

Development of a Guidebook for Managing Small Airports

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AUTHORS

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The work was completed under the general supervision of Mr. Grothaus.

ABSTRACT

Managers of small airports are responsible for a wide range of activities from facility maintenance, to financial management, to security, to community relations, to regulatory compliance. Although some management guidance is available, much of it is dated, narrowly focused, intended for larger airports, or presented as a textbook rather than a handbook for practitioners. The object of this project is to address this need for a Guidebook for Managing Small Airports that is targeted to practitioners. This report describes the development of that guidebook. The study included a literature review to determine available and relevant information sources and a survey of small airport managers to identify challenges and current practices in managing small airports. From this information, a prioritized list of recommended management principles for small airports was developed, as well as the outline and format of the guidebook.

EXECUTIVE SUMMARY

Introduction

Background

The managers of small airports have a wide range of responsibilities covering everything from operations and maintenance to regulatory compliance to stakeholder outreach all of which must often be accomplished within fiscal constraints.

Small airport managers are as diverse as the airports that they oversee. Some are professional airport managers, others are fixed-base operators (FBO) who provide management services, and others are elected officials or municipal employees whose portfolio of duties happens to include managing the local airport.

Aviation management is a relatively new academic discipline and training programs sponsored by industry associations tend to be geared towards the professional airport manager. Thus, many people who become airport managers or have responsibility for managing an airport as part of another position, have received little in the way of formal airport management training.

Although a large amount of information is available through both print and online resources, without prior knowledge and training it can be extremely time consuming to find answers to specific airport management questions.

In short, the job of managing a small airport is a challenging endeavor that is often undertaken by individuals who must overcome a lack of knowledge and formal training with energy and ingenuity.

This study was formulated by the Airport Cooperative Research Program (ACRP) to address the problem of a lack of training and readily available airport management information by developing a product that will help individuals throughout the United States to better manage the small airports for which they are responsible.

Objectives of Study

The primary objective of this study is to develop a comprehensive guidebook for managing small airports that addresses the topics of greatest importance to small airport managers and identifies the best sources of additional information about those topics.

The secondary objective of the study is to identify and describe low-cost and easily implementable practices that are in use at some airports but are transferable to others around the country.

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Scope of Study

The Guidebook is intended to be a resource for managers of small airports throughout the United States. To ensure that the Guidebook is as comprehensive as possible, the research team chose not to develop an explicit definition of a small airport. Thus, intended audience will find many, but not all, sections of the Guidebook to be relevant and useful.

The intent of the study is not to develop a single authoritative source on the management of small airports. The goal of the research team in producing the Guidebook is to address subjects and topics of near universal applicability at a high level and provide small airport managers with additional resources for more in depth information.

Findings

To better define the issues facing managers of small airports, determine the topics of greatest importance to small airports, and identify the best sources of information about those topics the research team completed an extensive literature review and conducted a survey of small airport managers.

Literature Review

A tremendous amount of literature on airport management and related topics is available in a variety of formats through multiple sources. However, sifting through the voluminous amounts of available information to answer a specific question can be a difficult task.

Many books about airport management or facets of airport management have been written over the years. Some of the published books are as relevant today as when first published but many books are quickly outdated in a field as dynamic as airport management.

Federal and state government agencies produce an enormous number of publications containing valuable information. Unfortunately, hard copies of these publications often carry a few. Although many of the publications are available online, finding specific publications or information on a specific topic on agency web sites can be difficult. A variety of trade publications are available to small airport managers but most of them require a subscription or membership fee and the contents are frequently geared towards larger airports.

Airport Manager Survey Results

The airport manager survey results are discussed in greater detail in the body of this report and the results are included in **Appendix C**. A few of the most interesting results from the survey are detailed below.

Of the airports responding to the survey, almost 90 percent were publicly owned and only 4 percent identified themselves as privately owned. Nearly 75 percent of respondents indicated that their airport had an airport manager and 13 percent of airports were managed by an FBO.

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Airports responding to the survey reported a variety of safety practices currently in use including: daily safety and self inspection programs, regular field condition reporting (NOTAMs), regular self-inspection of airfield systems and navigational aids, and employee safety programs.

The biggest safety concerns for the responding airports included wildlife hazards, theft, vandalism, accidental airfield incursions. Despite ubiquitous media coverage of the subject, terrorism was of very low concern to responding airports.

A very strong majority of airports reported that their airport master plans were produced by consulting firms and over three-quarters of responding airports indicated that they currently have zoning standards that meet local, state, and FAA Part 77 requirements.

More than half of responding airports have annual budgets less than \$500,000 and over 25 percent of airports have annual budgets less than \$250,000. The primary sources of revenue for the airports surveyed include: commercial land leases, fuel flowage, and t-hangar lease agreements.

The survey of airport managers included a number of questions in which the respondents were asked to describe practices currently in use at their airports that might be applicable at other airports across the country. As the research team expected, small airport managers across the country are employing many innovative practices. Highlights of the recommended practices submitted by airport managers include:

- An airport in Nevada acquired a chip sealer from the state DOT.
- To encourage new business development, one airport uses lease agreements in which the initial lease rate is low but the rate is indexed to the business's revenue growth.
- To improve the image of the airport within its community, the airport manager gives tours to school groups and started a summer aviation camp for students.
- To raise the profile of the airport, an airport manager provides county and city commission members with monthly updates, including "airport success stories" that describe how the airport helps local businesses and attracts tourists.
- To ensure that the airport is prepared to respond to emergency situations, one airport manager conducts annual tabletop exercises with all of the local emergency responders and a simulated emergency exercise every 3 years with the same emergency responders.

Conclusions

Based on the results of the literature review and the survey of airport managers, the research team reached a number of conclusions regarding the state of practice for managing small airports and the topics and information to be included in the guidebook.

Small airport managers often have questions related to specific topics but do not have the time necessary to search through for the information online or in general airport management publications. A useful tool for small airport managers would be a list of relevant publications,

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descriptions of each publication, and Internet links to those publications that are available on line (e.g., FAA Advisory Circulars).

The primary audience the Guidebook is airport managers at small, public use airports. Airport advisory board and commission members with oversight responsibility for airports represent a potential secondary audience.

Small airport managers possess years of practical experience which makes them the best source of information and innovative practices for other small airport managers.

Managers at small airports can realize immediate improvements in safety by utilizing and recording self-inspections, distributing appropriate safety information to contractors prior to construction projects, and conducting pre-construction meetings.

Financial management is another area of opportunity for improvement. The guidebook should encourage the development of better financial systems for small airport managers and provide sources of information to do so.

Marketing is an enormous area of potential improvement for small airports. Marketing plans should include certain basic elements regardless of the enterprise and need not be overly complicated to develop, particularly for small airports.

A small airport manager's primary responsibility is ensuring the safety of the airport for all its stakeholders. This requires adequate training of airport staff and personnel. Given the limited time and resources available for training, information about easily customizable training templates and classes would be of great benefit to small airport managers.

Recommendations

The Guidebook

The content of the *Guidebook for Managing Small Airports* represents the research team's recommendations. The research team recommends the management principles and techniques listed below for small airport managers as topics and subjects discussed in the Guidebook pertain to each of these principles and techniques.

Recommended Management Principles include the following:

- Public safety
- Fiscal responsibility
- Legal responsibility
- Environment stewardship
- Public Goodwill

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Recommended Management Techniques include the following:

- Quality management
- Team-based management
- Strategic planning
- Communication
- Coordination
- Consistency and standardization of operations

Use of the Guidebook The research team makes several recommendations regarding the use of the guidebook. The electronic format, either CD-ROM or downloaded from the Internet, will be the more useful to small airport managers than hard copies. Although comprehensive in nature, the Guidebook should not be considered the single authoritative source on the management of small airports. Finally, readers of the Guidebook need to remember that many of the topics that it addresses will evolve in the years ahead possibly making the information inaccurate.

Additional Recommendations

The research team encourages small airport managers to take advantage of the free advice and assistance that is available to them by contacting the appropriate federal and state government staff whose jobs are to help airports.

As previously noted, small airport managers are the best source of information about managing small airports. The research team exhorts managers of small airports to exchange information with each other often as possible.

Topics for Future Research

The research team believes that any of the subjects or topics included in the Guidebook is a candidate for future research and, in many cases the Airport Cooperative Research Program is establishing research projects related to these areas.

Based on the results of the survey conducted during the study and its own knowledge and experience, the research team strongly recommends the following six topics as areas of future research:

- Develop a guidebook for airport operations
- Create better tools to determine the local and regional economic impact of airports
- Conduct periodic surveys of airport rates and charges
- Develop guidebooks for different airport maintenance topics
- Conduct research about the unique human resources challenges associated with managing small airports, including differences in generational attitudes and succession planning
- Develop a guidebook of general marketing principles and techniques pertinent to small airports

Each of these research topics is discussed in greater detail in the body of this report.

CHAPTER 1 BACKGROUND

Problem Statement

According to the Federal Aviation Administration (FAA), there are over 20,000 landing facilities in the United States. Most of these facilities would be classified as small airports using practically any conceivable criteria, including number of operations, number of based aircraft, employees, revenues, and expenditures, just to name a few. Yet, every single airport in the country, regardless of its size, requires an individual or group of individuals to execute its management functions.

The managers of small airports are responsible for a wide range of activities and interact with a disparate group of stakeholders on a daily basis. Small airports are subject to many of the same federal, state, and local regulations and ordinances under which large airports operate. In addition, many, if not most, small airports operate under fiscal constraints that requires the maximization of scarce resources.

The people responsible for the maintenance and operation of small airports around the United States are as diverse as the airports themselves. Some are professional managers hired specifically to manage the airport while others oversee the airport as part of a contract to provide the services of a fixed-base operator (FBO). Some airport managers are elected officials, such as city clerks or county highway superintendents, whose portfolio of duties just happens to include managing the local airports. Some airport managers are municipal employees responsible for maintaining roads and water systems whose job description has been extended to include overseeing the airport.

The academic discipline of aviation management is relatively new. As a result, many people who become airport managers or have responsibility for managing an airport as part of another position, have received little or no formal training in aviation management. Unfortunately, the geographic and operational diversity of small airports in the United States coupled with the wide range of activities for which small airport managers are responsible, as well as fiscal and staffing constraints under which most small airports operate make it difficult for managers to spend time obtaining relevant training either through college-sponsored continuing education classes or certification programs offered by airport management associations.

Clearly, managing a small airport is a challenging endeavor often undertaken or left to people who must overcome a lack of formal training in the field with energy and creativity.

This study was formulated by the Airport Cooperative Research Program (ACRP) to address this problem by developing a product that will help individuals throughout the United States to better manage the small airports for which they are responsible thereby insuring the vitality of both the airport system and the aviation industry.

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Current Knowledge

A wealth of information about airport management exists. Numerous books, textbooks, and handbooks on the subject have been published. The federal government, primarily the Federal Aviation Administration but other agencies too, and state departments of transportation produce publications related to airport management. There are two national industry trade groups, as well as various regional and state trade associations that develop a variety of publications for airport managers.

For this particular project, the goal is not necessarily to address gaps in the current knowledge base but maximize the utility of the available information for small airport managers by providing a resource that can be used to determine where the best and most current information can be located in a timely manner.

Objectives

The objective of this study is to develop a guidebook for managing small airports. To accomplish this objective, it is necessary to identify the topics of greatest importance to small airport managers and provide both information about those topics and the best sources of additional information about those topics. In addition, the guidebook emphasizes low-cost and easily implementable practices that are in use at some airports but are transferable to others around the country.

Project Scope

As the title suggests, the Guidebook is intended to be a resource for managers of small airports. While the research team did not explicitly define what constituted a “small airport,” it did identify the target audience for the Guidebook. The managers of small airports are as diverse as the airports themselves. Although some small airport managers may be full-time municipal employees, most are city/county engineers, public works directors, city managers, contract employees, or other municipal employees who are tasked with managing the airport. These individuals constitute the primary audience for the Guidebook. New airport managers, airport commission or board members, and aviation management students will also benefit from the Guidebook. Full-time, professional airport managers are not the primary target audience but they may find the Guidebook useful as a reference and source of further information on certain topics.

Although the Guidebook is comprehensive in nature, it is not, nor is it intended to be, a single authoritative source on airport management. Due to the great diversity amongst small airports and differences in state regulations and guidance, as well as frequent updates to federal regulations and guidance, the Guidebook was developed as a resource for finding additional information about common issues and topics in airport management.

CHAPTER 2 RESEARCH APPROACH

Overview

Based on the Request for Proposal (RFP) issued by the Transportation Research Board (TRB) of the National Academies, the research team divided the project into ten tasks. Primary responsibility for completing each task was assigned to one or two members of the research. However, all members of the research team provided input and feedback on each task.

Task 1 Literature Review

The research team conducted a review of relevant literature about management principles and techniques for small airports. Using several publicly available databases, as well as online university library catalogs, a broad search for airport and aviation management books, textbooks, and other publications, was completed. The research team also reviewed federal and state government publications (e.g. FAA Advisory Circulars, state department of transportation handbooks, etc.) pertaining to airports and publications produced by industry associations (e.g., Association of American Airport Executives, Airports Council International – North America, etc.). This resulted in an extensive list of airport and aviation management publications from a variety of sources.

Based on feedback from the Project Panel, the research team culled the list of publications so that it included only those sources considered to be the most relevant and useful to small airport managers. Annotations for each of these sources, including the individual FAA Advisory Circulars, were written.

The final version of the annotated bibliography that is in the Guidebook is also included in **Appendix A** of this report.

Task 2 Glossary of Airport Terms

Since many managers of small airports lack formal training or education in aviation management and often have responsibility for managing the airport as part of a larger portfolio, the research team decided that a comprehensive glossary of airport terms, including a list of acronyms, would be extremely useful tool for the Guidebooks target audience.

The following online resources were consulted in developing the glossary of terms and list of acronyms:

- http://www.faa.gov/airports_airtraffic/airports/resources/acronyms/
- <http://www.biglogbook.com/abbreviations/index.php?char=zero>
- <http://www.gps.tc.faa.gov/glossary.html#sectD>
- <http://www.dot.state.mn.us/aero/avoffice/aviationaz.html>
- http://g.oswego.edu/dl/acs/glossary/section3_1.html
- <http://www.ukaccs.info/abbreviations.htm>

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- www.gaservingamerica.com/library_pdfs/AVIATI_2.PDF
- <http://www.airport-technology.com/glossary/>
- www.countyairports.org/docs/MasterPlan/E16/AppB.pdf
- http://www.faa.gov/airports_airtraffic/air_traffic/publications/ATpubs/AIM/Appendices/aimapd4.html

Based on feedback from the Project Panel (and the extensiveness of the glossary and acronym list), the research team developed a list of commonly used terms and acronyms that is included at the front of the Guidebook. A draft version of the Guidebook included “hotlinks” from the acronyms in the list of acronyms to the corresponding definitions in the glossary of terms. Although not available in the print version of the Guidebook, this feature would enhance the usability of the electronic version.

Task 3 Data Collection Plan

Survey Content

Due to the time and expense required to successfully conduct a survey by mail, the research team elected to use an online survey. The electronic survey format also facilitates data analysis and manipulation. The online survey was designed so that respondents could save information and return to the survey to complete it at a later time.

The survey was comprised of questions for small airport managers on the following subjects:

- Governance
- Safety
- Security
- Planning and Grant Procurement
- Airspace and Approaches
- Maintenance
- Leasing and Use Agreements
- Development and Construction Standards
- Finance and Revenue Generation
- Performance Measuring and Benchmarking
- Public Relations
- Environmental Considerations
- Training and Management Resources
- Regulatory Compliance
- Compliance with Grant Conditions
- Emergency Procedures

The survey also included broad questions about management challenges, specific topic on which information would be useful, innovative management practices, and preferred methods of accessing information.

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The survey was not anonymous. Respondents were asked to provide their name, airport, job title, contact information, and professional affiliations (e.g., AAAE, etc.), if any.

The survey included questions in a variety of formats including Yes/No, check all that apply, ranking, and free text. The research team determined the best format for each question based on the subject and the desired information to be gathering by the survey.

Survey Distribution

The research team developed an e-mail announcement that described the project, the survey, and how the information gathered through the survey would be used. A link to the Minnesota Airport Technical Assistance Program (AirTAP) website through which the survey could be accessed was included in the e-mail announcement.

With the assistance of the Project Panel, the research team developed an initial list of airports to which the survey was distributed. The survey results from this initial group of respondents were tabulated, summarized, and presented to the Project Panel during the conference call on June 15, 2007. Based on the initial survey results and feedback from the Project Panel, the research team revised the survey to reduce its length and focus more on specific topics and issues. The final version of the survey is included in **Appendix B**.

The research team worked with National Association of State Aviation Officials (NASAO) to coordinate with State Offices/Departments of Aeronautics to identify 5-10 airports, or more in some instances, in each state that would be good candidates to complete the survey and provide information useful to the development of the Guidebook. The research team also worked with state airport organizations to distribute the surveys their member airports. This approach to distributing the survey was expected to provide the highest yield or rate of return. In addition, respondents were offered a complimentary copy of the Guidebook as incentive to complete the survey. (Note: This incentive, which was recommended by the Project Panel, was the primary reason that the survey was not anonymous.)

The initial project plan included conducting focus groups with small airport managers as part of the data collection plan. The research team thought that focus groups might be necessary to gather additional information or to enhance the understanding of particular topic area. In the end, formal focus groups were not used do to the time and logistical challenges of convening them. Although conducting a focus group via conference call was considered, it was deemed to have too little value to be worthwhile.

Task 4 Interim Report

The research team prepared an interim report that compiled the results of Tasks 1, 2, 3, and 5, as well as the preliminary results of Tasks 6 and 7. The interim report was presented to the Project Panel during the interim meeting on September 25, 2007, in Washington, DC. The Project Panel approved the interim report which allowed the research team to continue working towards completion of the project based on an updated work plan.

Task 5 Data Collection

The initial deadline for completing the online survey was July 29, 2007. This deadline was extended several times to allow the research team and NASAO officials to encourage airport managers to complete the survey at various professional conferences. Almost 200 surveys were completed by the final deadline.

The research team hoped to receive survey responses from five airports from each state. This would yield both statistically significant and geographically diverse results. Although the results of the survey were informative and influenced the research team as it developed the draft guidebook, the goal of geographic diversity in the survey responses was not completely achieved and certain areas of the country (e.g., Texas) were over-represented in the results.

The main findings from the survey are discussed in Chapter 3 of this report. The summarized results of the survey are included in **Appendix C**.

Task 6 Recommended Management Principles

Based on the results of the literature review and data collection task, as well as its own knowledge and expertise, the research team developed a prioritized list of recommended management principles and techniques to be included in the Guidebook. The recommended principles formed the basis of the initial outline for the Guidebook by helping the research team to identify key topics and determine the order of topics in the Guidebook.

The final version of the recommended management principles developed by the research is included in Chapter 4.

Task 7 Guidebook Outline and Format

Based on the results of the literature review, data collection task, recommended management principles, and its own expertise in airport issues and manual production, the research team developed a draft outline of the Guidebook. This was presented to and approved by the Project Panel during the Interim Meeting on September 25, 2007, in Washington, DC.

As development of the Guidebook content proceeded, the research team adjusted the preliminary outline to improve the flow of the information in the Guidebook. The final outline of the Guidebook is included in **Appendix D**.

Initially, the research team intended to propose a format for the Guidebook that would maximize its utility for the managers of small airports. However, due to constraints related to the printing process, many of the original formatting ideas for the Guidebook were abandoned. The research team believes that tabs of some form, most likely black and on the page face, should be doable even with the printing restrictions and would greatly enhance the “user friendliness” of the Guidebook.

Task 8 Prepare Draft Guidebook

Preparation of the Draft Guidebook

Utilizing the information gathered during the successful completion of Tasks 1 through 7, as well as feedback from the Project Panel, the research team developed a draft version of the Guidebook. To expedite the writing process, chapters and portions of chapters were assigned to different members of the research team. Before compiling all of the chapters into a draft document, the research team members reviewed each other's work on an ongoing basis. This review process was facilitated by creating a web site through the University of Minnesota to which documents could be posted for review by the research team.

Industry Review Plan

The research team also prepared an industry review plan as part of Task 8. The goal of the industry review in task 9 was to solicit feedback on the Guidebook from a geographically and functionally diverse group of airport industry representatives.

Industry Review Panel The research team established an industry review panel comprised of 38 airport and aviation professionals. The review panel included 29 airport managers and directors representing 25 states, 5 state aviation officials, and 4 representatives from two industry associations. A complete list of the industry review panel membership is included in **Appendix G**.

In developing the roster of industry review panel members, the research team collaborated with those state aviation officials who assisted with creating the list of survey participants as part of the data collection plan in Task 3. The aviation officials reviewed the list to survey respondents from their states and recommended those that they believed would be competent and informed reviewers. In many cases, the state aviation officials noted that the potential reviewers possessed specific expertise and a desire to review the Guidebook. The review panel members represented a cross-section of airports by both geographic location and airport size.

The five state aviation officials included on the industry review panel were specifically recommended by the National Association of State Aviation Officials (NASAO) based on their knowledge of and interest in small airport operations and management. In addition, NASAO committed to reviewing the guidebook. At the suggestion of Mike Salamone, the industry review panel also included three members of the American Association of Airport Executives General Aviation Committee.

Industry Review Plan Each member of the industry review panel was asked to provide comments and feedback on the draft Guidebook. The review panel members were given the option of reviewing the Guidebook in its entirety or commenting on only those sections of the Guidebook in which they have expertise or a special interest.

The research team developed a review form that allowed the industry review panel to provide both general comments on the Guidebook and specific comments on chapters within the

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Guidebook. Providing a standard review form was intended to facilitate the reviewing process, identify important issues, and generate responses in a (somewhat) standardized format. The final version of the review form is included in **Appendix F**.

In addition to the providing comments on the review form, the industry review panel was invited to provide specific comments on the content of the Guidebook. There were three options for submitting specific comments:

1. Handwrite comments on pages of the Guidebook and fax those pages with comments to the research team.
2. Handwrite comments on the pages of the Guidebook, scan those pages with comments into a pdf format file, and send the pdf file to the research team via e-mail.
3. Make changes to the draft Guidebook using the “track changes” function in the Microsoft Word and send the revised document to the research team via e-mail.

Since the members of the industry review panel were meticulously selected and, in many cases, confirmed their willingness to participate in the review of the Guidebook, the research team expected a very high response rate.

The research team will catalog the comments from the industry review plan as they are received. The goal will be to determine common themes among the comments and identify conflicting comments that may require some type of follow-up for resolution. Once all of the comments have been received, the research team will prepare a report recommending changes to the Guidebook based on the industry review. The ACRP Project Panel will review and approve the proposed changes.

Task 9 Industry Review

Upon receiving approval of the draft Guidebook and industry review plan from the Project Panel, the research team distributed the electronic version of the draft Guidebook and the comment form to the industry review panel members.

Task 10 Prepare and Submit Draft Guidebook

After making revisions based on the industry review panel feedback, as well as additional feedback from the Project Panel, the research team submitted the final draft version of the *Guidebook for Managing Small Airports* to the Senior Program Officer for the project in September 2008.

CHAPTER 3 FINDINGS AND APPLICATIONS

Literature Review

There is a tremendous amount of literature on airport management or topics related to airport management available in a variety of formats through multiple sources. However, finding relevant information about a specific topic can be a difficult task as there are voluminous amounts of irrelevant information that must be navigated. The trend towards making information available via the Internet has actually proved to be a double-edged sword. Large amounts of information are now available in places as remote as northern Alaska with a few key strokes. However, Internet searches tend to produce a large number of options for information many of which are unrelated or tangential to the specific topic being researched.

A great number of books about airport management or facets of airport management have been written over the years. While some of the published books have a certain timeless quality; that is, they are as relevant today as when first published. Many books do not age well and in a field as dynamic as airport management are quickly obsolete without continuous revision.

Federal and state government entities, particularly the FAA and state aeronautics offices, produce an enormous amount of valuable information on a wide range of subjects. However, hard copies of their publications frequently carry a charge. Although many federal and state publications are available in electronic format via the Internet, it is not always easy to find information on a specific topic, such as general aviation airport security, and large documents can require an extended period of time for downloading without a high-speed internet connection.

There are a number of trade publications for airport managers but they require a subscription, not all of the information in them is available online without a subscription, and the contents are frequently geared towards larger airports.

Airport Manager Survey Results

The results of the survey of small airport managers yielded a wealth of information that the research team utilized in developing the Guidebook. The key findings from the survey are described below.

Ownership, Management, and Governance

Of the airports responding to the survey, almost 90 percent were owned by a county, municipality, or airport authority. Only 4 percent of responding airports identified themselves as privately owned. Given that almost one-third of the landing facilities in the United States are government owned, the results of the survey are strongly skewed towards publicly owned airports. This is most likely the result of a decision by the research team to work through the National Association of State Aviation Officials (NASAO), state aeronautics offices, and state airport management associations to distribute the survey.

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Almost 75 percent of respondents indicated that their airport had an airport manager. Thirteen percent of airports were managed by an FBO.

Sixty-seven percent of responding airports have an airport advisory board or commission that reports to a higher governmental authority.

Airport Safety and Security

Airports responding to the survey reported a variety of safety practices currently in use including: daily safety and self inspection programs, regular field condition reporting (NOTAMs), regular self-inspection of airfield systems and navigational aids, and employee safety programs.

The most sought after safety and security measures were card reader systems and closed circuit television surveillance systems.

The biggest safety concerns for the responding airports included wildlife hazards, theft, vandalism, accidental airfield incursions. Despite all the media coverage on the subject, terrorism was of very low concern to responding airports.

Only 40 percent of airports utilize and issue airfield safety/security procedures manuals to contractors for airport construction projects and 39 percent always involved tenants and emergency service providers at pre-construction meetings.

Airport Zoning and Land Use Planning

A very strong majority of airports reported that their airport master plans were produced by consulting firms.

Over three-quarters of responding airports indicated that they currently have zoning standards that meet local, state, and FAA Part 77 requirements.

Almost three-quarters of airports coordinate their zoning efforts with local zoning ordinances and regulations and two-thirds reported that airport zones are described in local community land use planning documents to prevent non-compatible land use.

Airport Budget, Revenue, and Marketing

More than half of responding airports have annual budgets less than \$500,000 and over 25 percent of airports have annual budgets less than \$250,000.

The primary sources of revenue for the airports surveyed include: commercial land leases, fuel flowage, and t-hangar lease agreements.

The airports responding to the survey use a variety of marketing techniques, including: web sites, airport events (e.g., fly-ins, etc.), and airport tours. However, only 35 percent of airports

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utilize a marketing plan and less than half of the airports are satisfied with the airport's image within the community.

Airport Training

The preferred sources of airport training and management resources are the FAA and state aeronautics offices.

A large majority of airports utilize on-the-job training as initial training for new airport employees.

Recommended Practices

The survey of airport managers included a number of questions in which the respondents were asked to describe practices currently in use at their airports that might be applicable at other airports across the country.

Highlights of the recommended practices submitted by airport managers include:

- An airport that requires a large amount of mowing uses a bat-wing type mower that saves both time and money.
- Another airport with a large amount of land to be mowed allows a local farmer to mow the airport property and remove the hay.
- An airport in Nevada acquired a chip sealer from the state DOT.
- To encourage new business development, one airport uses lease agreements in which the initial lease rate is low but the rate is indexed to the business's revenue growth.
- To generate revenue, one airport harvests an orange grove and a pine timber farm that are on the airport premises.
- An airport in Massachusetts rents billboards on airport property adjacent to the highway to augment airport revenues.
- To improve the image of the airport within its community, the airport manager gives tours to school groups and started a summer aviation camp for students.
- To raise the profile of the airport, an airport manager provides county and city commission members with monthly updates, including "airport success stories" that describe how the airport helps local businesses and attracts tourists.
- To ensure that the airport is prepared to respond to emergency situations, one airport manager conducts annual tabletop exercises with all of the local emergency responders and a simulated emergency exercise every 3 years with the same emergency responders.

Some additional innovative practices recommended by the survey respondents include:

- Utilizing college students in aviation management programs through either internships or cooperative programs.
- Meeting with local civic organizations to share the airport manager's vision for the airport and build support within the community for that vision.

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Coordinate budget and acquisition activities with local government departments to maximize the opportunities to acquire used equipment from the community.

Industry Review Panel Feedback

The research team received comments from 10 out of 38 industry review panel members. The response rate of 26 percent is below the research team's expectation given that the industry review panel members were specifically identified by state aviation officials and contacted in advance of receiving the draft guidebook. The research team also followed up with members of the industry review panel during the comment period.

There are several possible reasons for the lower than expected response rate. First and foremost, airport managers, especially those at smaller airports, tend to have multiple roles and are extremely busy. Although the research team stressed in the cover memorandum that it was perfectly acceptable to review only parts of the draft guidebook rather than the entire document, the sheer size of the guidebook may have deterred some of the review panel members from providing any comments. Also, it is possible that more members than those who submitted comments did review the draft guidebook but did not see a need for substantial changes to the document.

However, the research team is very pleased with the quality of the comments that were received. Although all of the suggested changes will not be made for a variety of reasons, from the suggestions it was evident that those providing comments had thoroughly read the guidebook and put significant time and thought into their remarks.

In general, the comments received from the industry review panel members were positive. All of the reviewers indicated that the guidebook will be of value to its intended audience. A number of the reviewers noted that although the guidebook seemed too long at first the length was necessary to adequately cover all of the topics. The comments and/or recommended changes fall into three broad categories:

1. Content – Comments that requested additional information or removal of information.
2. Clarification – Comments that identified portions of the text that were unclear to the reader.
3. Technical – Comments pertaining to document format, web links, spelling, etc. (Note: The guidebook will be edited a second time for spelling, grammar, etc., as well as hotlinks within the text, web links, etc.)

The research team reviewed all of the comments received from the industry review panel. Those comments by industry review panel members suggesting substantial or material changes, additions, or deletions to the Guidebook were recorded in a table and adjudicated by the research team. The comments that the research team found to be either non-material or technical in nature are not included in the adjudication table. The adjudication of the industry review panel comments is included in **Appendix H**.

CHAPTER 4 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the results of the literature review and the survey of airport managers, the research team reached a number of conclusions regarding the state of practice for managing small airports and the topics and information to be included in the guidebook. The research team's primary conclusions are discussed below.

There is an enormous amount of information pertinent to managing small airport available through a variety of sources. However, small airport managers often have questions related to specific topics and do not have the time necessary to wade through voluminous amounts of information online or read through non-pertinent material in general airport management publications. What would be most useful to small airport managers is a list of relevant publications, descriptions of each publication, Internet links to those publications that are available on line (e.g., FAA Advisory Circulars), and sources of additional information on specific topics, such as land use planning.

Although the guidebook will be useful to a broad spectrum of readers, the primary audience is likely to be airport managers for public use airports. The main secondary audience is likely to consist of airport advisory board and commission members with oversight responsibility for airports.

Most airport managers possess years of experience and with this experience comes a wealth of practical knowledge. In many respects, airport managers are the best source of information and innovative practices for other airport managers, particularly for airports that are located in the same general geographic area and have similar operational characteristics. However, the managers of small airports can learn a great deal from larger airport managers who may face certain problems, issues, or situations more frequently and, thus, gain knowledge more quickly regarding what techniques do and do not work.

Terrorism is not a concern for small airports. The managers for small airports are much more concerned with locally-oriented safety and security issues, such as wildlife, theft, vandalism, and airport incursions.

There is room for improvement at small airports with respect to utilizing and recording self-inspections, distributing appropriate safety information to contractors prior to construction projects, and involving all relevant airport stakeholders in pre-construction meetings.

In general, small airports are doing an excellent job of coordinating airport zoning rules with local land use and zoning planning. However, the survey respondents may not be representative of the small airport manager population as a whole in this regard. Also, since zoning ordinances can change frequently, as well as zoning board membership and airport managers, this is an important topic that requires adequate discussion in the guidebook. In addition, the guidebook should reference the forthcoming land use planning guidebook being developed under a separate ACRP project.

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A majority of small airports operate on miniscule budgets. This situation necessitates maximizing every dollar allocated to the airport. Although small airport managers are subject to various state, county, and municipal requirements when it comes to budgeting and tracking airport expenses, financial management is another area of opportunity for improvement. In addition, to discussing general financial management topics for small airports, the guidebook should encourage the development of better financial systems for small airports and provide sources of information to do so.

Marketing is an enormous area of improvement for small airports. Marketing plans should include certain basic elements regardless of the enterprise and need not be overly complicated to develop, particularly for small airports. In the Internet age, one of the most important marketing tools for an airport is a web site. Although many airports indicated having a web site, there is a difference between a web site and a useful and user friendly website. Improved marketing is necessary to both airports' economic viability and standing within the community.

Perhaps the most important role a small airport manager possesses is to ensure the safety of the airport for all its stakeholders. There are many facets to the airport safety equation but one of the most important is adequate training of airport staff and personnel. Since small airport managers may not have the time to develop their own unique training programs and often use staff from other county or municipal departments to complete airport maintenance tasks, information about easily customizable training templates and classes would be of great benefit to small airport managers.

Recommendations

The final version of the *Guidebook for Managing Small Airports* represents the research team's recommendations based on the literature review, data collection and analysis, and feedback from the Project Panel and the Industry Review participants. The Guidebook contains the research team's recommended topics with which airport managers should be familiar and sources of additional information about each topic,

Recommended Management Principles and Techniques

The administration of public use airports involves many of the classic management principles applicable to most organizations. Drawing on information from the survey of airport managers, the literature review, and its expertise, the research team identified five management principles and six management techniques that became the basis for the content of the Guidebook. Each of the topics and subjects addressed in the Guidebook pertain to one or more of these management principles and techniques.

The research team recommends the following management principles:

- **Public Safety:** Programs and policies must be implemented to ensure the safety of both the aviation public and the non-flying public.

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- **Fiscal Responsibility:** Fiscal responsibility is a critical component of airport administration involving the budgeting and expenditure of public and private funds.
- **Legal Responsibility:** Airport owners are responsible for complying with local laws and ordinances, as well as applicable state and federal regulations.
- **Environmental Stewardship:** An airport must be a good community “neighbor” regarding environmental issues such as storm water pollution, noise, and land use.
- **Public Goodwill:** Public relations are vital to the success of any small airport. Airport managers must implement a wide variety of marketing and community outreach strategies to maintain a positive perception of the airport and build strong community relations.

The research team recommends the following the management techniques:

- **Quality Management:** Airport managers must focus the efforts of employees to strive for improvements in meeting the needs of the public and airport customers. Airport staff must be provided training, tools, and resources to maintain high-quality facilities and services.
- **Team-Based Management:** Small airport owners must maximize resources available to airport managers through industry organizations, state and federal units of government, consultants, and other airport-related networks.
- **Strategic Planning:** An essential function of the airport manager is developing and assessing the organizational vision, mission, goals, objectives, and direction of the airport.
- **Communication:** Airport managers must communicate with governmental entities, customers, tenants, commissions, boards, and the general public.
- **Coordination:** Coordination between federal, state, and local units of government, and airport owners and tenants is integral to the success of the airport.
- **Consistency and Standardization of Operations:** Airport managers must strive for consistent application and enforcement of airport rules, standards, and polices.

Use of the Guidebook

The guidebook should not be viewed as the single authoritative source on the management of small airports but rather as a reference tool. The Guidebook provides an overview of the many tasks for which the manager of a small airport is responsible and directs the reader to sources of additional and more detailed information about particular topics or subjects.

The aviation industry, and the role of airports in the industry, is not static. The FAA’s implementation of the Next Generation Air Transportation System will increase and accelerate changes in the aviation industry. Many aspects of managing a small airport from navigation aids, to security procedures, to land use regulations will change in the coming years. Therefore, the Guidebook needs to be a living document that is periodically reviewed and updated to reflect changes in the knowledge and information required to manage small airports. The research team recommends that this be done at least bi-annually and, if possible, on an annual basis.

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Additional Recommendations

The process of developing the Guidebook, particularly the survey of airport managers and the industry review, reinforced something the research team has long known: Managers of small airports possess a wealth of knowledge and expertise often gleaned from years of experience. Thus, perhaps the best source of information for the manager of a small airport is another manager of a small airport. The research team strongly encourages small airport managers to exchange information with one another as often as possible. The research team further recommends that airport managers encourage their staff members and other public employees who assist in the maintenance and operation of the airport to share information with counterparts at other airports as often as possible.

Small airports are subject to myriad federal, state, and local laws, regulations, and ordinances. In When ever a question arises regarding federal or state regulations, an airport manager should first contact the appropriate government officials who are responsible for airports. The FAA and state aeronautics offices employ numerous staff members whose jobs are to assist airports in complying with the pertinent laws and regulations. The research team recommends that airport managers avail themselves of the knowledge and expertise of these dedicated public servants.

Recommended Topics for Future Research Projects

Any of the subjects for topics included in the guidebook are candidates for future research. In many cases, the Airport Cooperative Research Program has already established or is in the process of establishing research projects related to these topics. Based on the results of the survey conducted during the study and its own knowledge and experience, the research team has several specific suggestions for future research projects.

As noted in this report and the Guidebook itself, at many small airports in the United States the maintenance and operations functions are executed by municipal or county stay members who have other job responsibilities and are not employed by the airport. For example, a municipal employee responsible for the removal of snow from city streets may also be responsible for removing snow from the airport's runways and taxiways. While these tasks appear very similar on the surface, there are nuances to them that must be known or disastrous results will ensue. In addition, the survey of airport managers revealed that training was an issue for most small airports. Therefore, the research team proposes a project to develop a Guidebook for Small Airport Operations. This guidebook would provide much more detail about specific tasks common to many small airports, such as pavement maintenance, airport lighting installation, NAVAID maintenance, and snow removal

Research is necessary to create better tools to help airport managers determine the economic impact of their airports on both the community and regional levels. The few economic impact calculators that the research team examined as part of the study were out-of-date having been developed at least 5 years ago and regionally focused (e.g., for Nebraska airports or Minnesota airports). The ability to determine the economic impact of an airport on a municipal, county, and regional level would help airport managers justify the expenditure of scarce public funds to maintain and grow their airports. The research team acknowledges that *ACRP Synthesis 7*:

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Airport Economic Impact Methods and Models, published in 2008, addresses this research area but believes that given the importance of the topic additional research is warranted.

Many airport managers indicated that they would like more information about rates and charges. Studies of rates and charges can be time consuming and labor intensive projects that small airport managers are not able to undertake. State airport organizations sometimes produce studies of rates and charges for the state but these tend to be relatively infrequent. The research team recommends that ACRP, perhaps in cooperation with the FAA, the National Association of State Aviation Officials (NASAO), and national airport organizations, should undertake national rates and charges surveys on an annual basis or regional rates and charges surveys that are conducted bi-annually or tri-annually. This will ensure that any airport manager could have access to reasonably recent rates and charges data.

Although the ACRP has research field for maintenance, woefully little research has been conducted on airport maintenance techniques and best practices. This is an area of research that could pay large and immediate dividends for small airports as a number of managers indicated it is difficult to keep up with preventive maintenance tasks in a constrained budget environment. This type of research would be particularly beneficial to the smallest airports where maintenance functions are often performed by individuals not directly associated with the airport, such as personnel from municipal public works departments or county highway departments, who may not be familiar with the intricacies of navigation aids, airport lighting, and pavement maintenance for runways and taxiways.

The research team recommends performing more research in the area of human resources. This is a topic that is often overlooked or under emphasized in aviation management and general business academic programs. Yet, managing personnel, whether employed directly by the airport or other entities, may be an airport manager's most important responsibility and small airports present a number of human resource management challenges. In addition, like other modes of transportation, the aviation industry will experience profound change with the retirement of the Baby Boom generation. Managing this demographic shift in the population is an increasingly important task and research is necessary to determine its specific impacts on and responses for small airports.

The marketing of small airports is an area ripe for additional research. Although ACRP has undertaken a number of marketing-related projects they tend to be focused on narrow topics such as marketing airline service. Research is necessary to determine the best general marketing practices for small airports from both a qualitative and quantitative standpoint. Another potential research topic related to marketing is the development of a marketing template or toolkit specifically targeted to small airports. This would encourage a large number of small airports to integrate attracting itinerant aircraft, increasing the number of based aircraft, and improving the image of the airport in the community into a single marketing plan which would help to better focus the time and financial resources of small airport managers.

APPENDIX A: ANNOTATED BIBLIOGRAPHY**Airport Cooperative Research Program Publications**

Ludwig, D.A., C.R. Andrews, N.R. Jester-Ten Veen, and C. Laqui. *ACRP Report 1: Safety Management Systems for Airports, Volume 1: Overview*. TRB, Washington, D.C., 2007.

This report explains what a safety management system (SMS) is and how a systems approach to safety management will benefit both the safety and business aspects of airports. The implementation of SMS represents a change in the safety culture of an organization. In this regard, airport directors and members of their governing boards will find this document particularly useful, since the successful implementation of SMS is dependent on the commitment of the highest levels of management.

Muia, M. *ACRP Synthesis of Airport Practice 4: Counting Aircraft Operations at Non-Towered Airports*. TRB, Washington, D.C., 2007.

This synthesis project identifies and evaluates the different methods used by states, airports, and metropolitan planning agencies (MPSs) of counting and estimating aircraft operations at non-towered airports with the goal of identifying best practices. Also identified are new technologies that can be used for these counts and estimates. Information used in this study was acquired through a literature review; a survey distributed to all 50 state aviation agencies and selected airports and MPOs; contacts with manufacturers of counting equipment and aviation trade organizations; and follow-up telephone interviews and e-mail correspondence, where appropriate.

Nichol, C. *ACRP Synthesis of Airport Practice 1: Innovative Finance and Alternative Sources of Revenue for Airports*. TRB, Washington, D.C., 2007.

This synthesis study is intended to inform airport operators, stakeholders, and policymakers about alternative financing options and revenue sources currently available or that could be available in the future in the United States. The report provides a brief overview of common capital funding sources used by airport operators, a review of capital financing mechanisms used by airports, descriptions of various revenue sources developed by airport operators, and a review of privatization options available to U.S. airport operators. Information used in this study was acquired through a review of the literature and interviews with airport operators and industry experts.

Spitz, W., and R. Golaszewski. *ACRP Synthesis of Airport Practice 2: Airport Aviation Activity Forecasting*. TRB, Washington, D.C., 2007.

This synthesis reviews current practices and methods in airport activity forecasting in the United States. The study addresses how airport forecasts are used and identifies common aviation metrics, aviation data sources, issues in data collection and preparation, and special data issues at nontowered airports.

Williams, C. *ACRP Synthesis of Airport Practice 3: General Aviation Safety and Security Practices*. TRB, Washington, D.C., 2007.

This synthesis study identifies current practices in safety and security at general aviation airports. It reviews resources used by the general aviation community in the development of safety and security programs, funding sources, and issues that determine the amount of money spent on such programs and describes current practices that general aviation airports use to keep their facilities safe and secure.

Books

Albers, S. *Strategic Management in the Aviation Industry*. Ashgate Publishing, Ltd., Burlington, Vt., 2004.

This book looks at the strategic challenges facing the aviation industry, in various sectors of aviation management, including but not restricted to passenger planes. It combines views from economic, business, and academic professionals to examine “conceptual predispositions with regard to the industry, the economic and institutional environment, as well as the underlying strategy” of strategic issues relevant to aviation management.

de Neufville, R., and A. Odoni. *Airport Systems: Planning, Design, and Management*, 1st ed. McGraw-Hill Professional, 2003.

This book reviews the operations of large and medium-sized commercial airports. The book is principally targeted toward urban and regional planners and concerns the development impacts of airport expansion on environmental health and fiscal implications. The text covers all aspects of airport planning, design, and management and is intended for planning practitioners and academic use.

Eckrose, R. A., and W. H. Green. *How to Assure the Future of Your Airport: Principles of Airport Management and Administration*, 3rd ed. Applied Research Associates, Inc., Madison, Wis., 2002.

This book discusses 21 topics related to administering a local general aviation airport that is neither large enough nor profitable enough to have a professional staff. The third edition includes chapters on security and land use.

Gesell, L. E. *The Administration of Public Airports*, 4th ed. Coast Aire Publications, Chandler, Ariz., 1999.

The “blue book” is intended to prepare students for careers in aviation management and serve as a reference for professional airport managers. The fourth edition contains significant revisions that reflect the changing nature of managing airports in the public sector over the past 20 years.

Gesell, L. E. *Aviation and the Law*, 4th ed. Coast Aire Publications, Chandler, Ariz., 2005.

This book provides a basic understanding of law and legal systems and of how the principles of law may be applied to the many aspects of air commerce and air transportation. The fourth edition includes updates on the federal aviation security provisions since September 2001, as well as important court cases decided since the previous edition.

Green, W. H. *Beginner’s Guide to Airport Administration*. Hilldale Press, Inc., Madison, Wis., 2002.

Based on the book *How to Assure the Future of Your Airport*, this pocket-sized book provides individuals new to airport management a brief overview of 20 airport administration topics.

Hoerter, S. *The Airport Management Primer*, 2nd ed. S. Hoerter, Mount Pleasant, S.C., 2001.

This book focuses on foundational information needed by decision-makers and emphasizes strategic concepts rather than day-to-day tactics.

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Horonjeff, R., and F. X. McKelvey. *Planning and Design of Airports*, 4th ed. McGraw-Hill Professional, New York, 1994.

A guide to the planning, engineering, and design of airports. Includes geometric design information for airfields as well as statistical and legislative data relating to the development of airports.

Rodwell, J. F. *Essentials of Aviation Management: A Guide for Aviation Service Businesses*.

Kendall/Hunt Publishing Company, Dubuque, Iowa, 2003.

This text introduces small business theory and practices for basic managerial training and fixed-base operations for the U.S. aviation industry service centers. The book reviews business planning, marketing, financial strategies, and human resources, among other topics. The book also details flight lines, flight operations, and aviation maintenance activities along with the regulatory reviews associated with the industry.

Shahin, M. Y. *Pavement Management for Airports, Roads, and Parking Lots*. Springer, New York, 2006.

This book reviews cost-effective methods for evaluating pavements in addition to describing repair and maintenance techniques. While the book examines the budgetary aspects and practices of pavement management, the text also discusses measuring friction and physical conditions of pavements under stress.

Sheehan, J. *Business and Corporate Aviation Management: On Demand Air Travel*. McGraw-Hill Companies, New York, 2003.

This text reviews methods for establishing and operating an aviation operation, particularly targeted toward business and corporate clientele. The book reviews how companies use aircraft for business, what types of aircraft are most appropriate for certain types of business activities, regulations, scheduling, maintenance, and other necessary operations.

Singer, J. *Small Airport Management Handbook*. Carl Vinson Institute of Government, University of Georgia, Athens, Ga., 1985.

This book provides an overview of small airport operations and services. The text examines the issues confronted by small airports from an economic perspective.

Wells, A., and S. Young. *Airport Planning and Management*, 5th ed. McGraw-Hill Companies, New York, 2004.

This book offers strategic guidance on airport design, access issues, financing, laws and regulations, technology, and other concerns essential to the development and management of airports. The text reviews changes to the airline industry in the post-9/11 era, focusing on how airports have adapted to the new regulations imposed.

Wiley, J. R. *Airport Administration and Management*. Eno Foundation for Transportation, Inc., Westport, Conn., 1986.

This report provides real-world perspectives on airport operations, explores the expanded role of today's airport manager resulting from changing conditions and expectations, and presents problem-solving skills to meet present and future service needs.

Federal Aviation Administration Publications

Advisory Circulars

FAA advisory circulars can be found online at

www.faa.gov/airports_airtraffic/airports/resources/advisory-circulars.

Accounting Records Guide for Airport Aid Program Sponsors, AC 150/5100-10A. Federal Aviation Administration, Washington, D.C., April 13, 1976.

Sets forth recordkeeping requirements imposed on sponsors of Airport Development Aid Program (ADAP) and Planning Grant Program (PGP) projects funded by the Airport and Airway Development Act of 1970, as amended. In addition, federal regulations require a sponsor to establish and maintain a financial management system that meets the standards set forth in Part 152, Appendix K. This circular provides detailed explanations of these requirements.

Aircraft Fuel Storage, Handling, and Dispensing on Airports, AC 150/5230-4A. Federal Aviation Administration, Washington, D.C., June 18, 2004.

Identifies standards and procedures for storage, handling, and dispensing of aviation fuel on airports.

Airport Design, AC 150/5300-13 (and Change 11). Federal Aviation Administration, Washington, D.C., March 28, 2007.

Contains the FAA's standards and recommendations for airport design.

Airport Emergency Plan, AC 150/5200-31A. Federal Aviation Administration, Washington, D.C., September 30, 1999.

Provides guidance for the preparation and implementation of emergency plans at civil airports.

Airport Master Plans, AC 150/5070-6B. Federal Aviation Administration, Washington, D.C., July 29, 2005.

Provides guidance for the preparation of airport master plans that range in size and function from small general aviation to large commercial service facilities.

Airport Pavement Management Program, AC 150/5380-7A. Federal Aviation Administration, Washington, D.C., September 1, 2006.

Discusses the Airport Pavement Management System (APMS) concept, its essential components, and how it can be used to make cost-effective decisions about pavement maintenance and rehabilitation.

Airport Safety Self-Inspection, AC 150/5200-18C. Federal Aviation Administration, Washington, D.C., April 23, 2004.

Provides information to airport operators about airport self-inspection programs and identifies what should be included in such programs.

Airport Snow and Ice Removal Equipment, AC 150/5220-20. Federal Aviation Administration, Washington, D.C., March 31, 1994.

Provides guidance to airport operators on the procurement of snow and ice control equipment for airport use.

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Airport Winter Safety and Operations, AC 150/5200-30A. Federal Aviation Administration, Washington, D.C., October 1, 1991, amended February 3, 2005.

Provides guidance to help airport owners/operators develop an acceptable airport snow and ice control program and implement appropriate field condition reporting procedures.

Architectural, Engineering, and Planning Consultant Services for Airport Grant Projects, AC 150/5100-14D. Federal Aviation Administration, Washington, D.C., September 30, 2005.

Provides guidance for airport sponsors in the selection and employment of architectural, engineering, and planning consultants under FAA airport grant programs.

Citizen Participation in Airport Planning, AC 150/5050-4. Federal Aviation Administration, Washington, D.C., September 26, 1975.

Provides guidance for citizen involvement in airport planning. Although not mandatory for airport grant programs, it explains the need for early citizen participation.

Civil Rights Requirements for the Airport Improvement Program, AC 150/5100-15A. Federal Aviation Administration, Washington, D.C., March 31, 1989.

Encompasses the basic civil rights requirements for the Airport Improvement Program (AIP). The AC is intended for sponsors using program assistance and for contractors and subcontractors working on projects under the program.

Debris Hazards at Civil Airports, AC 150/5380-5B. Federal Aviation Administration, Washington, D.C., July 5, 1996.

Discusses problems of debris at airports, gives information on foreign objects, and tells how to eliminate such objects from operational areas. It also addresses the acquisition of power sweepers for foreign object damage/debris (FOD) control at airports.

Exclusive Rights at Federally Obligated Airports, AC 150/5190-6. Federal Aviation Administration, Washington, D.C., January 4, 2007.

Provides basic information about the FAA's prohibition on the granting of exclusive rights at federally obligated airports. This prohibition is one of the obligations assumed by the airport sponsors of public airports that have accepted federal assistance in the form of grants or property conveyances. This AC cancels AC 150/5190-5 (Change 1), *Exclusive Rights and Minimum Standards for Commercial Aeronautical Activities*, dated June 10, 2002.

Fire Department Responsibility in Protecting Evidence at the Scene of an Aircraft Accident, AC 150/5200-12B. Federal Aviation Administration, Washington, D.C., September 3, 1999.

Furnishes general guidance for an airport, employees, airport management, and other personnel responsible for firefighting and rescue operations at the scene of an aircraft accident.

Ground Vehicle Operations on Airports, AC 150/5210-20. Federal Aviation Administration, Washington, D.C., June 21, 2002.

Contains guidance to airport operators on developing ground vehicle operation training programs.

Guide for Airport Financial Reports Filed by Airport Sponsors, AC 150/5100-19C. Federal Aviation Administration, Washington, D.C., January 15, 2003, amended April 19, 2004.

Provides airport sponsors with guidance for complying with the airport financial reporting requirements.

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Guidelines and Procedures for Maintenance of Airport Pavements, AC 150/5380-6A. Federal Aviation Administration, Washington, D.C., July 14, 2003.

Provides guidelines and procedures for maintenance of rigid and flexible airport pavements.

Hazardous Wildlife Attractants on or Near Airports, AC 150/5200-33A. Federal Aviation Administration, Washington, D.C., July 27, 2004.

Provides guidance on locating certain land uses that have the potential to attract hazardous wildlife to or in the vicinity of public-use airports.

Labor Requirements for the Airport Improvement Program (AIP), AC 150/5100-6D. Federal Aviation Administration, Washington, D.C., October 15, 1986.

Encompasses the basic labor and associated requirements for the airport grant program. It is intended for sponsors using program assistance and for contractors and subcontractors working on projects under the program.

Land Acquisition and Relocation Assistance for Airport Improvement Program Assisted Projects, AC 150/5100-17. Federal Aviation Administration, Washington, D.C., November 7, 2005.

Provides guidance to sponsors of airport projects developed under the Airport Improvement Program (AIP) to meet the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (PL 91-646, as amended) and the Regulations of the Office of the Secretary of Transportation, 49 CFR Part 24.

Maintenance of Airport Visual Aid Facilities, AC 150/5340-26A. Federal Aviation Administration, Washington, D.C., April 4, 2005.

Provides recommended guidelines for maintenance of airport visual aid facilities.

Minimum Standards for Commercial Aeronautical Activities, AC 150/5190-7. Federal Aviation Administration, Washington, D.C., August 28, 2006.

Provides basic information about the FAA's recommendations on commercial minimum standards and related policies. Although minimum standards are optional, the FAA highly recommends their use and implementation as a means to minimize the potential for violations of federal obligations at federally obligated airports. This AC cancels AC 150/5190-5 (Change 1), *Exclusive Rights and Minimum Standards for Commercial Aeronautical Activities*, dated June 10, 2002.

A Model Zoning Ordinance to Limit Height of Objects Around Airports, AC 150/5190-4A. Federal Aviation Administration, Washington, D.C., December 14, 1987.

Provides a model zoning ordinance to be used as a guide to control the height of objects around airports.

Noise Control and Compatibility Planning for Airports, AC 150/5020-1. Federal Aviation Administration, Washington, D.C., August 5, 1983.

Provides general guidance for noise control and compatibility planning for airports as well as specific guidance for preparation of airport noise exposure maps and airport noise compatibility programs by airport operators for submission under Title 14, Code of Federal Regulations, Part 150, and the Aviation Safety and Noise Abatement Act of 1979. Contains an expanded Table of Land Uses Normally Compatible with Various Levels of Noise.

Notices to Airmen (NOTAMS) for Airport Operators, AC 150/5200-28C. Federal Aviation Administration, Washington, D.C., July 24, 2006.

Provides guidance on using the NOTAM system for airport condition reporting.

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Operational Safety on Airports During Construction, AC 150/5370-2E. Federal Aviation Administration, Washington, D.C., January 17, 2003.

Provides guidance on operational safety on airports: with special emphasis on safety during periods of construction activity: to assist airport operators in complying with Part 139, Certification of Airports.

Painting, Marking, and Lighting of Vehicles Used on an Airport, AC 150/5210-5B. Federal Aviation Administration, Washington, D.C., July 11, 1986.

Provides guidance, specifications, and standards in the interest of airport personnel safety and operational efficiency for painting, marking, and lighting of vehicles operating in the airport air operations areas.

Proposed Construction or Alteration of Objects that May Affect the Navigable Airspace, AC 70/7460-2K. Federal Aviation Administration, Washington, D.C., March 1, 2000.

Provides information to persons proposing to erect or alter an object that may affect the navigable airspace. It also explains the requirement to notify the FAA before construction begins and the FAA's responsibility to respond to these notices in accordance with Title 14 Code of Federal Regulations (14 CFR) Part 77, Objects Affecting Navigable Airspace. Additionally, the AC explains the process by which to petition the FAA's administrator for discretionary review of the determinations issued by the FAA.

Recommended Standard Traffic Patterns and Practices for Aeronautical Operations at Airports without Operating Control Towers, AC 90/66A. Federal Aviation Administration, Washington, D.C., August 26, 1993.

Calls attention to regulatory requirements and recommended procedures for aeronautical operations at airports without operating control towers. It recommends traffic patterns and operational procedures for aircraft, lighter than air, glider, parachute, rotorcraft, and ultralight vehicle operations where such use is not in conflict with existing procedures at those airports.

Reporting Wildlife Aircraft Strikes, AC 150/5200-32A. Federal Aviation Administration, Washington, D.C., December 22, 2004.

Explains the importance of reporting collisions between aircraft and wildlife, more commonly referred to as wildlife strikes. It also covers recent improvements in the FAA's Bird/Other Wildlife Strike Reporting system, how to report a wildlife strike, what happens to the wildlife strike report data, how to access the FAA National Wildlife Aircraft Strike Database, and the FAA's Feather Identification program.

Standards for Airport Markings, AC 150/5340-1J. Federal Aviation Administration, Washington, D.C., April 29, 2005.

Describes the standards for markings used on airport runways, taxiways, and aprons.

Standards for Airport Sign Systems, AC 150/5340-18D. Federal Aviation Administration, Washington, D.C., December 6, 2004.

Incorporates new mandatory hold signs that reflect changed standards for the Precision Obstacle Free Zone (POFZ) and Category (CAT II/III) operations. These changes correspond to revisions to FAA AC 150/5300-13, *Airport Design*, that change the Precision Object Free Area (POFA) to the POFZ and incorporate new separation standards for taxiways that parallel runways used for certain low visibility operations. This AC cancels AC 150/5340-18C, *Standards for Airport Sign Systems*, dated July 31, 1991.

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Standards for Specifying Construction of Airports, AC 150/5370-10B. Federal Aviation Administration, Washington, D.C., April 25, 2005.

Provides standards for the construction of airports. Items covered include general provisions, earthwork, flexible base courses, rigid base courses, flexible surface courses, rigid pavement, fencing, drainage, turfing, and lighting installation.

Airport Orders

Airport Capital Improvement Plan. Federal Aviation Administration, Washington, D.C., August 22, 2000. www.faa.gov/airports_airtraffic/airports/resources/publications/orders/media/AIP_5100_39A.pdf.

This order prescribes the development of the national Airports Capital Improvement Plan (ACIP). The ACIP serves as the primary planning tool for systematically identifying, prioritizing, and assigning funds to critical airport development and associated capital needs for the national airspace system (NAS). The ACIP also serves as the basis for the distribution of grant funds under the Airport Improvement Program (AIP). By identifying and investing in airport development and capital needs, the FAA can assure the American public that the NAS is a safe, secure, and an efficient environment for air travel nationwide.

Airport Compliance Requirements. Federal Aviation Administration, Washington, D.C., October 2, 1989. www.faa.gov/airports_airtraffic/airports/resources/publications/orders/media/Obligations_5190_6a.pdf.

This order provides the policies and procedures to be followed in carrying out the FAA's functions related to airport compliance. It may be of interest to those government agencies, both federal and state, concerned with actions associated with federal and personal property.

Airport Improvement Program Handbook. Federal Aviation Administration, Washington, D.C., June 28, 2005. www.faa.gov/airports_airtraffic/airports/aip/aip_handbook/.

This order provides guidance and sets forth policy and procedures to be used in the administration of the Airport Improvement Program. Several FAA orders and advisory circulars are referred to in this directive. The references appear as the basic publication number without any suffix. However, the latest issuance of the publication should be used as the reference.

Land Acquisition and Relocation Assistance for Airport Projects. Federal Aviation Administration, Washington, D.C., August 1, 2005.

www.faa.gov/airports_airtraffic/airports/resources/publications/orders/media/environmental_5100_37b.pdf.

This order provides guidelines and identifies responsibilities for FAA acceptance and monitoring of airport sponsor compliance with provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) (42 USC 4601 et seq.), as amended, on airport projects receiving federal financial assistance. This order incorporates all applicable requirements as provided in the Uniform Act implementing regulation 49 CFR Part 24, Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally Assisted Programs (70 FR 590, January 4, 2005, and as may be amended).

National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects. Federal Aviation Administration, Washington, D.C., April 28, 2006.

www.faa.gov/airports_airtraffic/airports/resources/publications/orders/environmental_5050_4/.

This order provides information to ARP personnel and others interested in fulfilling National Environmental Policy Act (NEPA) requirements for airport actions under the FAA's authority. This order is part of FAA's effort to ensure its personnel have clear instructions to address potential

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environmental effects resulting from major airport actions. In preparing Order 5050.4B, ARP has made it consistent with Order 1050.1E.2. Information on federal environmental laws other than NEPA appears in another document titled *An Environmental Desk Reference for Airport Actions*. ARP will publish notices in the *Federal Register* announcing the *Desk Reference's* availability.

Passenger Facility Charge. Federal Aviation Administration, Washington, D.C., August 9, 2001.
www.faa.gov/airports_airtraffic/airports/resources/publications/orders/media/PFC_55001.pdf.
 This order provides guidance and procedures to be used by FAA personnel in the administration of the Passenger Facility Charge (PFC) Program. The guidance and procedures reflect established FAA practices that have successfully met the statutory and regulatory requirements of the PFC Program. The guidance and procedures are current as of the date of issuance of this order and incorporate all changes to the PFC Program introduced by the “Wendell H. Ford Aviation Investment and Reform Act for the 21st Century” (AIR 21), as well as prior legislation. In addition, this order references several other FAA orders and advisory circulars. The references are made using the latest publication numbers for such documents as of the date of issuance of this order. However, in cases where a referenced document is updated following the issuance of this order, the latest official release of the document should be used as the reference.

Procedures for Conducting Investigations of Vehicle/Pedestrian Deviations. Federal Aviation Administration, Washington, D.C., April 28, 2004.
www.faa.gov/airports_airtraffic/airports/resources/publications/orders/media/Safety_5200_10.pdf.
 This order establishes procedures for and information on conducting investigations of vehicle/pedestrian deviations and on completing FAA Form 8020-25, Investigation of Vehicle or Pedestrian Deviation (V/PD) Report (Appendix A).

Runway Safety Area Program. Federal Aviation Administration, Washington, D.C., October 1, 1999.
www.faa.gov/airports_airtraffic/airports/resources/publications/orders/media/Construction_5200_8.pdf.
 This order establishes The FAA’s Runway Safety Area (RSA) Program and the procedures that FAA employees will follow in implementing that program.

Other Publications

Aeronautical Information Manual: Official Guide to Basic Flight Information and ATC Procedures. Federal Aviation Administration, Washington, D.C., March 15, 2007.
www.faa.gov/airports_airtraffic/air_traffic/publications/ATpubs/AIM.

State Department of Transportation Publications

Arizona Best Practices Guide. Arizona Department of Transportation, Phoenix, 2007.
www.azairports.org/bestpracticesguide.php.
 The purpose of this guide is to clarify roles, responsibilities, and expectations of all affected parties when conducting airport-related business within the state of Arizona. The *Best Practice Guide* is also intended to ensure that airport issues are dealt with in a uniform manner. Although this publication is specific to Arizona, the topics and information are germane to all airports. In addition, this guide may survive as a model for other airport organizations in developing best practice guides.

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Michigan Department of Transportation Aeronautics. *Airport Manager Examination Study Guide*.

Michigan Department of Transportation, Lansing, Mich., 2004.

www.michigan.gov/documents/studyguide_18131_7.pdf.

As the title indicates, the purpose of this publication is to assist Airport Manager candidates in preparing for the state licensure examination. Although much of the information is specific to Michigan (e.g., sections of the Michigan Aeronautics Code are often referenced), all airport managers should have knowledge of the subjects covered by the study guide for their own states.

New York State Airport Managers' Handbook. New York State Department of Transportation, Albany, N.Y., 2001.

www.nysdot.gov/portal/page/portal/divisions/operating/opdm/aviation/repository/files/nys_airport_managers_handbook.pdf.

This comprehensive handbook was prepared by the New York State Aviation Services Bureau in association with the New York Aviation Management Association to assist airport managers in making informed decisions on airport-related issues. The topics addressed in the handbook were selected based on feedback from airport managers in New York State. Each chapter of the handbook was written by an airport manager or subject matter expert. Although the handbook was written for New York airports, the topics are relevant to airports nationwide. In addition, the handbook addresses many issues over which a federal agency has jurisdiction, so much of the information provided may be useful for all airports.

NewMyer, D. A. and C. B. Seibert. *Airport Commissioner's Handbook*. Illinois Department of Transportation, Springfield, Ill., 2000.

This publication was prepared by the Southern Illinois University at Carbondale under contract to the Illinois Department of Transportation, Division of Aeronautics. The handbook addresses a broad range of topics relevant to airport commission members, including the role of airport commissioners, airport rules and regulations, airport facilities, and airport finance. While some of the information is specific to Illinois, the handbook provides an outline of the issues on which airport managers must educate airport commissioners.

NewMyer, D. A., et. al. *Airport Manager's Handbook*. Illinois Department of Transportation, Springfield, Ill., 2001.

This comprehensive handbook was prepared by Southern Illinois University at Carbondale under contract to the Illinois Department of Transportation, Division of Aeronautics. A variety of topics including airport control and ownership, operating and maintaining a safe airport, airport planning and finance, airport design standards, compatible land uses, and airport revenue generation are covered. The handbook also includes samples of various types of documents including the airport manager's agreement, fixed-base operator agreement, and lease agreement. Some of the information in the handbook is specific to Illinois, but the topics and majority of the information are relevant to all airports. This handbook is not available online.

Ohio Airport Handbook. Ohio Department of Transportation, Columbus, Ohio, 1999.

This comprehensive handbook contains sections on operating and managing a safe airport, developing airport facilities, state and federal grants, airport design, standards, leases, and community relations. The introduction includes brief descriptions of each chapter in the handbook. Some portions of the handbook are specific to Ohio airports, but there is valuable information for airport managers throughout the United States, especially the templates and sample documents. This handbook is not available online.

Trade Publications

Airport Business. Cygnus Publishing, Fort Atkinson, Wis.

Airport Business is the most widely circulated and audited business publication, targeting professionals who manage airports, airport-based businesses, and corporate flight facilities. Published 11 times annually, the magazine attempts to help managers run their operations more effectively by sharing case studies as well as providing expert analysis, industry news, and product information. Current issue articles are available through the magazine's website at www.airportbusiness.com.

Airport Magazine. AAAE Service Corporation, Inc., Alexandria, Va.

This bi-monthly publication of the American Association of Airport Executives (AAAE) is geared toward larger airports, but each issue contains a section on general aviation and other information that may be of value to smaller airports. Subscriptions are available without joining AAAE.

Centerlines. Naylor, LLC, Gainesville, Fla.

The content of this quarterly publication of Airports Council International: North America (ACI-NA) is geared more towards larger airports. However, most issues include articles about national policy and/or legislative issues that may affect all airports. Free PDF versions of the magazine are available through the ACI-NA website at www.aci-na.org.

Transportation Security Administration Publications

Security Guidelines for General Aviation Airports. Transportation Security Administration, Washington, D.C., May 2004.

www.tsa.gov/assets/pdf/security_guidelines_for_general_aviation_airports.pdf.

This document is intended to provide general aviation airport owners, operators, and users with guidelines and recommendations that address aviation security concepts, technology, and enhancements. To date, this is the primary published guidance on GA airport security. The TSA anticipates updating this document on an as-needed basis.

APPENDIX B: SURVEY

**AIRPORT COOPERATIVE RESEARCH PROGRAM
PROJECT 01-01 GUIDEBOOK FOR MANAGING SMALL AIRPORTS
SURVEY**

The Airport Cooperative Research Program (ACRP) is developing a guidebook for managing small airports. To obtain information about current practices, identify concerns and challenges for small airports, and gather ideas for successfully addressing those challenges, the ACRP is conducting this survey of airport managers across the nation.

INSTRUCTIONS Please complete this survey with information from your most current fiscal year. You may send supporting documentation for responses as needed. The information provided will be used to develop a Guidebook for Managing Small Airports, to be distributed around the county. **Survey respondents will be sent a Guidebook directly, free of charge.**

Thank you very much for your participation. Your response is vitally important to providing a useful and comprehensive document.

Please complete this survey by July 29, 2007

Person Completing the Survey: _____

Position: _____ Phone Number: _____

Address:

Name of Airport _____ Airport Identifier: _____

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A. Governance

1. Which of the following best describes the ownership structure and direct management structure of your airport?

Ownership Structure (check one)	Direct Management (check one)
City owned	Airport Manager
County owned	FBO/Manager
Airport authority	Public Works Director
Joint powers agreement	Airport Commission
Privately owned	Groundskeeper
Other _____	Unattended
	Other _____

2. Do you have an advisory board / commission that reports to a higher governing authority?

Yes

No

B. Safety

1. Which practices do you employ as part of your airports safety program?

Daily safety and self inspection program

Regular field condition reporting (NOTAMS)

Aviation Fuel Quality Control Program

Tenant Safety Meetings

Preventive Maintenance Program

Airfield Safety Rules and Regulations

Regular self inspections of airfield systems and navigational aids

Safety Signage

Employee Safety Program

None of the above

2. Have you addressed access or other issues as they relate to airport safety? If so, describe:

C. Security

1. Rank each of these according to their importance as the most realistic security threat(s) to your airport (1 being most important, 6 being least important)

Terrorism

Vandalism

Theft

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- Accidental airfield incursions by public
 Wildlife
 Unreasonable response time from local authorities

2. Is airport security a priority for the tenants on your airport?

- Yes
 No
 Do not know

3. Indicate on the list below which of the following security measures you have in place or are planned at your airport, and those you would like to have in place at your airport:

Security Measure	In place	Would like to have
Security gates and fences		
Closed circuit TV/cameras		
AOPA GA Secure Airport Program		
Card Reader access systems		
Security signage		
Written security plan		

4. Describe some of the issues, challenges or **obstacles** you experience directly related to airport security:

D. Planning and Grant Procurement

1. What is the approximate gap between the total project dollar costs required to meet your airports Capital Improvement Program (CIP) over the next five years and available funding?

- <\$100,000
 \$100,000 – 250,000
 \$250,001 – 500,000
 \$500,001 – 1,000,000
 \$1,000,001 – 2,500,000
 \$2,500,001 – 5,000,000
 >\$5,000,000

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2. Do you have access to resources for implementing the CIP, such as funding, staffing, approvals, permitting?

- Yes
- No
- Do not know

3. Who produces your Airport Master Plan?

- Airport Manager
- City/County Engineer/Planner
- Consultant
- Other _____

5. Describe some of the issues or challenges you experience regarding planning and CIP development:

E. Airspace and Approaches

1. Does your airport have current zoning standards that meet local, state and FAA Part 77 requirements?

- Yes
- No
- Do not know

2. Is the airport zoning effort coordinated with local zoning ordinances/regulations?

- Yes
- No
- Do not know

3. Are the airport zones described in local community land use planning documents to prevent non-compatible land uses?

- Yes
- No
- Do not know

4. Describe any concerns you have about zoning or protection of airspace around your airport:

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F. Maintenance

1. Who maintains the NAVAIDs at your airport?

- Airport Staff
- City/County
- FAA
- FBO
- Contracted
- Other, please describe: _____

2. What is the biggest maintenance priority and expense on your airport?

3. What is your preferred source of information for airport maintenance requirements, equipment, and strategies?

- FAA Advisory Circulars
- Trade Publications
- Internet Sources
- Conferences and Trade Shows
- Word of Mouth
- State Department of Transportation/Office of Aeronautics
- Other, please describe: _____

4. Describe the specific challenges you face in addressing airport maintenance issues:

5. Describe any Best Management Practices (BMPs) that you use in addressing maintenance issues, such as mowing, wildlife control, erosion, vegetation management, lighting, pavement maintenance, etc:

G. Leasing and Use Agreements

1. Does your airport enforce building codes or minimum standards for aeronautical activities for airport development projects?

- Yes
- No
- Do not know

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2. What information would be most useful in assisting you with airport lease preparation?

- Rates and charges data
 Standard Insurance requirements
 Non-Exclusive Rights and Minimum Standards formulization
 Permitted uses in leased spaces
 Standard Terms and Conditions
 Land Lease Terms
 Building Codes
 Other _____

3. Do you have a standard lease agreements for varying categories of lease use, such as commercial, non-commercial, agricultural use, etc?

- Yes
 No
 Do not know

4. Describe any incentives you use to initiate and foster new business:

H. Development and Construction Standards

1. Do you currently utilize and issue an airfield safety / security manual to the contractors for each airport construction project?

- Yes
 No
 Do not know

2. Do you involve tenants, emergency services, etc. at your pre-construction meetings?

- Yes
 No
 Occasionally

I. Finance and Revenue Generation

1. What is your current airport operating budget?

- _____ <\$100,000
 _____ \$100,000 – 250,000
 _____ \$250,001 – 500,000
 _____ \$500,001 – 1,000,000
 _____ \$1,000,001 – 2,500,000
 _____ \$2,500,001 – 5,000,000
 _____ >\$5,000,000

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2. Check your airports primary sources of revenue:

- Tax Subsidy
- Commercial Land Leases /Rent
- T-hangar Lease Agreements
- Private Hangar Land Lease
- Agricultural Land Lease
- Terminal Concession Rents
- Fuel Flowage
- Landing/Ramp Fees
- Other: _____

3. Describe any unusual or non-standard method of revenue generation used at your airport.

4. Does your airport utilize available airport federal or state grant assistance?

- Yes
- No
- Do not know

5. Describe any challenges you face in the area of airport financing:

6. Share any ideas you have on innovative airport financing:

7. What is your airport's outlook for attracting additional sources of revenue?

- Good
- Fair
- No foreseen change in the next 5 years
- Do not know

J. Public Relations

1. Does your airport utilize a marketing plan?

- Yes
- No
- Do not know

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2. Check any marketing techniques currently utilized by your airport

Airport Newsletter

Website

Airport Events

Pilot Meetings

Print Advertising

Radio Advertising

Community Education

Tours

Other, Please Describe _____

3. Are you satisfied with the perception of your airport in the community?

Yes

No

Do not know

4. Does your airport struggle to remain open against local opposition?

Yes

No

Not sure

5. Have you attempted to improve your airport's standing in the community, with tools such as newspaper articles, open houses, allowing community use of your airport facilities, etc?

Yes, please describe how: _____

No

6. Describe any other challenges that you face in marketing your airport to the local community:

7. Describe any success stories you'd like to share relating to marketing your airport:

K. Environmental Considerations

1. Does your airport have a current plan for managing stormwater runoff and a pollution prevention plan?

Yes

No

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2. Do you utilize any chemicals for airfield maintenance, vegetation control, snow removal, or aircraft de-icing?

Yes, please describe: _____

No

3. On average, how many noise complaints does your airport receive per year?

<10

11-25

26-50

>50

4. Does your airport have standard procedures for noise mitigation?

Yes

No

Please describe: _____

5. Do wetlands inhibit your airport development?

Yes

No

6. Describe any environmental challenges that are important to you (such as permitting, crop sprayers, wash areas, etc.)

L. Training and Management Resources

1. What is your preferred source of airport training and management resources?

FAA Advisory Circulars

Trade Publications

Internet

Conferences and Trade Shows

State Aeronautics Departments

FAA District Offices Personnel

Word of Mouth

Do not know

Other

Please describe _____

2. How do you initially train a new airport maintenance employee?

Informal on the job training with experienced airport staff

Formal (curriculum / testing) on the job training with experienced airport staff

Rely on city / county maintenance experience only

Rely on contracted maintenance

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- Utilize national, state, consulting, etc. maintenance training programs
- Do not train new employees

M. Regulatory Compliance

1. Check the procedures you utilize for documenting regulatory concerns on your airport:

- Incident reports
- Accident reports
- Training / documentation
- Maintenance logs
- NOTAM logs
- Other _____

2. How often do you perform airfield inspections?

- Once each Quarter
- Once a Month
- Once a Week
- Once each day
- At least twice each day
- Other _____

N. Compliance with Grant Conditions

1. Are the Federal and State grant assurance requirements reflected in your airport lease agreements?

- Yes
- No
- Do not know

2. Are the grant assurances readily available for review by management, governing authority, tenants, etc.?

- Yes
- No
- Do not know

O. Emergency Procedures

1. Does your airport have a current Airport Emergency Plan?

- Yes
- No
- Do not know

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2. Does your airport conduct regularly scheduled familiarization tours, drills, tabletop exercises, reviews and emergency exercises with all responding emergency agencies?

- Yes
- No
- Do not know

3. Describe your concerns with Airport Emergencies and Emergency Preparedness:

4. Share any best practices that you use to prepare for emergencies at your airport:

CLOSING INFORMATION

1. What is your biggest challenge in airport management?

2. What specific topics would you find of most value in a guidebook for small airports?

3. What are the more innovative methods used in airport management in your jurisdiction or other communities you know of?

4. What is your preferred way of obtaining information and assistance?

- Internet or web based
- written documents
- meetings
- networking groups
- online bulletin boards or discussion groups
- professional conferences
- courses
- other, please describe: _____

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5 What professional organizations do you belong to?

- American Association of Airport Executives (AAAE)
- Airport Council International – North America
- Aircraft Owners and Pilot’s Association (AOPA)
- other, please list: _____

Thank you again for your time in completing this survey. Researchers may follow up with respondents who have successfully addressed current challenges, to further clarify responses and information for inclusion in the guidebook. For additional comments or concerns, email _____.

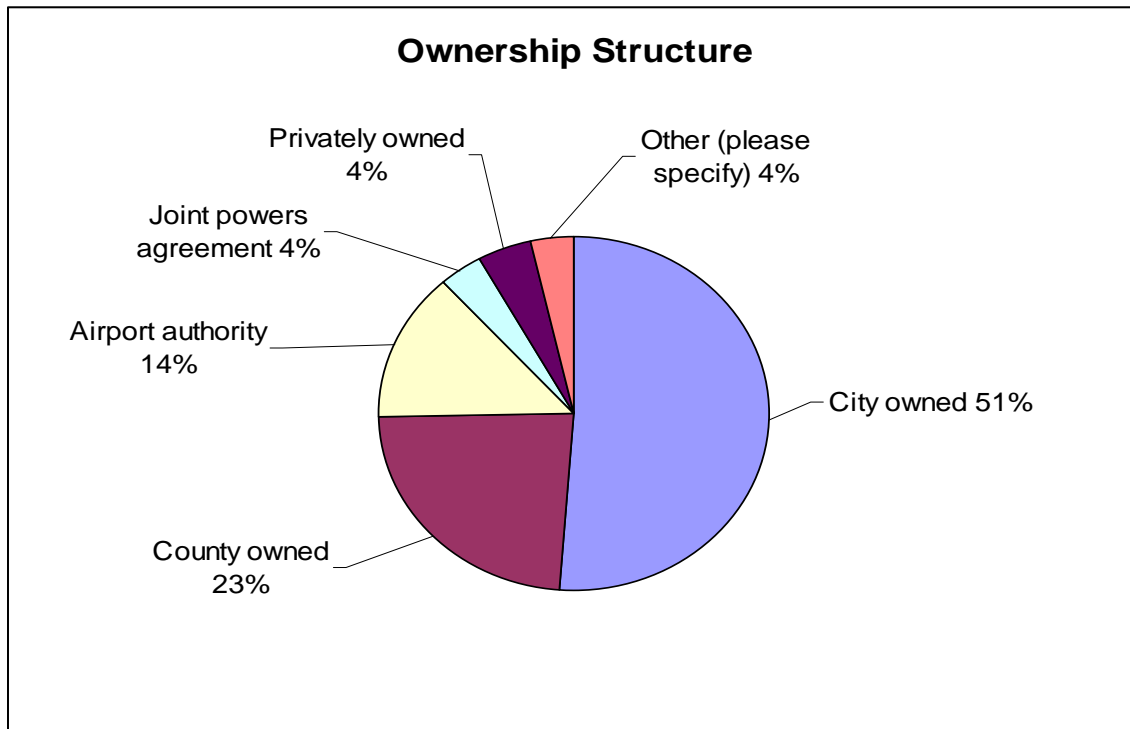
The published Guide will be sent directly to all survey respondents. Please indicate below if you are available for follow-up questions.

I may be contacted with any follow up information that the survey team may need.

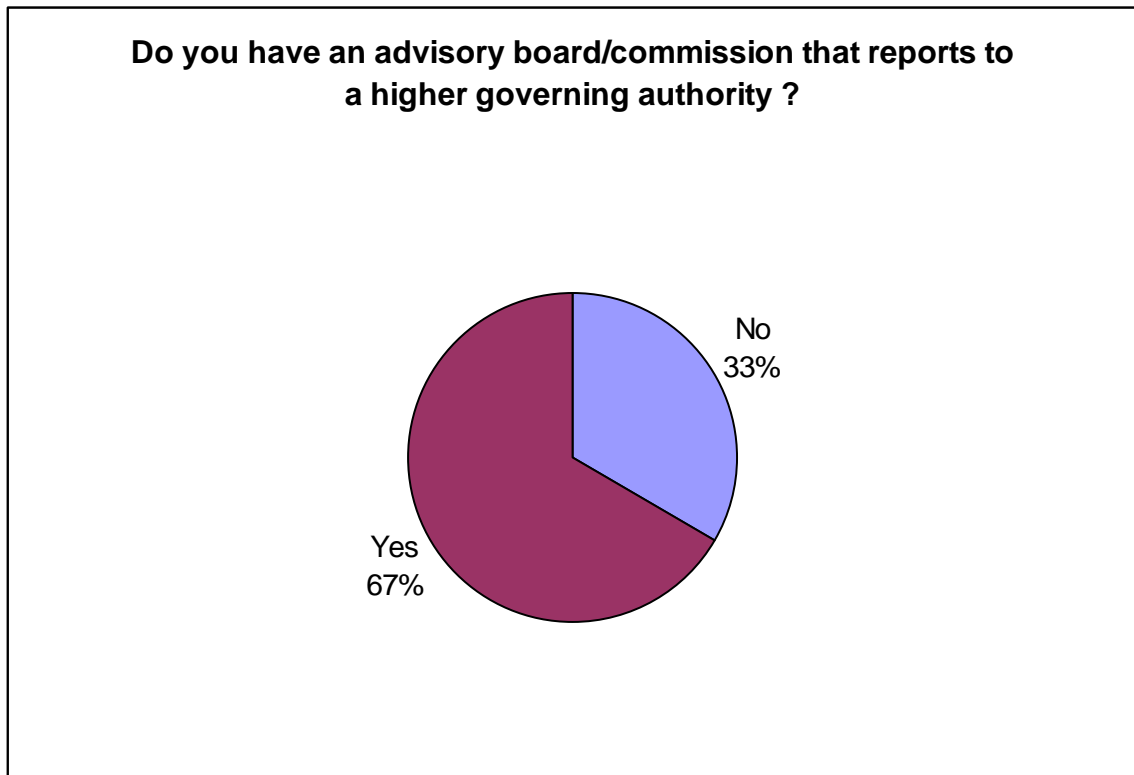
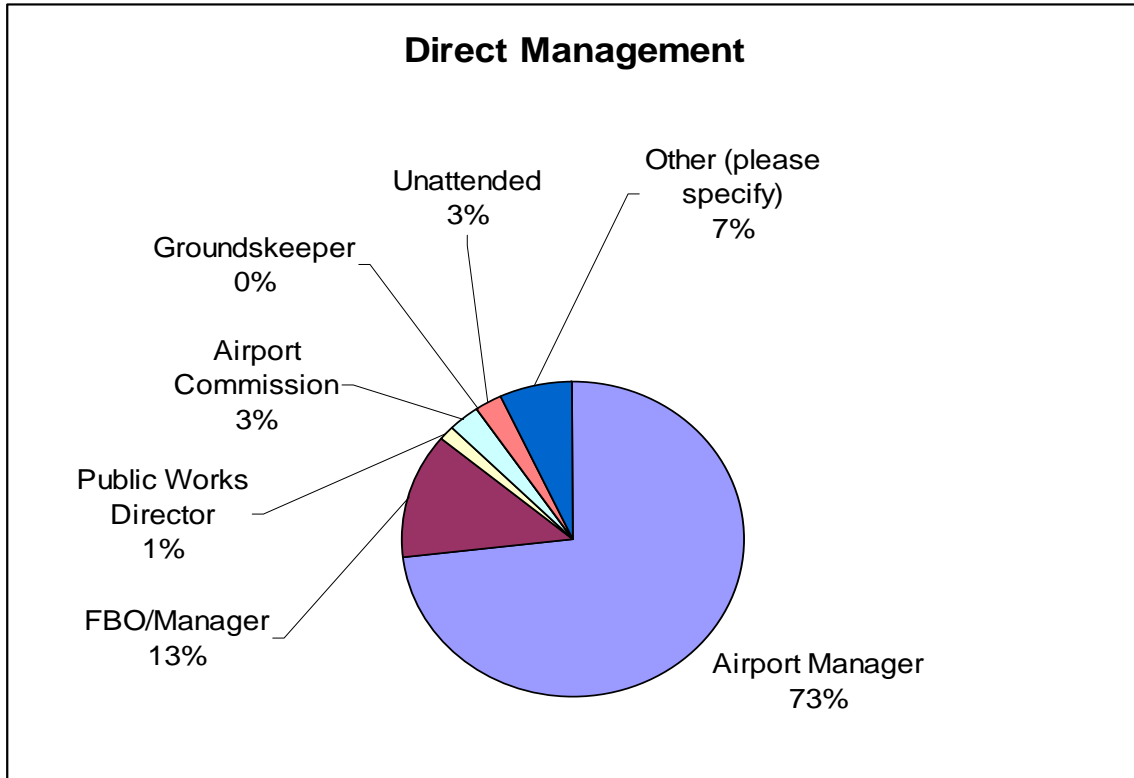
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APPENDIX C: SURVEY RESULTS

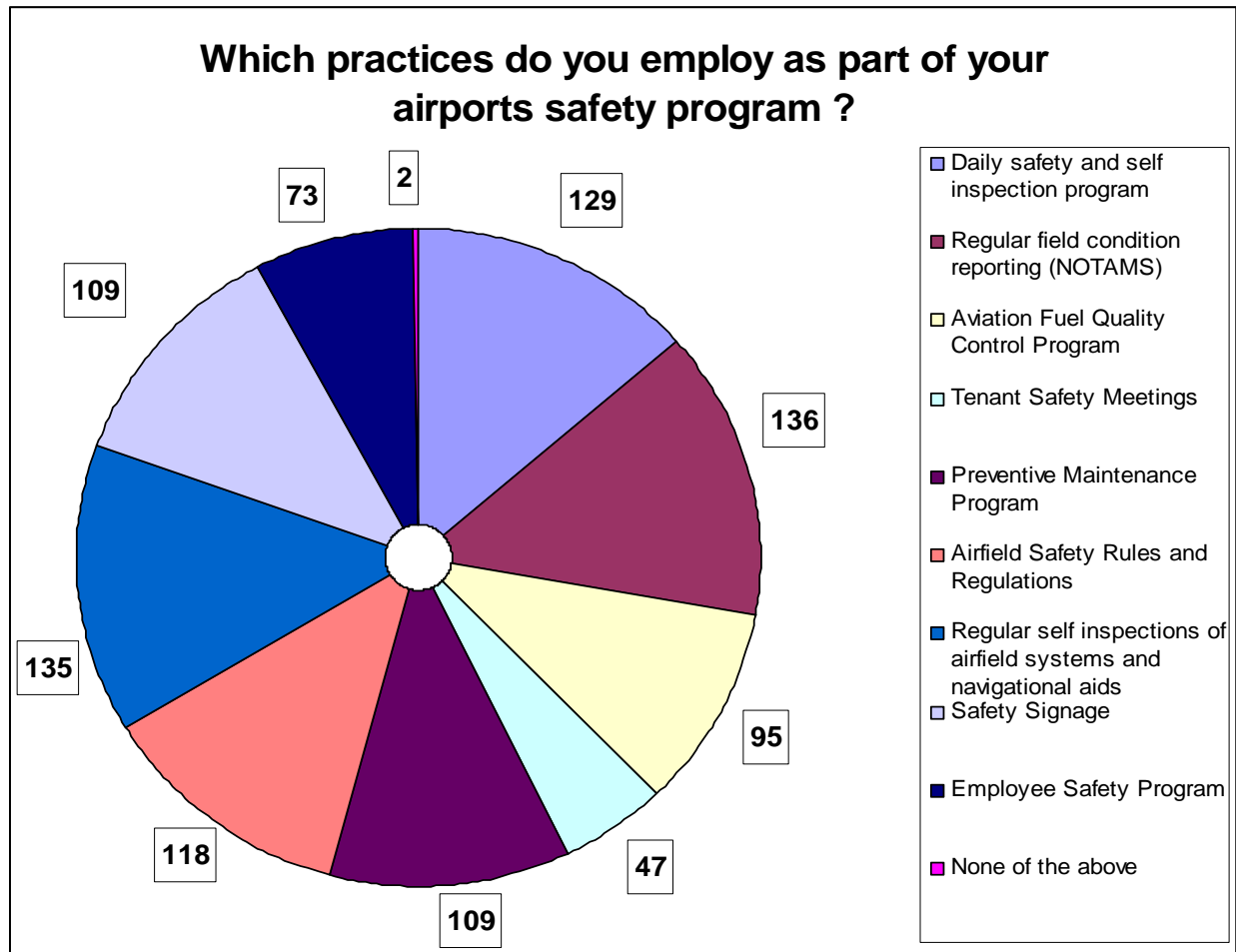
Governance



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Safety



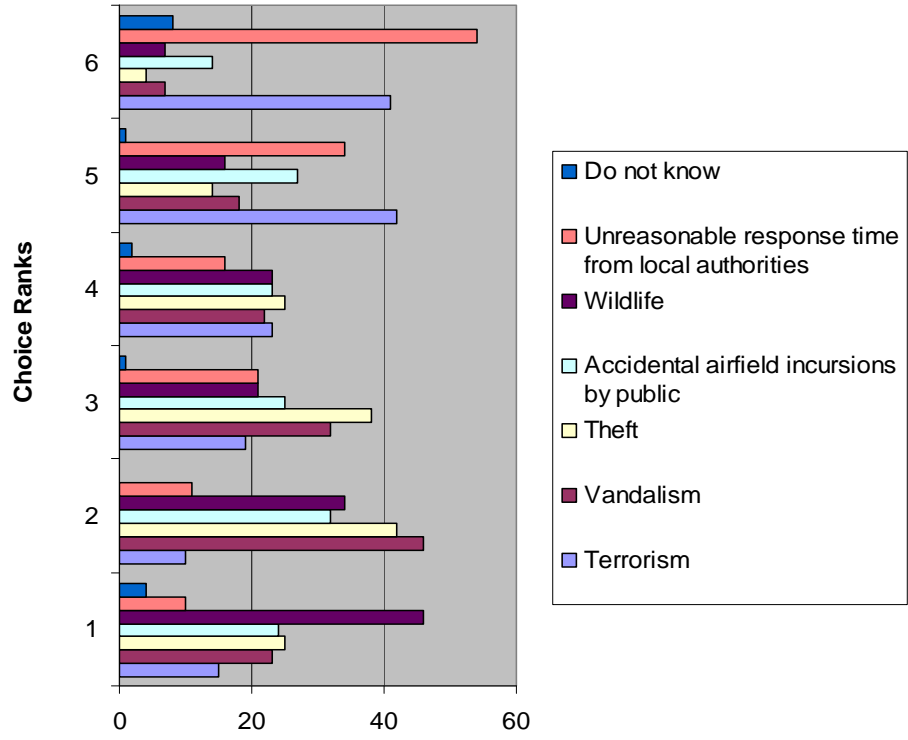
Question 2

Have you addressed access or other issues as they relate to airport safety? If so, describe:

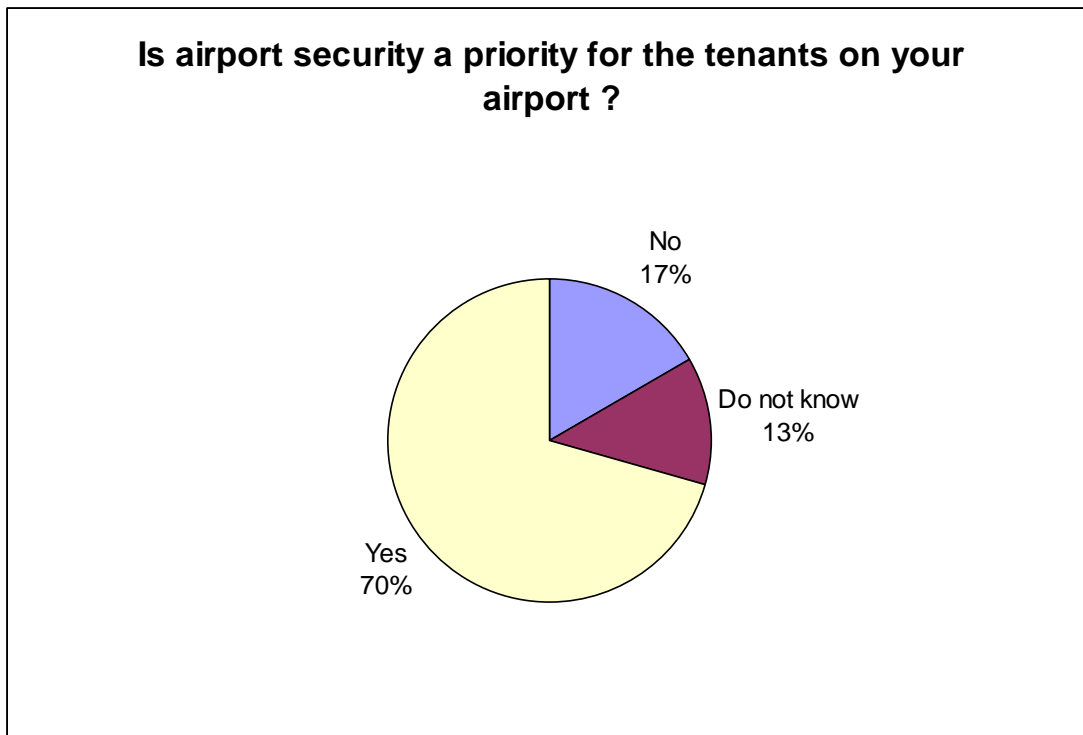
- 100% airport fencing access only allowed to airport and FAA employees
- Considering fencing certain areas for public safety and access issues to aircraft parking areas
- Full perimeter security fencing. Perimeter inspected at least once per day. Random patrol by local police for additional security. Airport has 5 automatic gates connected (via hardwire and wireless) to centralized computerized access system. Working to complete a Driver Training Program to educate airport users of importance of knowing where movement/non-movement areas are to avoid runway incursions. Working to secure all pedestrian gates with cypher locks to prevent pedestrian runway incursions, potential of aircraft or equipment theft/vandalism.
- We have coded electronic gates for vehicle access. Pedestrian access is not locked, but there is only one pedestrian gate located near the terminal.

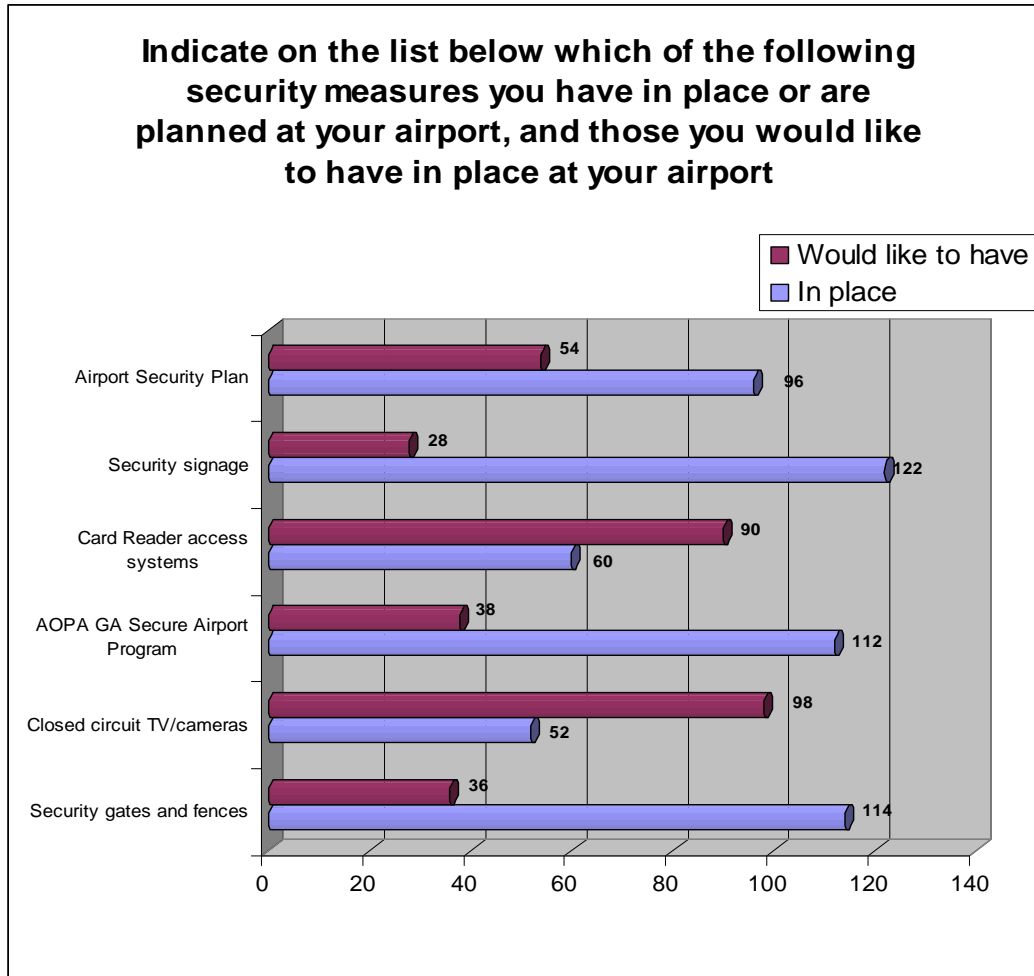
Security

Rank each of these according to their importance as the most realistic threat(s) to your airport (1 being most important, 6 being least important)



	1	2	3	4	5	6
Do not know	4	0	1	2	1	8
Unreasonable response time from local authorities	10	11	21	16	34	54
Wildlife	46	34	21	23	16	7
Accidental airfield incursions by public	24	32	25	23	27	14
Theft	25	42	38	25	14	4
Vandalism	23	46	32	22	18	7
Terrorism	15	10	19	23	42	41



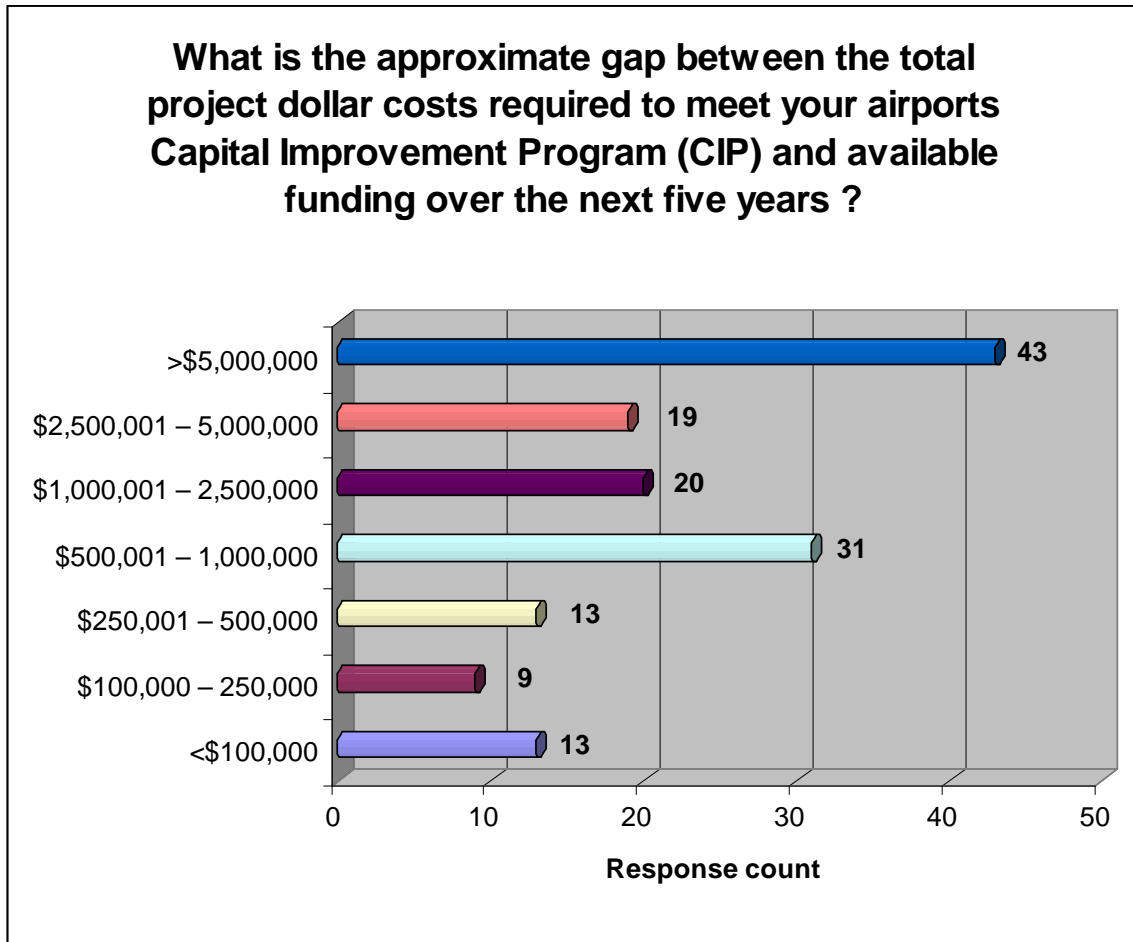


Question 4

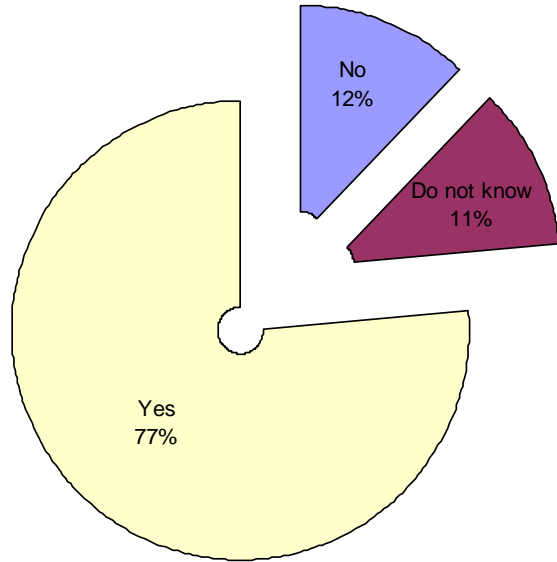
Describe some of the issues, challenges or obstacles you experience directly related to airport security:

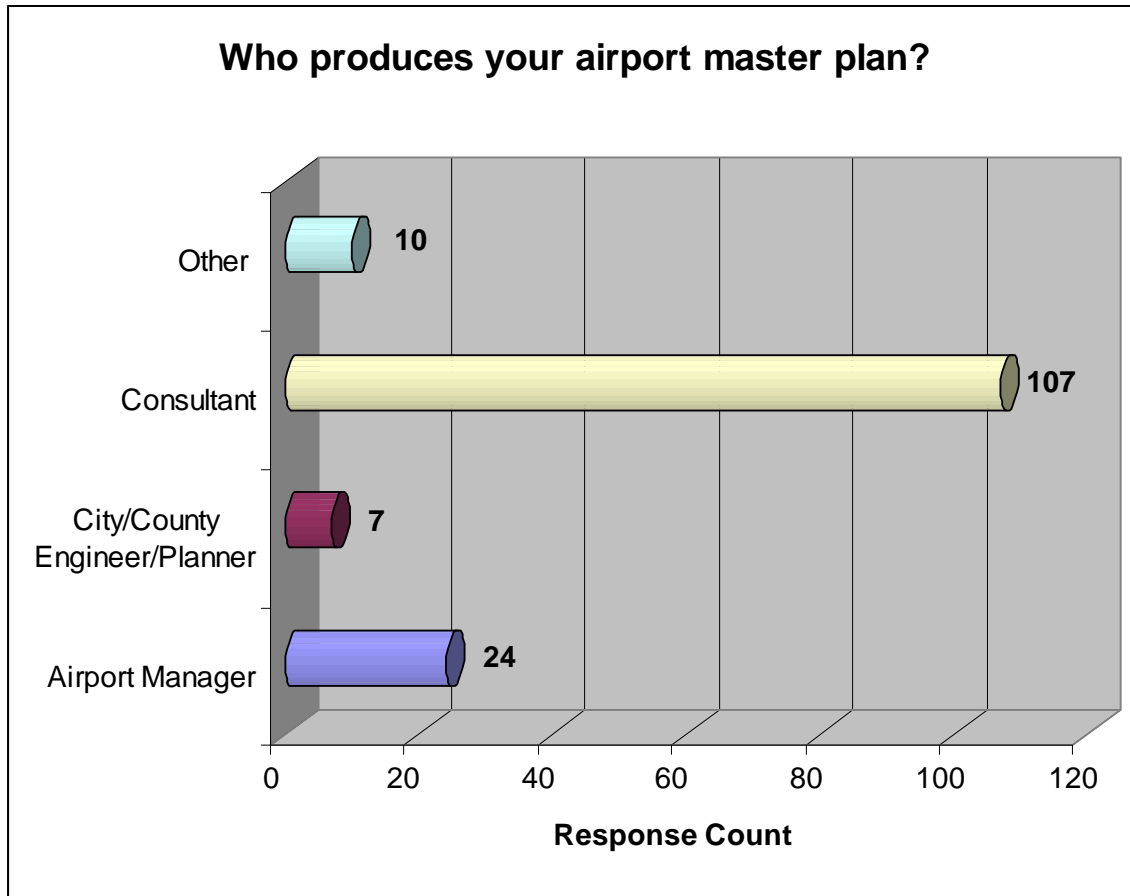
- We currently use remote control gate openers for our tenants to access the hangar area. We would like to have a computerized access system for better quality control but it is an expense.
- We are adding a surveillance type security system in the next couple of months to help us in our hangar and fuel farm areas...we have had folks in/out of these areas that do not belong...and having license plate identification, etc. will assist us in investigating, etc.
- Would like to have all of our automated gates on the new access control system. Would like better monitoring capabilities of tenant owned access points. Three PTZ cameras mounted on ATCT are not of a high quality leading to poor pictures in low light, inclement weather, etc.
- We are currently working on upgrading fencing and gates to improve our security. We follow AOPA guidelines as well as our own policies.

Planning and Grant Procurement



Do you have access to resources for implementing the CIP, such as funding, staffing, approvals, permitting ?



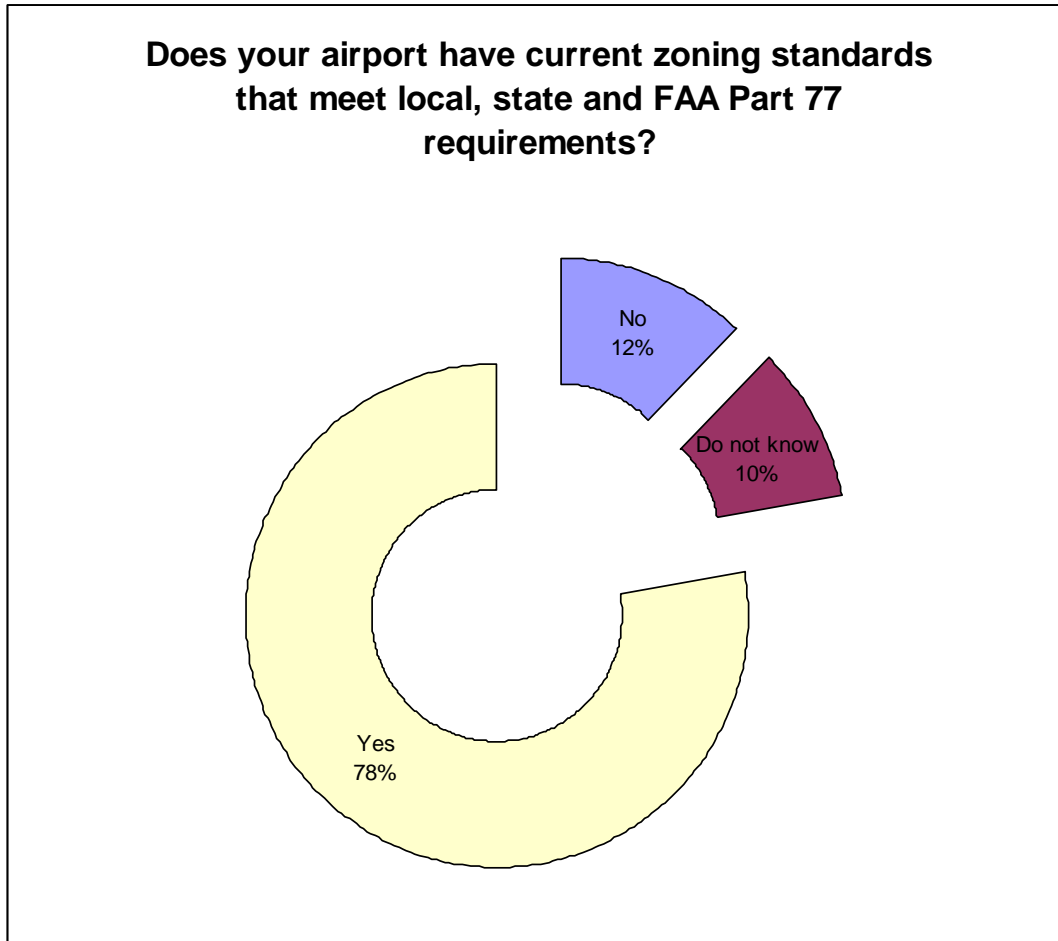


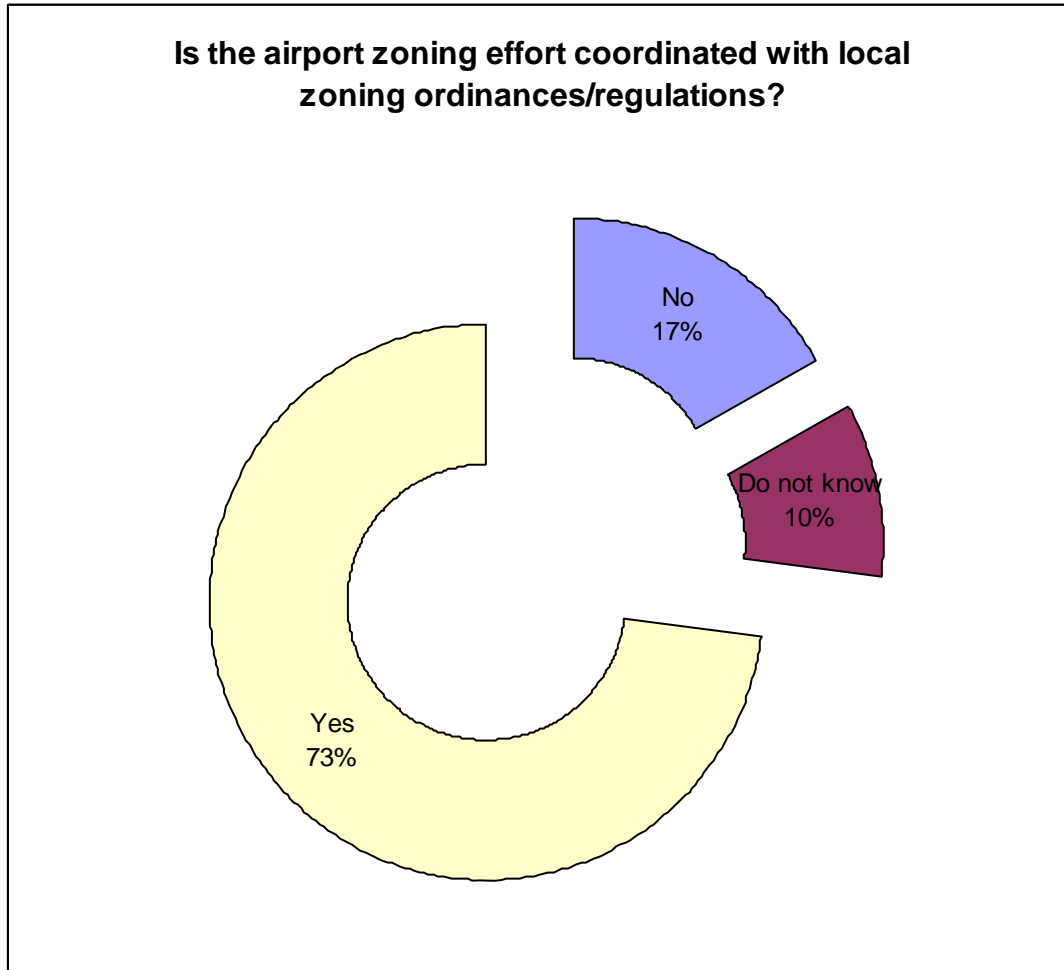
Question 5

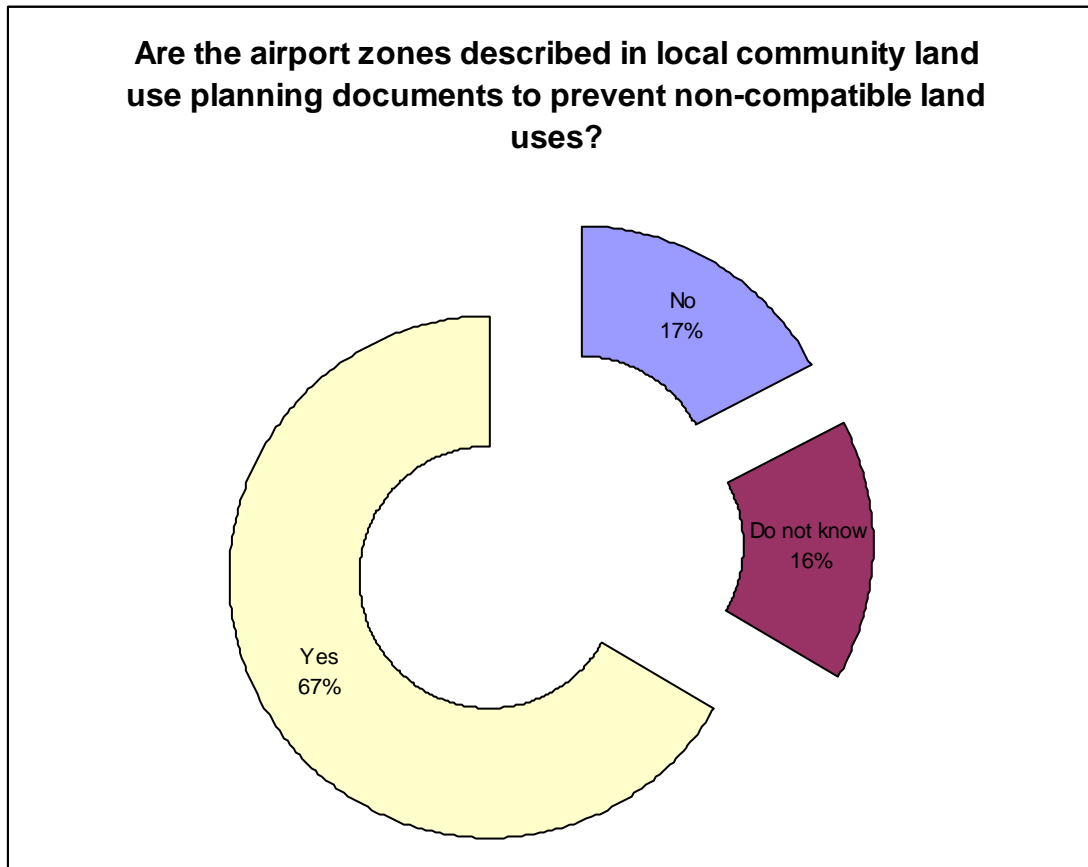
Describe some of the issues or challenges you experience regarding planning and CIP development

- Figuring out what should be done first. We are at a stage where we could do several things but we need to prioritize and that means some projects get pushed.
- The master plan update is focusing on upgrading the airport from BII standards to CIII standards. The airport currently operates under a modification to standards and the ultimate goal is to operate without waivers. Sufficient FAA funding to meet the CIII standards is a very difficult and challenging issue.
- The question of the availability of federal/state funds is always an issue, as is the timing of those funds. CIP costs always seem to greatly exceed the estimates provided by the consultants during the planning phases of projects.
- Long Story- Originally we did not have an airport budget on the year that I-105 came into effect. Had numerous years that we could not levy any tax and still can not increase the tax level but now we can borrow from other services in the county but still not to increase the total for the county.

Airspace and Approaches





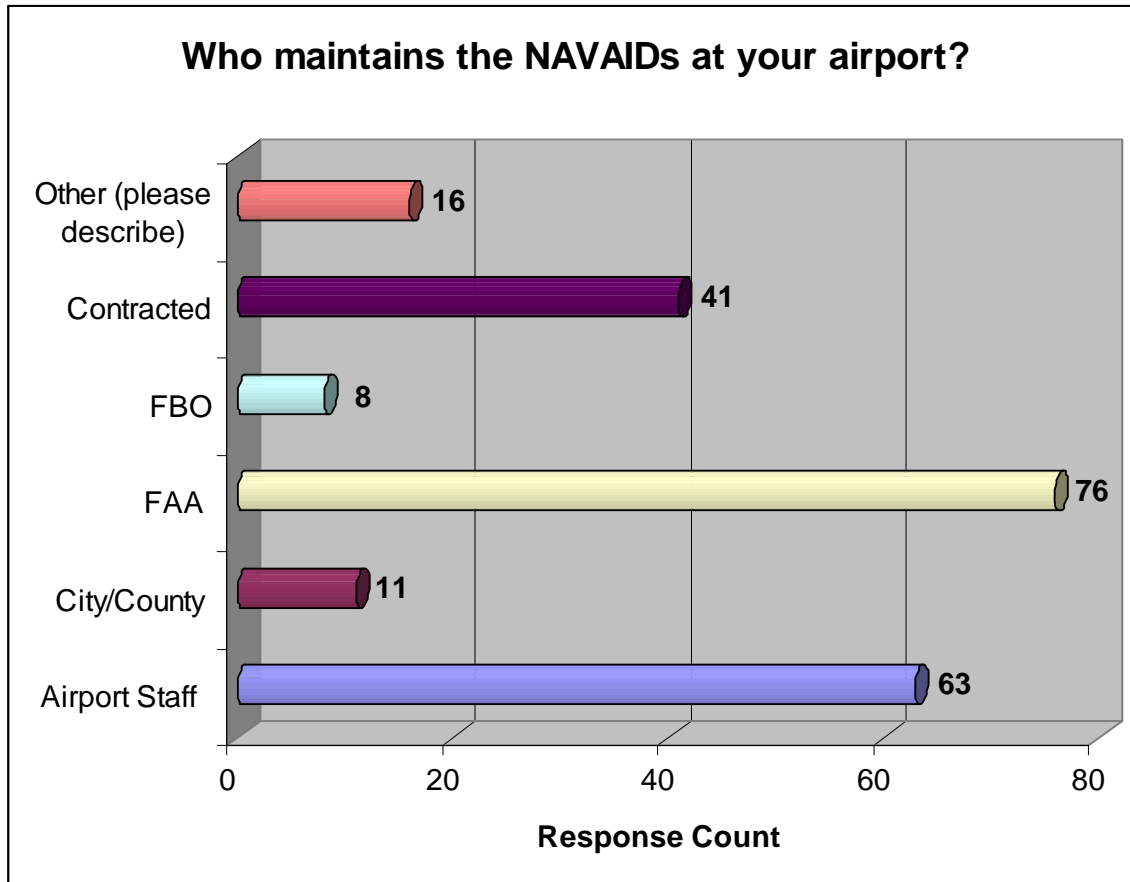


Question 4

Describe any concerns you have about zoning or protection of airspace around your airport:

- Public awareness is huge and more can be done in educating the community.
- Slippage through edits to zoning allowing residential encroachment. Area around airport is one of the hottest residential and commercial growth areas in southwest and possibly country. This is putting strong pressure on City to continue adherence to the land use plan that serves to protect airport especially off ends of the parallel runway system. Most pressures are coming from sides of airport perpendicular to runways.
- Multiple jurisdictions, changes brought about by court decisions. Feds need to step up and implement nationwide standards backed by Federal rule of law. Leave the local/state out of the line of fire. They did it for wetlands, why not airports.
- Very difficult to keep track of projects that will impact the airport. Really no way of encouraging compliance. Due to political sensitivities the areas requiring zoning are too small to completely protect the airport.

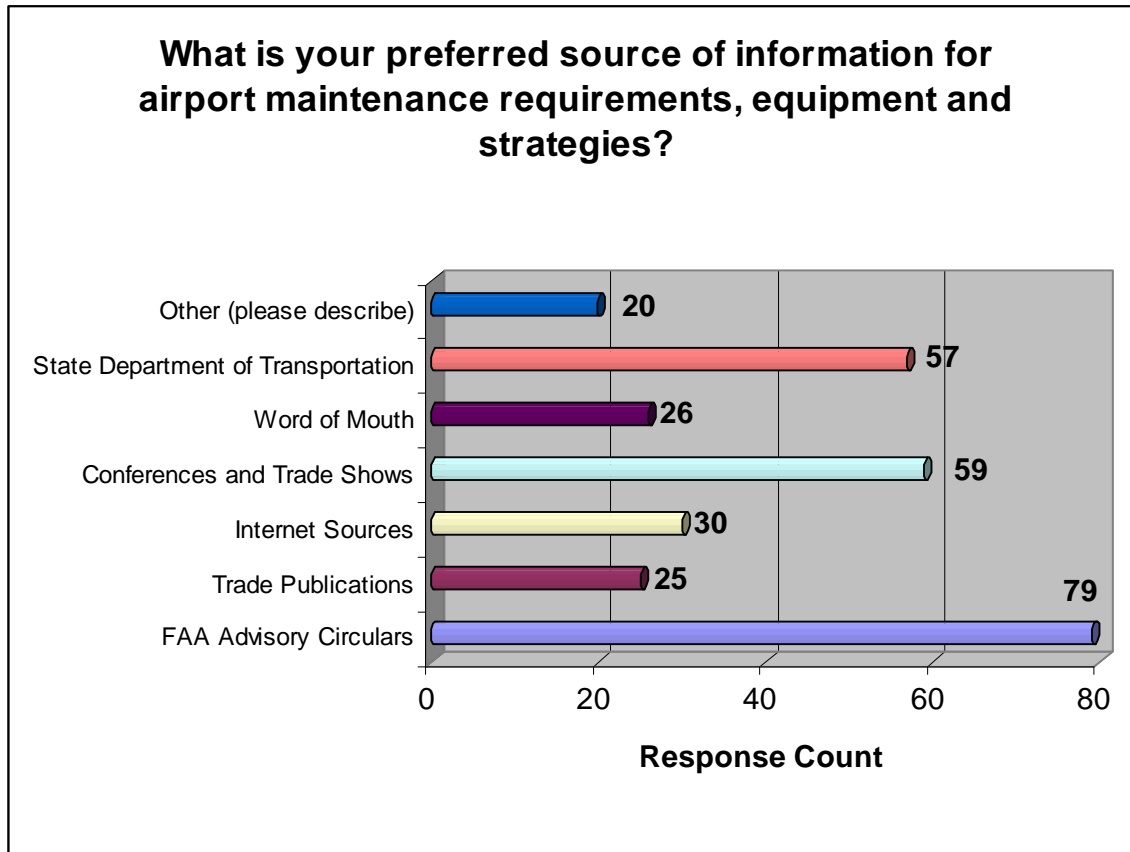
Maintenance



Question 2

What is the biggest maintenance priority and expense on your airport?

- Airfield lighting & pavements
- Pavement followed closely by building maintenance
- T-Hangar operation and maintenance
- Priority: safety items. Most \$: ATCT costs
- Keeping 236 acres mowed and trimmed
- Keeping the airfield pavement in quality condition, as well as snow removal and mowing throughout the year.



Question 4

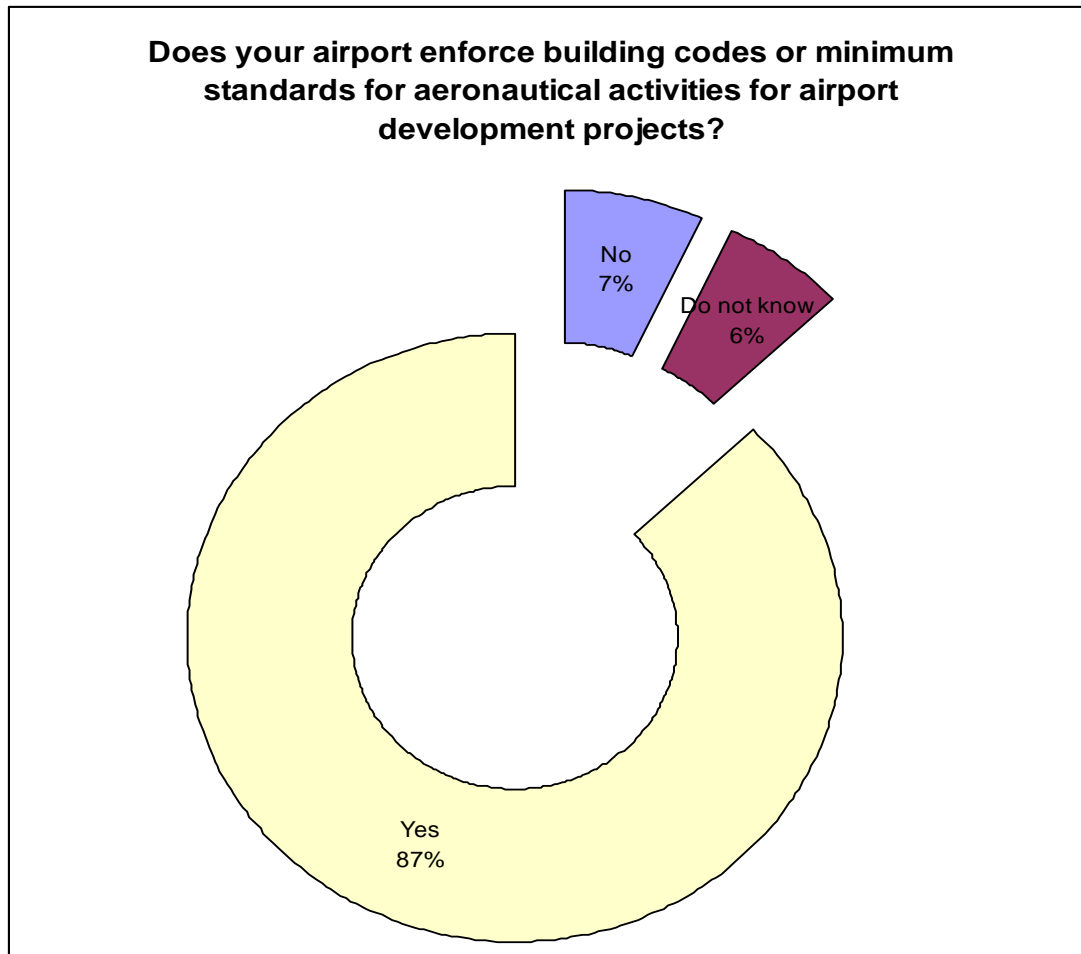
Describe the specific challenges you face in addressing airport maintenance issues:

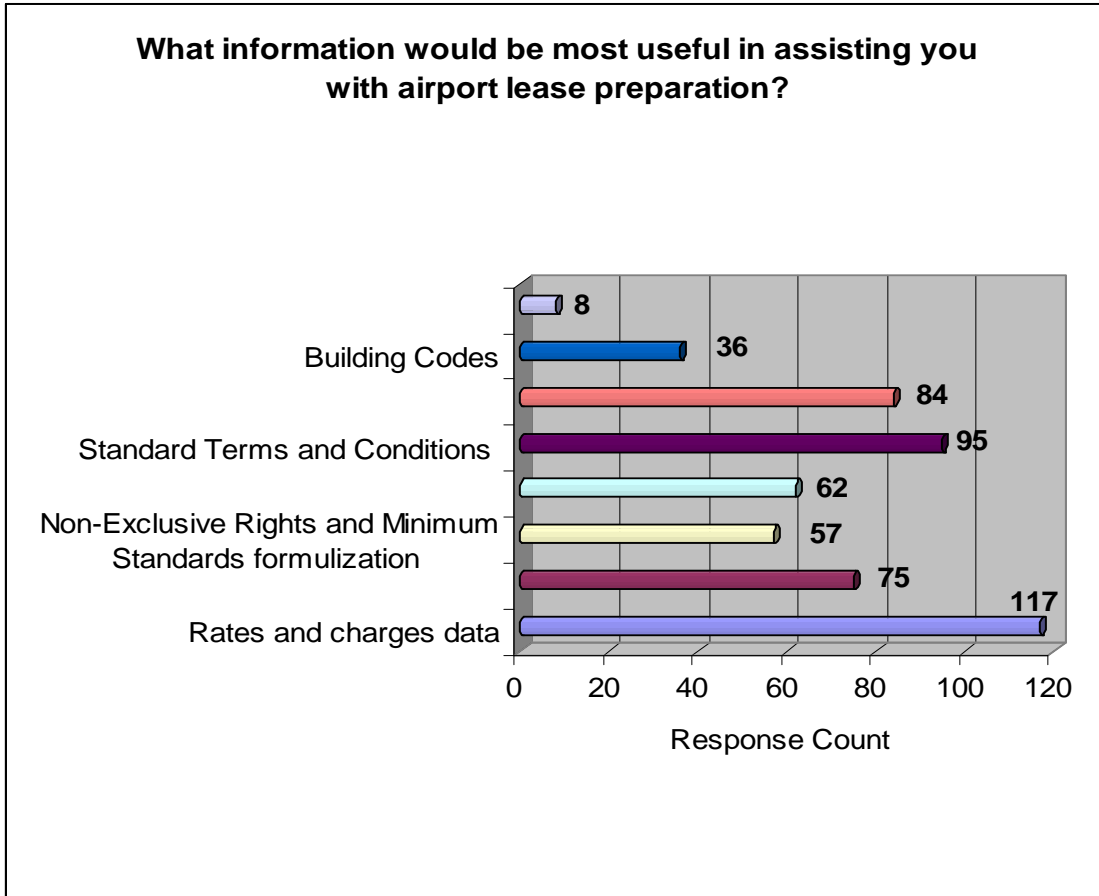
- Preventive Maintenance program is in place but sometimes hard to fund emergency maintenance needs. Regular maintenance of fueling systems, equipment, pavement, etc. helps mitigate the emergency needs.
- Funding. And also knowing best practices on how to best maintain certain equip and pavements.
- Our city streets get a chip seal around year 6. We can not use the chip seal on the airport. What other products can we use to preserve our pavement like the chip seal? Our engineer does not believe in the fog seal and will not approve it.
- Lack of equipment and manpower. There is never enough funding for quality equipment. This is a local responsibility and the airport does not generate enough revenue to acquire necessary equipment.

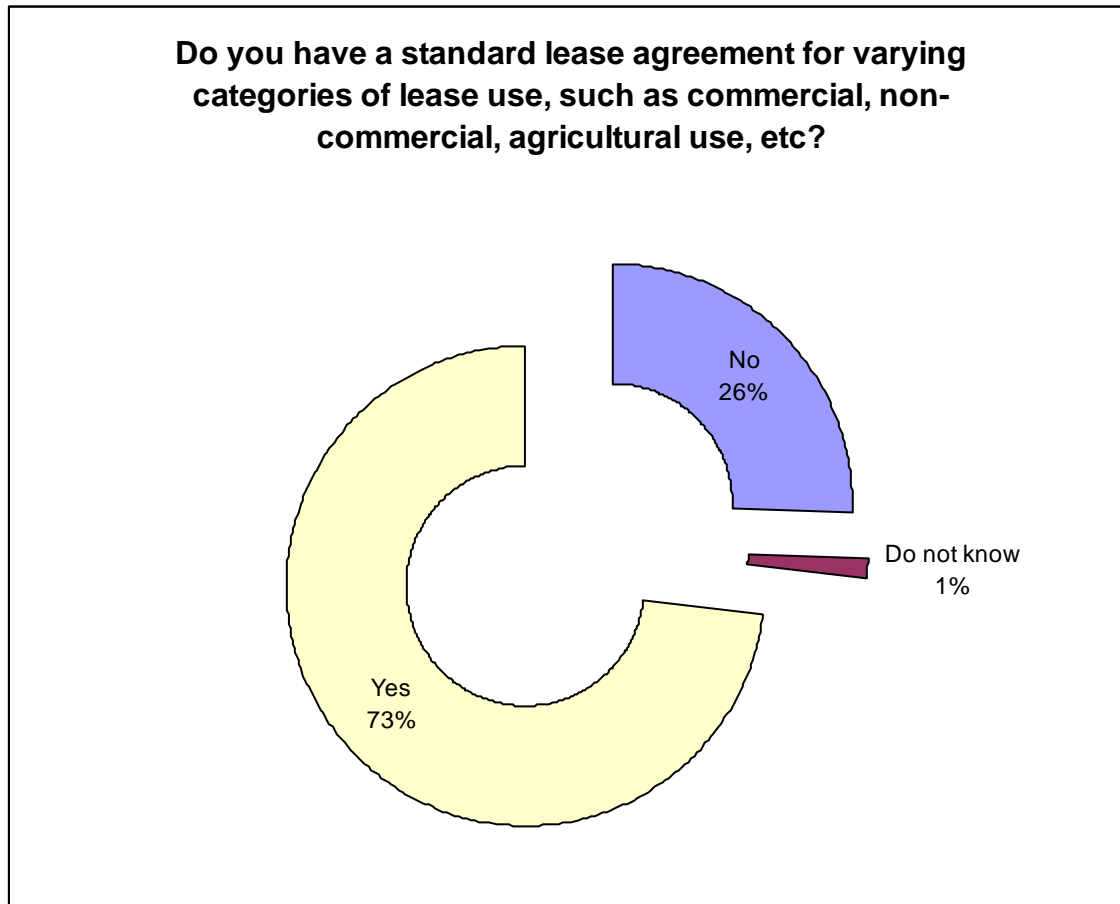
*ACRP Web-Only Document 5: Development of a Guidebook for Managing Small Airports**Question 5*

Describe any Best Management Practices (BMPs) that you use in addressing maintenance issues, such as mowing, wildlife control, erosion, vegetation management, lighting, pavement maintenance, etc.:

- We have lots of mowing and now use a bat wing type mower that saves time and money. We also are hazing wildlife on the airport daily and euthanize some smaller animals. We use weed killer on all fence areas and around lights.
- We have daily, weekly, monthly checklists for all maintenance items on our airfield.
- Brush Hog in the spring, crack seal in the spring. We acquired a crack sealer from Nevada Dept. of Transportation through Governor Gibbons' office.
- A local farmer mows/hays the areas around the runway and the sewage-treatment plant then spreads sludge from the plant on the fields.

Leasing and Use Agreements





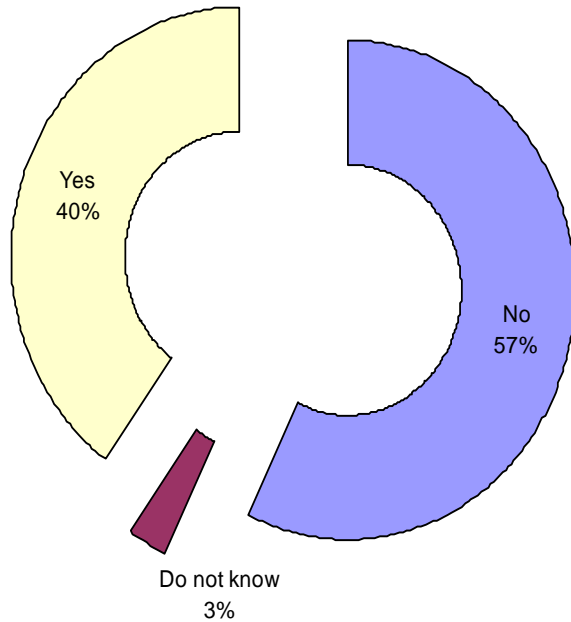
Question 4

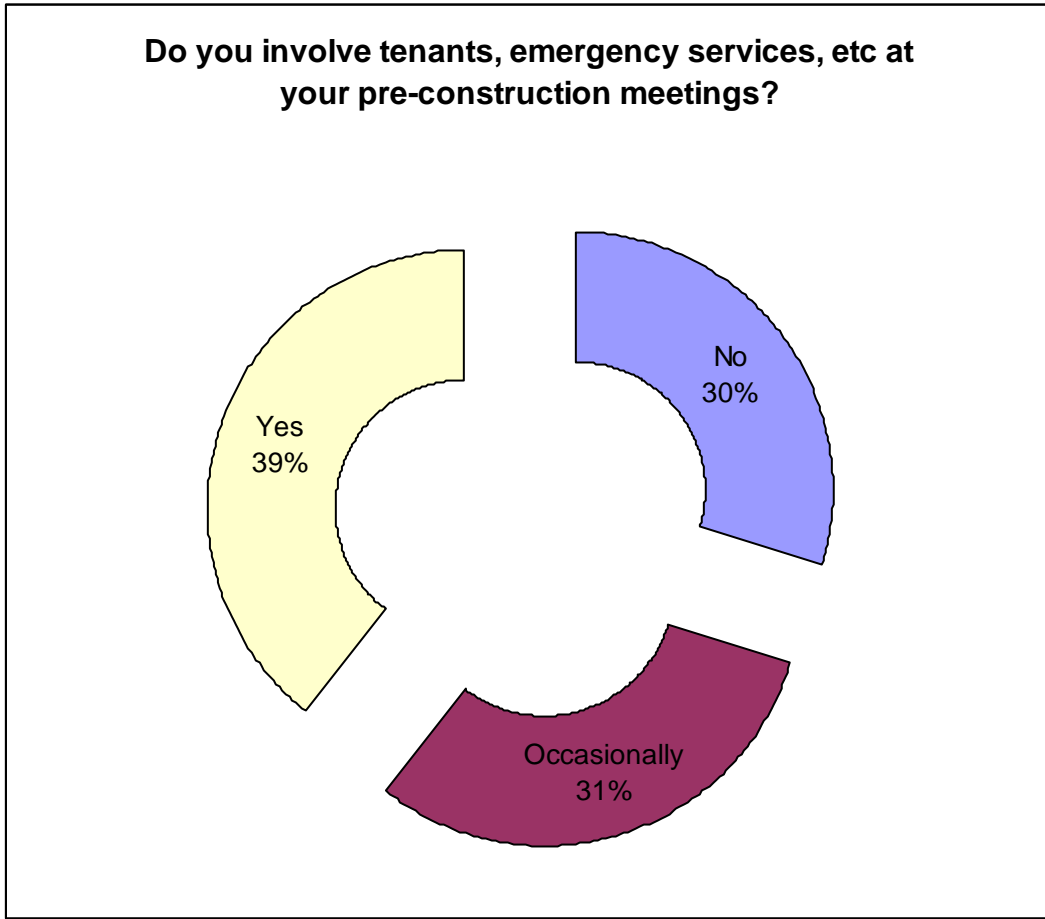
Describe any incentives you use to initiate and foster new business:

- We try to utilize lower costs to begin with and implement escalating clauses in the agreement to match the business' growth.
- The demand for airport real estate is so high that incentives are not necessary. However, we recently approved a lower monthly lease rate for tenants who lease 20 or more aircraft parking spaces from the airport.
- No lease payment until constructed facility ready for occupation (provided timeliness agreements are met). 30 term, restart of term at completion of final phase of multiphase development. Provide outstanding common airport facilities and ATC operation.
- Abate rent for a short period of time... for "retail"; or concession sales; go with a percentage of gross.
- We have been trying to get city water and sewer and hopefully once that happens we can develop the facility and attract new business. Also in planning is to hopefully build a new terminal and FBO area to attract a larger FBO type business.

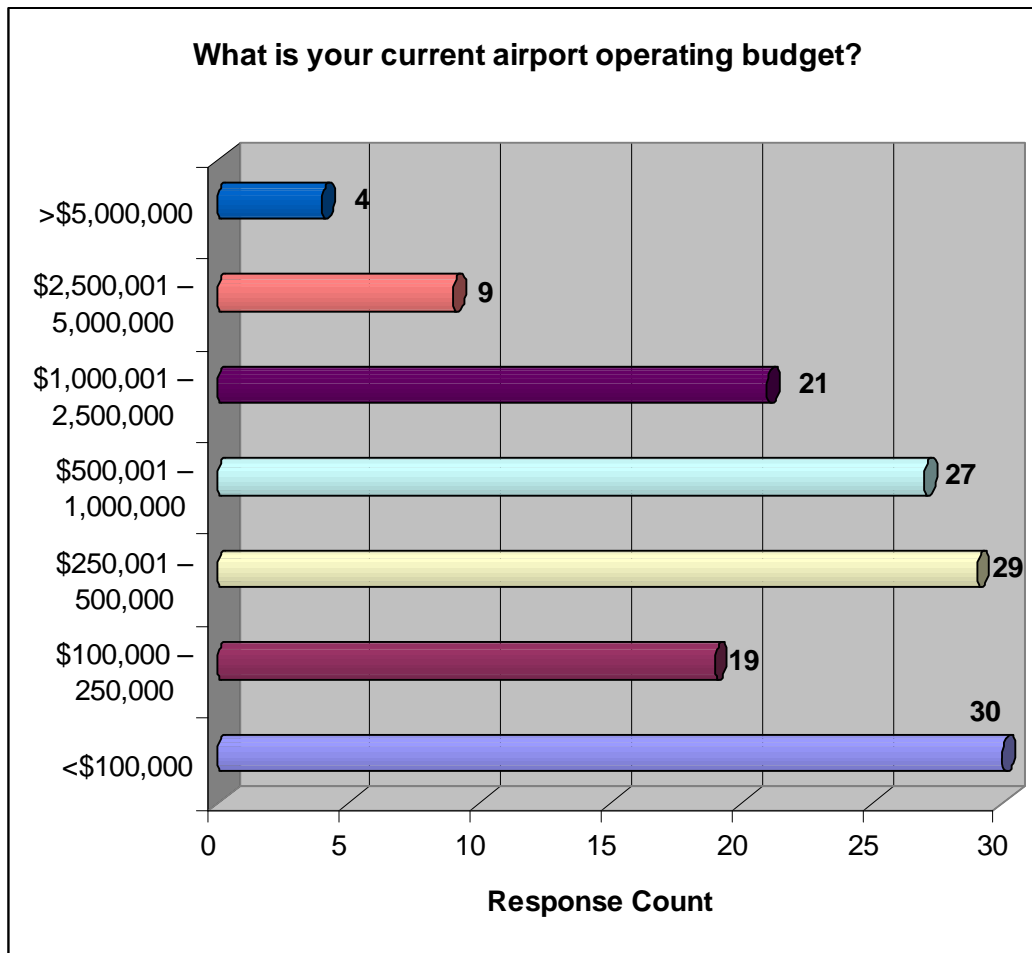
Development and Construction Standards

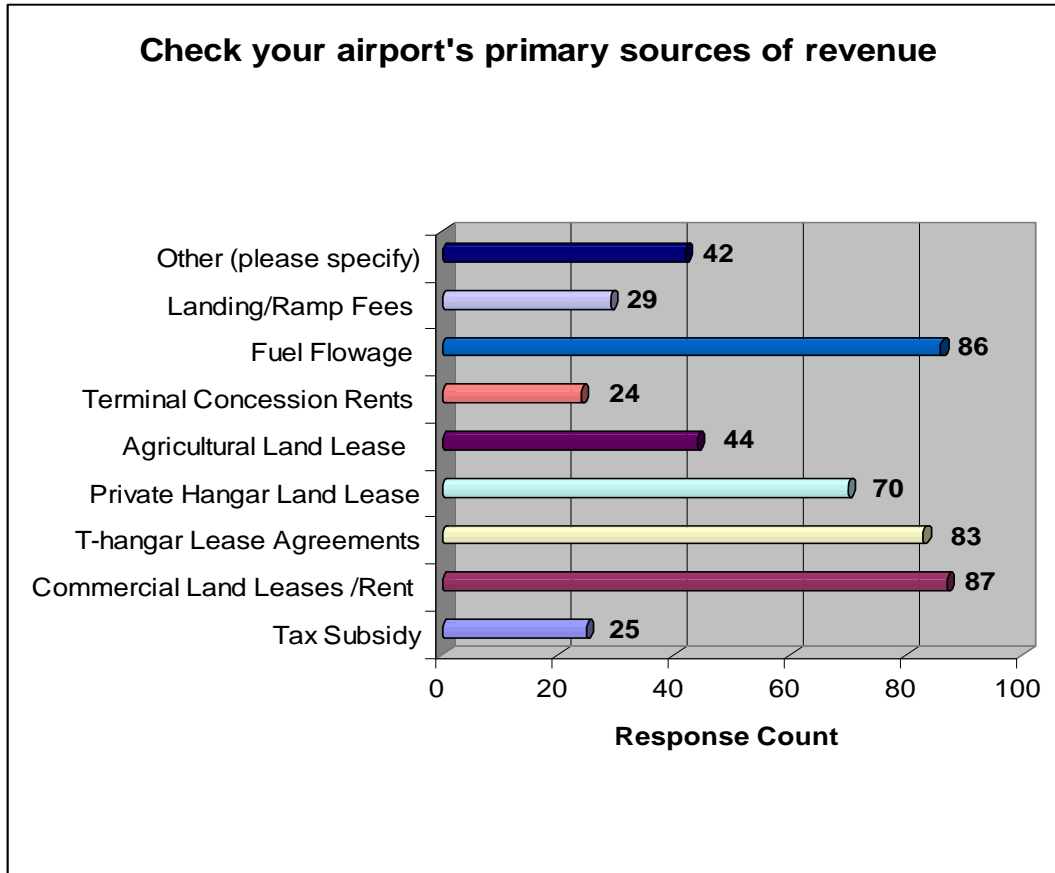
Do you currently utilize and issue airfield safety/security procedure manual to the contractors for each airport construction?





Finance and Revenue Generation

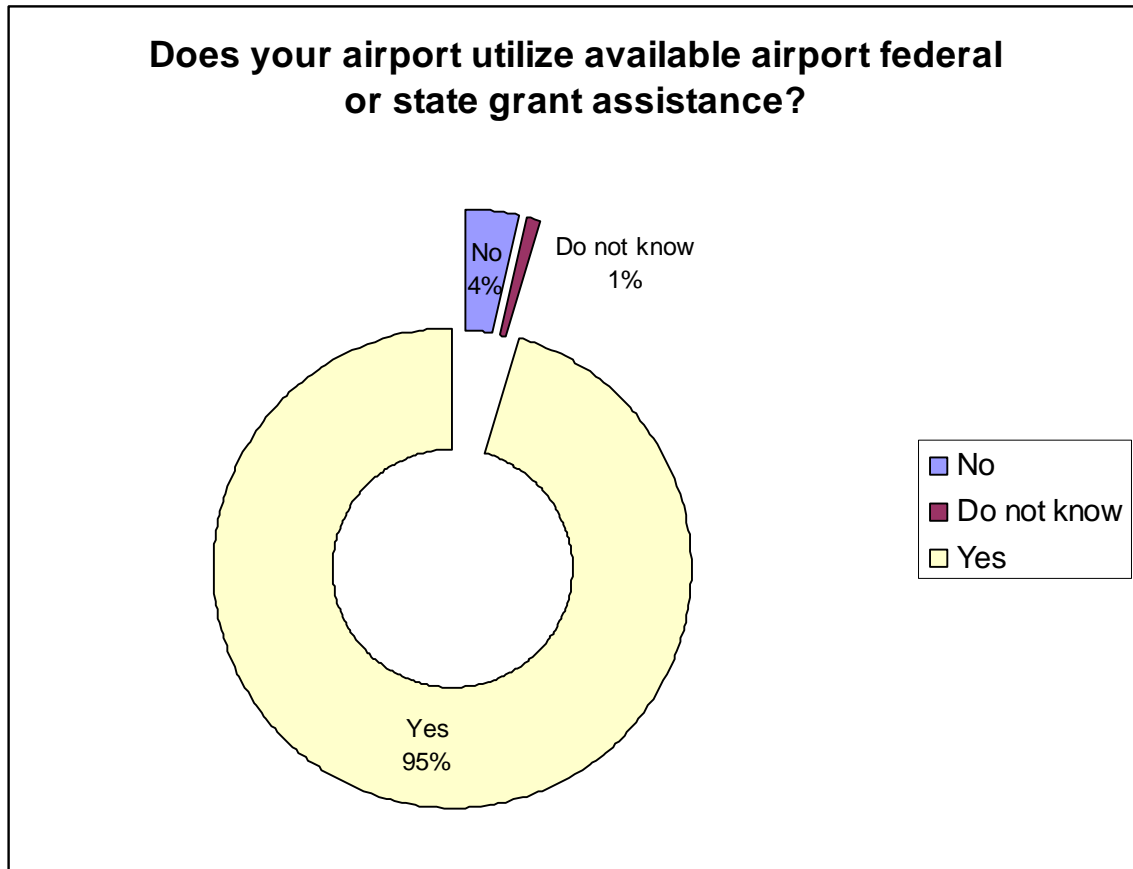




Question 3

Describe any unusual or non-standard method of revenue generation used at your airport:

- We have survived on PILT monies (Payment in lieu of taxes). Our budgets are bare bones with much of airport maintenance provided by volunteers. We must compete with other county services for the pilot monies so it gets fairly political.
- Off-airfield businesses that are tied into our waste water treatment plant
- We have a small orange grove and a pine timber farm we harvest for additional revenue.
- Use of billboards on airport property adjacent to the MASSPIKE. This generates over \$30,000 per year.



Question 5

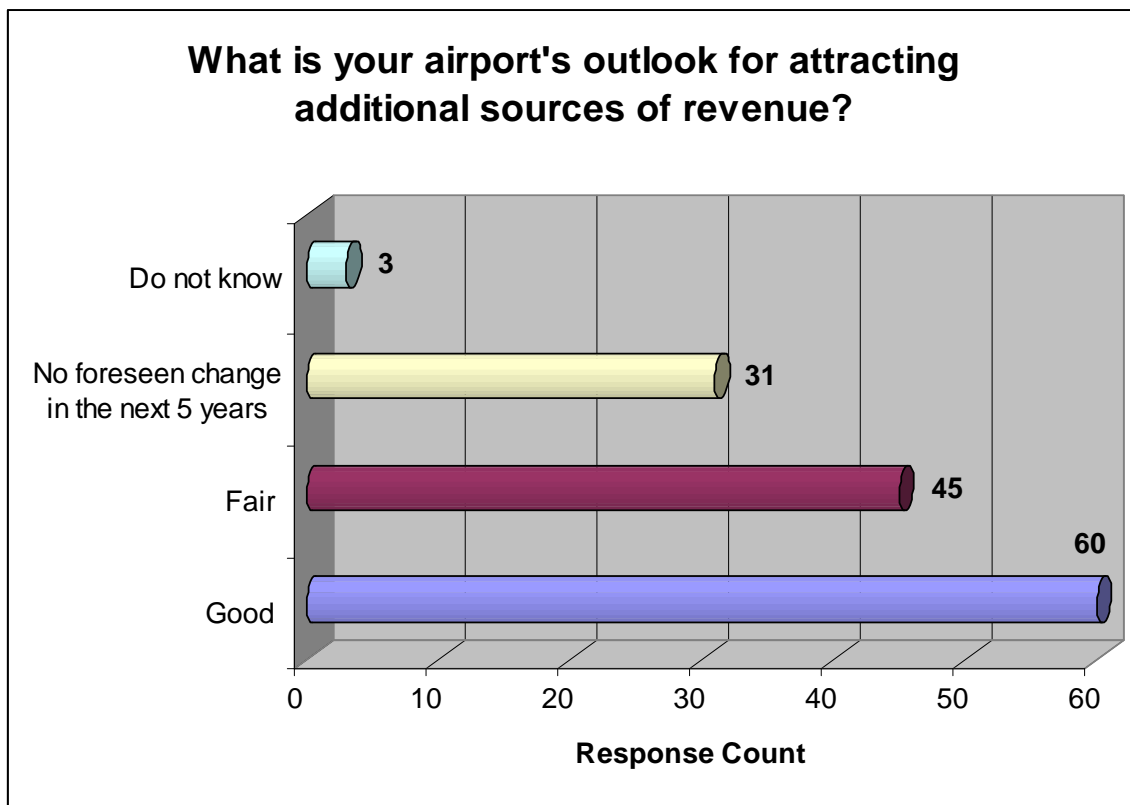
Describe any challenges you face in the area of airport financing:

- Contributing to the local share in conjunction with State and Federal grants can be an issue especially if the City already has a large construction season planned.
- Justifying local match to city council/ county board. Budgets are capped at unreasonable limits based on politics, instead of need. Personnel costs (health insurance) fuel, utilities increase in double digits every year - yet must turn in a budget with a net increase of 2%, year after year. It is not sustainable.
- Each budget year the airport struggles with balancing the budget on the limited revenue sources available to maintain and operate the airport. That is why the airport has to rely on tax askings from the City to balance the budget.
- As a reliever the size of our projects require larger grant request some times 4 to 5 million at a time. It is hard to get these projects funded at one time with the current grand environment. It would be nice if relievers had a pot of money to pull from and a larger entitlement program for relievers.

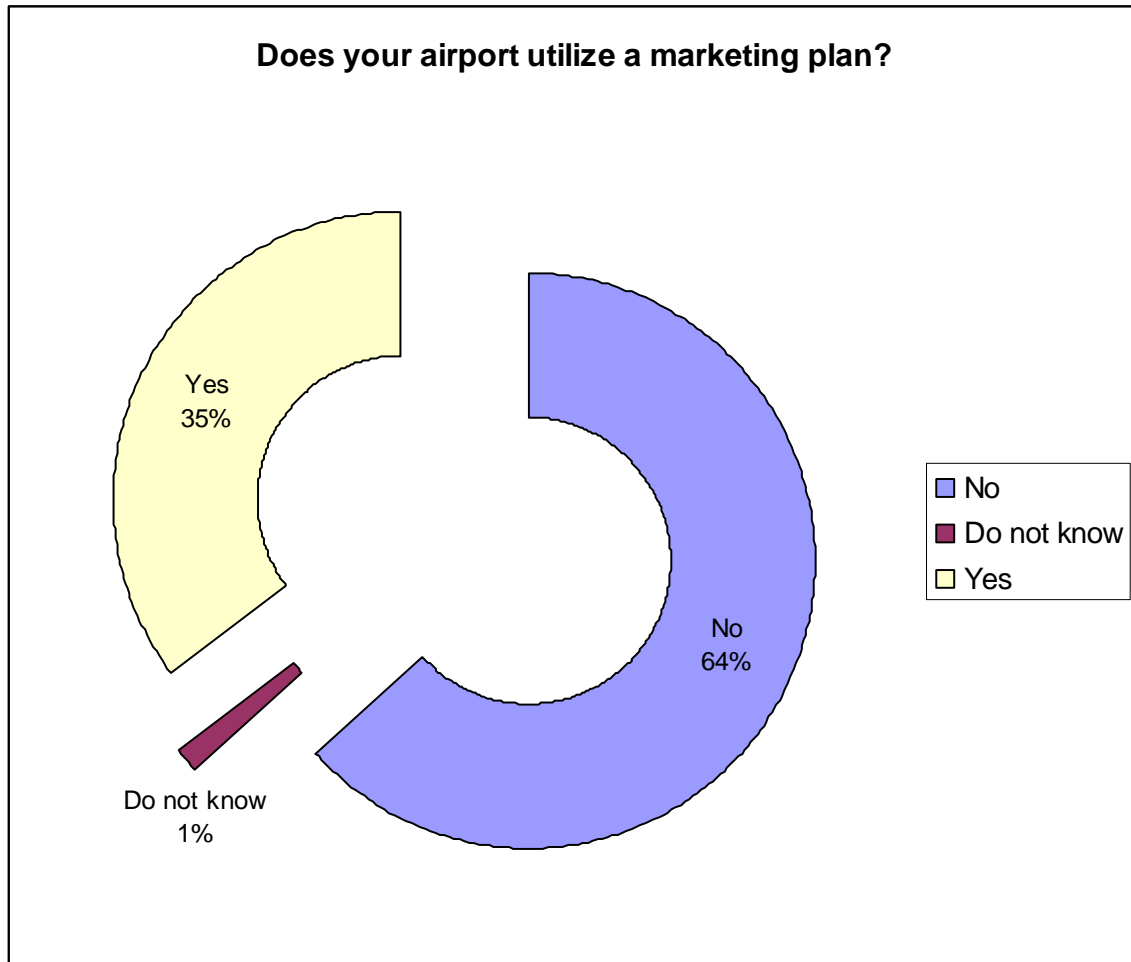
Question 6

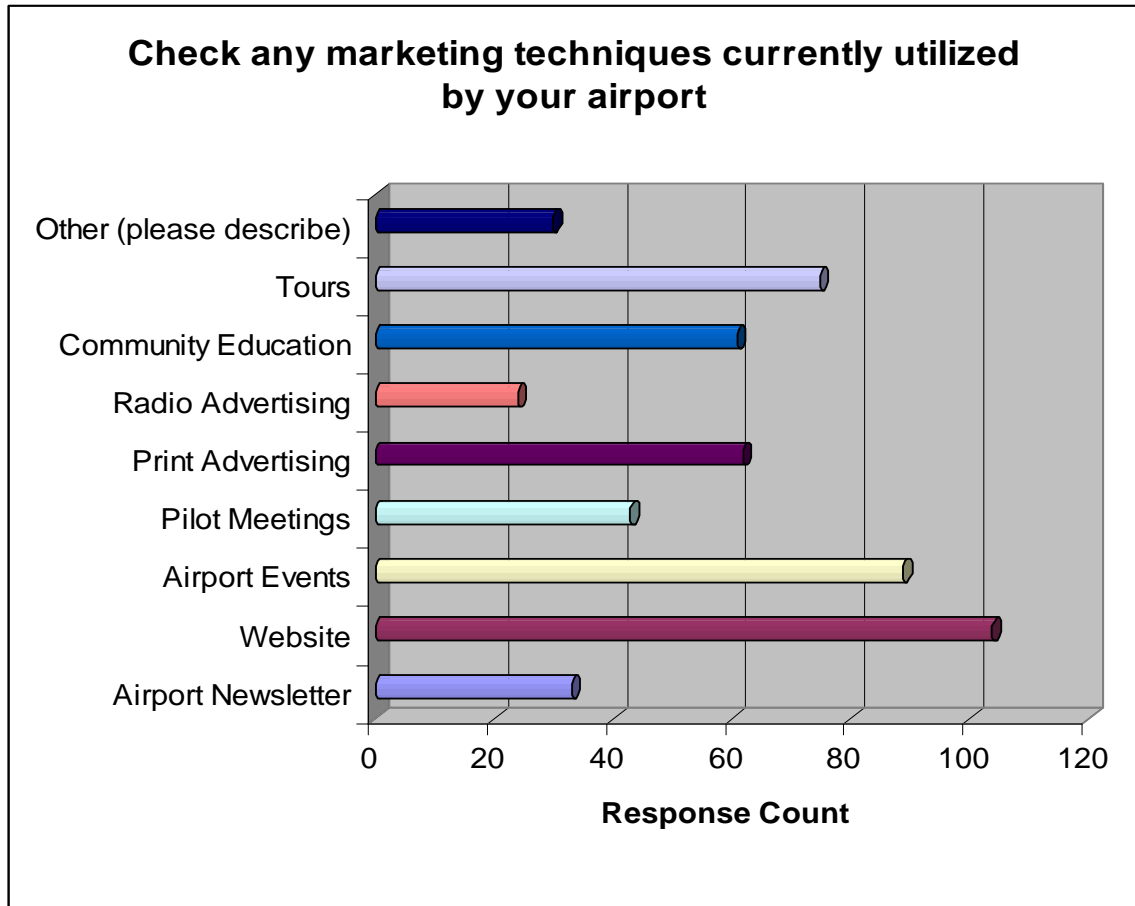
Share any ideas you have on innovative airport financing:

- Diversifying your income sources as much as possible is important. You cannot rely on one source (such as airlines due to recent financial difficulties) and need to build on other resources if possible.
- We charge individuals to build hangars on our airport. The improvements that are not covered by grant are divided up and assessed against the hangar lots
- The GA entitlements are fairly new. At some point, some had to advocate for them. I think they should be revisited and a greater portion of discretionary funds should be made available to GA airports on a competitive basis. Let us show the impact of our operations to the economy versus an air carrier's impact on the economy. Raise the PFC cap and send some of the air carrier entitlement funds to GA airports that are key to Michigan's economy.
- Banks need to understand the long term value of the improvements and be willing to finance 20, 30 or 40 year large capital improvements. What's the difference between that and continually refinancing homes that are never paid off?

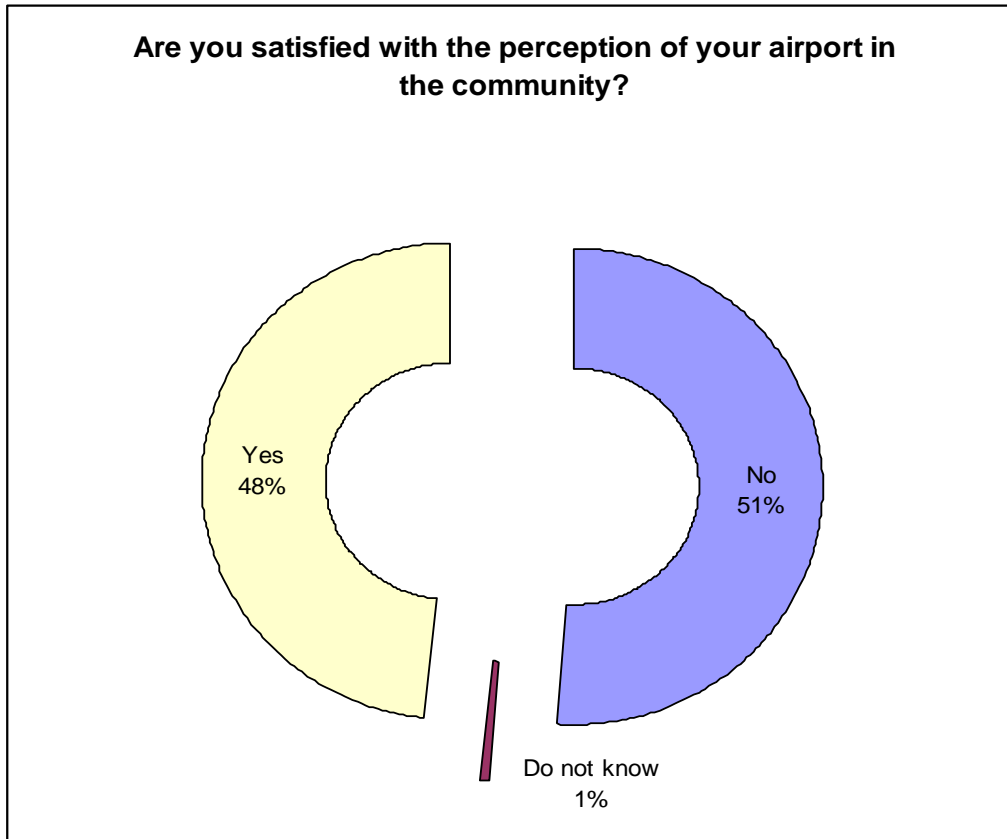


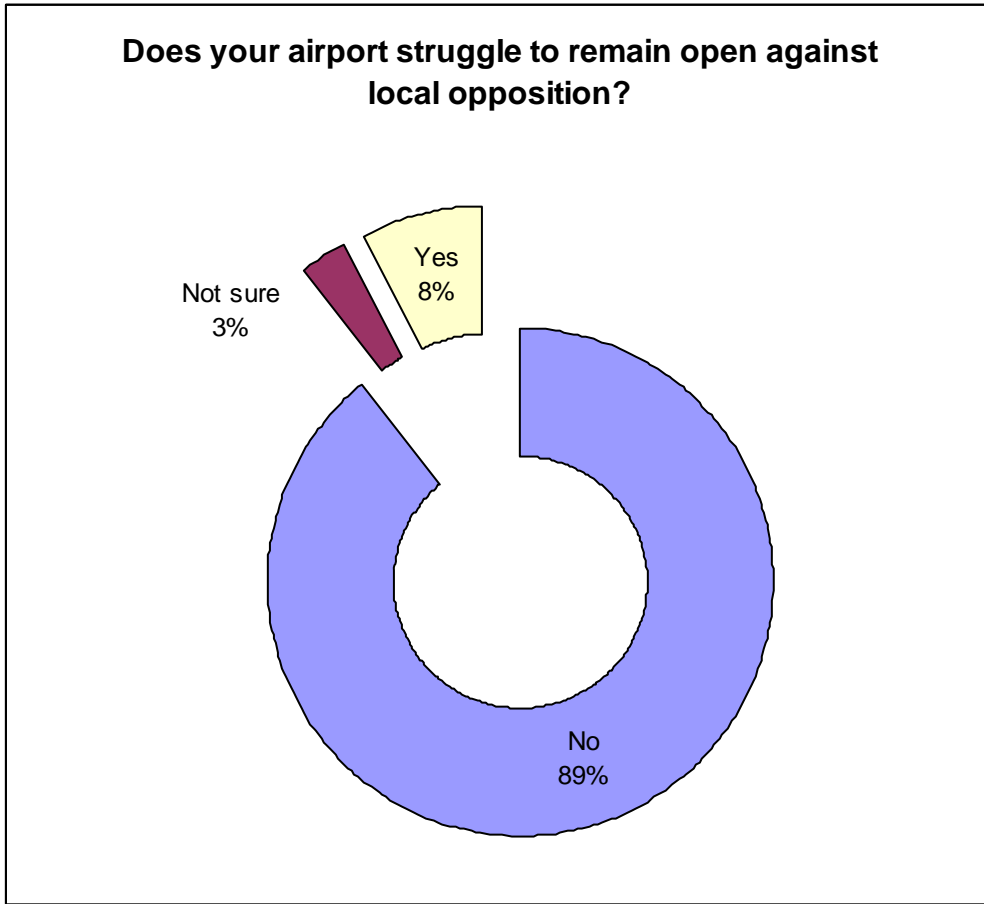
Public Relations

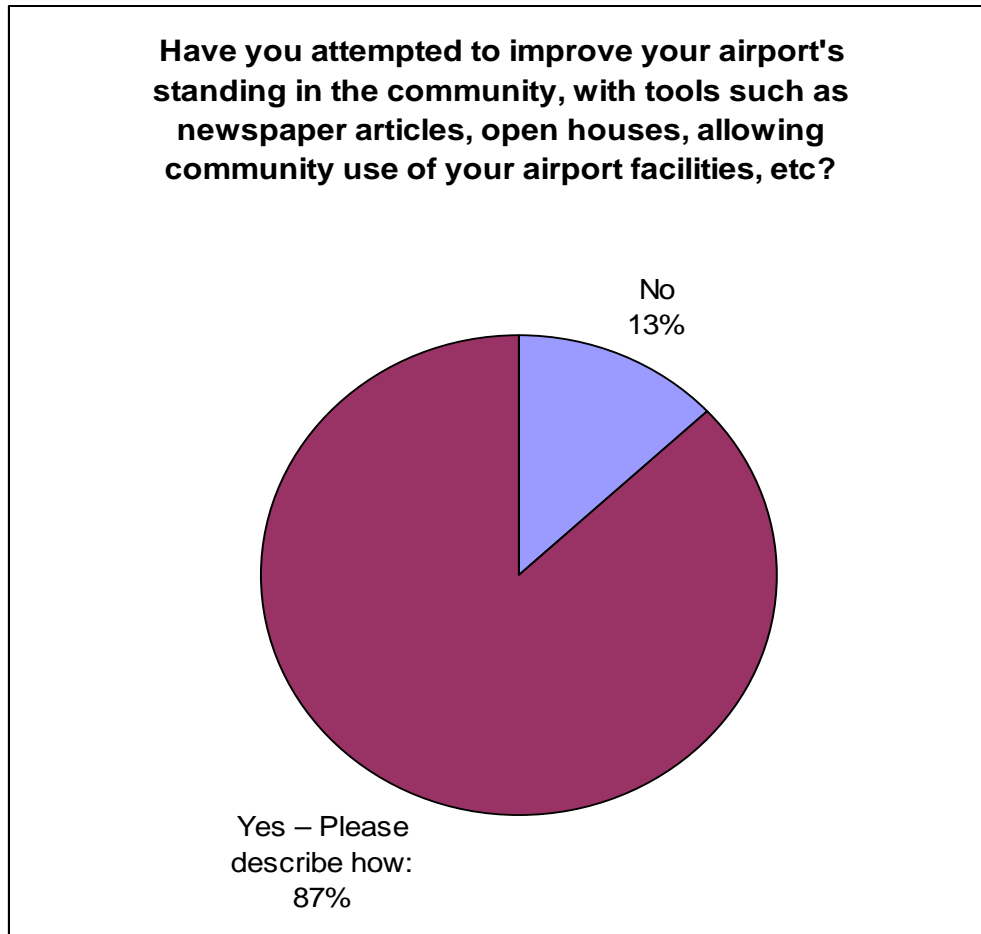




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*Question 6*

Describe any other challenges that you face in marketing your airport to the local community:

- We currently have two commercial flights a day that are full. We are aggressively working with the airline to bring in a third needed flight. Until that happens, it is hard to market for something that is not available to the public.
- Still face the ingrained concept that the airport is just a place for "rich" folks to hang out on a Sunday afternoon to go flying...all at the expense of the poor folk in town.
- Too many people in the community base their success of an airport on the ability to have commercial airline service. Showing them the benefits of GA and corporate traffic, and now especially Light Sport Aircraft, is a challenge. Those same people believe that valuable airport land ought to be opened up as well to non-aeronautical commercial development.

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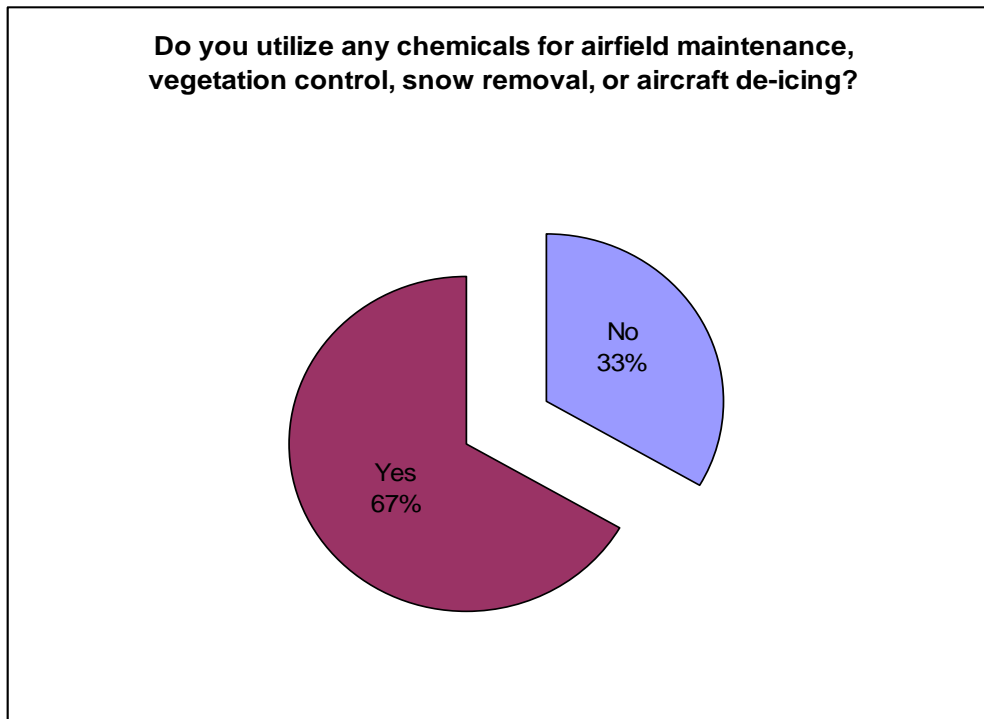
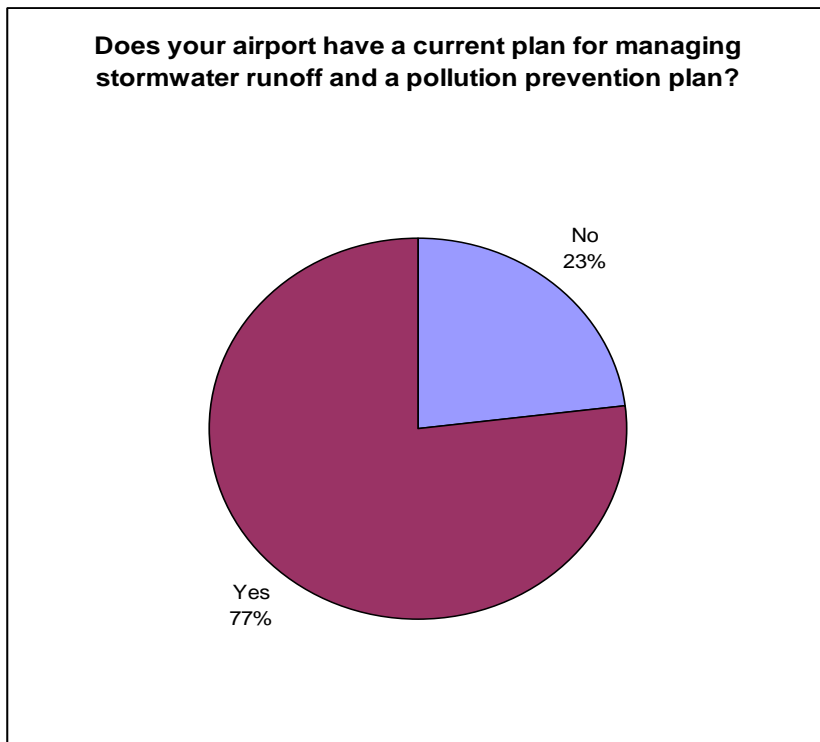
- We do a great job of educating based pilots on the importance of being a good neighbor. However, especially during the summer months, we struggle with visits from transient pilots who think that buzzing and other unsafe antics are acceptable. Educating pilots on how airports are funded and the struggles airport management has to maintain community relations is helpful. I would love to see a segment on community relations incorporated into every pilot's BFR training!

Question 7

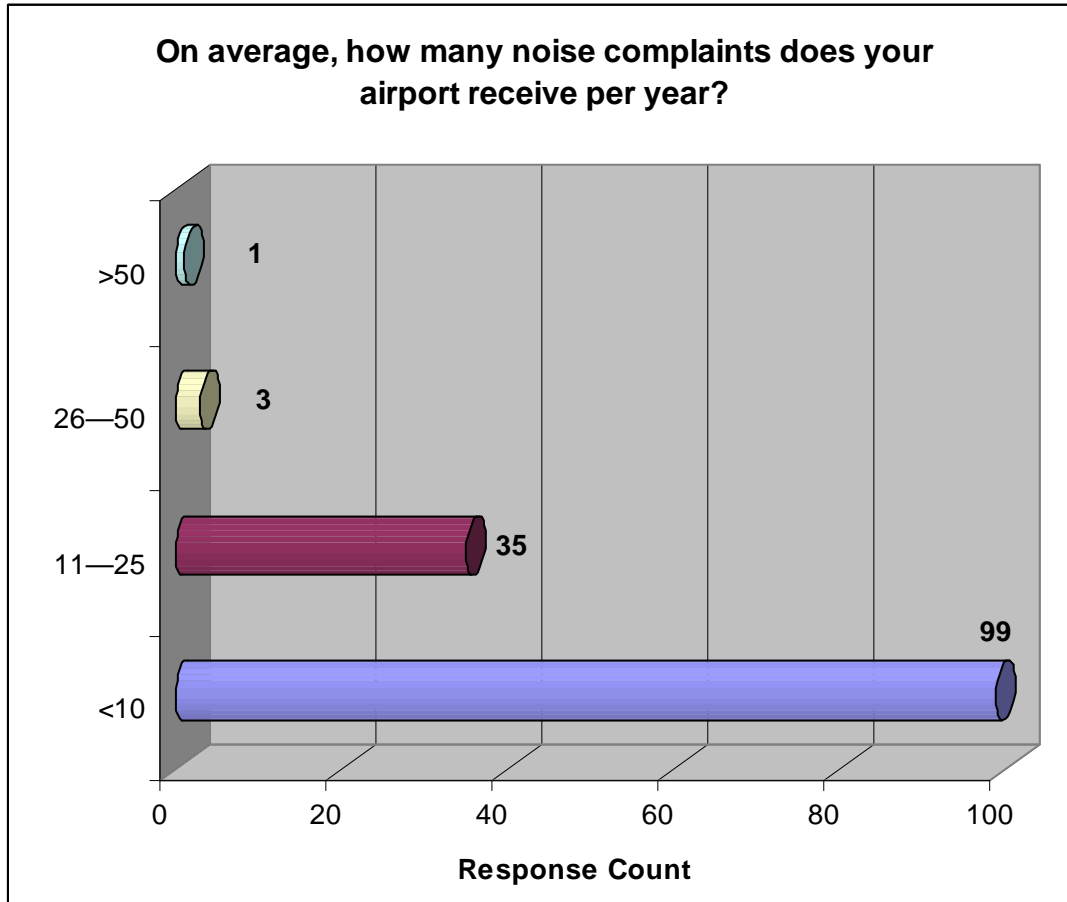
Describe any success stories you'd like to share relating to marketing your airport:

- It helps to have an on-site Airport Manager to work the marketing program and follow through on the various marketing strategies. We have had some success with youth tours and aviation camps.
- We just strive to be the best Airport we can and we do our best to get the word out that Temple is easy to negotiate with...we want the business and we will do what we can to get it...AMCOM is here because of that philosophy...started out with a 7800 square foot hangar in 1995...just recently added a second 50,000 square foot complex to support their growing operation on our airport!
- An extremely negative editorial was run in our local paper concerning a taxiway project. The facts were absent and it turned out the author did not live in the area. The paper apologized (in person) to our Commission and ran the full version of our response. The response went over well and ironically assured our funding in what turned out to be a very tight budget year.
- I recently began providing county and city commissions with monthly updates which include airport "success stories" of how the airport helps local businesses or brings in other tourism and business.

Environmental Considerations

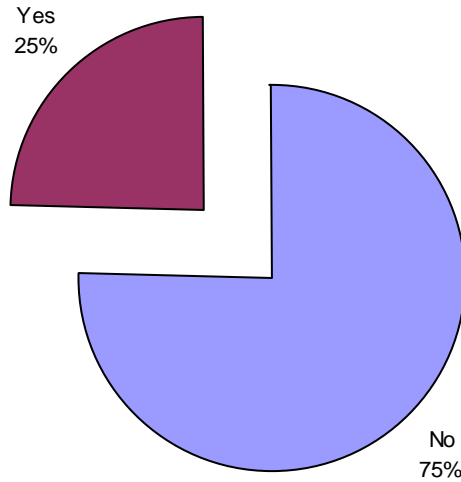


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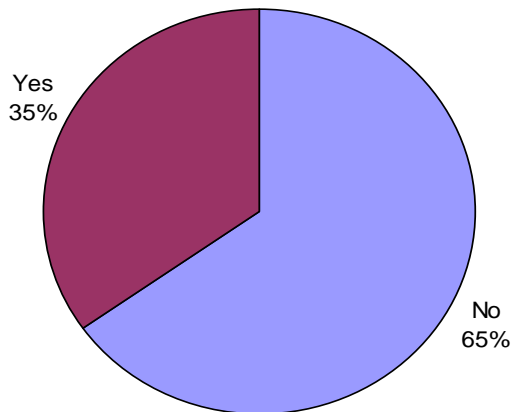


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Does your airport have standard procedures for noise mitigation?



Do wetlands inhibit your airport development?



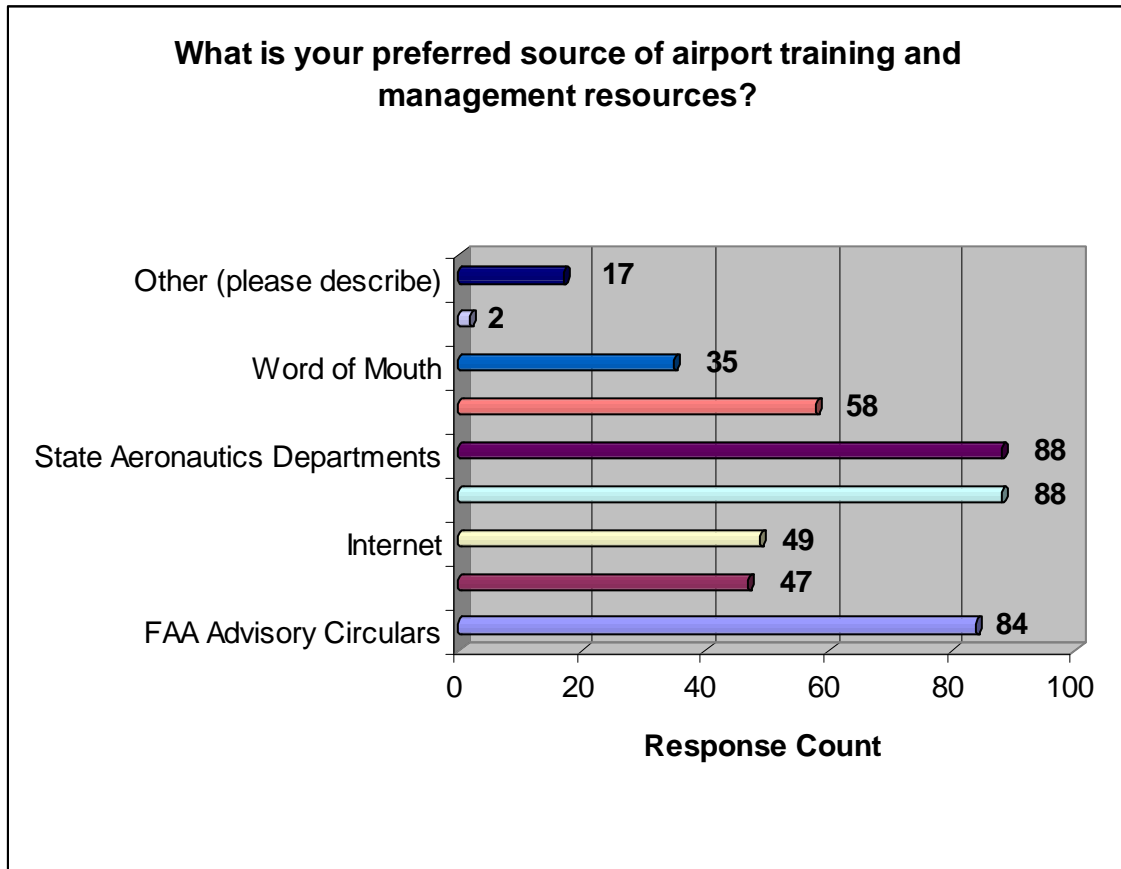
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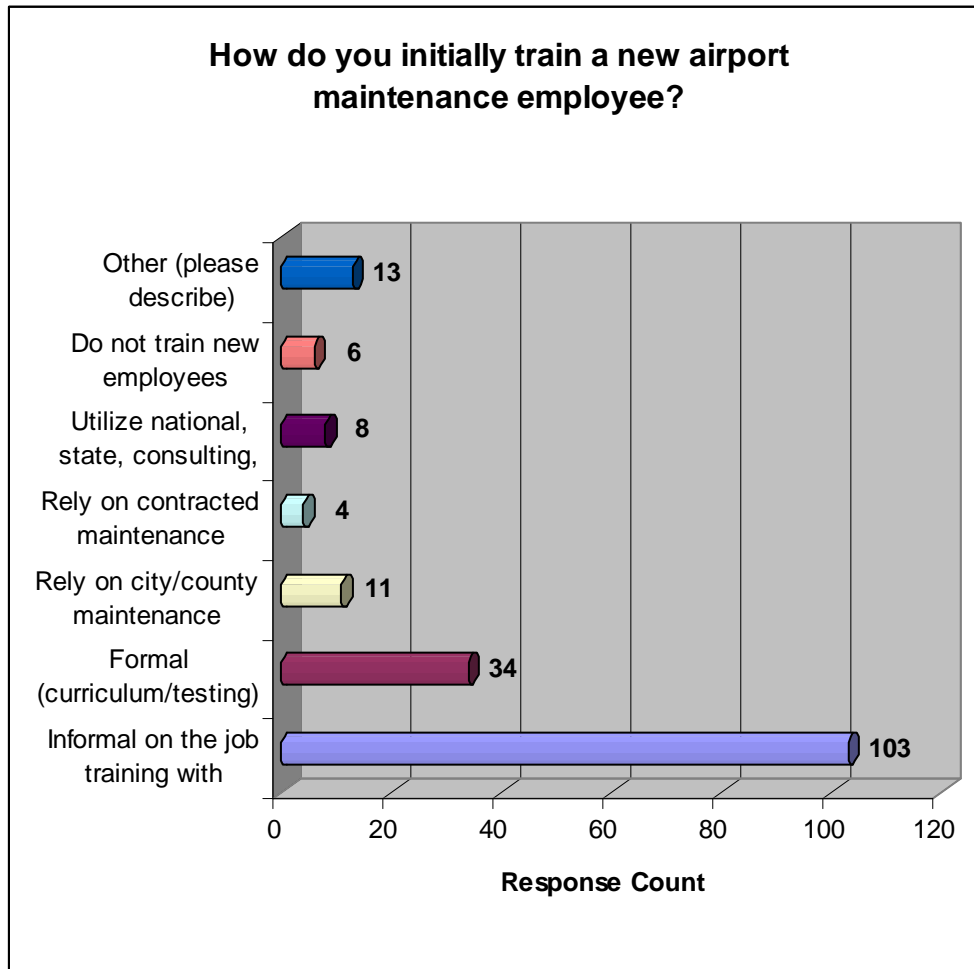
Question 6

Describe any environmental challenges that are important to you (such as permitting, crop sprayers, wash areas, etc.):

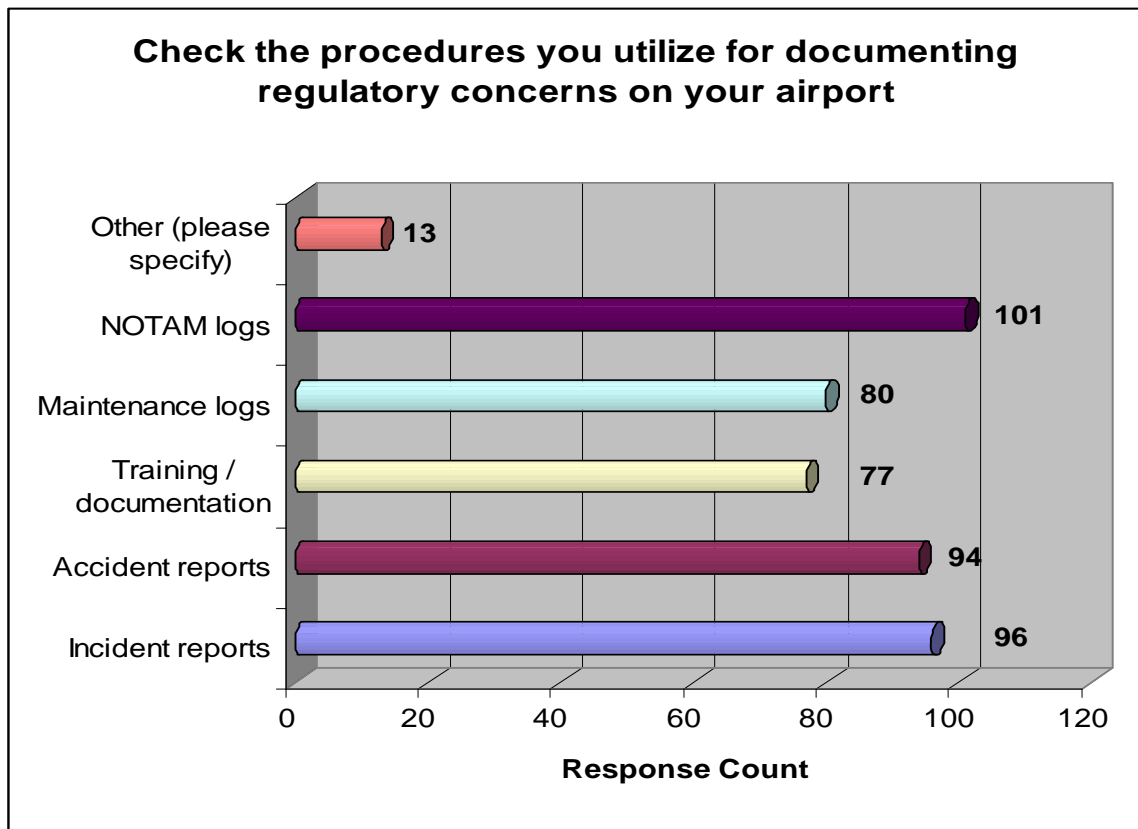
- Educating and working with our tenants has proven to be very successful for our SWPPP.
- A challenge is understanding what the regulatory requirements are. It would be nice to have a checklist that has dates or time frames associated with it. For example, how many times a year do I need to have my storm water tested.
- Permitting is the biggest impediment to timely and cost efficient airport development. Once an area has been established as desirable for airport; that facility should be developed with safety and efficiency as paramount considerations. Wetland mitigation should be subordinate to the best long term interests of developing and operating the airport safely and cost effectively.
- This airport elevation is 6ft at our highest point and development must be at 12ft. In order not to flood our runways taxiways and streets, special attention must be made to drainage issues. With this airport being on a barrier Island wetlands is an issue that we must look at before any construction begins.
- We are almost completely surrounded by wetlands and have a river on both ends of our runway. These environmental constraints severely limit our options for development. Several areas of our airport are limited to winter cutting operations for the VMP and we have rare species concerns.

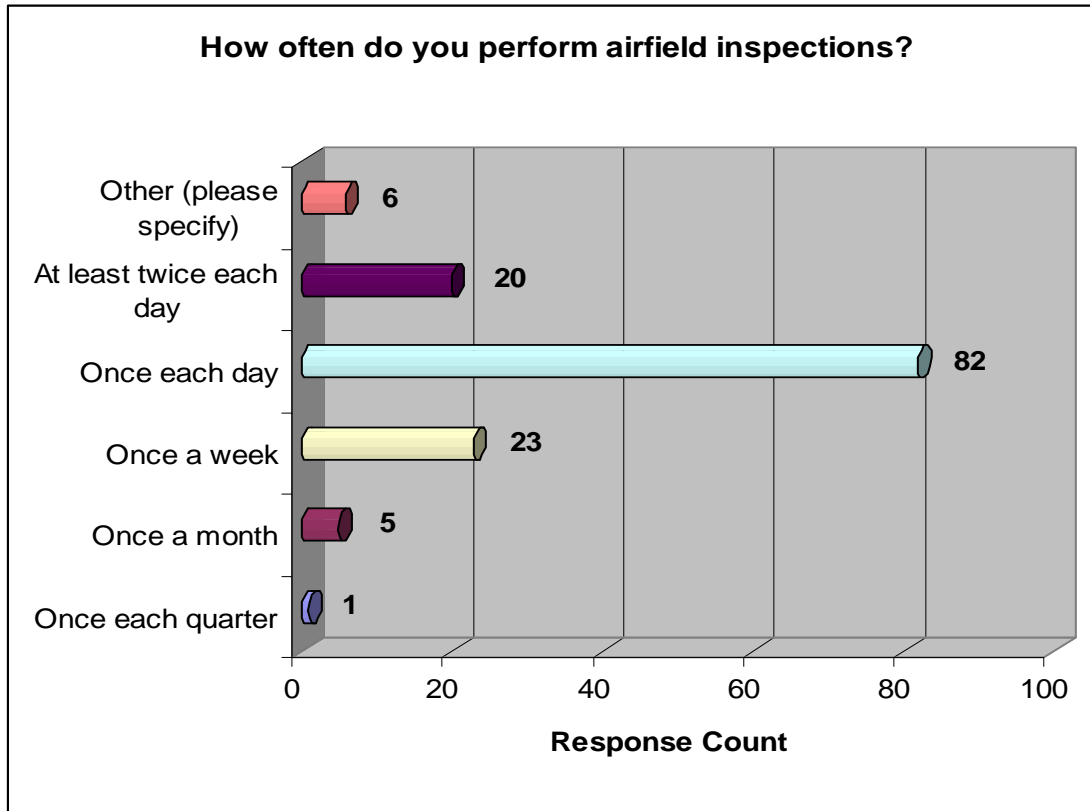
Training and Management Resources



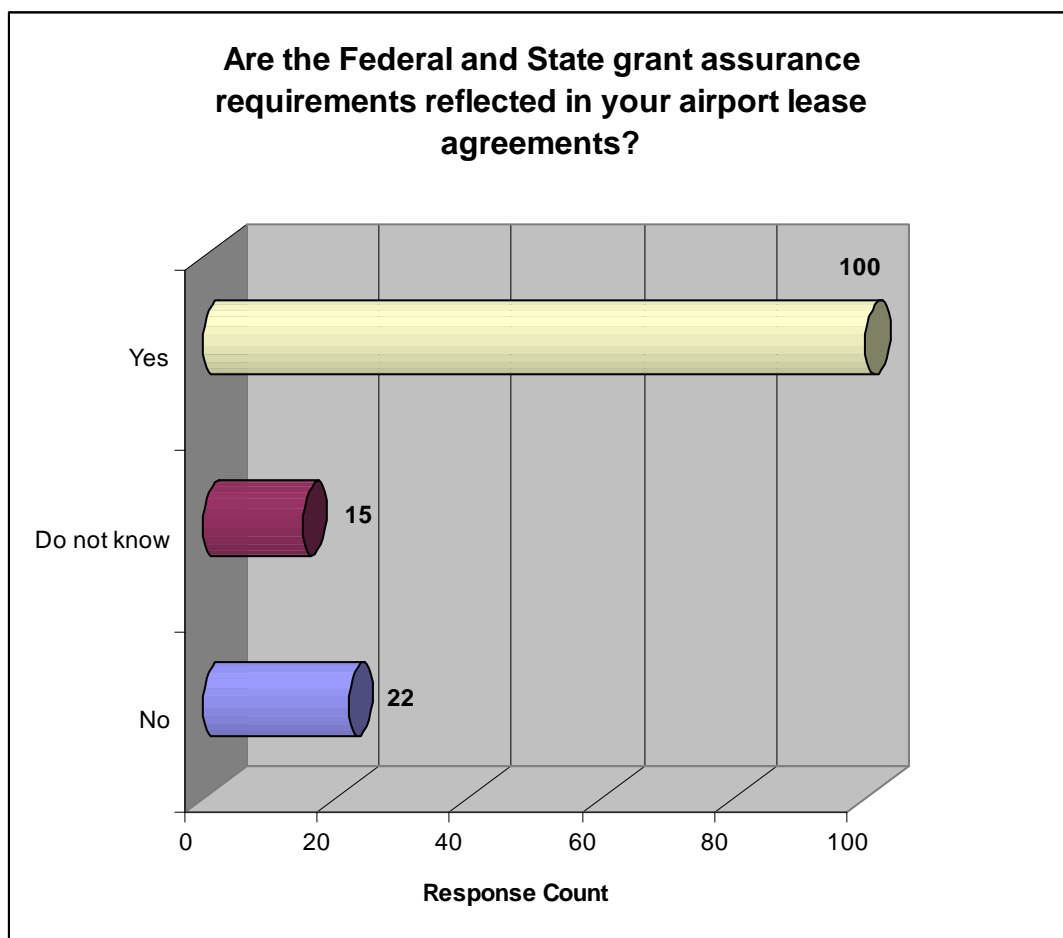


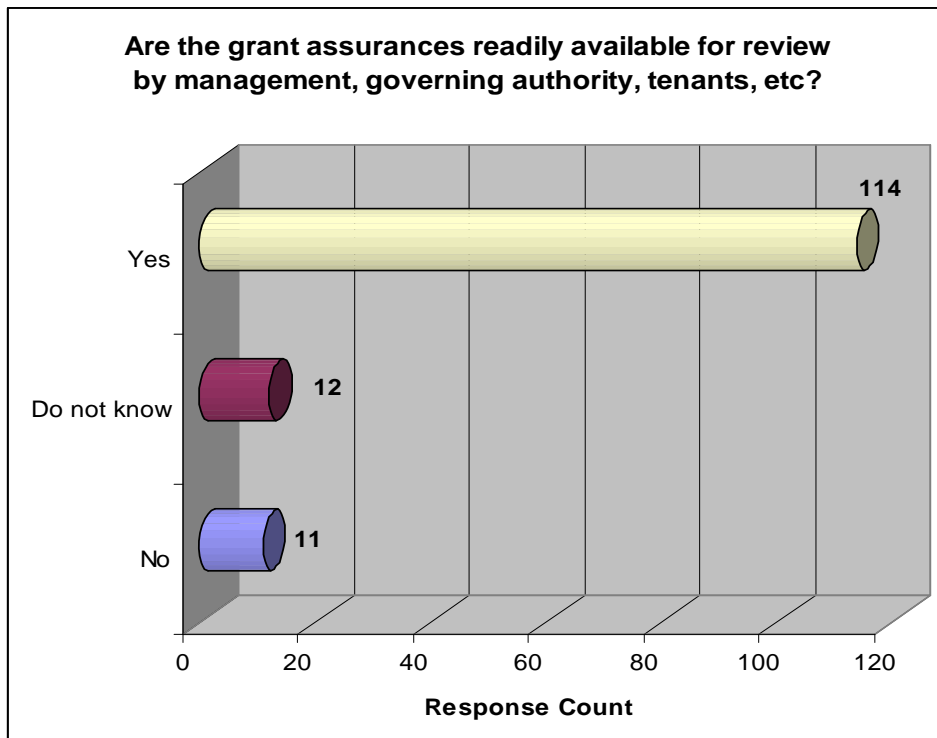
Regulatory Compliance



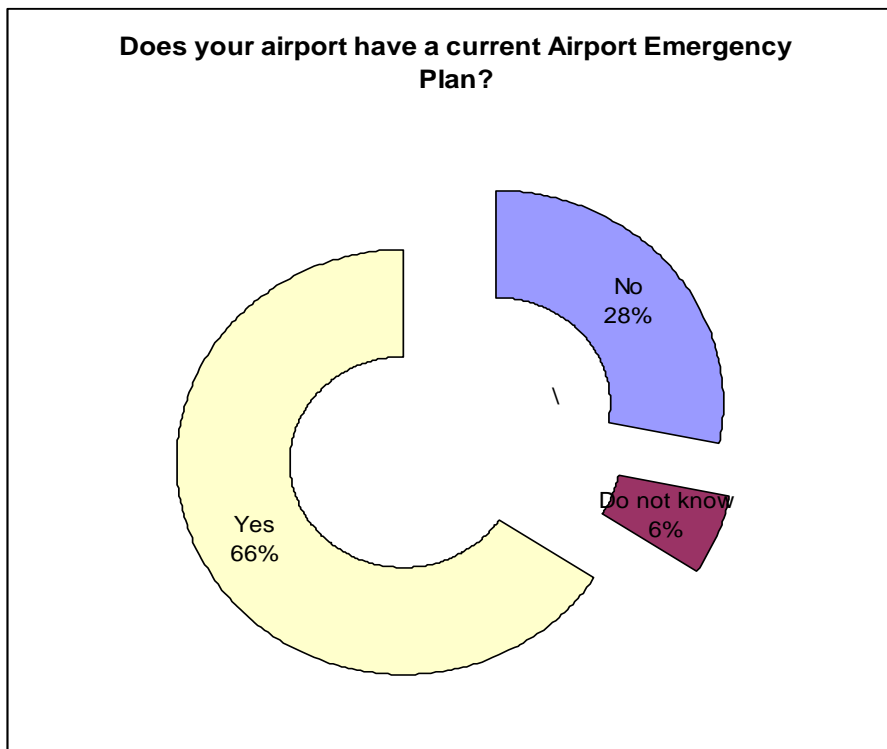


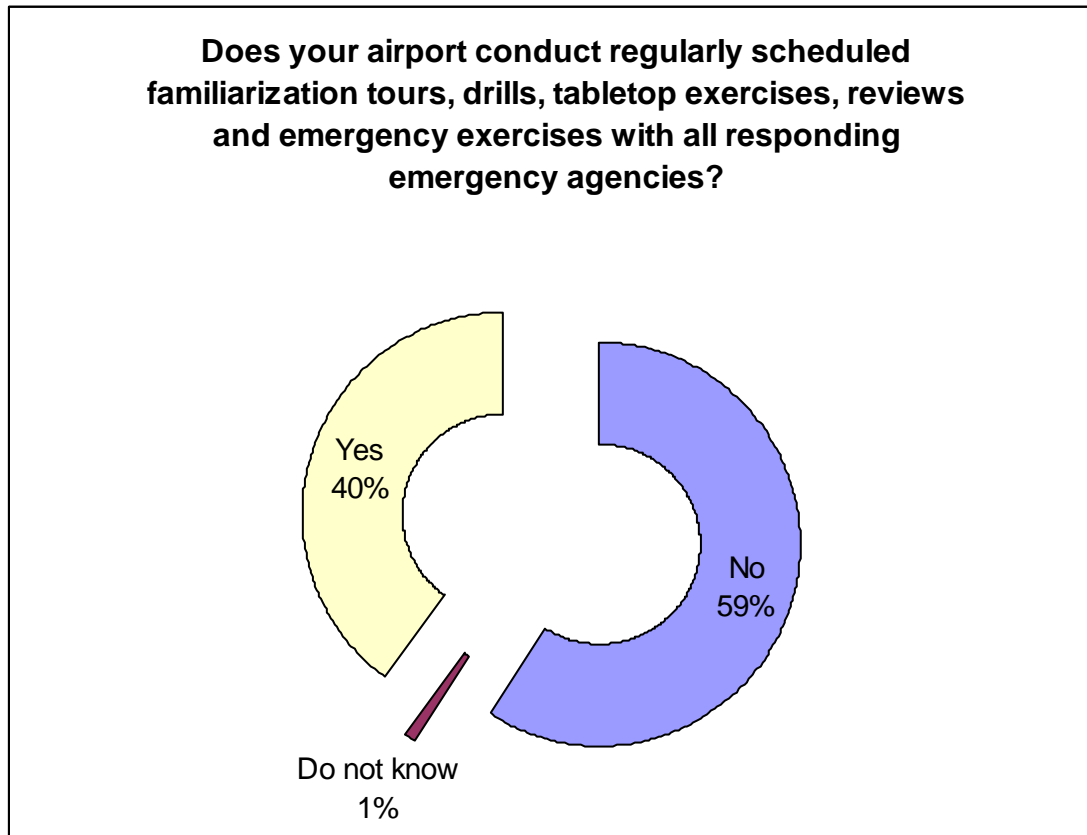
Compliance with Grant Conditions





Emergency Procedures





Question 3

Describe your concerns with Airport Emergencies and Emergency Preparedness:

- Familiarization for the responding agencies. It cannot be stressed enough due to the infrequency they have with the airport.
- Civil Air Patrol, FBO and other agencies exercises to work together.
- We have a complete emergency plan and agreements with the adjoining cities. We review our emergency plan yearly with all interested parties.
- My biggest fear is having an accident and not having a plan in place to refer to on how to handle it. I have talked to the Fire Dept and other emergency agencies about a training session but making it happen is not easy. It requires cooperation among city and county and private emergency agencies but is something that really needs to be done.

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Question 4

Share any best practices that you use to prepare for emergencies at your airport:

- Good relationship with responding organizations. Airport Manager is a member of the fire department and provides an increased presence of emergency response on field. We regularly exercise our plan.
- Have airport staff well trained and prepared for emergencies, especially things such as gear malfunctions and landing incidents that are predictable. This should include procedures to remove the aircraft once released by FAA.
- Emergency call out list of all employees. Both radio and direct telephone link with our local law enforcement. Staff meetings on emergencies.
- Tabletop exercises yearly with all emergency responders. Emergency Exercise every three years with all emergency responders. Yearly training of maintenance and ARFF personnel

Closing Information*Question 1*

What is your biggest challenge in airport management?

- It is an ever changing profession and Airport Manager must be somewhat of a "jack of all trades". Dealing with tenant and lease issues is difficult at times.
- Staying abreast of the changes. Creative funding to have a cushion for the unknowns that always seem to appear, whether it be equipment breakdowns/replacements, drastic fuel increases, etc.
- There are many challenges that face airport managers everyday. Ensuring federal and state grants are available to the airport. Our airport is an Essential Air Service Airport which is a challenge every year at appropriations time to fight the battle for full-funding of the Essential Air Service Program. Unfortunately, for our community without this program, we would more than likely be without commercial air service because of the fragile airline industry.

Question 2

What specific topics would you find of most value in a guidebook for small airports?

- Checklists for training, security and emergency procedures to be easily used by staff.
- Regulatory checklists so things items don't fall through the cracks and helps managers keep track of everything they need to...would help in being better organized.
- Most valuable information that could be of use in a guidebook would have to be model/standard lease agreements. published or updated fees and rates from a region would also be useful.
- Realistic methods of meeting the requirements for the various "PLANS" an airport is supposed to have: Minimum Standards, Emergency Response, Storm Water Pollution

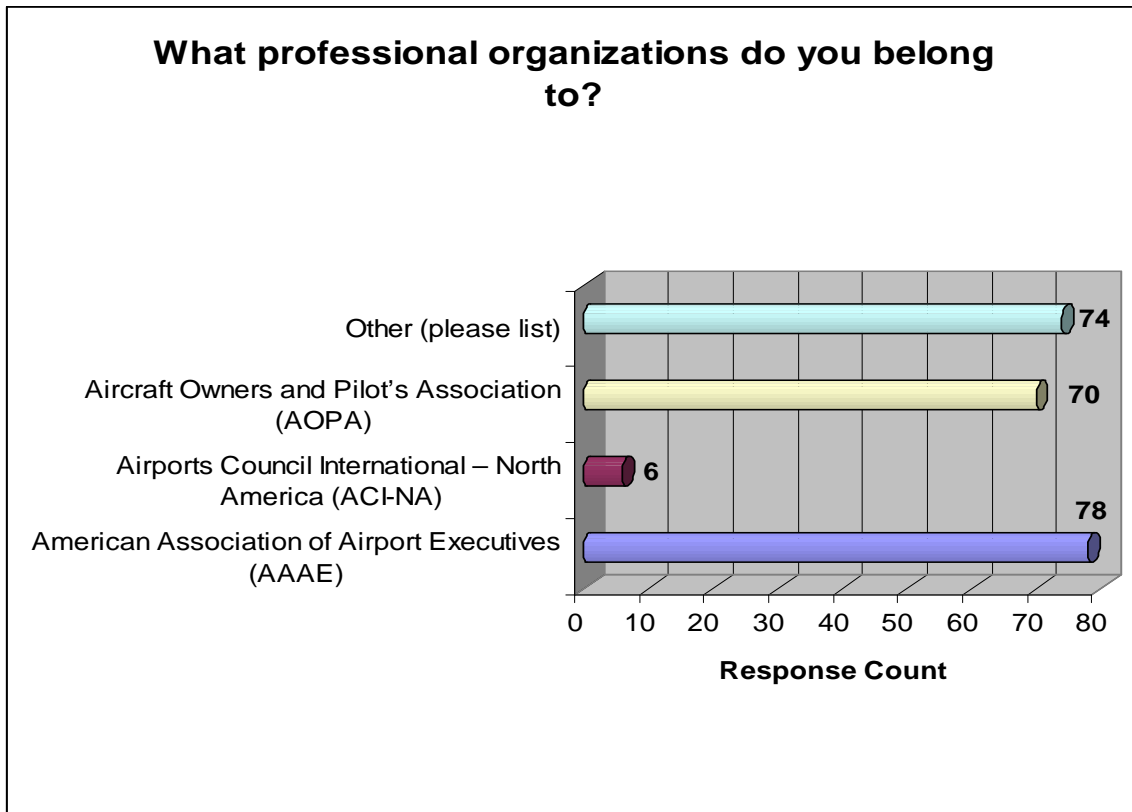
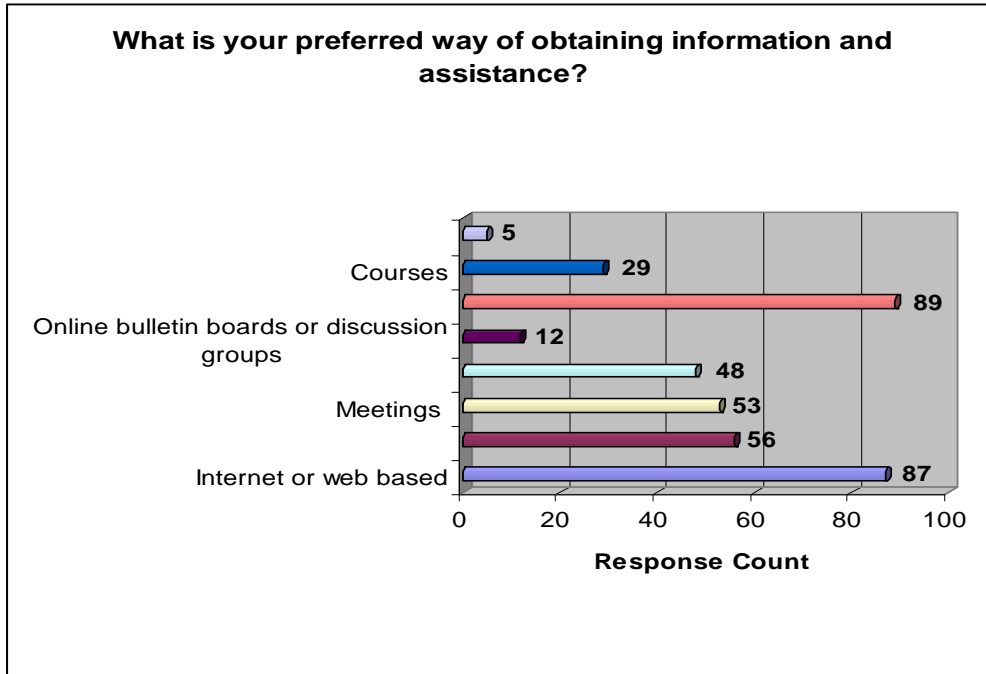
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Prevention, Supplemental Pollution Control and Countermeasures, Pavement Maintenance, Airfield Maintenance, ACIP planning, Marketing, Industrial development, Zoning and Control.

Question 3

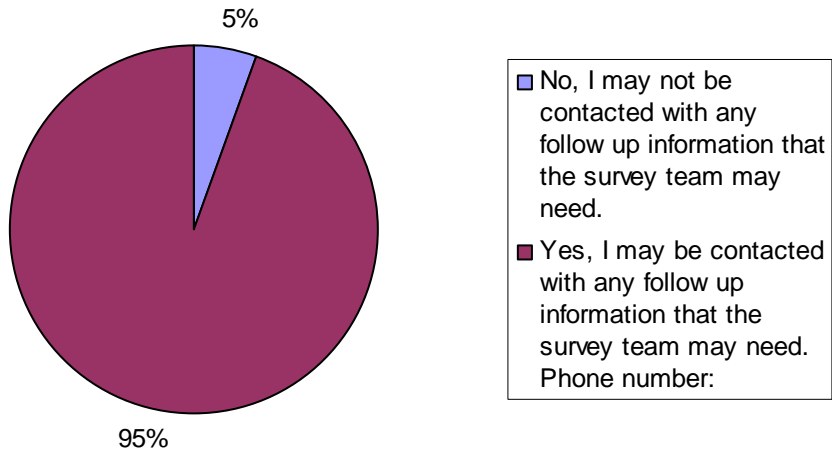
What are the more innovative methods used in airport management in your jurisdiction or other communities you know of?

- Utilizing college students in airport management programs.
- I feel that to be effective, you must develop a strong relationship with your elected officials, developing a plan of action that they can believe in. I have found that meeting with the civic organizations (local chamber of commerce, Lions Club, Rotary Club, etc) to share your vision for your airport, as well as present your current challenges, is an effective means to building community support. Without the community support, the elected officials will find it difficult to champion your causes. Without their support, you will not be able to fully develop and implement your capital improvement plans. Bottom line - not political support, no funding.
- Maximum utilization of the staff at the Bureau of Aeronautics. Ask lots of questions of them. Usually you can get an answer quickly from them.
- The FAA makes all airports have a 5 year masterplan for the airport property. I started a 5 year update plan for money left in the budget at the end of the year. To include when to replace mowers and snow equipment, when to repair/replace roofs. I did this while visiting with the street department so that I knew when they were trading in equipment that I could use.



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The published guide will be sent directly to all survey respondents. Please indicate below if you are available for follow-up questions



APPENDIX D: FINAL GUIDEBOOK OUTLINE

Frequently Used Terms and Acronyms

Summary

Introduction

Chapter 1: Airport Organization

Governance

Types of Airport Ownership

Structure and Role of FAA, State, Airport

Function and Roles of Airport Manager

Function and Roles of Airport Staff

Communications and Coordination with Airport Owners and Boards

Regulatory Compliance

Federal Regulations

State and Local Regulations

Chapter 2: Airport Finance

Finance

Developing a Budget

Determining the Economic Impact of an Airport

FAA Policy and Procedures Concerning Use of Airport Revenue

Land Acquisition and (Negotiating and Paying Fair Market Value)

Revenue Generation

Leasing and Use Agreements

Minimum Standards

Flying Clubs

Rules and Regulations

Exclusive Rights

Rates and Charges

Terms and Conditions

Liability and Insurance

Grant Programs

FAA Airport Capital Improvement Plan

Airport Improvement Plan (AIP)

Compliance with Grant Conditions

Airport Development

Federal, State, and Local Funding

FAA AIP Funding

Passenger Facility Charges

State Grants

Local Funding

Airport Revenue

Airport Bonds

Other Capital Sources

Capital Improvement Programming and Cash Management

Airport Development Project Case Study

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Additional Resources

Chapter 3: Airport Operations

Safety

- Public Protection
- Tenant and Contractor Protection
- Employee Protection
- Aircraft Fueling
- Notice to Airmen (NOTAM)
- Airfield Data and Communication
- Airfield Driving Programs
- Wildlife Hazard Mitigation

Maintenance

- Inspections and Surveillance
- Preventive Maintenance Programs
- Landside Maintenance

Security

- History and Overview
- Federal Regulations
- Safety and Security Guidelines for General Aviation Airports
- Incorporating State and Local Regulations
- Developing an Airport Security Program
- Local Training and Airport Familiarization
- Security Technology

Emergency Preparedness

- Airport Emergency Plan
- Operational Planning Procedures
- Emergency Training and Airport Familiarization
- Aircraft Accidents and Incidents
- Media Relations
- Preferred Practices and Recommendations

Additional Resources

Chapter 4: Airport Planning and Development

Planning

- National Plan of Integrated Airport Systems (NPIAS)
- State Aviation System Plans
- Master Plans and Airport Layout Plans (ALPs)
- Design Standards
- Project Justification
- Compatible Land Use Plans
- Zoning
- Emerging Trends
- Consultant Selection

Development and Construction Standards

- Design Development
- Construction Plans
- Construction Specifications

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- Construction Safety and Operations Plans/Safety Manuals
- Airport Construction Activities
- Regulatory Overview
- Water Resources
- Air Quality
- Noise
- Hazardous Materials
- Due Diligence Environmental Audits
- Spill Prevention Countermeasure and Control Plans (SPCCs)
- Wetlands
- Fish, Wildlife, and Plants
- Farmlands
- Historical, Architectural, and Cultural Significance
- Airspace and Approaches
 - 14 CFR Part 77, Objects Affecting Navigable Airspace (FAR Part 77)
 - Part 77 Civil Airport Imaginary Surfaces
- Additional Resources
- Chapter 5: Public Relations
 - Marketing and Advertising
 - Developing a Marketing Plan
 - Developing Marketing Strategies and Priorities
 - Measuring Success
 - Community Relations
 - Media Relations
 - Perception of the Airport in the Community
 - Hosting Public Events
 - Additional Resources
- Chapter 6: Commercial Service
 - History and Overview
 - Airmail
 - Commercial Passenger Service
 - Positives of Air Service for a Community
 - 14 CFR Part 139, Federal Aviation Requirements
 - Community Compatibility
 - Master Planning Issues
 - Essential Air Service (EAS) Program
 - History
 - Guidelines
 - Airline Use Agreements
 - Relationships Between Airports and Airlines
 - Standard Lease Requirements
 - Typical Lease Agreement
 - Additional Resources
- Chapter 7: Airport Education and Training
 - Developing a Training Program
 - Developing an Airport Orientation Program

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Performance Measuring and Benchmarking
References
Glossary of Terms
Acronyms
Annotated Bibliography
Appendix A: Airport Cooperative Research Program Projects

APPENDIX E: INDUSTRY REVIEW COVER MEMORANDUM

Date:

To:

From:

Re: Industry Review for ACRP Project 01-01, Guidebook for Managing Small Airport

The Airport Cooperative Research Program (ACRP) is developing a guidebook for managing small airports. Thank you for your input on that guidebook to date. We would like you to assist us further, as a review panel expert. You were selected based on input from your state aviation organization, who noted that you were likely to both have and share expertise in small airport organization and management.

Attached is a draft version of the guidebook, along with a standard review form. Please take time to review the document. Feel free to review the entire document or focus on those sections where you have the most expertise.

You may choose to review the guidebook in one of three ways:

1. Print the document. Handwrite your comments and changes on the printed pages. Fax only those pages with comments to Tom Helms of the Center for Transportation Studies at 612-625-6381.
2. Print the document. Handwrite your comments and changes on the printed pages. Scan only those pages with comments into a .pdf file. Email those pages to Tom Helms at helms032@cts.umn.edu.
3. Review the document electronically. Turn on “track changes” mode in Word (Located under the “Tools” pull-down menu.). Save the file as ACRPdraftdoclastname.doc indicating your last name in the new file name. Email that document to Tom Helms at helms032@cts.umn.edu. Please note that this is the preferred method of review.

Please submit your comments in either hard copy or electronic format March 16, 2008.

Thank you for your time and assistance in developing this guidebook. We are certain that it will provide an excellent resource for airport managers around the country. Your comments will be considered, and a final guidebook will be published and distributed in the fall of 2008.

APPENDIX F: INDUSTRY REVIEW COMMENT FORM

**Airport Cooperative Research Program
Project 01–01**

Guidebook for Managing Small Airports

Industry Review Form

General comments regarding the guidebook:

Which chapters or sections were most helpful?

Which chapters or sections were least helpful?

Which topics, if any, are missing?

Chapter 1. Airport Organization

General Comments:

Specific comments indicated by page number and paragraph:

Page	Paragraph	Comment

To add lines in the table: place the cursor in the last row, click on “Table” pull down menu, click on “Insert”, click on “Rows Below”. Repeat to add additional lines.

Chapter 2. Airport Finance

General Comments:

Specific comments indicated by page number and paragraph:

Page	Paragraph	Comment

To add lines in the table: place the cursor in the last row, click on “Table” pull down menu, click on “Insert”, click on “Rows Below”. Repeat to add additional lines.

ACRP Web-Only Document 5: Development of a Guidebook for Managing Small Airports

Chapter 3. Airport OperationsGeneral Comments:

Specific comments indicated by page number and paragraph:

Page	Paragraph	Comment

To add lines in the table: place the cursor in the last row, click on “Table” pull down menu, click on “Insert”, click on “Rows Below”. Repeat to add additional lines.

ACRP Web-Only Document 5: Development of a Guidebook for Managing Small Airports

Chapter 4. Airport Planning and Development

General Comments:

Specific comments indicated by page number and paragraph:

Page	Paragraph	Comment

To add lines in the table: place the cursor in the last row, click on “Table” pull down menu, click on “Insert”, click on “Rows Below”. Repeat to add additional lines.

ACRP Web-Only Document 5: Development of a Guidebook for Managing Small Airports

Chapter 5. Public Relations

General Comments:

Specific comments indicated by page number and paragraph:

Page	Paragraph	Comment

To add lines in the table: place the cursor in the last row, click on “Table” pull down menu, click on “Insert”, click on “Rows Below”. Repeat to add additional lines.

ACRP Web-Only Document 5: Development of a Guidebook for Managing Small Airports

Chapter 6. Commercial Service

General Comments:

Specific comments indicated by page number and paragraph:

Page	Paragraph	Comment

To add lines in the table: place the cursor in the last row, click on “Table” pull down menu, click on “Insert”, click on “Rows Below”. Repeat to add additional lines.

Chapter 7. Airport Education and Training

General Comments:

Specific comments indicated by page number and paragraph:

Page	Paragraph	Comment

To add lines in the table: place the cursor in the last row, click on “Table” pull down menu, click on “Insert”, click on “Rows Below”. Repeat to add additional lines.

ACRP Web-Only Document 5: Development of a Guidebook for Managing Small Airports

Appendices. Glossary of Terms, Acronyms, Annotated Bibliography

General Comments:

Specific comments indicated by page number and paragraph:

Page	Paragraph	Comment

To add lines in the table: place the cursor in the last row, click on “Table” pull down menu, click on “Insert”, click on “Rows Below”. Repeat to add additional lines.

*ACRP Web-Only Document 5: Development of a Guidebook for Managing Small Airports***APPENDIX G: INDUSTRY REVIEW PANEL MEMBERS**

	Organization Name	FirstName	LastName	Title
	Airport Directors and Managers			
Alabama	Montgomery Regional Airport	Phil	Perry	Executive Director
Arizona	Chandler Municipal Airport	Greg	Chenoweth	Airport Manager
Arkansas	Stuttgart Municipal Airport	Carl	Humphrey	Airport Manager
Colorado	Greeley-Weld County Airport	Mike	Reisman	Airport Manager
Florida	Bartow Municipal Airport	Cynthia	Barrow	Executive Director
Georgia	Brunswick Golden Isles Airport	Steve	Brian	Airport Manager
Idaho	Pocatello Regional Airport	Kristy	Heniz	Airport Manager
Iowa	Dubuque Regional	Robert	Grierson	Airport Manager
Kentucky	Owensboro Daviess County Regional Airport	Tim	Bradshaw	Airport Manager
Louisiana	Slidell Municipal Airport	Sam	Carver	Airport Manager
Maine	Sanford Regional Airport	Evan	McDougal	Airport Manager
Maryland	Easton Airport	Mike	Henry	Airport Manager
Massachusetts	Marshfield Municipal	Ann	Pollard	Airport Manager
Minnesota	South Saint Paul Municipal	Glenn	Burke	Airport Director
Mississippi	Natchez-Adams County Airport	Clint	Pomeroy	Airport Manager
Missouri	St. Charles County - Smartt Field	Tracy	Smith	Airport Director
Montana	Gallatin Field Airport	Ted	Mattis	Airport Manager
Montana	Laurel Municipal Airport	John	Smith	Airport Manager
Nebraska	Fairbury Municipal Airport	Sandi	Decker	Airport Manager
Nevada	Minden-Tahoe Airport	Jim	Braswell CAE	Airport Manager
New Hampshire	Nashua Airport Authority	Roy	Rankin	Airport Manager
Texas	Collin County Regional Airport at Mc Kinney	Ken	Wiegand	Airport Manager
Texas	Hondo Municipal Airport	Tim	Fousse	Airport Manager
Texas	Temple Draughon-Miller Airport	Sharon	Rostovich	Director
Washington	Pearson Field	Sean	Loughran	Airport Manager
West Virginia	Wheeling-Ohio County Airport	Tom	Tominack	Airport Manager
Wisconsin	Chippewa Valley Regional Airport	Charity	Speich	Airport Manager
Wisconsin	Wittman Regional Airport	Peter	Moll	Airport Manager
Wyoming	Natrona County International Airport	Glen	Janusha	Airport Manager
	State Aviation Officials			
Florida	Florida Department of Transportation - Aviation Office	Bill	Ashbaker	State Aviation Manager
Maryland	Maryland Department of Transportation - Aviation Administration	Ashish	Solanki	Director
Missouri	Missouri Department of Transportation - Aviation Section	Joe	Pestka	Administrator of Aviation
New York	New York Department of Transportation - Aviation Bureau - Pod 54	Seth	Edelman	Director
Washington	Washington Department of Transportation - Aviation Division	John	Sibold	Director
	Aviation Organizations			
Maryland	NASAO	Henry	Ogrodzinski	President and CEO
Colorado	AAAE - General Aviation Committee - Centennial Airport	Robert	Olislagers	Executive Director
Texas	AAAE - General Aviation Committee - Addison Airport	Lisa	Pyles	Airport Director
Washington	AAAE - General Aviation Committee - Olympia Regional Airport	Robert	Rudolph	Executive Director

APPENDIX H: INDUSTRY REVIEW COMMENTS AND ADJUDICATION

No.	Name	Airport/Organization	Chapt.	Pg/Para	Comment	Response
1	M. Reisman	Greeley-Weld Co. Airport	General	N/A	There are uses of acronyms and abbreviations for common things with which I am not familiar and a number of terms referenced are now obsolete.	Acronyms in the list and in the document will be verified.
2	M. Reisman	Greeley-Weld Co. Airport	General	N/A	Recommend adding a reference to the sharing of common documents between airports and airport managers.	Such a reference will be added in the appropriate section.
3	M. Reisman	Greeley-Weld Co. Airport	General	N/A	No specific references to FAR Part 150 Noise Issues in the document.	Add a section on FAR 150 in the appropriate location if it is not already there.
4	M. Reisman	Greeley-Weld Co. Airport	General	N/A	Airport Finance could use better information on establishing rates and charges and explaining the difference between compensatory and residual methods.	Expand the explanation of rates and charges and add definitions of compensatory and residual methods.
5	M. Reisman	Greeley-Weld Co. Airport	1	General	Add references about the roles of Airport Advisory Boards and tenants associations.	Accepted.

No.	Name	Airport/Organization	Chapt.	Pg/Para	Comment	Response
6	M. Reisman	Greeley-Weld Co. Airport	1	General	Guidebook lacks information on how an airport manager fits into the overall chain of command/authority in a city/county as it relates to a city/county manager and city council or county board.	Add information about this subject in the appropriate section.
7	M. Reisman	Greeley-Weld Co. Airport	2	General	Several sections, such as minimum standards, flying clubs, rules and regulations, exclusive rights, and rates and charges, may be better used in another section outside of the Airport Finance chapter.	Not accepted. Minimum standards, flying clubs, rules and regulations, exclusive rights, and rates and charges, all pertain to leases which are a form of revenue generation.
8	M. Reisman	Greeley-Weld Co. Airport	2	General	There is no mention of airports that operate as “Enterprise Funds.”	See response to comment 9 below.
9	M. Reisman	Greeley-Weld Co. Airport	2	29	The paragraph on Enterprise Funds should be referenced as a special economic development fund or similar to avoid confusion with an airport that operates as a true “Enterprise Fund” so that it is a financially self-supporting and revenue generating department or organization.	Partially accepted. Enterprise funds come in many different forms and vary widely by state and municipality. Some enterprise funds are exclusively for capital projects related to business development activities and some are for self-supporting municipal services (e.g., sewer, water, airport, etc.). The former is appropriately mentioned in the sources

No.	Name	Airport/Organization	Chapt.	Pg/Para	Comment	Response
						of revenue section. The latter is more appropriate to Chapt. 1 Airport Organization. Will consider adding enterprise funds to Chapt. 1, as appropriate.
10	M. Reisman	Greeley-Weld Co. Airport	3	General	There is no real reference to the importance of the 150 series of ACs which contain substantial information relevant to airport operations and recommended operating practices.	Accepted. The 150 series of ACs is referenced throughout this chapter. A paragraph will be added emphasizing the importance of this series of ACs and referring airport managers to both the guidebooks bibliography and the FAA's online regulatory library.
11	M. Reisman	Greeley-Weld Co. Airport	3	37/3	NOTAM issuance procedures have changed and several states have pilot programs to improve issuance support issues by Lockheed Martin. Then general statement concerning the manner of issuance is no longer true in all locations.	Add language to reflect change in NOTAM issuance procedures and potential variation by state.

No.	Name	Airport/Organization	Chapt.	Pg/Para	Comment	Response
12	M. Reisman	Greeley-Weld Co. Airport	4	73/4	The term “jurisdictional boundary” may not be correct, especially when used to describe areas outside of the airport property. This insinuates that an airport has some form of governmental or zoning control over lands outside of its perimeter which is not always true, especially for airports that are owned by airport authorities. Do you mean “airport influence area”?	
13	M. Reisman	Greeley-Weld Co. Airport	4	97/2	Recommend that you reference the FAA Model Height Zoning Ordinance which can be found in the AC.	Accepted. That AC is included in the References section of the chapter.
14	M. Reisman	Greeley-Weld Co. Airport	7	General	Recommend that you reference the numerous model training programs produced by the FAA and available to operators. Also, FAA and AOPA training tapes on operations and the AAIE Airport News and Training Network Digicast system.	Accepted. References to the various FAA and association training programs will be added.

No.	Name	Airport/Organization	Chapt.	Pg/Para	Comment	Response
15	M. Reisman	Greeley-Weld Co. Airport	App.	General	Many of the terms included in the glossary are not used in the document. There is no need to list all of the acronyms in this section. The acronyms used in the document should be included in the list at the front of the guidebook.	Not accepted. The intent is to provide a comprehensive glossary and list of acronyms regardless of whether or not a term or acronym is referenced in the text. The list of commonly used terms and acronyms at the front of the document is just that; its purpose is as a quick reference.
16	C. Barrow	Bartow Airport	6	General	As a GA airport operator, this section did not apply 100% to me; although the section regarding leasing tips was informative.	A discussion of commercial service was mandated in the project's RFP. The research team will consider adding a "disclaimer" that this chapter may not apply to airports without commercial service.

No.	Name	Airport/Organization	Chapt.	Pg/Para	Comment	Response
17	R. Grierson	Dubuque Regional Airport	General	N/A	Airport training is important but I think comments like training as dictated by FAR Part 139 should be reflected throughout the airport staff. Such training is job specific and can be obtained at most AAAE conferences.	The purpose of Chapter 7 is to emphasize the importance of training and orientation programs at small airports that may experience significant staff turnover or have services (e.g., snow removal) provided by county or municipal staff. While AAAE training programs can be valuable, the staff at small airports may not be able to attend those conferences and programs.
18	R. Grierson	Dubuque Regional Airport	General	N/A	Chapter 4 should cover in detail land use planning for adjacent parcels off airport.	Partially accepted. A paragraph or two referring airports to state zoning handbooks for information on adjacent parcel zoning will be added.
19	R. Grierson	Dubuque Regional Airport	6	General	Discuss a little more on the business side of airlines what they want at an airport.	Accepted. Additional information about airline expectations will be included.
20	M. Henry	Easton Airport	General	N/A	I would like to have seen a more in depth discussion of business/financial planning.	Additional information on business/financial planning will be included, as appropriate.

No.	Name	Airport/Organization	Chapt.	Pg/Para	Comment	Response
21	M. Henry	Easton Airport	2	30/1	Add information about USDA rural business development grants.	Accepted. Appropriate information on USDA rural business development grants will be added.
22	M. Henry	Easton Airport	3	53/4	Add information about “continuity of government-continuity of operations (COG-COOP)”	Accepted. Appropriate information about COG-COOP will be added.
23	M. Henry	Easton Airport	4	90/2	Add fuel truck parking information.	Accepted. Appropriate information about fuel truck parking will be included.
24	T. Mathis	Gallatin Field	5		Make sure that your community is aware of the many valuable uses of your airport, such as air ambulance, fire fighting, aerial agriculture spraying, search and rescue, and law enforcement. A note with a picture of these activities sent to the local newspaper can go a long way in illustrating the importance of your local airport.	Accepted. Information about activities or services valuable to the community will be added to the appropriate section of this chapter.
25	S. Decker	Fairbury Municipal Airport	2	15/5	Totally unusable for GA airports.	Partially accepted. The information in this paragraph will be reviewed to ensure it applies to GA airports.
26	S. Decker	Fairbury Municipal Airport	2	15/6	Not feasible for GA airports.	Partially accepted. The data behind this revenue source will be reviewed.

No.	Name	Airport/Organization	Chapt.	Pg/Para	Comment	Response
27	S. Decker	Fairbury Municipal Airport	2	19/4	Should read “flight instruction” and airports should not be involved with regulations for flying clubs.	Partially accepted. “Flight inspection” will be changed to “flight instruction.” Airports should have rules that prohibit a flying club from operating like an FBO.
28	S. Decker	Fairbury Municipal Airport	2	21/3	Should not have individual owners bringing or storing their own fuel.	Not accepted. While this comment may be an advisable practice, an airport cannot outright prohibit self-fueling without being in violation of Sponsor Assurances.
29	S. Decker	Fairbury Municipal Airport	3	38/3	Airfield driving program? Again, not appropriate for small GA airports.	Not accepted. The FAA has identified inadequate training as a source of airfield driving accidents and includes a sample training curriculum in AC 150/5210. Establishing an airfield driving program is appropriate to any GA airport that wishes to reduce the risk of airfield driving accidents.
30	S. Decker	Fairbury Municipal Airport	7	General	Not for small GA airports.	The inclusion of a discussion of commercial service was mandated in the project’s RFP.

No.	Name	Airport/Organization	Chapt.	Pg/Para	Comment	Response
31	G. Januska	Casper/Natrona County Int'l Airport	1	3/3	Not sure that "many" states build, own, and operate their own airports.	The number of state built, owned, and operated airports will be verified.
32	G. Januska	Casper/Natrona County Int'l Airport	1	4/8	This paragraph implies that the perception of airports is not good.	Will adjust language to avoid connotation that the perception of airports is not good.
33	G. Januska	Casper/Natrona County Int'l Airport	1	4/10	This assumes that you are not considering private airports as part of small airports.	The guidebook is geared towards publicly owned airports. However, much of the information is relevant to managers of small, privately owned airports.
34	G. Januska	Casper/Natrona County Int'l Airport	2	9/6	If you discuss non-operating expenses, you may want to touch on non-operating revenue, interest income, etc.	Accepted. Appropriate information about non-operating sources of revenue/income will be added.
35	G. Januska	Casper/Natrona County Int'l Airport	2	15/2	As in dollar amount or greatest used?	Will verify information and clarify text.
36	G. Januska	Casper/Natrona County Int'l Airport	2	15/4	Associated municipalities have bonding authority.	Accepted. Language indicating the municipalities may issue bonds for airport projects will be added.
37	G. Januska	Casper/Natrona County Int'l Airport	2	17/Table, 2 nd line	These two do not go with one another.	Accepted. This example will be verified.

No.	Name	Airport/Organization	Chapt.	Pg/Para	Comment	Response
38	G. Januska	Casper/Natrona County Int'l Airport	3	39/3	Not sure how. My experience, talking about wildlife management gets the PETA, etc. people riled up.	Will revise parenthetical clause to indicate that wildlife "may" provide a good public relations opportunity.
39	G. Januska	Casper/Natrona County Int'l Airport	3	45/2	Not true, most airports are privately owned.	Will verify information and revise paragraph accordingly.
40	G. Januska	Casper/Natrona County Int'l Airport	4	61/4	Deliverables by whom?	Accepted. Will clarify the last sentence.
41	G. Januska	Casper/Natrona County Int'l Airport	4	61/4	May want to preface this by saying that most master plans are prepared by 3 rd parties.	Accepted.
42	G. Januska	Casper/Natrona County Int'l Airport	5	100/5	I'd talk about understanding the media requirements (deadlines for stories, printing, etc.)	Accepted. Will add information about considering media needs.
43	J. Pestka	Missouri DOT	1	3/3	Mention block grants and state functions?	These items are, and are more appropriately, addressed in other parts of the guidebook.
44	J. Pestka	Missouri DOT	4	78/2	Not sure what this (last sentence of the paragraph) is conveying.	The intent is to make clear the advisory nature of the FAA's role in airport consultant selection. The sentence will be reviewed and, if possible, clarified.

No.	Name	Airport/Organization	Chapt.	Pg/Para	Comment	Response
45	R. Null	Florida DOT	General	N/A	If the audience for this guidebook is “small airport manager” I am afraid to say that this document is rather long and for the most part, intimidating.	Other comments expressed concern about the length but acknowledged that the comprehensive guidebook required the current length. The expectation is that the guidebook will be used as a ready reference. The topical break down in the table of contents should lead airport managers to the information they seek quite quickly.
46	R. Null	Florida DOT	1	3/3	Aviation office inspections are more than “safety,” they directly relate to statutory requirements to meet state airport licensing standards.	Accepted. The discussion of state aviation office inspections will be expanded, as appropriate.
47	R. Null	Florida DOT	1	7/7	FAA does not provide an airport the authority to operate – states (at least Florida) provide public use airports the legal authority to operate by issuing a license – even to Part 139 airports.	Accepted. A paragraph about state airport licensing requirements will be added.
48	R. Null	Florida DOT	3	39/5	Stress that there are some wildlife hazards that may NOT be reduced due their protected species status (e.g., eagles nests on or near airports in Florida).	Accepted.

No.	Name	Airport/Organization	Chapt.	Pg/Para	Comment	Response
49	R. Null	Florida DOT	3	50/4	States may have stringent airport security requirements imposed by state law. Florida requires airport security plans for some airports not required by FAA and that security is mandatory to ensure airport licensing by the state.	Accepted. The paragraph will be revised to recognize the varying nature of airport security requirements by state.
50	R. Null	Florida DOT	3	59/5	Some states such as Florida have very specific airport inspection standards required to obtain an airport operating license from the state. Airport Master Plans and Airport Layout Plans that only address FAA requirements may be missing critical information that may make the airport ineligible for state funding of their planned projects.	Accepted. A paragraph about state airport licensing requirements will be added.
51	R. Null	Florida DOT	4	76/3	Add "LPV Approach" discussion somewhere in vicinity of "Area Navigation" discussion. Tremendous interest in acquiring LPV approaches at airports in Florida. Definitely an "Emerging Trend."	Accepted. A section on LPV approaches will be added in an appropriate place in the guidebook..

No.	Name	Airport/Organization	Chapt.	Pg/Para	Comment	Response
52	R. Null	Florida DOT	4	84/2	Last sentence is incorrect and should be removed. FAA does not issue permits for construction. The FAA only issues an airspace determination. Authority to issue a “permit” for construction lies with the state or local government only.	Accepted. The last sentence will be eliminated to revised.
	P. Friedman	FAA AAS-100	General	N/A	Take a closer look at how to treat specific questions . . . if may of these types of questions could be answered it would be an extremely useful reference for airport managers down the road.	The research team gave this comment substantial consideration but decided not to include an FAQ section in the Guidebook. The research team determined that any list of FAQs would be deemed lacking important questions and an FAQ section would not be consistent with the agreed upon outline and format of the Guidebook. As more ACRP projects are completed, developing a single FAQ volume based on all of the projects might be a valuable ACRP Synthesis topic.
	P. Friedman	FAA AAS-100	1	2	Remove “please specify” from the pie chart slice labeled “Other”	Accepted

No.	Name	Airport/Organization	Chapt.	Pg/Para	Comment	Response
	P. Friedman	FAA AAS-100	1	6	Show a link to the AC web page	
	P. Friedman	FAA AAS-100	1	11	Are there any other online/electronic resources for airport operators to calculate their economic impact?	The short answer is no. Most economic impact calculations are performed by consulting firms for specific airports. The currently available online calculators tend to be dated and regionally focused, like the one developed by the University of Minnesota for the DOT. Developing a basic web-based economic impact calculator for airports would make an excellent ACRP project.