl

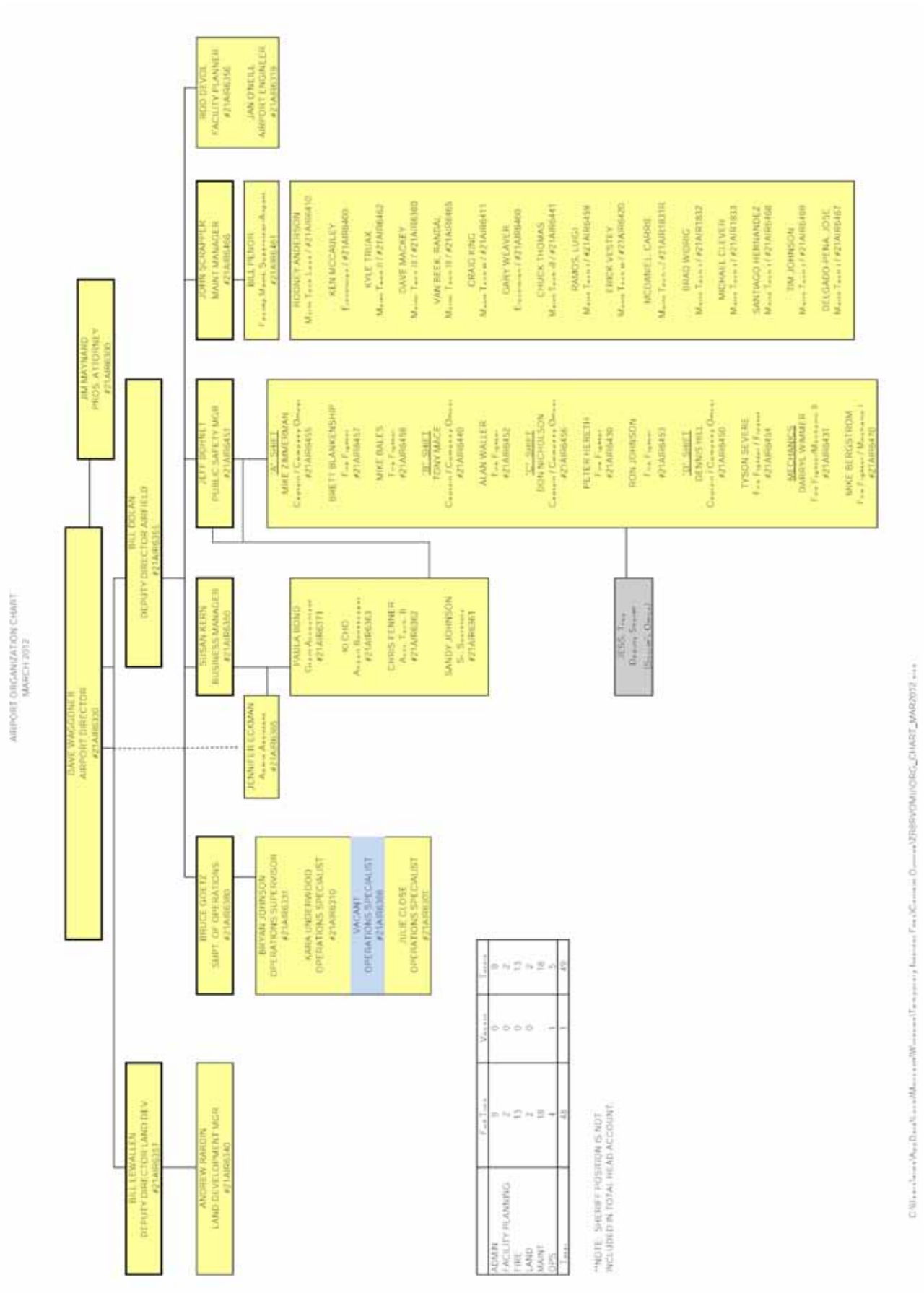




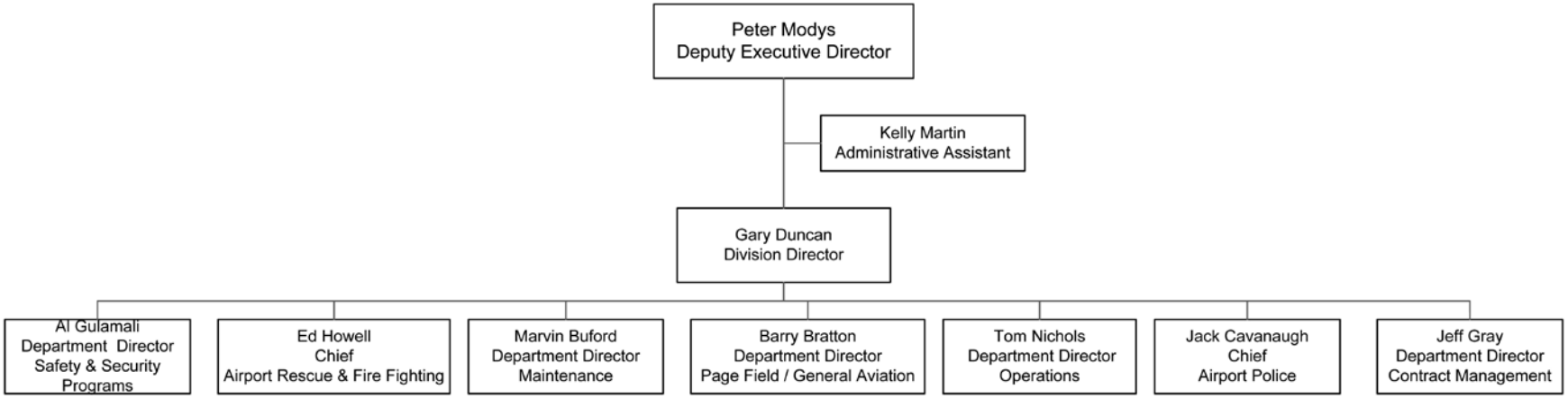


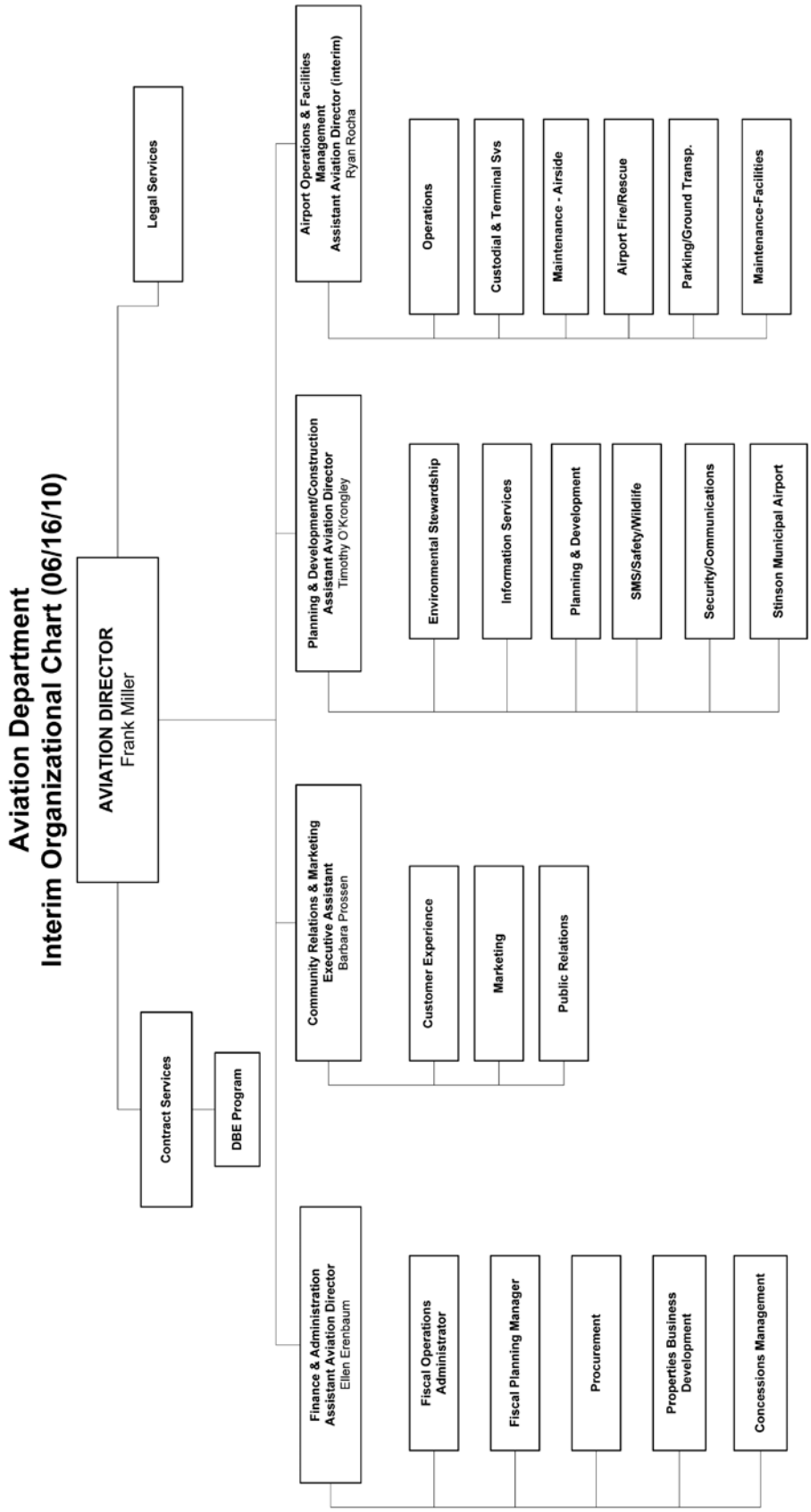






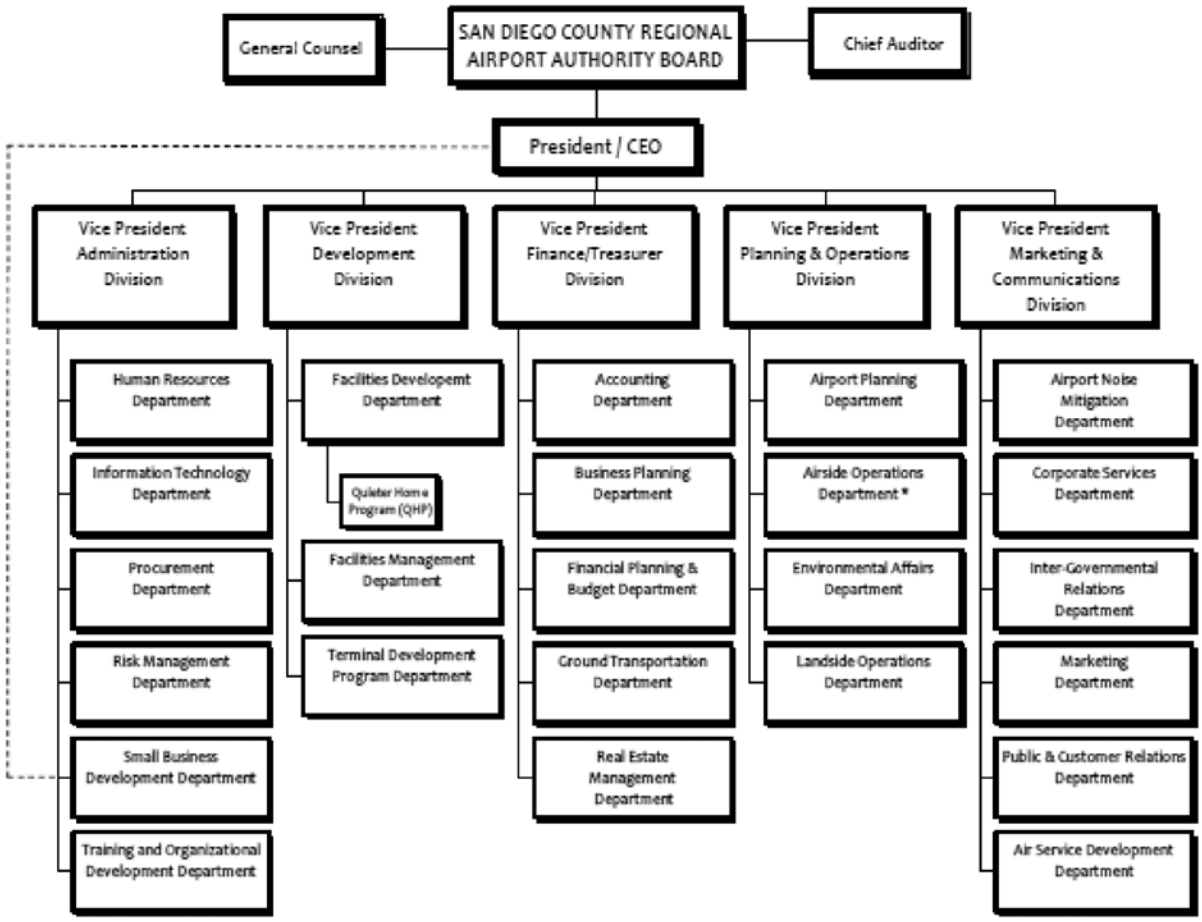
LEE COUNTY PORT AUTHORITY
Aviation



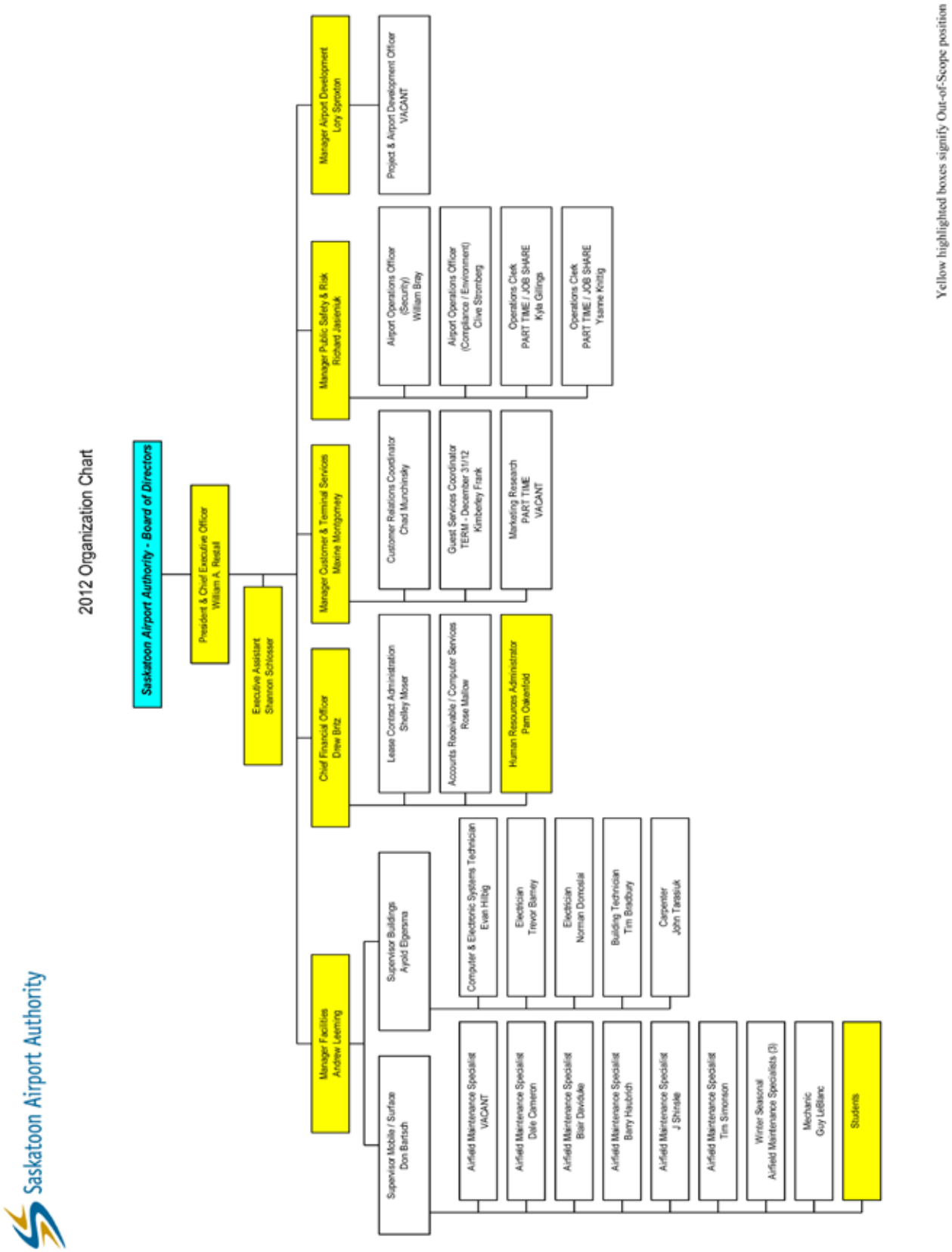


San Diego County Regional Airport Authority

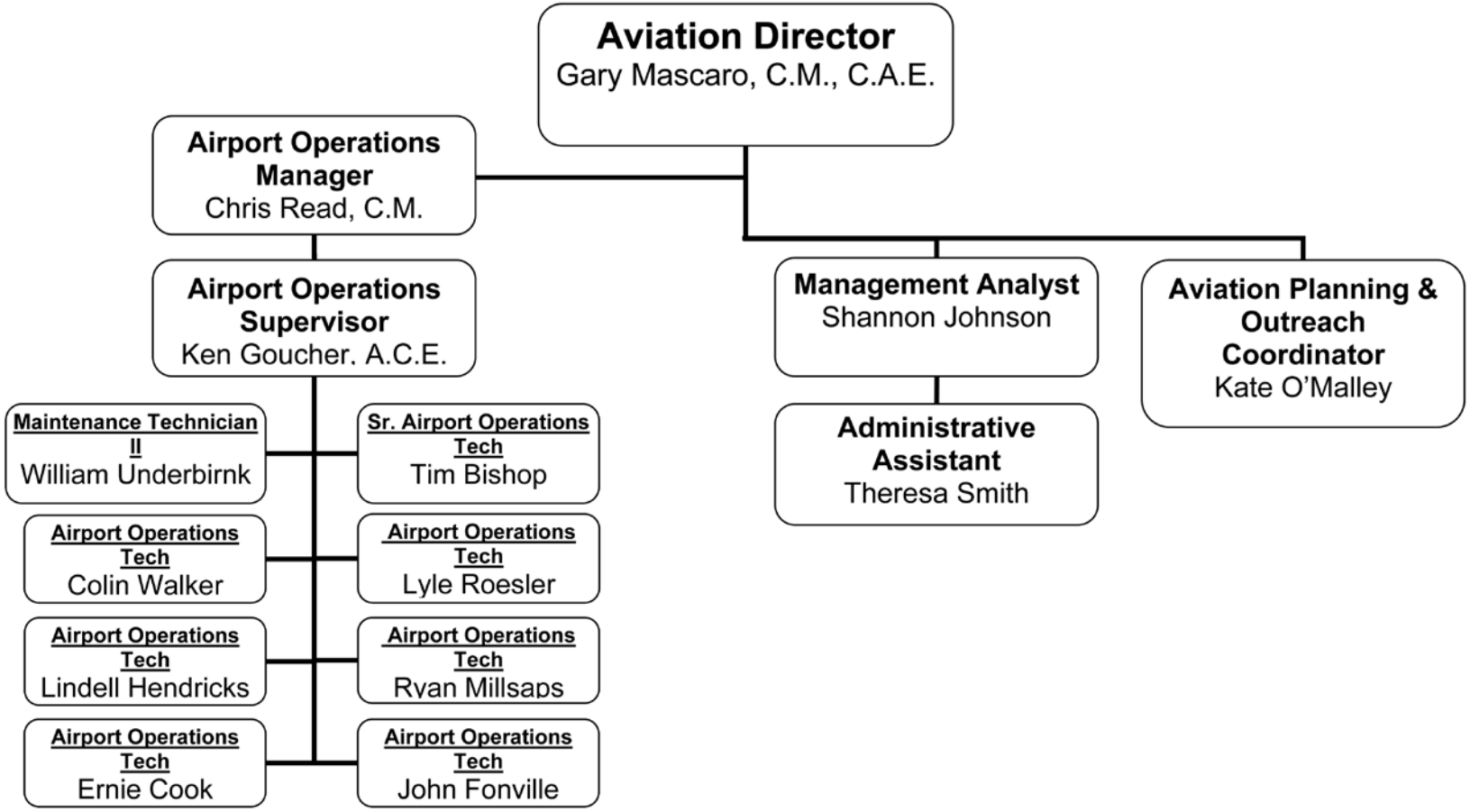
SDCRAA Organizational Structure



** The Aviation Security & Public Safety Department is included in the Airside Operations Department*

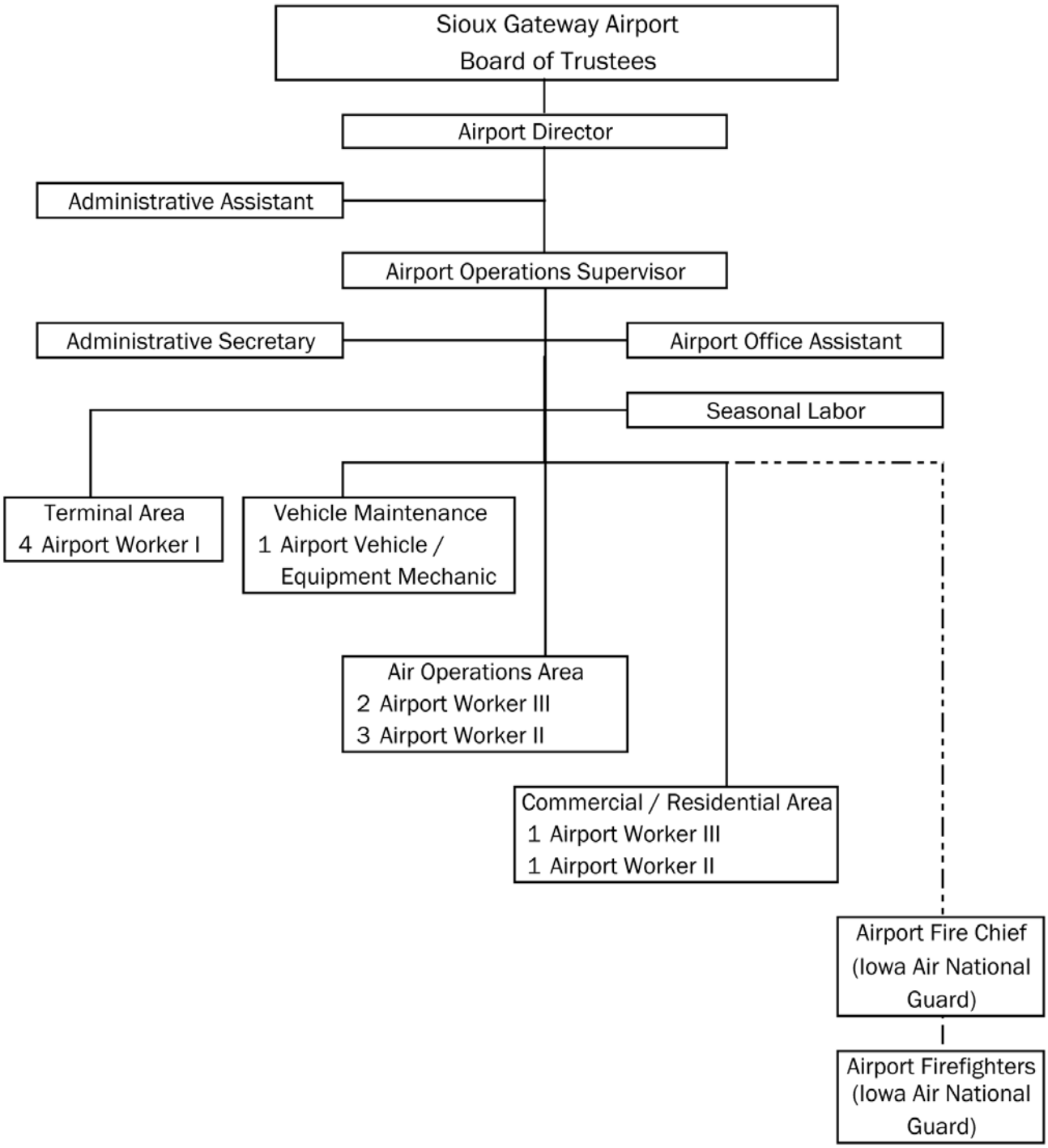


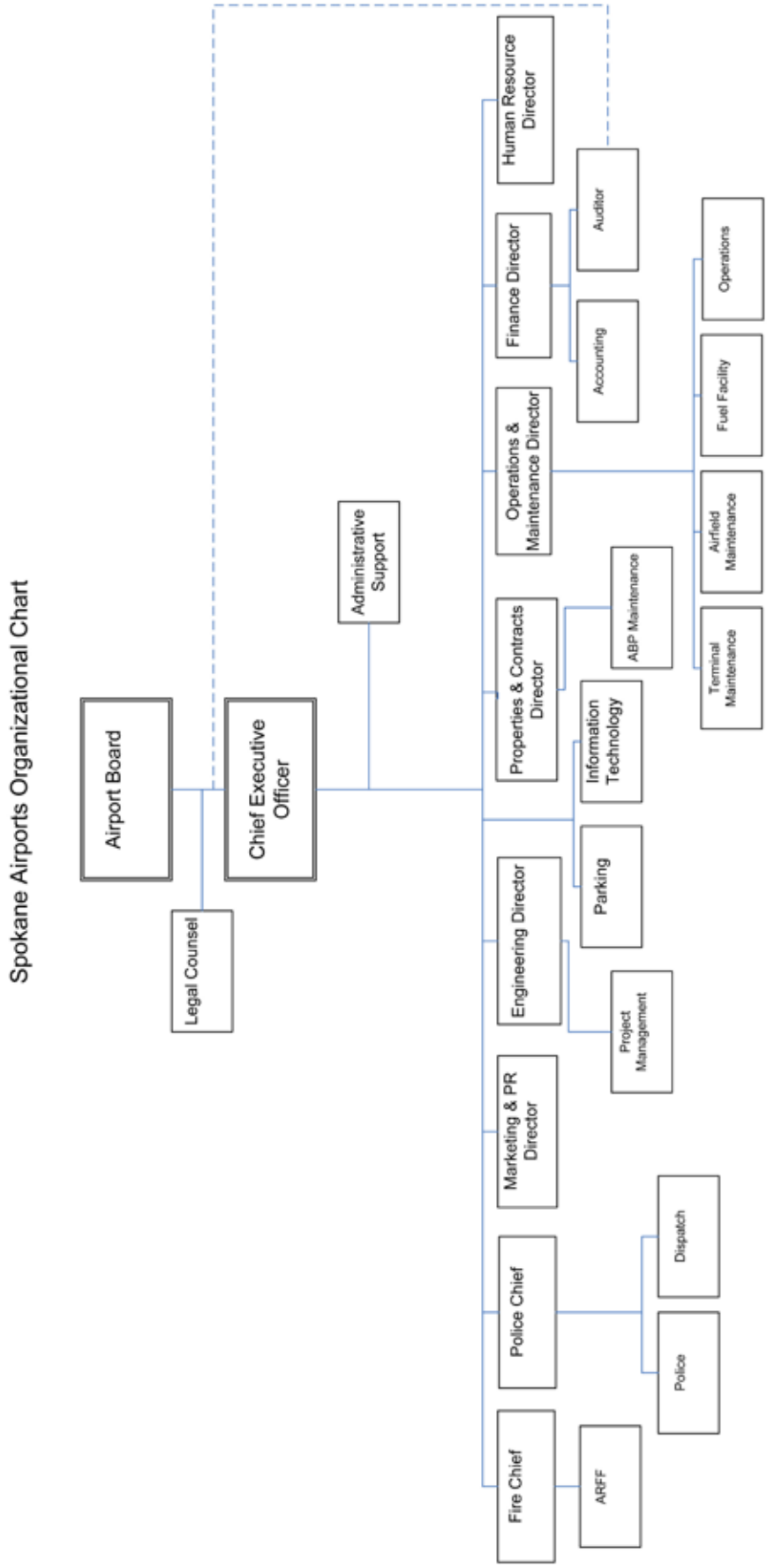
City of Scottsdale
Aviation Department – Scottsdale Airport

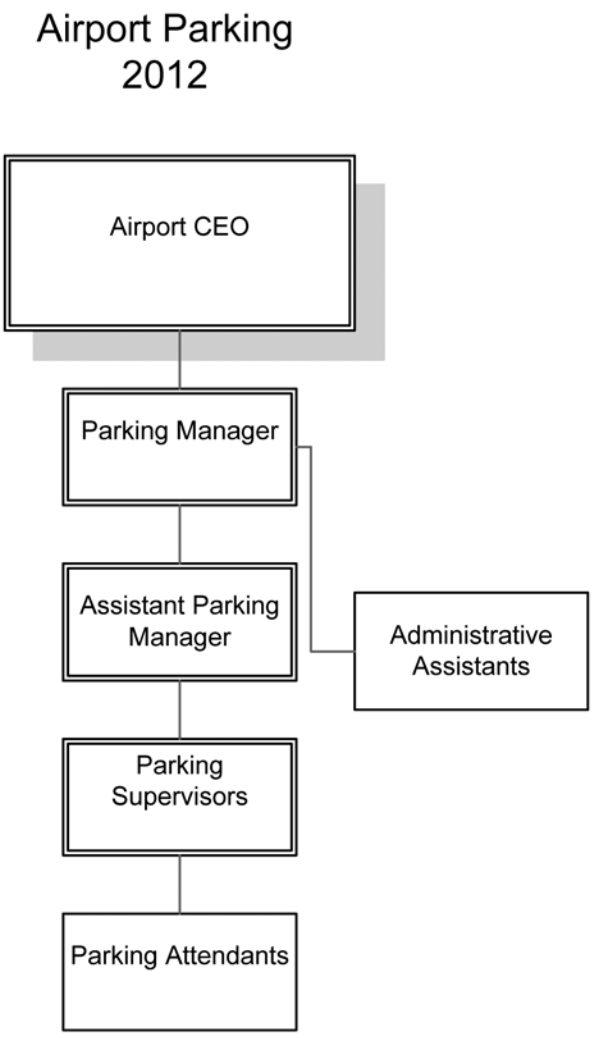


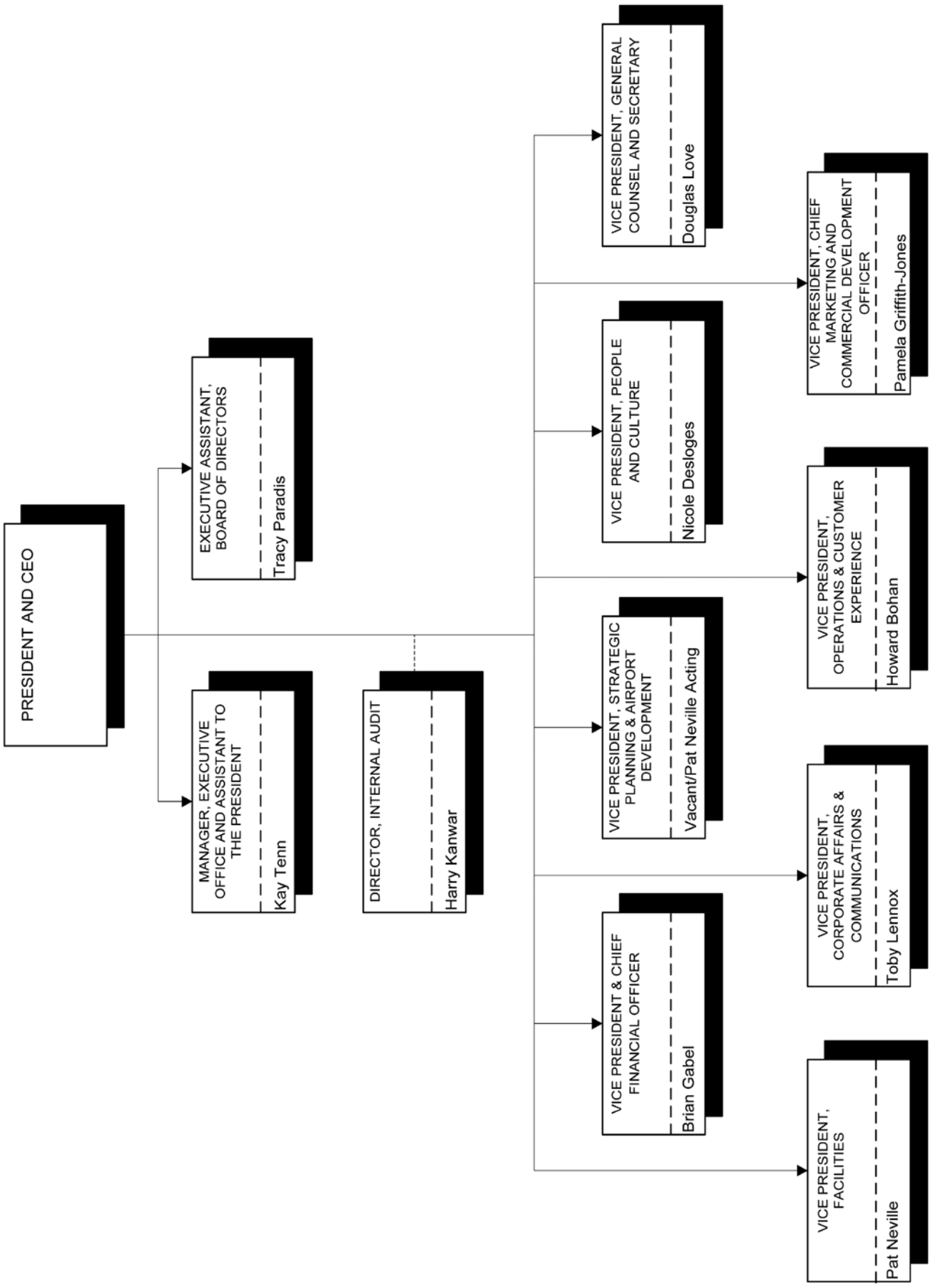
Sioux Falls South Dakota

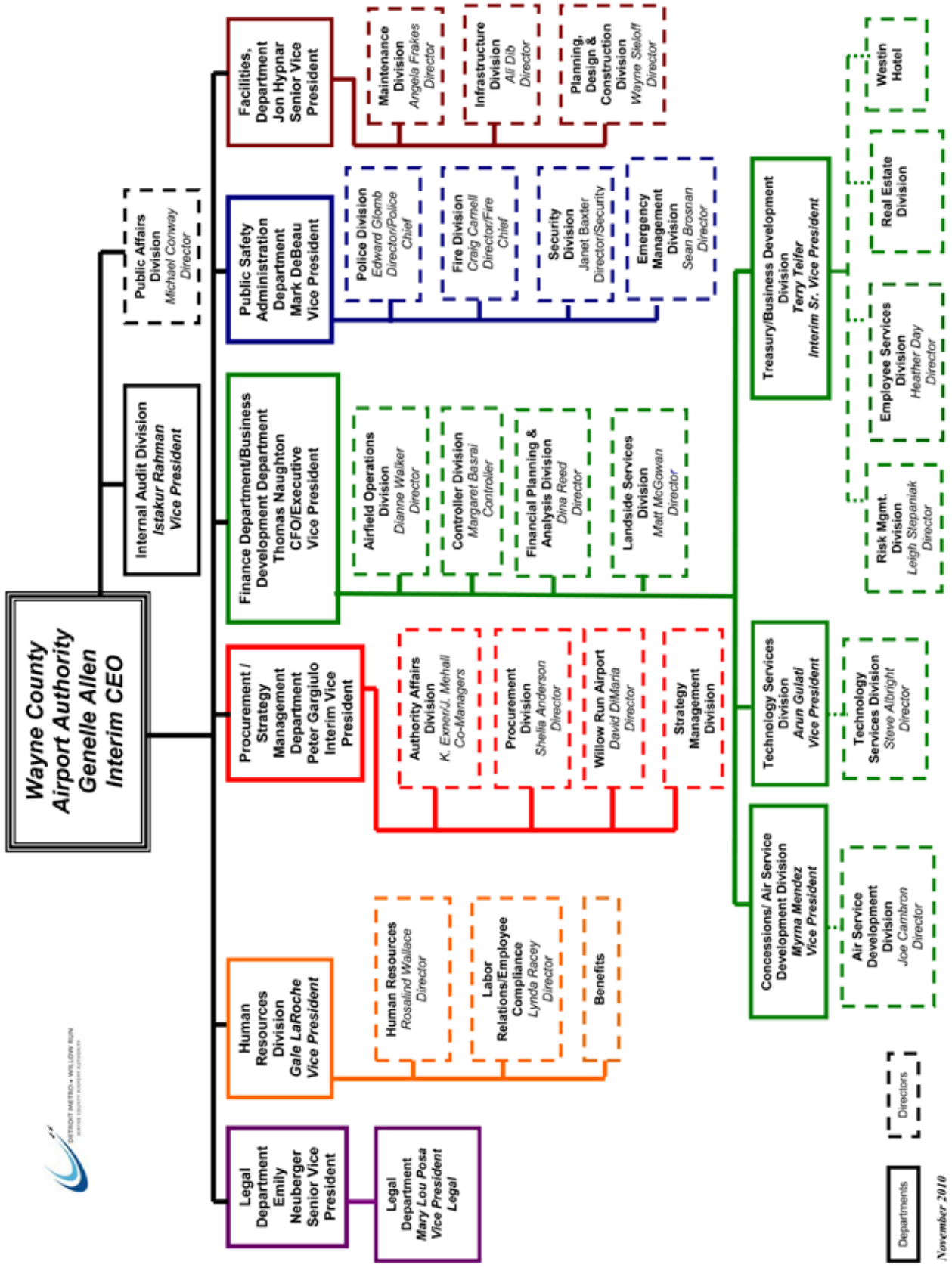
SIOUX GATEWAY AIRPORT/COL. BUD DAY FIELD
ORGANIZATION CHART



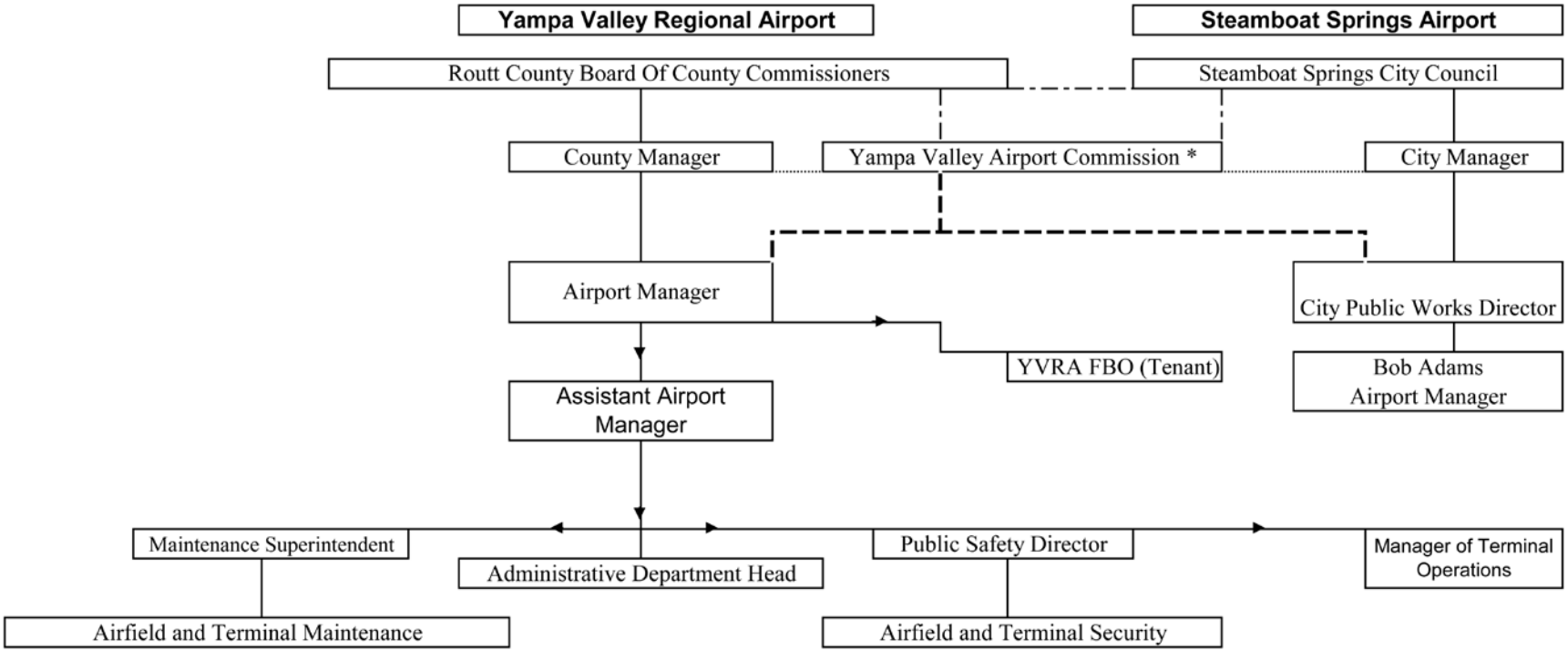








Organizational Structure and Management Flow Chart



* The Yampa Valley Airport Commission is appointed jointly by the Board of Routt County Commissioners and the Steamboat Springs City Council

Legend:

_____ Solid Lines are Direct Lines of Authority.

..... Dotted Lines indicate Lines of Communication and Facilitation.

_ _ _ _ _ Dashed Lines indicate connection through the Intergovernmental Agreement creating the YVAC.

▬▬▬▬ Bold Dashed Lines indicate connections for responsibilities over business planning and policy development by the YVAC.

Copy of organizational chart YVRA YVAC 05 03 05.xls

Abbreviations and acronyms used without definitions in TRB publications:

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	Air Transport Association
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
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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