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CONTRIBUTORS

Stephanie Ward, Lynn Wilson, and Regan Schnug; Airport Cooperative Research Program; Transportation Research Board; National Academies of Sciences, Engineering, and Medicine

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AIRPORT COOPERATIVE RESEARCH PROGRAM

ACRP RESEARCH REPORT 176

**Generating Revenue from
Commercial Development
On or Adjacent to Airports**

**Stephanie Ward
Lynn Wilson**

AND

Regan Schnug
MEAD & HUNT, INC.
Middleton, WI

IN ASSOCIATION WITH

Tom Thatcher
L. R. KIMBALL
Ebensburg, PA

Diana Fainberg
DIANA E. FAIBERG ASSOCIATES, LLC
Teaneck, NJ

AND

Kathleen Yodice
LAW OFFICES OF YODICE ASSOCIATES
Frederick, MD

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2017

AIRPORT COOPERATIVE RESEARCH PROGRAM

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

The need for ACRP was identified in *TRB Special Report 272: Airport Research Needs: Cooperative Solutions* in 2003, based on a study sponsored by the Federal Aviation Administration (FAA). ACRP carries out applied research on problems that are shared by airport operating agencies and not being adequately addressed by existing federal research programs. ACRP is modeled after the successful National Cooperative Highway Research Program (NCHRP) and Transit Cooperative Research Program (TCRP). ACRP undertakes research and other technical activities in various airport subject areas, including design, construction, legal, maintenance, operations, safety, policy, planning, human resources, and administration. ACRP provides a forum where airport operators can cooperatively address common operational problems.

ACRP was authorized in December 2003 as part of the Vision 100—Century of Aviation Reauthorization Act. The primary participants in the ACRP are (1) an independent governing board, the ACRP Oversight Committee (AOC), appointed by the Secretary of the U.S. Department of Transportation with representation from airport operating agencies, other stakeholders, and relevant industry organizations such as the Airports Council International-North America (ACI-NA), the American Association of Airport Executives (AAAE), the National Association of State Aviation Officials (NASAO), Airlines for America (A4A), and the Airport Consultants Council (ACC) as vital links to the airport community; (2) TRB as program manager and secretariat for the governing board; and (3) the FAA as program sponsor. In October 2005, the FAA executed a contract with the National Academy of Sciences formally initiating the program.

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

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COOPERATIVE RESEARCH PROGRAMS

CRP STAFF FOR ACRP RESEARCH REPORT 176

Christopher J. Hedges, *Director, Cooperative Research Programs*
Lori L. Sundstrom, *Deputy Director, Cooperative Research Programs*
Michael R. Salamone, *Manager, Airport Cooperative Research Program*
Theresa H. Schatz, *Senior Program Officer*
Hana Vagnerova, *Senior Program Assistant*
Eileen P. Delaney, *Director of Publications*
Sharon Lamberton, *Editor*

ACRP PROJECT 03-39 PANEL **Field of Policy and Planning**

Frederick R. Busch, *Aviation, Denver, CO (Chair)*
Douglas Davies, *DMD Real Estate Group, Chandler, AZ*
Steven L. Domino, *RS&H, Salt Lake City, UT*
Gary P. Mascaro, *City of Scottsdale – Scottsdale Airport, Scottsdale, AZ*
Kent McLemore, *ATKINS, Houston, TX*
Edward W. Moran, Esq., *Lee County Port Authority, Ft. Myers, FL*
Chunyan Yu, *Embry-Riddle Aeronautical University, Daytona Beach, FL*
Renee Hendricks, *FAA Liaison*
Monica Starnes, *TRB Liaison*


FOREWORD

By **Theresia H. Schatz**

Staff Officer

Transportation Research Board

ACRP Research Report 176: Generating Revenue from Commercial Development On or Adjacent to Airports is a comprehensive, practical guidebook for developing or redeveloping airport and adjacent properties for commercial and industrial purposes so that the development can contribute to overall airport revenues. This guidebook is intended for use primarily by airports but may also be a reference for local government entities, economic development agencies, commercial developers, and land use planners.

Recognizing differences in airport and community economics and characteristics, available expertise and potential opportunities, the guidebook includes methods, considerations and specific checklists for preparing and implementing a commercial development plan. It addresses advantages and disadvantages of on-airport versus off-airport land development opportunities, as well as marketing and legal issues, among others. It also includes case studies that include successful and unsuccessful examples of commercial development on and around airports.

The development of commercial and industrial properties on or adjacent to airports has historically been viewed as a compatible land use development exercise, not an airport revenue generation exercise. Nationally, insufficient attention has been given to such development as a source of airport revenues. Insufficient revenue streams have been a contributing factor in the decline of U.S. public use airports over the past few decades. *ACRP Report 44: A Guidebook for the Preservation of Public Use Airports* identified 16 reasons why some airports prosper and others struggle or fail. Many of these reasons are grounded in economic and financial factors. In short, simple business failures can be a major cause for airport closures. Public use airports that rely solely on aviation-generated and related revenues have a potentially narrow and undiversified revenue stream, making them particularly susceptible to cyclical market downturns and trends.

While the development of on-airport or adjacent property can potentially offer additional revenue, many considerations need to be addressed in addition to land use compatibility. These considerations include a thorough and realistic market analysis, compliance with FAA sponsor assurances, and ensuring that development does not impinge on the airport's ability to accommodate long-term aviation activity. Yet many airports and their communities do not have the expertise necessary to conduct a thorough analysis of an airport's ability to generate additional revenue through the development of available land. This often leads to unrealistic revenue generation expectations or to unrealized potential.

Under ACRP Project 03-39, research was conducted by Mead & Hunt, Inc., in association with L.R. Kimball, Diana E. Fainberg Associates, and the Law Offices of Yodice Associates. The information in the guidebook was gathered by interviewing representatives of at least

ten different airports varying in type and size throughout the country, and discussing overarching topics related to land development and the airports' development experiences. Interviews were also conducted with industry professionals in the Airport Owners and Pilots Association (AOPA), developers, airport managers, FAA Regional Directors, and others. As part of this guidebook, several toolkits have been developed for both site evaluation and implementation. To download customizable (Microsoft Word) files containing the checklists in the appendices, go to the TRB website (www.trb.org) and search for "ACRP Research Report 176".



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Introduction

1.1 Overview

Many good reasons exist to consider development on an airport or on property adjacent to the airport. Development on and adjacent to airports can result in some or all of these potential outcomes:

- **New revenue to the airport**
- **Reduced fees to airlines**
- **More jobs in the community**
- **Increased cargo service**
- **More aviation operations**
- **More commercial passengers**

Conversely, development may be a detriment to airport operations and airport revenue, through outcomes such as:

- **Incompatible land use**
- **Conflicts with federal grant assurances**
- **Demands on shared infrastructure**

It's easy to agree that the end goal for airport development is to have all of the potential positive outcomes without the negative ones. To reach this goal, however, it's important that the development effort starts out with a carefully researched plan. Based on research conducted for ACRP Project 03-39, "Generating Revenue from Commercial Development On or Adjacent to Airports," this guidebook has been created to provide airport managers, directors, and board members information and tools that are helpful for evaluating and planning development efforts to maximize positive outcomes.

1.1.1 Success Stories

Throughout the country, many examples show how both airports and their surrounding communities have benefited from successful commercial development on or near airports. These success stories typically have involved attention to comprehensive planning and cooperative efforts between the airport and community. Notable examples include:

- **Southern California Logistics Airport.** A redevelopment of the former George Air Force Base, the 2,500-acre airport has remade itself into a logistics and aerospace hub through a public-private partnership, and it is the anchor for an additional 8,500 acres of multimodal

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industrial development. By the end of 2014, close to 3 million square feet of industrial space was fully leased, and more buildings were under way.

- Southwest Florida International Airport. The airport is in the midst of a development effort involving 1,150 acres, with successful ground leases or land sales negotiated for retail, office, and other uses such that 70% of airport revenues are due to non-aviation activities.
- Pittsburgh International Airport. The airport has rebounded from the loss of US Airways a dozen years ago to produce several business parks, with private investments of \$350 million developing over 3 million square feet of airport property, in addition to lease of oil and gas rights.
- Miami-Opa Locka Executive Airport. Part of the Miami-Dade system in Florida, the airport has leased and sold adjacent property to create a flourishing development that includes the 178-acre AVE Commerce Center with a master plan of over 2.5 million square feet; a lease by Orion Jet Center on 155 acres; and a recently announced Amazon distribution center of about 900,000 square feet, representing an investment of \$200 million.
- Scottsdale Airport. The airport is surrounded by the Airpark, which is home to aviation, commerce, industrial, entertainment, and even residential uses, involving 33.9 million square feet of space hosting 55,000 employees.

1.1.2 Goals Versus Reality

In an ideal world, planning for revenue generation through development would begin years ahead of time. Discussions would begin with the FAA, planning documents would be amended, market studies would be conducted, and pro formas would be created. Financing would be identified and the airport would be well-informed about the target market, the projected investment costs, and the projected revenue stream. In the real world, however, many airports enter the conversation about development with considerably less preparation, through scenarios like these:

- **The industrial park in the community is built out, with no space to accommodate new businesses. Community leaders identify the airport as the next phase for an industrial park expansion. After all, a large amount of vacant land is available there, and utilities are already in place.**
- **The airport owns land that it no longer needs for aeronautical uses (or land that was never identified for aeronautical use). Why not develop it for nonaeronautical use?**
- **The region has a new economic development director who is planning to bring new jobs to the area. The airport seems to be a good place for new development that will bring new jobs to the community. Economic incentives will be discussed at the next board meeting.**
- **The airport is facing political pressure to reduce the general fund allocation toward airport operations. In addition to cutting costs, the airport starts to talk about development as a new revenue stream.**
- **A private airfield or a military base transitions to a public airport owned by the local community. In addition to the airport facilities, vacant buildings on the property can be leased to generate revenue.**

These scenarios illustrate how the conversation about commercial development often begins, sometimes without airport involvement. Development on or adjacent to the airport may sound like a great idea, but the “build it and they will come” approach usually is not especially successful or particularly easy.

1.1.3 It’s Complicated—but Possible

Generating revenue from development on or adjacent to the airport is complicated. Safe and efficient airport operations remain the first priority. To this end, FAA regulates on-airport development at federally obligated airports, which impacts development considerations such as the development schedule, permitted uses, building heights and locations, and lease lengths. Other airports may have similar restrictions as a result of state grant obligations. Airports without any grant obligations still need to make development plans that maintain safe and efficient airport operations and plan for future airport needs.

The financial structure for on-airport development differs from, and can also be more complicated than, ventures for private development. For example, as a public transportation facility, an airport may have some tax advantages; however, there are also restrictions or limitations on disposing of (selling) property acquired with public dollars, so on-airport development often is done through lease agreements rather than sales. Also, FAA tends to favor lease durations that are shorter than those desired by private developers.

Although it is complicated, the development process can be understood, and airports can effectively position themselves to maximize airport revenue. Generating revenue from property owned by an airport is the primary focus in most of this guidebook. The guidance is appropriate for:

- **Airports of all sizes**
- **Public airports that are federally obligated**
- **Public airports that are not federally obligated**
- **Private airports**

Generating revenue from property that is near to—but not owned by—an airport—has unique nuances, and therefore has a dedicated chapter in this guidebook. Although the airport may have little to no direct control of the property in this situation, there is also less investment and less risk. Development on properties adjacent to the airport can often be developed on a more accelerated timeline. These developments can contribute to airport revenue directly through access fees or through-the-fence (TTF) agreements and indirectly by increasing the number of commercial passengers and general aviation activity. As airports look for ways to increase revenue sources, off-airport development for revenue generation is an innovative idea that is entering mainstream conversation.

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1.2 The Guidebook

Real estate development on and adjacent to airports brings together two professions: airport management and real estate development. For the venture to be successful, airport management needs to know something about real estate development, regulations, and funding systems, and developers need to know something about airport operations, regulations, and funding systems. Each profession has its own language, processes, legal guidance, and goals. Nonetheless, it is possible to coordinate the two to reach a positive outcome. This guidebook has been created with both groups of professionals in mind.

ACRP Research Report 176 will guide airport managers, directors, and board members through a series of chapter-based “toolkits” that provide an informative combination of narrative text and checklists. In each toolkit, the narrative text explains the issue and its connection to development while the checklists pose applicable, airport-specific questions in a helpful, concise format. For practical use, the checklists that are featured in the toolkits also are reproduced in an appendix at the end of the guidebook. Moreover, airports wishing to adapt these tools can download files containing the checklists from the “ACRP Research Report 176” webpage at www.trb.org.

The toolkits’ primary function is to guide the user through evaluating and implementing the development process. On-airport and off-airport development efforts are not mutually exclusive, but each type of development calls for a specific set of considerations and actions. Accordingly, airports interested in generating revenue from development on property that is not owned by the airport will find a specific section on this topic in the guidebook.

1.2.1 Using the Guidebook

The development of non-aeronautical land, whether for aeronautical or non-aeronautical purposes, involves a host of physical, legal, environmental, and urban planning issues that are generally outside the purview of airport management and operations. The airport manager must take on a different perspective—that of the developer. This is often unfamiliar territory, and the toolkits in the guidebook are designed to assist with this new role. Note that the term “non-aeronautical land” is used to refer to airport-owned land that is not needed for aeronautical uses and would be available for development. For grant-obligated airports, this is a designation that is shown on an approved Airport Layout Plan (ALP).

The first three chapters in the guidebook set the stage with some basic information:

- **Chapter 1: Introduction** explains the guidebook goals and layout.
- **Chapter 2: Fundamentals** focuses on airport development and introduces terminology.
- **Chapter 3: Legal Considerations** addresses airport development and grant assurances.

Chapter 2 functions as a primer, introducing major elements of aviation planning, aviation funding, and land development within a few pages. The chapter explains how development on-airport and on land adjacent to an airport can be coordinated even as the two processes are guided and regulated by separate legislative, legal, and funding structures. In addition to discussing methods for successful development and coordination, the chapter provides notes

about how things can go wrong when the two worlds collide. Both seasoned professionals and novice practitioners in the aviation and real estate industries will benefit from the combined overview.

Chapter 3 introduces common legal topics in a short text format, offering a dedicated discussion of several legal issues with lots of potential to impact commercial development plans on and adjacent to airports. The chapter thus provides a basic legal framework to support the initial assessments that will be made using the exercises in the guidebook's subsequent (toolkit) chapters. The information in Chapter 3 also can help guidebook users recognize when it may be advantageous to seek legal counsel in the planning or development process. Specifically, this chapter identifies legal considerations in five categories, providing a high-level review of legal matters related to:

- **Federal obligation of airports**
- **Zoning and other property and leasing laws**
- **Environmental regulation**
- **Insurance and liability**
- **Federal regulatory restrictions**

Guidebook users who are not familiar with these topics will find it valuable to read Chapter 3 from beginning to end before beginning the evaluation checklists in Chapters 4–7. Users who are more familiar with these topics may choose to bypass Chapter 3 and begin directly with the toolkit chapters. Each airport is different, and not every legal issue will apply in every instance. Within the toolkit chapters, graphical icons are used to connect the checklist exercises with the foundational information presented in Chapter 3. (For information and examples detailing the icons used in the guidebook, see “Section 1.4.3, Icons,” in this chapter.)

Following Chapter 3, the next four chapters present the interactive, workbook-style content:

- **Chapter 4: Self-Assessment Toolkit** presents a toolkit for evaluating the airport's position with regard to development.
- **Chapter 5: Site Evaluation Toolkit** presents a toolkit for documenting locational features, infrastructure, and markets.
- **Chapter 6: Implementation Toolkit** presents a toolkit for moving forward with the first steps toward development.
- **Chapter 7: Off-Airport Considerations and Revenue** presents a toolkit for addressing the special considerations involved in generating revenue from off-airport property that is not controlled by the airport.

Chapters 4–7 are toolkit chapters that guide the user to answer various questions related to airport ownership, structure, business activity, context, and planning. Every airport is unique, so no one-size-fits-all toolkit is possible. Moreover, all criteria may not be relevant in all cases. Rather, the exercises and checklists provided will need to be adjusted to the airport's particular situation. The checklists provided in the guidebook also are collected in the appendix for the user's convenience, and are provided in a downloadable Word file from the report webpage at www.trb.org. Once the file is saved to the guidebook user's computer, the checklists can be customized and completed by the user to include specific local conditions and regulatory requirements. The topic explanations provided in the introductory chapters will help the

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guidebook user make these determinations. Even when it is not directly applicable, the criteria may add value by reflecting real-world insights, advice, and principles heard during the project research.

The four toolkits are intended to be worked on in the order presented. They build upon each other, and the toolkits assume that the airport is interested in examining the revenue potential of commercial development and considering the use of non-aeronautical land for that purpose. The toolkits pose questions and criteria for the airport sponsor to consider and answer.

In Chapter 4, the first toolkit guides the user to answer various questions relating to airport ownership, structure, business activity, and planning. This self-assessment process should result in a better understanding of the airport's current position in a host of categories; it also should help the airport identify specific goals for pursuing commercial development.

In Chapter 5, the second toolkit guides a review of the characteristics (physical and otherwise) of targeted land. This chapter incorporates the real estate perspective. The toolkit assists in identifying the attributes of the site that would be important to developers or tenants/users of the land. It includes numerous factors relating to regulations, utilities, and market conditions. The guided evaluation process results in one of two conclusions:

1. Land development is reasonably feasible and there do not appear to be many factors that would preclude proceeding to the next stage.
2. Financial, legal, or physical obstacles exist that would discourage development for the foreseeable future and indicate that it would not be prudent to proceed.

In Chapter 6, the third toolkit is a two-part exercise, providing first a financial analysis, then a development and management planning guide. Advancement to this toolkit assumes that—following the site evaluation described in Chapter 5—a decision has been made to proceed with the next phases of development planning. A starting point for this toolkit will be the creation of a development concept that brings together the site evaluation and market factors in a test Concept Plan. The financial analysis guides the user through the identification of costs to implement the plan. The final section of this toolkit, which addresses development and management, will guide refinement of the development plan and measures for implementation, including partnerships, marketing, and financing, as well as management of the property. Joint venture structures and revenue options are among the elements examined.

In Chapter 7, the fourth and final toolkit focuses on special considerations for development on land adjacent to the airport. This toolkit concentrates primarily on the circumstance in which an airport sponsor does not own the surrounding non-aviation land. In such cases, the sponsor can evaluate how the airport might benefit from commercial development on privately owned land, and how to influence off-airport development decisions to maximize either direct or indirect benefits to airport revenue.

When commercial development is considered on or near airport land—and throughout the evaluation and decision-making process described across the toolkits—it is important to remember that the airport does not exist in a vacuum. A critical consideration throughout the process is the relationship of the airport to its surrounding community. Whether positive or negative, that relationship will be a significant element in the feasibility of any development plan and has the potential to impact either the development plan facilitation or obstruction.

Because the guidebook is written for a wide range of airport sizes, locations, and structures, criteria in each toolkit may apply to some individual cases more than others. Some may be more applicable to public than private airports, for example. It should also be noted that these toolkits are not intended to eliminate the need to involve experts such as legal counsel, engineers, and architects; however, they will provide an important framework for due diligence and evaluation. Throughout the text, icons indicate where consultant expertise is particularly advisable.

Following Chapter 7, the guidebook concludes with a list of abbreviations, a glossary, and a bibliography/references list:

- The **Abbreviations and Glossary** section offers a quick reference that introduces and defines some of the terms important to the intersection of airport planning and land development (e.g., *on-airport development*, *adjacent to airport development*, *federally obligated*, *grant assurances*, etc.).
- The **Bibliography and References** section provides source information for the publications that are referenced throughout the guide, particularly in Chapter 6.

1.2.2 Development of Criteria

The criteria provided in all four toolkits stem from four sources:

1. Literature review regarding airport development examples and histories
2. Professional experience in real estate development and airport planning
3. Prior ACRP reports
4. Interviews and in-depth case studies

Toolkit criteria have been developed from the project team's real estate planning and development experience with commercial and multiple-use development projects, as well as experience with airport master planning and lessons learned from the project research in real estate. The literature review for this guidebook also produced many examples of airport development projects and the variety of factors affecting their feasibility. Other criteria were derived from earlier ACRP reports, which are referenced at applicable points in the guidebook.

The criteria are intended to encourage the development of a land manager and developer perspective, viewing the available airport land and land adjacent to the airport as an asset to evaluate with respect to market demand and non-airport competitive locations. At the same time, on-airport land is in a unique category that incorporates particular constraints of land use, noise compatibility, and FAA regulation, among others. Thus, site evaluation criteria typical of real estate analysis have to be supplemented with a practical aviation operations outlook. A classification system presented in Chapter 2 provides a guide to the various constraints on different types of airport land.

The airport case studies and industry interviews conducted during development of the guidebook provided important practical insights as well as greater awareness of common issues and principles in land development. When using the toolkit chapters, it is important to keep these issues and principles in mind, with the following issues being foremost:

- **Land availability**
- **Predictability for participating developers**

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- **Real estate investors' need for land control**
- **A comprehensive long-term planning vision**
- **Infrastructure availability**
- **Consistency of airport goals with regional economic development goals**
- **Government support for airport success**
- **Competition with non-airport development sites**
- **Diversity of off-airport development uses**
- **FAA restrictions and approvals**

1.2.3 Important Details

This report is not intended to be a do-it-yourself guidebook to commercial development. Regardless of size, every airport will probably need expert help at some point along the way. What *ACRP Research Report 176* does offer is an initial do-it-yourself evaluation to determine whether the airport appears to be well-suited to on-airport development. If the airport decides to move forward with such a project, the guidebook offers enough information that airport managers, directors, and board members can understand the issues and the process. Guidebook users also will be positioned to identify which resources may be available on staff and where experts will need to be involved in the process. The treatment of off-airport development in the guidebook yields similar results.

The topic of "successfully managing the airport" is not included in this document. This guidebook walks carefully through steps toward on- and off-airport development specifically for the purpose of generating airport revenue. It does not cover broader issues of airport management. That said, the guidebook culminates with the following topics that were identified as critical to financial success:

- **Creating a test Concept Plan**
- **Identifying costs to implement the plan**
- **A final refinement of the development plan**
- **Measures for implementation**

Awareness of the need for a guidebook on this subject grew out of the finding, in *ACRP Report 44: A Guidebook for the Preservation of Public Use Airports*, that insufficient revenue streams have been a contributing factor in the decline of U.S. public use airports over the past few decades and that simple business failures are a major cause for airport closures.

1.3 Other ACRP Work on This Topic

In addition to *ACRP Report 44*, other ACRP works provide related guidance on the topic of revenue generation. In 2007, *ACRP Synthesis of Airport Practice 1: Innovative Finance and Alternative Sources of Revenue for Airports* began to survey the current practice on the topic. In 2015, *ACRP Report 121: Innovative Revenue Strategies—An Airport Guide* presented strategies to help airport professionals identify, evaluate, and implement innovative strategies for generating revenue. Topics included innovative financing, improving existing airport businesses, and—most closely connected to this report—revenue participation in real estate development.

To determine its goals and objectives for commercial land development, it is essential for the airport operator to identify the relative importance of the financial, political, and aesthetics/identity considerations.

ACRP Synthesis of Airport Practice 1

ACRP Works Related to this Topic:

- *ACRP Report 44: A Guidebook for the Preservation of Public Use Airports*
- *ACRP Report 47: Guidebook for Developing and Leasing Airport Property*
- *ACRP Report 121: Innovative Revenue Strategies – An Airport Guide*
- *ACRP Synthesis of Airport Practice 1: Innovative Finance and Alternative Sources of Revenue for Airports*
- *ACRP Synthesis of Airport Practice 19: Airport Revenue Diversification*


The continued selection of finance and revenue topics for ACRP research is indicative of how significant the issue is to aviation industry practitioners. These works are related but they are not duplicative. For example, *ACRP Report 121* provides an understanding of the comparative benefits of tools for revenue generation. *ACRP Research Report 176* provides guidance for airports on evaluating whether revenue generation through commercial development on or adjacent to the airport makes sense for a specific airport—and, if so, provides guidance regarding physical and financial considerations in planning for such development.

1.4 Organization of Content

This section has been created to help guidebook users get the most out of this resource. It starts with an explanation of:

- **How things are arranged (Know, Have, Do)**
- **How the icons and links connect ideas between chapters**
- **How terms are used**

1.4.1 KNOW, HAVE, DO

The evaluation criteria are arranged around various topics in Chapter 2 and in the toolkits in Chapters 4–7. Each topic is introduced with an explanation of its significance. The dedicated pages also include a section of the annotated checklist or worksheet associated with the topic and a discussion about what the results mean. The checklist sections include this icon as a reminder that the complete checklist appears in the appendix: 

Each topic follows a structure of “Know, Have, Do,” as follows:

KNOW

This narrative section explains the basic elements of the topic and why it is important to the conversation. This section may also contain references, resources, and examples drawn from airport case studies.

HAVE

This annotated checklist walks guidebook users through the specific topic considerations, asking questions and providing answer choices. Using this approach, the user is guided through a process of identifying existing characteristics or conditions that impact decisions about on-airport development (Chapters 4–6) and development adjacent to airports (Chapter 7). If additional information is needed to answer the specific questions, the guidebook user is directed to additional resources. In most cases, completing the checklist is primarily a matter of understanding where to find existing information.

DO

This wrap-up section assists with interpretation and direction regarding the checklist results, including providing direction about next steps. In some cases, there may be a gap in the airport’s readiness for development. When that is the case, additional studies or professional expertise may be recommended.














1.4.2 Sound Bites

In this guidebook, sound bites are statements that the project team heard during case study interviews that were carried out as part of the initial research for ACRP Project 03-39. They are presented as call-out boxes. Sound bites are found primarily in the toolkits (Chapters 4–7) and are placed next to a related toolkit topic. Their purpose is to connect the information presented in the guidebook with actual experiences of airports from around the country. For example, this sample sound bite is drawn from Chapter 5, where it appears next to a discussion about staffing needs associated with successful development projects.

Participants in the case study interviews were assured of anonymity so that they could speak freely about the lessons learned from both successes and failures. Therefore, individual speakers are not identified.

1.4.3 Icons

The guidebook uses icons to identify topical elements such as key concepts or common themes, or to indicate connections between chapters or sections of text and worksheets or checklists. Each icon is a graphical reminder that an introduction and explanation of the topic can be found elsewhere. The following icons are used in the report:

 Five Tiers	 Pro Forma (Financial Tool)
 Core Concepts	 Consultant Expertise
 Community Relations	 Market Research
 Legal Reference	FAA FAA
 Chapter Reference (Chapters 1–7)	 Off-Airport
 Toolkit Reference (Chapters 4–7)	 Reminder: Complete Checklist Is in the Appendix
 Stop/Go Decision Point	 SOUND BITE

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1.5 Summary

This guidebook is designed to help aviation and real estate professionals and community leaders understand the basic framework of generating revenue from on-airport and near-airport development. To this end, the next two chapters set the stage for the conversation with a discussion of the fundamentals, including the necessary vocabulary and the legal framework specific to on-airport development and development adjacent to the airport. Following the informational chapters, the guidebook changes to a workbook style, allowing the user to first explore the topic and then consider its airport-specific application.

Property development is a complicated issue. *ACRP Research Report 176* provides general guidance, but it is not intended to be a “do-it-yourself” toolkit. It is not intended to replace the advice or professional assistance airport professionals may need to obtain from engineers, planners, attorneys, surveyors, financial professionals, and others along the way. It should allow the guidebook user to understand what makes a development successful, make some initial decisions about whether development makes sense, and enter into the conversation as an informed participant.



CHAPTER 2

Fundamentals

2.1 Overview

This chapter orients the guidebook user to the language, tools, and concepts used in *ACRP Research Report 176*. It serves as a primer, introducing major elements of aviation planning, aviation funding, and land development in just a few pages of text. The chapter then introduces the **five tier** concept— a definition of five relationships between property ownership and airport access that directly impacts the level of FAA regulatory control over property development. The discussion uses a graphic depiction of parcel locations in relation to the airport to support the definition of a unique vocabulary that is essential to the later toolkit discussions.

2.2 Aviation Planning

KNOW

On-airport development planning typically consists of airport master plans and airport layout plans (ALPs) and, as applicable, the analyses and studies required by regulatory agencies prior to funding for projects. Airport master plans and ALP drawing sets provide specific information about an individual airport's plans for future development and are a valuable source of information when considering opportunities for revenue generation from adjacent airport development. Airport development using federal funds at federally obligated airports must be done in accordance with an ALP approved by both the sponsor and FAA. Proposed development must also be shown on an approved ALP to be eligible for Airport Improvement Program (AIP) funding. This connection to regulatory oversight and federal funding provides an assurance that development, when it happens, will occur as planned. Some airports that are not federally obligated will also have an ALP, either because of a state initiative or in anticipation of a potential future need for federal funding.

HAVE

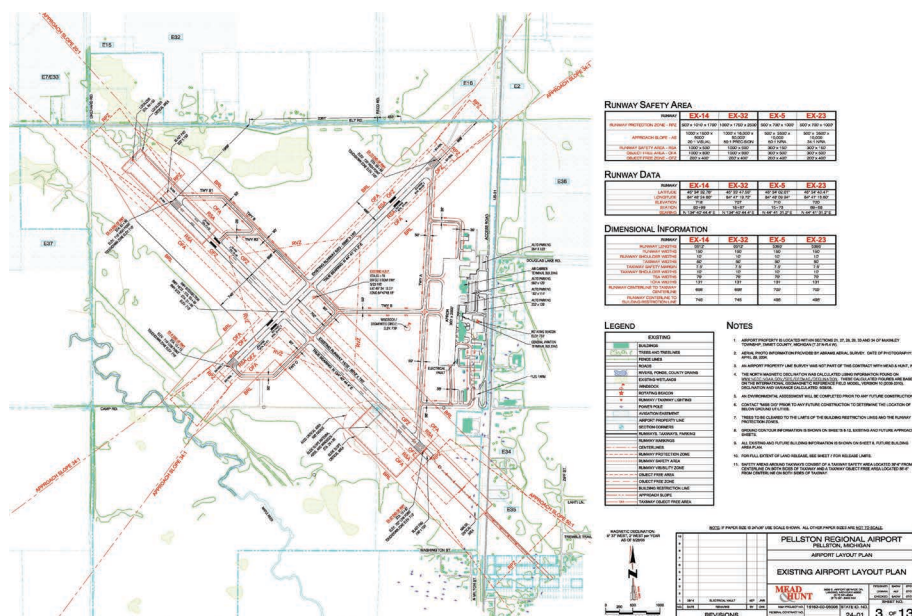
The Self-Assessment Toolkit in Chapter 4 includes a section to explore an individual airport's master plan and ALP. This section provides a basic understanding of the documents that make up the Airport Master Plan and ALP drawing set, along with their roles.

AIRPORT MASTER PLAN—An Airport Master Plan is a long-range planning tool that guides the growth and development of individual airports. The document usually addresses a 20-year planning horizon with updates typically carried out every 5 years, as warranted. The Master Plan Report is very similar to a local community Comprehensive Plan in content and purpose: It identifies preferred long-range development options for the airport based on forecasted growth. The document is generated by an airport sponsor and its governing body to evaluate future growth and development needs based on the projected facility usage.

FAA Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*, provides criteria for the creation of an Airport Master Plan. As outlined in the AC, a typical master plan process includes the following elements:

- **Inventory of facilities and airspace**
- **Forecast of anticipated growth in activity**
- **Demand/capacity analysis**
- **Facility requirements**
- **Alternative plan concepts**
- **Environmental overview**
- **Plan implementation**
- **ALP**
- **Public involvement process**

The master plan process should include a comprehensive public involvement strategy and encourage communication between stakeholders. Public input can provide a critical connection between the airport and the community, leading to improved compatible land use decisions.



Source: Mead & Hunt, Inc.

Figure 1. Sample Airport Layout Plan.

ALP—The ALP is a drawing set that depicts existing airport facilities and proposed developments. An ALP can be an element of the Airport Master Plan or a stand-alone document. The ALP drawing set illustrates the existing and future airport facilities and all applicable design standards (from AC 150/5300-13, *Airport Design*). The drawing set will vary and may include sheets such as an approach sheet, an on-airport land use drawing, an off-airport land use drawing, and an airport property map. The drawing set provides a physical depiction of the existing conditions and future plans for development.

FAA Grant Assurance 29 requires maintenance of an updated ALP for federally obligated airports (see Chapter 3, “Legal Considerations,” for discussion of grant assurances). FAA Standard Operating Procedure (SOP) 2.0, *Standard Procedure for FAA Review and Approval of Airport Layout Plans (ALPs)*, is a valuable resource on this topic.

LAND RELEASE—When an airport is *grant obligated* as a condition of accepting grant funds or surplus property, airport property is considered to be *dedicated* to airport purposes when it is defined as *aeronautical use* on the ALP or listed as such on the Exhibit ‘A’ property map. If that property is later not needed for airport purposes, FAA must take action to *release* the airport from the agreement. A release is a written authorization relinquishing FAA’s right to enforce an airport’s contractual obligations. If granted, a land release allows the airport to either (1) change the designation of property designated for aeronautical use to property for non-aeronautical use (while maintaining ownership of the property) or (2) sell a specific parcel of land outright. The process is explained in FAA Order 5190.6B, *Airport Compliance Manual*, specifically in Chapter 22, “Releases from Federal Obligations.”

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Before taking action, FAA Airports District Offices (ADOs), regional airports divisions, and even FAA headquarters may evaluate the request based on the benefits to civil aviation, taking into consideration elements such as future operations, airport capacity, and the impact to airport users. Case study interview responses indicated that, in some cases, the need for a land release was a surprise to the airport. Also, in many cases, the land release process required much more time than anticipated.

Obtaining a land release is a lengthy process that requires a dedication of staff time as well as professional consultants. The project research indicated that, even when applicants were successful in securing a land release, the process often took much longer than originally anticipated. The application to FAA, the FAA's review, and the *Federal Register* publication requirement all contribute to the timeline. A complete application to FAA for a land release requires, at a minimum, several significant pieces, including:

- **A written justification of the project**
- **A current ALP that shows the area to be released as being unnecessary for airport use**
- **A current Exhibit 'A' property map**
- **A Metes and Bounds Survey of the subject property to be released**
- **Documentation about how the land was originally acquired**
- **An Environmental Survey (often a Categorical Exclusion, or *CATEX*—see the section on regulatory constraints/permitting in Chapter 5 of this guidebook for more information)**
- **A Land Appraisal to determine fair market value for the specific type of activity (fee purchase or lease)**

Assembling these various documents into a complete application is a lengthy process in itself. Once the application has been submitted, FAA may take months to review and respond to it. Modifications may then be required in response to FAA comments. Once FAA is ready to move forward with an approval, the request is published in the *Federal Register* and a 30-day *comment period* is required. This last step is actually a 90-day process once the review and comment and collection of comments windows are included. It is reasonable to expect that a land release process could be completed in 6 to 12 months, but it would not be out of the question for the process to take multiple years.

The land release process is further complicated by the fact that the airport must have a specific tenant or client identified and be able to describe the proposed use of the property in detail prior to it being released. This description typically includes a fairly detailed Site Plan. Just noting that a parcel is no longer necessary for airport purposes and would be marketed for some form of non-aeronautical use(s) is not an acceptable level of justification or detail. The proposed developers and tenants will also be operating with their own scheduling constraints and pressures. Needless to say, the developer's timeline creates an additional push to move the process as quickly as possible.

AIRPORT CAPITAL IMPROVEMENT PLAN (ACIP)—An ACIP is a summary of development goals, typically for a 5-year planning period, that is developed based on the Airport Master Plan. The Airport Master Plan and ACIP are intended to guide the continued growth and development of an airport. It is beneficial to make the plans available to elected officials, local planners, and local land use decision-makers to enhance their understanding of the airport's needs and associated

compatible land use issues during the evaluation process of proposed development projects within proximity to airport environs.

DO

Locate and review the airport planning documents that have been adopted by the airport sponsor, including the Airport Master Plan, the ALP, the Exhibit 'A' property map, and the ACIP. Complete the self-assessment checklist in Chapter 4 that explores the Airport Master Plan and the ALP.

2.3 Community Planning

KNOW

Planning for development on or adjacent to airports will require work with local agencies. Local agencies' land use powers come from a variety of sources including federal laws, state enabling legislation, and state constitutions. Across the country, two primary tools available for local control of land uses around airports are the Comprehensive Plan (a policy document) and the Zoning Ordinance (a regulatory document). Both of these tools play a part in guiding development on and adjacent to airports. The Comprehensive Plan sets forth the community's expectations and visions for growth and land use over a 20-year planning horizon. The Zoning Ordinance establishes the current rules for permitted land uses, site development standards, and the permitting process. The Zoning Ordinance is important because, whether for safety reasons or for potential revenue generation, some land uses on properties adjacent to an airport will be more favorable than others.

HAVE

In Chapter 7, the discussion of land use planning for revenue generation explores the Comprehensive Plan and Zoning Ordinance. In Chapter 4, the self-assessment in the toolkit includes a section to explore the Community Master Plan and Zoning Ordinance. The content in this introductory chapter provides a basic understanding of the documents and their roles.

COMPREHENSIVE PLAN—This policy document formalizes the community's plan for future development as the result of a public process. Subsequent regulatory and financial decisions made by the community's elected officials must align with the policy direction established by the Comprehensive Plan. The document often includes:

- **Maps, charts, and text to explain goals and objectives for future development**
- **Past and present conditions and a forecast of anticipated future growth**
- **An inventory of resources within the community**

Projections for future growth guide planning efforts to invest in facilities and community resources that support growth and development, including utilities, roads, and recreation facilities. The Comprehensive Plan also defines the type, location, and density of future development and is used as a guide for creation and amendment of the Zoning Ordinance and to plan for capital improvements. All of these elements influence land use development in the community generally and adjacent to the airport specifically.

ZONING ORDINANCE—A regulatory document of land use development standards, the Zoning Ordinance includes land use zoning districts that define the location, type of permitted use, and conditions for development in each geographic area of the community. For the purposes of this guidebook, the Zoning Ordinance is important to know about because it regulates the type and density of permitted development as well as the conditions of development in the community—including development on parts of an airport and adjacent to the airport. The Zoning Ordinance also is important to airports because it can be used to promote land use compatibility and airspace protection, and to minimize noise conflicts.

AIRPORT LAND USE COMPATIBILITY PLAN (ALUCP)—More specific than a local Comprehensive Plan, the ALUCP promotes compatibility between local airports and the surrounding properties.

Although the ALUCP is not intended specifically to encourage revenue generation from development adjacent to airports, the policies in the plan may influence land development options and patterns and, by extension, opportunities for revenue generation. ALUCPs are required in some states and voluntary in others, and specific content may vary depending on the state enabling legislation. Also, the geographic limits of an ALUCP may extend beyond a single municipal boundary, presenting an opportunity for coordinated land use planning between or among multiple communities for property adjacent to the airport.

DO

Locate and review the community planning documents that have been adopted by the airport's host community (or communities), including the Comprehensive Plan and the Zoning Ordinance. Complete the self-assessment section in Chapter 4 of this guidebook, which explores community land use planning for revenue generation.

2.4 Aviation Funding

KNOW

Potential funding for general aviation (GA) and commercial service airports comes typically from the sources listed in this section.

AIP FUNDING—Funding for capital improvement projects is made available to National Plan of Integrated Airport Systems (NPIAS) airports through this grant program, which is authorized and appropriated through congressional action. Information about the NPIAS can be found in the *National Plan of Integrated Airport Systems Report* on FAA’s website. An overview of the AIP grant program can be found in Chapter 4 of FAA’s *Airport Improvement Program (AIP) Handbook*. AIP grant funding comes with conditions attached, called *grant assurances*. Airport sponsors who accept AIP grants become *federally obligated* to comply with the conditions of the grant assurances. (See Chapter 3, “Legal Considerations,” for more information on the topics of grant assurances and federal obligation.)

PASSENGER FACILITY CHARGES (PFCs)—PFCs are a per-person fee collected by commercial service airlines on behalf of airports for passengers who board their flight at that airport. Airports may use PFCs for certain types of projects defined in federal law including as the local match portion of AIP grants.

STATE GOVERNMENTS—Some state governments provide grant funding for aviation as part of their transportation programs. If available, these funds generally are competitive and typically the grants are funded through fees and taxes levied on aircraft owners and airport users, including revenue from fuel flowage fees. Similar to AIP grants, state funding typically comes with *assurances* about what airport sponsors must do as a condition of the receipt of funds. For information, visit the state’s Aeronautics Division website. (The website may be a stand-alone site or it may be included as part of a state’s Department of Transportation [DOT] website.)

LOCAL FUNDING—Local funding often is provided in part through a general fund allocation to the airport. This occurs because airports that are sponsored by cities, counties, and states may not generate enough revenue to cover their costs (especially smaller airports without commercial air service). Although fees may be collected for airport operations, the amount received may not be enough to cover 100 percent of operating, construction, and maintenance costs. If the airport is part of a port district or an authority, the airport owner may also be authorized by the state legislature to levy taxes and fees to collect additional local funding.

BORROWING MONEY—Tax-exempt bonds are the most frequent financial tool used to borrow money for major capital improvements. For airports owned by a public sponsor (city, county, or state), this tool includes *general obligation bonds* that are secured through the general tax authority. Another bonding option may be *general airport revenue bonds* (GARBs), which are bonds that are secured by the revenues of the airport and other revenues as defined in the bond indenture. GARBs are secured primarily by the revenues of the airport.

AIRPORT REVENUE—Airport revenue is money generated through activities or property uses on the airport. In general, larger GA airports and airports with commercial passenger service and air cargo service generate more revenue because these airports have additional sources of income such as rent and usage fees, concession revenue, and PFCs from commercial passenger service.

They also have the potential to house more lease-paying businesses within the terminal to support scheduled commercial passenger airline operations.

HAVE

Each airport maintains some record of its current funding sources as part of a budgeting process. The identification of funding sources will also help to identify potential restrictions, conditions or obligations that may impact development choices. It will also help to understand the airport's current financial resources and economic health. The descriptions of potential funding sources in the preceding section provide guidebook users a basic understanding which they will find helpful in completing the self-assessment in Chapter 4. The toolkit in Chapter 4 includes a section to explore the airport's budgeting process and its Strategic Business Plan, if available.

DO

To review aviation funding, locate and review the airport's annual budget and Strategic Business Plan, if available. Develop an understanding of the airport's current sources of aviation funding for operations and capital improvements, and complete the self-assessment section in Chapter 4 that explores the airport Strategic Business Plan and budgeting process.

2.5 Development Plan

KNOW

A *Development Plan*, also called a Site Plan, is a graphic representation of the development intent for a parcel of land. The plan can include a range of details from sketch plan to construction documents. In its initial form, the plan may be conceptual, limited to showing building lots, building footprints, parking areas, and roads. More refined versions usually comprise a multi-sheet set with engineering design, including:

- **A table of zoning data**
- **A survey of existing conditions**
- **Details and dimensions of roadways**
- **Proposed lot acreage**
- **Proposed building size**
- **Sewer, water, and storm drain lines**
- **Detention basins**
- **Grading plans**
- **Landscaping**

HAVE

Chapter 6 in this guidebook presents two principal sections using a Stop/Go decision format. The first half of Chapter 6 addresses development and management planning steps and provides a path to creating a refined development program if one is warranted. The material in this section of Chapter 2 provides a basic understanding of the Development Plan (Site Plan), which is a key component of a comprehensive development strategy.

SITE PLAN APPROVAL—In addition to working out site design and engineering for the developer and clarifying what can be fit on the property, the Development Plan is usually necessary to secure approval from municipal and/or county land use authorities (generally a planning board or zoning board). The local Zoning Ordinance and other relevant ordinances will dictate the plan details required for a complete application, including engineering, environmental, and topographic information as well as proposed buildings. Developers usually keep to the minimum requirements, reserving flexibility for the details not mandated to be shown in the application.

The Site Plan must be reviewed and approved by the local land use authority for the developer to proceed to a construction permit. The approval is documented in an action by the approving authority, and usually refers specifically to the title and revision date of the Site Plan approved. The approved plan is also kept in the municipal or county offices as a record of what has been permitted in the way of land alteration and buildings. The applicability of local zoning regulation to airport property varies. As a rule of thumb, it does not apply in the airport operations areas (AOA), may apply to airport property outside of the AOA, and does apply to airport-owned property outside the airport boundary. The applicability of local zoning regulation should be confirmed for each specific location.

DO

Locate and review current or previous land development or site plans for on-airport property designated for non-aeronautical use as well as site plans for sites adjacent to the airport. These plans may be for sites where development has already occurred or sites where development was proposed but not constructed. Whether the property is developed or vacant, the site plans will likely include information such as site elevations, utility locations and size, and public easements, including drains and road right-of-way information, which all may be helpful for future development plans on and adjacent to the airport.



2.6 Grant Obligations

KNOW

Approximately 3,400 public-use airports across the United States have either received federal grants or are eligible to receive federal grant funding should the opportunity and need arise. In exchange for federal airport development assistance (both monetary awards and transfer of federal property for airport purposes) airport sponsors make binding legal commitments to assure that the public's interest in civil aviation will be served. **An airport sponsor's responsibilities are commonly referred to as its *federal grant obligations or grant assurances*.** Some obligations are for the life of the project (not to exceed 20 years) and some continue in perpetuity as long as the airport remains in operation. A discussion of specific grant assurances can be found in Chapter 3 of this guidebook.

Although AIP grant funds may not typically be used for projects that are intended for revenue generation, it is an important topic for the discussion of on-airport development for revenue generation because grant assurances impact a variety of development issues including site design, lease agreements, and financing. Information on these impacts is provided throughout the toolkits in chapters 4 through 7.

HAVE

An airport can become grant obligated by accepting money or property through several federal programs. Since 1946, FAA has issued monetary grants through three different programs. The current grant program is the AIP, pursuant to the Airport and Airway Improvement Act of 1982 (AAIA) as amended (Title 49 U.S.C. § 47101, et seq.). The grant obligations will typically be described in the grant documents, often called sponsor contracts.

Generally, the grant assurances have remained consistent through the three programs over time, but some changes have occurred as a result of the passage of various pieces of legislation. It is also possible for a grant agreement to contain special covenants or specific conditions.

An airport also may become grant obligated as the result of accepting a transfer of surplus real property from the federal government for the purpose of generating revenue to support the airport's aviation needs. This situation is similar to accepting federal grant money: when an airport accepts a transfer of federal property, it also accepts federal obligations, which may vary according to the specific transfer document.

Generally, the descriptions of other federal obligations will resemble the language found in most grant agreements, but one or more special conditions may apply in relation to obligations that come with real property. Also, the obligations associated with the transfer of real property stay with the land, even if the land is sold, until they are released under the Surplus Property Act.

DO

It is important that the airport sponsor confirm the specific obligations entailed to the airport through the documents associated with each specific grant award. If the airport has accepted monetary grant awards, the airport should confirm the authorizing legislation and the associated conditions or assurances. If the airport has accepted airport property, the sponsor should clearly understand how the airport property was acquired and whether obligations are associated with some or all of the property acquisition. Because sponsor assurances vary over time and project-specific circumstances, the only way to determine the airport sponsor's federal obligations accurately is to review the language of each grant agreement.

2.7 The Five Tiers

KNOW

Airport property and properties adjacent to airports are subject to varying degrees of FAA regulatory requirements and control. Obligated airports—airports that have accepted federal and/or state grants—also are subject, as a condition of those grants, to both broad and specific regulatory requirements addressing safety and economic conditions. The varying types of unobligated land parcels beyond the obligated airport boundaries are subject to tiers of lesser regulation. These regulatory tiers differ substantially depending upon how the airport property, or property near the airport, is owned, its degree of airport access, its site planning, and its case-specific circumstances.

Development and airport revenue opportunities are directly affected and structured by the nature and extent of FAA's economic regulatory oversight of the airport and adjacent non-airport-owned properties. Four key factors appear to be driving this:

- **The nature of applicable FAA grant obligations**
- **Airport or airport agency ownership or non-ownership of the property**
- **Site planning and vertical limitations**
- **The type of access permitted to the airport grounds proper**

HAVE

Given the interaction of these four factors, this guidebook groups development and development-related revenue opportunities into five distinct tiers. The five tiers are a consequence of how FAA has fashioned airport grant obligations in its Order 5190-6B, *FAA Airport Compliance Manual*. The five tiers are not cited in the FAA Order; rather, the identification of these tiers is a unique and specific finding of ACRP Project 03-39 and meant to guide the conversation about what may or may not be allowed to be developed based on the regulatory restrictions. These definitions can be used as a starting point to understand the type(s) of property available for property development on and adjacent to the airport.

Tier 1—Airport- or airport agency-owned property, FAA obligated:

- **Subject to all applicable FAA grant obligations**
- **Airport design limited by FAA airport design/layout standards**
- **Property considered part of the airport proper and controlled by the airport**
- **Most common type of airport agency-owned property**
- **Greatest horizontal and vertical site planning and development constraints**
- **Greatest land use constraints**
- **Greatest FAA controls/constraints on use of revenues**

Tier 2—Airport- or airport agency-owned property, not FAA obligated, with airport through-the-fence (TTF) access:

- **Limited by FAA policy on TTF operations**
- **Property controlled by the airport agency but not technically part of the airport proper**

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- **Not a common type of airport agency-owned property**
- **Fewer land use constraints**
- **Airport agency has more latitude in development and revenue use**
- **May have reduced horizontal and vertical site planning constraints for airport agency**

Tier 3—Airport or airport agency-owned property, not FAA obligated, without airport TTF access:

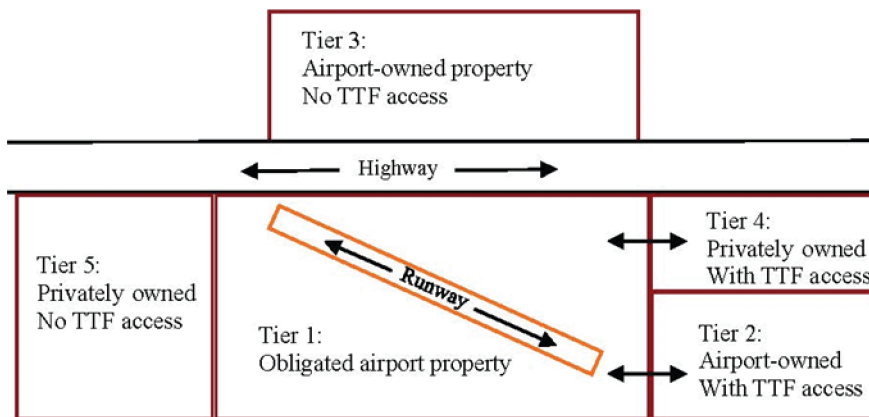
- **Generally not limited by FAA grant obligations**
- **Property controlled by the airport agency, but not technically part of the airport**
- **Not a common type of airport agency-owned property**
- **More development and revenue and latitude for airport agency**
- **Fewer land use constraints**
- **Fewer horizontal and vertical site planning constraints for airport agency**

Tier 4—Non-airport or non-airport agency property, not FAA obligated, with airport TTF access:

- **Limited by FAA TTF grant obligations**
- **Property not controlled by the airport agency**
- **A common type of property**
- **Considerable development opportunities but constrained revenue opportunities for the airport agency**
- **Fewer land use constraints**
- **Slightly reduced horizontal and vertical site planning constraints**

Tier 5—Non-airport or non-airport agency property, not FAA obligated, without airport TTF access:

- **Not limited by FAA grant obligations**
- **Property not controlled by the airport agency**
- **Most common type of property**
- **Considerable development opportunities but least revenue opportunities for the airport agency**
- **Fewest land use constraints**
- **Fewest horizontal and vertical site planning constraints**



Source: Mead & Hunt, Inc.

Figure 2. Regulatory tiers.

DO

Review the definitions of the five tiers in light of the specific property on or adjacent to the airport that may be under consideration for development. Is the airport considering property development on land that falls in one or more of the five tiers? These terms are used throughout the toolkits in chapters 4 through 7 of this guidebook, so it will be important to understand the reference. Also, the level of development restriction or condition may help the guidebook user identify the best development strategy for the airport while working through the toolkit exercises. References to the five regulatory tiers are denoted using the following “five tier” icon:



2.8 Summary

This guidebook includes information regarding airport regulation, development, and funding, and also information about property development, management, and finance. Airport management and operations and property development are distinct, unique professions, and users of this guidebook may not be familiar with both. From this chapter, guidebook users can gain or refresh their basic understanding of cornerstone concepts related to aviation and community planning, aviation funding and grant obligations, and land development before turning to the toolkit chapters. The concept of the five tiers was developed from the ACRP Project 03-39 research as a way to support the conversation. Guidebook users who wish to reference more detailed definitions of the technical terminology used in the guidebook are encouraged to consult the glossary.

Legal Considerations

3.1 Introduction

When considering commercial development on or near an airport, legal issues are not necessarily the first thing that comes to mind, nor are they always readily apparent. This is certainly understandable, given that most airport personnel are neither lawyers nor involved in legal issues in their normal day-to-day tasks. Nonetheless, many legal issues could prevent or limit the scope of development on or near an airport, put the airport at risk of a legal challenge to the development, or even put the viability of the airport in jeopardy. All too often, legal issues are identified late in the development process and end up delaying or preventing the development that was originally planned, possibly including a costly and time-consuming legal challenge. This chapter in the guidebook is therefore intended to raise awareness of the primary legal issues with the potential to impact commercial development on or near an airport.



This chapter does not present an exhaustive list of potential legal implications for development, nor is it intended to replace competent and appropriate legal advice. It is intended to be a valuable step in identifying areas of concern that might have legal ramifications. The chapter presents a general legal framework for airport managers and directors and others working for or with airports, and it identifies other agencies and organizations that may have jurisdiction over a commercial development project and thus may need to be contacted during the process. The goal of this chapter is to help airport managers and decision makers guard against unnecessary obstacles that common legal issues could pose to commercial development of areas on or near an airport. A basic understanding of these common issues helps underscore the need for legal review of any project and guides airport staff to identify and engage expert reviews and evaluations early in the process.

Much like other topics covered by this guidebook, the discussion associated with legal considerations is complicated and potentially lengthy. Furthermore, not every legal issue will apply at a particular airport because of the vast differences among the airports across the United States. Also, legal considerations have been the subject of a number of other ACRP projects. Consequently, the discussion here will be brief, and direction will be provided to other resources that dive deeper into individual topics to support the guidebook user. Given the nature of the subject matter, however, the content is more technical than that in other chapters.

When an airport is interested in developing property that is either FAA grant obligated (Tiers 1, 2 and 3) or may be considering allowing through-the-fence (TTF) access to an FAA grant-obligated airport (Tiers 2 and 4), there may be a number of federal regulations that must be met to remain in compliance with federal obligations. **A discussion of grant obligations is provided in Chapter 2 of this guidebook and an understanding of that topic is an essential foundation of the discussion here.** Even if compliance with grant assurance obligations is not necessary at the point in time of the planning and/or execution of the commercial development, it is often a



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responsible choice to consider whether the possibility of future grant applications and awards would merit making grant assurance compliance decisions ahead of time. ACRP Project 03-38, “Understanding FAA Grant Assurance Obligations,” (currently active) is intended to provide a resource to help guide this decision-making process. In addition to FAA obligations, property in Tiers 1 through 5 may also be regulated by other governmental authorities, and it is important to review those legal considerations as well.

The initial discussion in this chapter focuses on federally obligated airports due to the large number of such airports and the sometimes overlooked or misunderstood federal grant obligations at these airports. The remainder of the chapter will address topics that apply to all airports, including federal involvement, environmental impacts, state and local laws, safety and security, and appropriate fiscal and business consideration, as follows:

- **The FAA Airport Compliance Manual**
- **An airport’s federal obligations**
- **Local property laws such as zoning**
- **Environmental compliance (regulations)**
- **Liability and insurance concerns**
- **Safety regulations mandated by federal agencies including FAA, the Transportation Security Administration (TSA), and the Department of Homeland Security (DHS)**
- **Other ACRP resources**

3.2 **FAA's Airport Compliance Manual and AIP Handbook**

Under 49 U.S.C. § 47101, et seq., FAA has authority to award federal grants to financially assist with the maintenance and development of public-use airports that are considered significant to the national air transportation system, including all commercial service airports, all reliever airports, and selected general aviation airports. In the past, FAA's authority was administered through the Federal Aid to Airports Program (FAAP), the Airport Development Aid Program (ADAP), and, most recently, the Airport and Airway Improvement Act (AAIA), which established the Airport Improvement Program (AIP).

FAA

FAA is bound by statute to administer the grant program according to certain statutory requirements and other federal laws, including those that relate to the ability to successfully accomplish commercial development on or in the vicinity of an airport. The statute sets forth the terms, referred to as *grant assurances*, which FAA must include in every grant agreement as the sponsor's conditions for receiving the federal grant. Upon acceptance of an AIP grant, the assurances become a binding contractual obligation between the airport sponsor and the federal government.

FAA's *Airport Compliance Manual* (FAA Order 5190.6B) sets forth in detail the specific policies and procedures that guide FAA in its oversight of airport compliance, including the grant program and FAA's interpretation of an airport's obligations made in the grant agreement. The manual also sets forth guidance for FAA's administration of the obligations set forth in conveyance of federal land documents. This manual is updated periodically to reflect current FAA practice in administering the airport programs at all federally obligated airports. The *FAA Airport Compliance Manual* is a respected resource on the topic of airport sponsor compliance with federal grant assurances and conveyance terms. The manual itself is not regulatory, but it provides guidance for FAA personnel on how to interpret and administer the various continuing commitments that airport sponsors make to the United States as a condition of accepting the grant of federal funds or the conveyance of federal property for airport purposes.

The airport sponsors are legally responsible for the ownership and operation of the airport; thus, they have the primary responsibility for keeping the airport in compliance with the terms of the agreements that gave them the land or money in support of the ongoing availability of the airport. The *FAA Airport Compliance Manual* can be found online at www.faa.gov.

FAA's *AIP Handbook* (FAA Order 5100.38D) is another valuable resource for understanding an airport sponsor's grant obligations and the manner in which FAA oversees grant obligation compliance. The *AIP Handbook* also is updated on occasion and provides guidance and sets forth policy and procedures used by FAA in the administration of the grant program. The content includes the obligations that are accepted along with the grants issued through the program. This document also can be found online at www.faa.gov.

FAA airports district offices (ADOs) and regional airports divisions have the responsibility to advise sponsors of their compliance requirements and to ensure that sponsors comply with their federal obligations. Given the great number of federally obligated airports and the variety of federal obligations, the compliance program primarily focuses on education with the goal of achieving voluntary compliance. The program supplements this educational approach with periodic compliance monitoring and investigation of potential violations. Generally, when a violation is identified, informal resolution is the preferred course of action. Such informal

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resolution can be as simple as a phone call by the FAA to the airport to identify the violation and a voluntary adjustment by the airport in response. However, the FAA may take more formal compliance actions if they are warranted. Such formal actions may include withholding future federal funds, rejecting future grant applications, and/or initiating formal legal action, such as ordering the airport to cease and desist the offending conduct and/or to repay federal funds that have already been disbursed to the airport.

3.3 Airports' Federal Obligations

Based on research conducted in the development of *ACRP Report 156: Guidebook for Managing Compliance with Federal Regulations: An Integrated Approach*, a federally obligated airport may be governed by more than 60 primary and 339 secondary regulations, as well as statutes, executive orders, and Office of Management and Budget (OMB) circulars. *ACRP Report 156* provides much greater detail about specific obligations. This section of *ACRP Research Report 176* reviews some of the primary federal grant obligations that come from accepting a federal grant of AIP funds or from a transfer of surplus property.

3.4 Federal Grant Obligations and Responsibilities

As noted in Chapter 2 of this guide, approximately 3,400 public-use airports across the United States have either received federal grants or are eligible to receive such grants in the future should the opportunity and need arise. Chapter 4 of FAA's *Airport Compliance Manual* addresses federal grant obligations and responsibilities. In this guidebook, Chapter 2 orients guidebook users to the basics of what airport sponsors need to *know*, *have*, and *do* in relation to federal grant obligations and the corresponding conditions and assurances. This chapter provides a brief summary, as follows:

- Under the various federal grant programs, the sponsor of a project agrees to assume certain federal obligations pertaining to the operation and use of the airport.
- The federal obligations become a part of the grant agreement, binding the grant recipient when the federal funds are accepted for airport development.
- Some obligations are for the life of the project (some not to exceed 10 years and others not to exceed 20 years), and some continue in perpetuity as long as the airport remains in operation.
- FAA has issued grants through three different programs. Generally the grant assurances have remained consistent through the three programs over time, although some changes have resulted from the passage of various pieces of legislation.
- Grant agreements may also contain special covenants or specific conditions that go beyond the requirements specified in the statute.

This chapter presents an overview of the current grant assurances that are most likely to impact revenue generating activities on a grant-obligated airport; however, it is important that the airport sponsor confirm the specific obligations imposed by the actual grant agreement associated with each specific grant award.

3.5 Federal Obligations from Property Conveyances

Chapter 3 of the FAA *Airport Compliance Manual* addresses transfers of personal and/or real property to airport sponsors. The federal government may transfer (or *convey*) surplus property or nonsurplus property. These conveyances are of primary interest to this guidebook because the property may be used for aeronautical or non-aeronautical purposes to generate revenue to support the airport's aviation needs.

Similar to accepting grant money, when an airport accepts a transfer of property from the government, it also accepts federal obligations that may vary according to the specific transfer document. For the most part, the federal obligations will be similar to those found in most grant agreements with respect to the basic compliance requirements, but there may be one or more special conditions. For instance, special conditions may result if the surplus property being transferred from the government was originally acquired through the War Powers Act. This law allows the federal government to take over land needed for national defense.

The obligations associated with the transfer of real property usually run with the land—even if the land is sold—until the land is released from the obligations by the federal government, generally upon a showing that the land is no longer needed for the purpose for which it was conveyed and its release is necessary to advance the civil aviation interests of the United States.

The airport sponsor should clearly understand how airport property has been acquired and whether obligations are associated with some or all of the property acquisition. This information may generally be found on a property map or through a title search. Airports that are federally obligated will most likely have an Exhibit 'A' Property Map that should be reviewed for historical property information. In this guidebook, Chapter 4 provides more information on this topic.

3.6 Grant Assurances

Pursuant to federal law related to airport improvement set out in 49 USC 47101 et seq. and its statutory predecessors, FAA may approve an application for project grants upon a certain showing of the need for a particular project at a public-use airport. However, any grant is subject to the satisfaction of and continuing compliance with a number of assurances that are set forth in a contract signed by the recipient of those funds as a condition of receiving those funds. Not all grant assurances that are imposed as a condition of accepting federal grant monies apply to the commercial development issues at an airport. However, a working knowledge of the assurances that are most likely to apply will help the guidebook user assess whether there may be an impact to commercial development action plans.

The following assurances generally bear consideration for commercial development; however, this is not an all-inclusive list. Other assurances may also apply, depending on individual circumstances. Note: Unless otherwise noted, text set as a block indent is taken from the section “Assurances for Airport Sponsors” in FAA’s *AIP Handbook*.

3.6.1 Assurance 5, Preserving Rights and Powers

A sponsor cannot take any action that may deprive it of its rights and powers to direct and control airport development and comply with the grant assurances, and a sponsor may not sell, lease, encumber, or otherwise transfer or dispose of any part of its title or other interests in the property without the prior written approval of the FAA.

Of particular concern to the FAA is granting a property interest to tenants on the airport. These property interests may restrict the sponsor’s ability to preserve its rights and powers to operate the airport in compliance with its federal obligations. Providing developers with an option to acquire a fee interest in federally obligated airport property is not acceptable to the FAA under this grant assurance. An option to acquire a fee interest in airport property should be considered a sale of airport property for purposes of requiring an FAA release, since the result is potentially the same.

By this assurance, with its several subparts, the airport may not sell grant-obligated property or enter into leases that have the effect of selling property or unencumbering the airport from compliance with applicable grant assurances. If the airport leases property, the airport is still responsible for complying with the grant assurances so it must maintain more control over the property than may be standard for other property leases. This relates back to the Airport Layout Plan (ALP) review by FAA for any change in property use designation (*see* Chapter 2).

Assurance 5 is also one of several grant assurances that relate to FAA’s authority to review lease terms, rates, and length of leases. In the course of any review, FAA will look at any lease or agreement granting the right to serve the public on the airport to determine if there is a contractual term that the lease interest is subordinate to the sponsor’s federal obligations and that the lease will be interpreted to preserve the airport’s compliance with the federal obligations. (For more information on the topic of lease agreements, refer to *ACRP Report 47: Guidebook for Developing and Leasing Airport Property*.)

3.6.2 Assurance 6, Consistency with Local Plans

The project is reasonably consistent with plans of public agencies that are authorized by the State in which the project is located to plan for the development of the area surrounding the airport.

This assurance recognizes that there are local, state, and regional planning agencies and public investments in areas surrounding the airport and that actions by the airport could have an impact on these surrounding areas. Whether or not a specific project is grant funded, the airport sponsor has a continuing obligation to comply with this grant assurance. Through this assurance, the airport is required to consider whether the airport plans and policies are consistent with existing or planned zoning or future land use plans. This is especially relevant when the airport is in one jurisdiction but surrounded by other jurisdictions. In some cases, a local jurisdiction can withhold permits or zoning approval if they determine that a project does not meet the local standards and requirements, even if FAA would otherwise agree that the project does not violate federal obligations and might be in the best interest of the airport. Also, if a project requires an Environmental Assessment (EA), the airport will usually be required to provide a letter from the sponsor stating that the project is consistent with local plans. (For a discussion of environmental permitting, see Chapter 5, “Site Evaluation Toolkit,” in this guidebook.)

3.6.3 Assurance 7, Consideration of Local Interest

[The airport sponsor] has given fair consideration to the interest of communities in or near where the project may be located.

This similarly ongoing assurance expands the requirements set out in Assurance 6 to say that the sponsor has to let the local communities comment on the airport’s plans or proposals. The airport does not have to follow the input received from the community, but it must at least consider the comments. Written records, such as summaries of community comments, staff reports, and/or meeting minutes can help to demonstrate the airport sponsor’s consideration of the community’s expressed concerns and interests and the reasons for any deviation from community requests.

3.6.4 Assurance 8, Consultation with Users

In making a decision to undertake any airport development project under Title 49, United States Code, [the airport sponsor] has undertaken reasonable consultations with affected parties using the airport at which project is proposed.

Similar in theme to assurances 6 and 7, this ongoing grant assurance points the airport toward communication with stakeholders who may potentially be affected by an airport development project. In this case, affected parties may be current airport tenants, based aircraft owners, and airlines. Users that may be affected by any proposed development projects need to be consulted. Here again, the grant assurance does not require the airport to adhere to the input received but rather to engage in some dialogue to gather information and input and have it appropriately considered.

3.6.5 Assurance 19, Operation and Maintenance

The airport and all facilities which are necessary to serve the aeronautical users of the airport, other than facilities owned or controlled by the United States, shall be operated at all

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times in a safe and serviceable condition and in accordance with the minimum standards as may be required or prescribed by applicable federal, state and local agencies for maintenance and operation. It will not cause or permit any activity or action thereon which would interfere with its use for airport purposes.

As its title suggests, this grant assurance addresses both operation and maintenance. The airport also agrees not to cause or permit any activity or action on the airport that would interfere with airport purposes. For example, with regard to airport operations, the airport is responsible for marking and lighting hazards, clearing snow and high grass or wind debris, and communicating information about conditions at the airport—including possible wildlife management issues and hazard assessments—to the aeronautical users of the airport. The airport must maintain the minimum services, staff, and equipment to fulfill this responsibility, and a commercial development project may require that the airport accept the burden of more resources to satisfy this responsibility. This assurance may also need to be taken into account if multiple options for commercial development exist, prompting a need to consider an aviation use that fills a need at the airport versus a less necessary aviation use or a non-aeronautical use that might otherwise generate more airport revenue.

3.6.6 Assurance 20, Hazard Removal and Mitigation

[The airport sponsor] will take appropriate action to assure that such terminal airspace as is required to protect instrument and visual operations to the airport (including established minimum flight altitudes) will be adequately cleared and protected by removing, lowering, relocating, marking, or lighting or otherwise mitigating existing airport hazards and by preventing the establishment or creation of future airport hazards.

Generally, this grant assurance assigns the airport responsibility for actively working to prevent or to correct airport hazards. Hazards include tall structures, wildlife attractants, and other features that may interfere with aircraft operations. Assurance 20 addresses both on-airport development projects and projects that might be encouraged around the airport. For example, development of a new company headquarters building near the airport is likely to encourage business use of the airport, but the building will need to be located and scaled so that the building height does not pose a hazard to aircraft operations. Also, for a commercial development project, Assurance 20 would require the airport to be mindful of construction vehicle placement—in particular, any cranes protruding into the airspace environment of the airport—and of the need to communicate information about any potential hazard to airport users.

3.6.7 Assurance 21, Compatible Land Use

[The airport sponsor] will take appropriate action, to the extent reasonable, including the adoption of zoning laws, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft.

Some land uses are incompatible with the airport because of impacts (such as smoke and glare) that interfere with visual operations, or because they are likely to attract birds and wildlife. Other land uses, such as schools, hospitals, or apartment buildings, are considered incompatible because the noise caused by airport operations could be disruptive. The multi-volume *ACRP Report 27: Enhancing Airport Land Use Compatibility* provides an excellent resource on this topic.



This grant assurance places the responsibility on the airport sponsor for taking actions, as needed, to restrict incompatible land uses near the airport. The federal government does not have land use authority and cannot regulate land uses around the airport. The airport sponsor does not have land use authority but can be an active participant in community conversations and decisions regarding land use around the airport. The airport can encourage the community to adopt an airport zoning ordinance to codify a plan for compatible land use. In those cases where an airport is actively working to attract or recruit new businesses to the area, land use compatibility should be considered before reaching out to potential commercial developers. In this guidebook, these possible airport actions are discussed further in Chapter 7, “Off-Airport Considerations and Revenue.”

3.6.8 Assurance 22, Economic Non-discrimination

[The airport sponsor] will make the airport available as an airport for public use on reasonable terms and without unjust discrimination to all types, kinds and classes of aeronautical activities, including commercial aeronautical activities offering services to the public at the airport.

The excerpted text shown is just one of nine subsections in Grant Assurance 22, Economic Non-discrimination. This assurance is one of the broadest assurances that apply to a federally obligated airport, and it potentially applies to any use of the airport. In addition to the requirement of public use, there are provisions regarding leases, rates, and fees, which may all guide or impact plans for on-airport development. For example, it is the airport sponsor’s responsibility to ensure that the rates and fees are reasonable for the facilities that are being provided—even for subleases on airport property executed by an airport tenant. Also, the rates and fees must be comparable for tenants renting similar spaces, such as similarly situated Fixed Base Operators (FBOs). Compliance with Assurance 22 also is important with regard to terms for TTF agreements.

Language requiring compliance with this economic non-discrimination obligation must be included in any agreement, contract, lease, or other arrangement under which a right or privilege at the airport is granted to any person, firm, or corporation to conduct or to engage in any aeronautical activity for furnishing services to the public at the airport. A useful guide in this regard is *ACRP Legal Research Digest No. 23: A Guide for Compliance with Grant Agreement Obligations to Provide Reasonable Access to an AIP-Funded Public Use General Aviation Airport* (February 2013).

3.6.9 Assurance 23, Exclusive Rights

[The airport sponsor] will permit no exclusive right for the use of the airport by any person providing, or intending to provide, aeronautical services to the public.

The oldest federal obligation affecting federally funded airports, Assurance 23 requires that multiple providers of the same services be permitted to conduct business at the airport if such accommodations can be reasonably made. This topic is addressed in Chapter 8 of the FAA *Airport Compliance Manual*. According to that source, the intent of this restriction is to promote aeronautical activity and protect fair competition at federally obligated airports. This assurance does not absolutely require that multiple service providers exist at a federally obligated airport, just that interested providers not be specifically excluded if the opportunity for bringing the business to the airport is available. An airport may be found to have granted exclusive rights

through a specific agreement or by imposing unreasonable standards or taking other actions that have the same effect. One example of such an action would be if an airport allows a single company to lease all of the available development property when it is far in excess of the amount that would be needed by that company, thereby preventing others from doing business at the airport. However, an airport may decide to offer some services itself as a means of revenue generation without being found to be violating this provision, including that the airport provides that service with its own employees. FAA AC 150/5190-6, *Exclusive Rights at Federally Obligated Airports*, provides airport sponsors with more information. The exclusive rights prohibition applies as long as a public-use airport is in operation as an airport—essentially, in perpetuity.

3.6.10 Assurance 24, Fee and Rental Structure

[The airport sponsor] will maintain a fee and rental structure for the facilities and services at the airport which will make the airport as self-sustaining as possible under the circumstances existing at the particular airport, taking into account such factors as the volume of traffic and economy of collection.

The FAA *Airport Compliance Manual* addresses this assurance in Chapter 17, “Self-sustainability.” Fees also need to be consistent with FAA’s published Policy Regarding the Establishment of Airport Rates and Charges. The rates and charges policy provides guidance on the legal requirement that airport fees be fair, reasonable, and not unjustly discriminatory.

In FAA’s policy guidance, airport sponsors are encouraged to be as self-sustaining as possible when entering into new or revised agreements or when otherwise establishing rates, charges, and fees. The FAA recognizes, however, that not all airports will be able to be self-sustaining. Above all, fees and rents must be reasonable in reflecting the cost of the services or facilities. Fair market value is considered reasonable for non-aeronautical use of the airport. Although the FAA does not have to approve rates and charges in advance, they may be reviewed as part of determining compliance with grant assurances. Therefore, it is a good idea to clearly document the methodology used to arrive at certain rates and charges at the time that they are decided so that compliance is assured at the time and may then be acceptable to the FAA in any subsequent review.

3.6.11 Assurance 25, Airport Revenues

All revenues generated by the airport and any local taxes on aviation fuel established after December 30, 1987, will be expended by it for the capital or operating costs of the airport; the local airport system; or other local facilities which are owned or operated by the owner or operator of the airport and which are directly and substantially related to the actual air transportation of passengers or property; or for noise mitigation purposes on or off the airport.

This grant assurance requires the use of airport revenue for airport purposes for the life of the airport, which is a consideration when an airport sponsor is considering self-funding an airport development project. When planning for the use of revenues from commercial projects, it is important to understand how they may be used and that they may not be diverted away from the airport’s core purposes. *ACRP Legal Research Digest No. 2: Theory and Law of Airport Revenue Diversion* (June 2008) is an excellent resource on this topic.

3.6.12 Assurance 29, Airport Layout Plan

Grant Assurance 29, Airport Layout Plan, requires the sponsor to depict the airport's boundaries, including all facilities, and to identify plans for future development on its ALP. An FAA-approved ALP (signed and dated) is a prerequisite to the grant of AIP funds for airport development or for the modification of the terms and conditions of a surplus property instrument transfer (FAA *Airport Compliance Manual*).

The ALP is a key “communication” and “agreement” document between the airport sponsor and FAA. It represents an understanding between the airport sponsor and FAA regarding the current and future development and operation of the airport. The ALP serves as a critical planning tool that depicts both existing facilities and planned development for an airport and also includes information about adjacent off-airport properties that are not controlled by the airport. The airport sponsor is obligated to keep the ALP up to date.

Sponsors of airport development carried out at federally obligated airports must do what they can to avoid any commercial development projects on or near the airport that will conflict with the expectations set forth in an FAA approved ALP. If development plans on or around the airport change in a way that affects what is depicted and planned in the ALP, the grant assurances obligate the airport sponsor to evaluate what, if any, revisions must be made to the existing ALP and submit those proposed revisions to FAA for approval before the planned development may continue.

The ALP also is discussed in Chapter 2 of this guidebook in the section on aviation planning. Specific guidance is provided in FAA's Standard Operating Procedure (SOP) 2.0, Standard Procedure for FAA Review and Approval of Airport Layout Plans (ALPs). Coordination with the local FAA ADO is strongly encouraged.

3.6.13 Assurance 30, Civil Rights

[The airport sponsor] will promptly take any measures necessary to ensure that no person in the United States shall, on the grounds of race, creed, color, national origin, sex, age, or disability be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in any activity conducted with, or benefiting from, funds received from this grant.

The authority for this grant assurance comes from Title VI of the Civil Rights Act of 1964, as amended. Its compliance is guided by U.S.DOT's regulation on Non-discrimination in Federally Assisted Programs of the Department of Transportation (49 CFR Part 2) and by FAA Advisory Circular (AC) 150/5100-15, *Civil Rights Requirements for the Airport Improvement Program (AIP)*. The FAA Office of Civil Rights handles alleged violations of laws relating to civil rights.

For grants executed subsequent to the passage of the Civil Rights Act of 1964, the statutory requirement prohibiting discrimination applies to all of the sponsors' programs and activities at the airport—not just to the project that was funded by the federal grant—and compliance with this assurance remains in effect for as long as the property is used as an airport. Therefore, this non-discrimination obligation, and the actions that an airport sponsor must take to fulfill this obligation, must be considered any time a commercial development project on or near the airport affects federal funding activities or programs, involves land acquired with federal funds, or will use federal funds in the development project.

3.7 Lease Agreements

As noted through earlier sections, several grant assurances affect the language and provisions that are permissible in a lease agreement between a sponsor and a lessee of airport land. Aeronautical lease agreements are addressed in Chapter 12 of the FAA *Airport Compliance Manual*. FAA does not approve or deny lease agreements, and an airport is not obligated to get permission from the FAA for a lease agreement prior to its execution; however, if consulted, FAA will advise sponsors when the terms of proposed lease agreements have the effect of limiting the sponsor's ability to fulfill its federal obligations. When an opinion is proffered, FAA's opinion is limited to the lease's impact on the sponsor's federal obligations.

Lease durations can be a sticking point between airport sponsors and ground lessees, who generally prefer longer lease terms. To protect their investment, ground lessees may look for lease terms up to 99 years. The FAA *Airport Compliance Manual* provides policy direction with regard to aeronautical lease durations. FAA staff members are instructed to consider whether or not the lease term exceeds the time that is reasonably necessary to amortize a tenant's investment. Specifically, the text advises:

Most tenant ground leases of 30 to 35 years are sufficient to retire a tenant's initial financing and provide a reasonable return for the tenant's development of major facilities. Leases that exceed 50 years may be considered a disposal of the property in that the term of the lease will likely exceed the useful life of the structures erected on the property. FAA offices should not consent to proposed lease terms that exceed 50 years (FAA *Airport Compliance Manual*).

Although this direction seems fairly straightforward, case study interviews conducted as part of ACRP Project 03-39 revealed that FAA offices varied widely in interpretation.

Lease agreements must also satisfy the airport sponsor's obligation to afford fair and reasonable access to the airport, allow for providers to set up businesses at the airport when circumstances allow for competition, and set appropriate fees at the airport, which all have a direct bearing on the content of a lease agreement. Extensive guidance for this grant assurance exists in relation to TTF agreements (see the section on TTF Agreements in this chapter). *ACRP Report 47: Guidebook for Developing and Leasing Airport Property* also provides extensive guidance on the topic of airport leases.

3.8 Buy American Preferences and Other Federal Contract Labor Requirements

Although not strictly an assurance, the “Buy American” preferences required under 49 U.S.C. § 50101 require that all steel and manufactured goods used in federally funded projects be produced in the United States. Therefore, to the extent that the commercial development at or near the airport may involve a project that is federally funded, the airport must take into account this statutory requirement. It bears considering that this requirement may be waived under certain conditions. Whether the project is undertaken by the airport or by a private developer, if no federal funds are involved in the project itself, the requirement does not apply. A good resource for understanding an airport’s obligations is *ACRP Legal Research Digest No. 18: Buy America Requirements for Federally Funded Airports* (February 2013).

In addition, federally funded construction contracts over \$2,000 must comply with prevailing wage rate requirements of the Davis–Bacon Act of 1931, as amended. Federally funded construction contracts over \$2,500 also must comply with certain work-hour and working conditions requirements of the Contract Work Hours and Safety Standards Act, as amended.

3.9 TTF Agreements and Operations

TTF operations are generally defined as the ground movement of aircraft from off-airport property to the aircraft operating surfaces of the airport (e.g., runways and taxiways). There need not be a physical fence delineating the aircraft operating surfaces for an operation to be classified as a TTF operation. TTF operations can involve residential, aeronautical, and non-aeronautical uses, except that residential TTF agreements are prohibited at commercial service airports. The general guidelines for such activities being off-airport but utilizing airport facilities by operating TTF is that TTF operations should be treated as if they are based on airport property. Therefore all the rules, regulations, policies, rents and fees, and terms and conditions that apply to on-airport uses should apply to TTF operations. This is consistent with the sponsor's responsibility to maximize the benefits from the use of federally obligated land, facilities, and improvements on an airport.

Any commercial development near an airport that may involve aircraft access to and from the airport must carefully evaluate the impact of FAA's very strict view of TTF operations.

Although FAA recognizes that there are times when an airport sponsor will enter into a TTF agreement, FAA does not support these agreements as a general policy because TTF arrangements can place an encumbrance upon the airport property and reduce the airport's ability to meet its federal obligations. However, the *FAA Airport Compliance Manual* recognizes that TTF agreements may be approved on a case-by-case basis and provides guidance for preparing an access agreement for those airports that do grant a right of TTF access.

The airport does not have to obtain FAA's approval for a TTF lease agreement, but FAA can take enforcement action if the agreement violates the sponsor's grant obligations. *ACRP Report 114: Guidebook for Through-the-Fence Operations* explores the subject in detail.

3.10 Environmental and Mineral Rights Considerations

Existing environmental conditions, the timeline for an environmental review or permitting process, or the potential for negative environmental impacts can all contribute to the potential viability of generating revenue from development on or adjacent to the airport. There are legal requirements and potential legal consequences to consider when assessing potential development activity. Mineral extraction and the sale of other natural resources may also offer a potential for revenue generation. These activities are subject to FAA consideration at grant-obligated airports. This section of *ACRP Research Report 176* provides a broad overview of the regulatory framework on both topics.

3.10.1 The National Environmental Policy Act (NEPA)

NEPA requires that projects using federal money, requiring federal approvals or federal permits, or taking place on a federally obligated airport undergo an environmental review to identify the potential environmental impacts of the proposed project. Similarly, many states have enacted environmental impact requirements. FAA has adopted specific orders outlining the steps necessary to prepare NEPA documentation; a Categorical Exclusion (EA), or an Environmental Impact Statement is generally required. The requirements for environmental analysis and findings are included in the current version of FAA Order 5050.4, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects*. Under FAA policy, the ADO is not permitted to fund a project until the environmental finding is complete. In this guidebook, this topic is explored further in Chapter 5, “Site Evaluation Toolkit.” A helpful resource on this topic is *ACRP Legal Research Digest No. 22: The Role of the Airport Sponsor in Airport Planning and Environmental Reviews of Proposed Development Projects Under the National Environmental Policy Act (NEPA) and State Mini NEPA Laws* (April 2014).



3.10.2 Environmental Contamination

EPA is the federal agency responsible for protecting the environment against contamination and requiring remediation when there has been contamination. Development occurring on or near an airport can result in air emissions, water or waste discharges, or other types of contamination, resulting in environmental impacts that could be hazardous. It is necessary to identify the environmental impacts of a project before deciding whether to proceed. Moreover, it is in the airport’s best interest to assign responsibility for the environmental impacts of a particular use in advance of a project. For example, when considering a commercial development use that is likely to cause contamination or other ecological impacts, even if only lingering, the airport should include a term in the lease or the contract that specifically identifies whose responsibility it will be to investigate for any contamination and who will be responsible for the cost and execution of any necessary remediation at the end of the lease period.

In some instances, especially at airports that used to be military institutions or manufacturing hubs, environmental pollutants or contamination may exist in the soil, groundwater, sediment, or surface water. If this is found to be the case, the planning process must address how the pollutants or contaminants will be remediated or further remediated. The remediation requirement may be imposed by the governing body (i.e., EPA or a state environmental agency) on the entity that is responsible for the contamination, or the job may fall to the airport. At some airports, it comes as a surprise that there is contamination in the ground from previous and long-ago uses. In this regard, it is helpful to know the history of activity on the airport land in order to

anticipate whether there may need to be any environmental remediation addressed before development may begin.

3.10.3 Noise

Airport noise considerations are important to any decisions about commercial development on or near an airport. For both legal and practical reasons, it is in the airport's best interest to plan for development projects that are compatible with the noise impacts caused by the airport's use. Practically, it is advantageous to maintain a cooperative working environment in order to retain the commercial activity. Many airports may have already conducted a noise study pursuant to FAA regulatory standards; thus, they may already have a noise compatibility plan in place that identifies noise contours and the compatible uses that may fall within those contours. Legally, the airport will want to guard against lawsuits that claim that the airport harms or interferes with the commercial development activity. The airport can seek to protect itself with contract and lease provisions that acknowledge the existence of noise so that noise does not become a basis for complaints. In addition, complaints may be avoided through the use of the results of a noise study, which may be used by the airport to demonstrate a reasonable and justifiable view of airport noise impacts that can then assist in making commercial development decisions. Otherwise, if complaints do occur, they could lead to subsequently limiting the availability and use of the airport.

3.10.4 Other Environmental Issues

Other environmental issues that may need to be considered by any airport contemplating a development project include impacts to wetlands and to water resources, soil conservation and stabilization, threatened and endangered species, and other environmentally sensitive or protected resources. Even if the development does not trigger the NEPA review, federal regulation may apply to protected resources, and state and local permitting requirements may also apply. In this guidebook, Chapter 5 provides information and checklists to help airport sponsors identify potential environmental issues for specific site development concepts. Local planning offices and regional and state environmental offices also can help to provide direction and information.



3.10.5 Mineral Rights

Airports may be able to generate revenue connected to mineral rights associated with the airport property. Oil and gas extraction in particular is a burgeoning issue at airports; but coal, sand, gravel, and timber are also subject to FAA consideration, as they may affect airport compliance and other legal obligations. FAA has adopted guidance that generally states that all existing FAA policies and procedures that relate to environmental, safety, and compliance considerations may still apply to mineral extraction activities. FAA has the statutory authority to exempt a defined amount of airport revenue generated from mineral extraction activities on general aviation airports from statutory, grant assurance, and policy obligations if certain conditions are met. Whether mineral rights constitute potential airport revenue will depend on the specific circumstances at the airport, including situations in which a property conveyance may have excluded mineral rights or a situation in which the airport is otherwise federally obligated through a grant agreement or surplus property transfer. Any lease of airport property to conduct drilling or extraction activities must be at fair market value for non-aeronautical use.

3.11 An Airport's Consideration of State and Local Law Restrictions

The Tenth Amendment to the United States Constitution states that the powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people. The power to regulate and control land use is a power that is reserved to the states, and within states, is then often given to the local community. At the same time, compatible land use planning protects the navigable airspace and ground area around airports and maximizes the return of investment on infrastructure, while maintaining a safe operating environment. FAA recognizes that land uses on and surrounding an airport have the potential to impact the functioning and use of the airport. Although FAA seeks to minimize any negative impact to the extent possible, the agency does not always have the legal authority to require it. As a result, protecting the airport's viability is sometimes achieved through cooperation, education, and communication with the local authorities. As has been noted in other sections of this guidebook, land use compatibility is addressed through the grant assurances. FAA also works to protect the space needed for airport operations through review programs for tall structures and through airport design standards.

Local zoning restrictions often are put in place to protect the airport and its environment against encroachment by incompatible land uses. In this regard, "incompatible" uses could include those that would be adverse to the continuation of the airport (e.g., residential uses that would lead to noise complaints or wildlife attractants that may lead to an unnecessary increase in bird strikes) as well as uses that pose an unnecessary danger to aircraft or persons and property on the ground (e.g., construction that intrudes into runway protection zones [RPZs] or that involves bright lighting that creates a potential hazard).

Through zoning ordinances, local land use regulation controls the types of uses to which land may be put and the types of structures that may be built and used in the community. As a rule of thumb, local zoning regulations apply to areas around the airport and also to areas on the airport that are outside of the airport operations area (AOA). This varies by location and should be investigated as part of any airport development planning process. The rules and regulations affect not only the construction of any development, but also usually the permissible uses for those developments. Zoning authority provides the power to regulate and prevent the design issues that can restrict or impair the airport's ability to operate, such as height, smoke, and glare, and to prevent or restrict uses that can be incompatible with an airport. In this guidebook, the toolkit in Chapter 4 helps with an assessment of current conditions and Chapter 7 advises on strategies to change and improve current conditions.

Zoning around the airport can limit commercial development in total or in type, including protecting airspace (especially along approach and departure paths) and mitigating and preventing hazards. As such, zoning is a powerful tool for addressing land use compatibility around the airport. *ACRP Report 27: Enhancing Airport Land Use Compatibility, Volume 1: Land Use Fundamentals and Implementation Resources* is a comprehensive resource regarding issues associated with land uses around airports. Several states also have produced useful documents that may help explain zoning issues the airport might face. For example, the Washington State Department of Transportation (Washington State DOT) has published an *Airport and Compatible Land Use Program Guidebook* (2011) that includes an overview of most common zoning issues. The Florida DOT's *Airport Compatible Land Use Guidebook* (2010) is another valuable reference.



Design standards are FAA regulations that apply on airport property but may be supported by local land use cooperation if the areas extend off the airport property. On the ground, safety areas (as defined by FAA AC 150/5300-13, Airport Design) apply to areas such as runway safety areas, runway object free areas, and RPZs. FAA recommends that, whenever possible, the entire RPZ be owned by the airport and be clear of all obstructions. Private development in the RPZ will not be permitted on-airport and will not be tolerated off-airport by the FAA. If private development should occur off-airport, the issue will need to be addressed in a future ALP update.

In the air, FAA has adopted regulations that set out obstruction standards and require notification to the FAA of any construction that may intrude into the areas where FAA must protect the navigable airspace (14 CFR Part 77). Federal Aviation Regulation (FAR) Part 77 is intended to ensure that aircraft can safely approach, land, take off, and depart an airport and seeks to protect against an object's interference with any navigational aids and facilities. Adjacent to airport property, navigation easements may be acquired for the protection of the airspace necessary to approach, land, and depart from the airport.

FAA



Through FAR Part 77, FAA is authorized to determine whether a structure or object is or could be a hazard to air navigation. This is done through the submittal of an FAA Form 7460-1, Notice of Proposed Construction or Alteration. FAA provides comments in response to the submittal. FAA's determination of whether the project does or does not pose a hazard to aviation does not have any legal effect in and of itself; however, the FAA's "no hazard" determination is almost always required before any building or construction permits will be issued and before any insurance coverage may be obtained. Effectively, then, the required process in getting the "hazard" or "no hazard" determination also stands as a determination that will allow (or not allow) a commercial development project. Also, in every aeronautical study determination, FAA acknowledges that state or local authorities control the appropriate use of property beneath an airport's airspace.

In addition to the RPZs and FAR Part 77 surfaces, other surfaces are evaluated by FAA for obstructions. These other surfaces may contribute to the height limitations for airports and may impact recommended land use patterns due to other hazards to visual air navigation, such as smoke, glare, vapors, and dust. They also include surfaces defined in relation to terminal instrument flight procedures (TERPS) established by FAA Order 8260.3 B Changes 19 through 22. For runways and airports that support air carrier operations, FAA AC 150/5300 13, Appendix 2, "Airport Design," requires the identification of one engine inoperative (OEI) obstacle surfaces. Runways with an instrument approach must also consider the departure surface for instrument runways, which also is defined in FAA AC 150/5300 13, Appendix 2.

Other local rules that may affect development on and adjacent to airports, such as regulations on leasing, bidding, employment, and construction can vary among states and across jurisdictions.

3.12 An Airport's Consideration of Potential Liability and Insurance Coverage

Airports must make business and fiscal decisions that include consideration of potential liability claims and awards. Liability is always a concern for any business entity, but especially so for government-owned and government-operated airports, which arguably have a heightened fiduciary duty to protect citizen and taxpayer interests in the financial stability of the municipality. Airport sponsors must make decisions that guard against claims, and they must ensure the availability of appropriate insurance coverage. If commercial development is being considered, the airport must consider not only the availability and adequacy of the necessary insurance coverage for the airport, but also the type and minimum amount of coverage it may require any commercial development company to carry to further protect the airport against exposure to potential liability.



The possibility of liability depends on the specific use of the land on or near the airport and is necessarily case specific. Potential causes of action that exist in the airport context have included noise tort, damage to property, bodily harm, and environmental tort. Airports considering a potential commercial development are in the best position to assess the potential liability concerns presented by the development as it relates to the location, size, and use of the airport. It is important to review and evaluate the proposed uses to determine what potential liabilities they present. In this regard, it may be necessary to seek consultants to assess vulnerabilities and to coordinate with insurance carriers to identify the availability of (and the airport's ability to obtain) adequate insurance coverage. Furthermore, existing insurance policies may contain restrictions against certain kinds of development or a manner of development. Such restrictions would affect how a commercial development action plan would be written and executed.



Many states offer limited tort liability to municipalities and their divisions when they are acting in their governmental role. This means that there may be a statutory limit to the amount of damages for which the airport may be liable. Insurance coverage decisions should be considered in light of these statutory limitations.

3.13 Application of FAA Safety Considerations and TSA Security Requirements to Development

FAA is statutorily responsible for the nation's airspace and the safe and efficient use of that airspace. In the exercise of that authority, as pertinent to the development of property on and around the airport, FAA has set certain standards that can restrict development on or in the vicinity of an airport, such as RPZs, noise contours, and height restrictions.

Apart from federal obligations that stem from accepting grant monies, other federal government rules and regulations may apply to property development on or around an airport. For example, TSA, an agency within the U.S. Department of Homeland Security, is responsible for the security of our nation's infrastructure and borders. Following the terrorist attacks of September 11, 2001, TSA was given responsibility over aviation security at the nation's commercial airports. For the most part, TSA adopted FAA's existing airport security requirements, at least initially. As a result airports whose aircraft operations regularly involved air carriers and commercial operators were already very familiar with well-established security requirements, and those airports have continued to comply with those requirements as they have been modified and expanded over the years. For some airports, however, new commercial development may trigger new TSA compliance requirements. This situation warrants close coordination between the airport and the commercial developer to assure appropriate security compliance, not only with the regulations but also with the requirements embodied in confidential airport security programs that are adopted and particular to each airport that services commercial air traffic.

Generally speaking, general aviation airports and the general aviation areas at commercial airports are not impacted by security requirements provided the general aviation area is separated by adequate security systems, measures, or procedures from the commercial airport operations area (AOA). The extent of any impact that TSA security regulations will have on a commercial development project will most likely depend on the location of the development and any need for access to the commercial airport operating environment.

3.14 Other ACRP Resources

ACRP develops near-term, practical solutions to problems faced by airport operators. PDF versions of all ACRP publications are available for free download from <https://www.nap.edu/content/the-bookstore> or from www.trb.org. Specific ACRP publications can be found on either webpage by using the search function by keying in the title, series number, or key words related to the topic. The following resources provide additional information about grant assurances, grant obligations, and other federal compliance topics.

- **ACRP Report 156: Guidebook for Managing Compliance with Federal Regulations: An Integrated Approach.** This guidebook is accompanied by a spreadsheet-based Regulation Compliance Management Tool (RCM Tool) that can be downloaded from a link on the report's webpage and used by individual airports to identify and assess applicable regulatory elements, including grant assurances.
- **ACRP Legal Research Digest 23: A Guide for Compliance with Grant Agreement Obligations to Provide Reasonable Access to an AIP-Funded Public Use General Aviation Airport.** This research digest offers insight into the very specific responsibility of federally obligated general aviation airports to provide public use of the facility on reasonable and not unjustly discriminatory terms.
- **ACRP Report 47: Guidebook for Developing and Leasing Airport Property.** This ACRP report explores issues associated with developing and leasing available airport land and summarizes best practices from the perspective of the airport sponsor.
- **ACRP Report 58: Airport Industry Familiarization and Training for Part-Time Airport Policy Makers.** This report provides an opportunity to educate the guidebook user on the roles and responsibilities of the airport operator in developing, maintaining, and operating airports, which is directly related to maintaining compliance with federal obligations.
- **ACRP Project 03-38, "Understanding FAA Grant Assurance Obligations."** This ACRP research project was active at time of the publication of *ACRP Research Report 176*. Once the research deliverables have been completed, they will provide an additional resource for airports on the specific topic of compliance with FAA grant assurances.

3.15 Summary

When considering any commercial development on or near an airport, legal issues are one category among many that can have an impact on development plans and decisions. This chapter is not intended to replace legal counsel; rather, it provides an introduction to a series of topics that may arise in relation to commercial development on or adjacent to public-use airports. With a basic understanding of legal issues that are directly connected to commercial development and airports, the guidebook user may be able to identify potential legal issues early in the planning process and thus avoid them, along with any associated delays and costs.

FAA grant assurances are conditions that are accepted by airports as receiving federal AIP grants or property transfers from the federal government. These conditions are imposed to preserve the safety and the operational capacity of the airport, but they also have a direct bearing on the sale and lease of airport land and buildings. Even if an airport is not grant obligated, familiarity with FAA grant assurances may prove wise in relation to potential future development efforts.

All airports need to be aware of environmental and land use regulations. Environmental resources may be regulated at the federal, state, and local levels. Land use regulations are primarily local with some state influence. Each project is different, and it is impossible to customize the information in this guidebook to a specific project; but an overall awareness of these regulations can help airport sponsors anticipate and avoid potential legal issues associated with property development. Liability and insurance, as well as safety and security, are topics that also involve potential legal considerations for airport development.

The overview presented in this chapter, along with the additional resources provided in the toolkit chapters, establishes an effective starting point for identifying areas with potential legal ramifications. The goal is to help the guidebook user anticipate and reduce or eliminate legal obstacles that could otherwise result in a delay or cancellation of a development project.



CHAPTER 4

Self-Assessment Toolkit

4.1 Introduction

This Self-Assessment Toolkit provides the reader with information and then asks questions relating to:

- **Airport ownership**
- **Management structure**
- **Business activity**
- **Planning**

The answers to the questions in this toolkit generate a self-assessment that will later be used to guide an evaluation of development options. The text and checklist sections are presented in an alternating sequence so that questions about a topic immediately follow the explanation. Each checklist section includes the following icon as a reminder that all 12 checklists are available in the guidebook appendix:



The 12 checklists are:

- **Airport Ownership**
- **Management Structure**
- **Federal Aviation Administration (FAA) Grant Obligations**
- **Airport Layout Plans (ALPs) and Airport Master Plans**
- **Airport Strategic Business Plan/Budgeting**
- **Airport Business Segments**
- **Dominant Industry or Company**
- **Business Trends and Projections for Airport Revenue**
- **Funds for Development**
- **Risk Tolerance for Development Projects**
- **Development Goals**
- **Community Context**

Chapter 4 concludes with a section on goal setting that is intended to encourage the airport to take a closer look at its motivations for pursuing commercial development.

4.2 Airport Ownership

KNOW

Airport ownership can be private or public, but several variations exist in both sectors regarding the form of ownership.

Public airports can be owned by a:

- **State**
- **County**
- **Municipality**
- **Independent authority**

Privately owned airports can be held by:

- **Corporations**
- **Partnerships**
- **Families**
- **Individuals**

Why is ownership significant? The type of ownership can affect the airport's ability to make decisions regarding land disposition and make investments for site preparation and infrastructure. It also can define the extent of legal constraints or public involvement required for such decisions. Ownership structure also can affect how nimble the organization can be in decision-making or responding to market opportunities. An individually owned airport without a complicated reporting hierarchy can make a quicker decision than an airport with a more complex management structure, where decisions may be subject to board approval, public administration and budgeting approval, or public hearings.

Publicly owned airports often deal with restrictions on raising funds and requirements for public bidding for master developers, professional services, or public-private partnerships. Such airports can be subject to departmental budget restrictions or limitations on bonding for improvements. They also can be affected by political currents with respect to support for airport development—one reason for the importance of good community relations, and why good community relations are stressed throughout this guidebook.



Publicly owned airports with many of these limitations may want to consider how they can encourage off-airport development as a revenue enhancement strategy, either in place of or in addition to development by the airport, as discussed in Chapter 7 of this guidebook.

Privately owned airports may not encounter as many restrictions, but they may have other limits on raising capital for development or infrastructure. New investors or partners may be necessary. Privately owned airports also may be subject to varying levels of community support, depending on how the airport is perceived.

HAVE

The questions in this section can be used to identify the airport’s ownership structure. The complete Airport Ownership Checklist is provided in Appendix A, “Chapter 4 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **PRIVATE?**
 - **Individual?** Airports owned by individuals may have the simplest structure and decision-making process. Additional investors may be needed for development projects.
 - **Family?** Family-owned businesses may have more complexity than individual ownership, but still have a simple structure for decision-making and action.
 - **Corporation or partnership?** With corporate or partnership structures, decisions can become more complex, given the involvement of board members or multiple partners. More debate may occur about strategy and action.

- **PUBLIC?**
 - **City or county?** The airport may be its own department or it may be part of a department of transportation (DOT), department of public works, or economic development department, and it is usually subject to annual budget appropriations.
 - **Independent airport authority?** These entities usually represent the combined effort of several municipalities who agree to run the airport through an independent authority. Each municipality is represented in the leadership through elections or appointment to a managing board. Independent airport authorities generally have more independence than municipal or state-owned airports, and they may have bonding authority.
 - **Port authority?** A governmental or intergovernmental body that manages a defined set of bridges, tunnels, airports, and other such facilities of a port or city.
 - **State?** Responsibility for state-owned airports can be assigned to an aeronautics division within the state DOT or may be the responsibility of an aeronautics commission. In either case, the airport can be subject to budget appropriations and political changes. In this scenario, funding may be available through economic development agencies.

↗		
Airport ownership options	Check to select	Notes
Private?		
Individual?		
Family?		
Corporation or partnership?		
Public?		
City or county?		
Independent airport authority?		
Port authority?		
State?		

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DO

Use the information identified in this section to consider benefits and limitations of the airport's ownership structure and access to financial resources as it relates to on-airport development initiatives. Although it will not be possible at this point to answer specific questions about the airport's ability to make decisions or access financial capital, these characteristics will be important references through the toolkits as a development plan and costs are better defined.

4.3 Management Structure/Report/Decision-Making

KNOW

This set of checklist items looks for more in-depth information, building on the ownership question above. The answers to the questions in this section of the toolkit should clarify how decisions regarding the planning and implementation process will be made, who will have primary responsibility for executing the process, and whether a system of reporting and review is in place.

Another important element to analyze is whether an employee position exists or should be established to devote time to the development process. The need for a dedicated employee position can depend on whether the development is likely to be short term or long term, and whether the development project will be fairly simple or extensive. **Devoting only part-time attention to development and marketing may not work.** For example, in one case study examined, airport land was open for development but even though website information could be found, no staff appeared to have been assigned responsibility for being knowledgeable about what was available or providing information to potentially interested parties.



HAVE

Completion of this section of the toolkit will clarify the airport's procedure going forward, should the airport sponsor elect to continue with the development process. It is easier to estimate time frames for planning and development if the channels of reporting and decision-making are known up front and if the airport sponsor assigns responsibilities for managing the project to current staff or creates the appropriate staff positions. The complete Management Structure Checklist is provided in Appendix A, "Chapter 4 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **WHO SETS AIRPORT POLICY?** Executive director, board, commissioner?
- **HOW IS IT IMPLEMENTED?** Which managers have the responsibility to take action? Is the structure tied to excessive hierarchy? How far up the reporting or structural chain will decisions go?
- **WHO CREATES AND WHO APPROVES THE AIRPORT BUDGET?** Executive director? Annual budget legislation? Will decisions depend on budget cycles?
- **WHERE DOES APPROVAL AUTHORITY LIE FOR A DECISION TO ENGAGE IN DEVELOPMENT, SIGN A DEAL, OR ISSUE BONDS?** Board, mayor, commissioner, executive director, airport manager, deputy or vice president?
- **HOW MANY EMPLOYEES ARE IN EACH DEPARTMENT?**
- **DOES A PROPERTY/DEVELOPMENT MANAGER POSITION EXIST?** Would this manager oversee a development project or engage consultants? Will the airport manager or designated employee have a degree of decision-making autonomy that will keep the process moving?
- **DOES ENABLING AND GOVERNING LEGISLATION APPLY?** If the airport is a public entity or authority, do any laws or regulations limit the airport's activities? Do any restrictions in governing statutes limit development options? Do institutional or legal restrictions limit financing or funding abilities? In this guidebook, Chapter 3, "Legal Considerations," may

SOUND BITE

The property development department is understaffed, which adds to the challenges of attracting development.



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provide some guidance, but other state legislation may also apply. In some states, for example, public-private partnerships may not be permitted and thus should be investigated on a case-by-case basis.

- **ARE THERE BOND RESOLUTIONS/RESTRICTIONS?** These documents define the rights and responsibilities of issuers and bondholders, and how bond funds should be used. Does this apply to the airport?
- **ARE THERE RATE COVENANTS?** These documents may specify increases in user fees as necessary to cover debt service, and recourse by bondholders if the issuer, such as an airport authority, defaults. The implications for airport development warrant both a review of available funds for debt service and separate resources to devote to development.

↗	
Airport management structure	Notes
<i>Who sets airport policy?</i>	
<i>How is policy implemented?</i>	
<i>Who creates the airport budget?</i>	
<i>Who approves the budget?</i>	
<i>Where does authority lie?</i>	
To engage in development?	
To sign a deal?	
To issue bonds?	
<i>How many employees per department?</i>	
<i>Property/development manager?</i>	
<i>Enabling/governing legislation?</i>	
<i>Bond resolution/restrictions?</i>	
<i>Rate covenants?</i>	

DO

The results of this management structure inventory can be used to consider who at the airport will make policy decisions and who will implement development initiatives. Staffing changes or additions may be needed to manage the development. It is also important to consider the airport’s current position as a developer with respect to enabling legislation and existing financial agreements and restrictions.



4.4 FAA Grant Obligations

KNOW

Airports in the National Plan of Integrated Airport Systems (NPIAS) are eligible to receive grants under the FAA Airport Improvement Program (AIP). If accepted, these grants carry obligations or assurances as a condition of receiving funds. There are 39 grant assurances applicable to airport sponsors receiving or having received FAA grant assistance. FAA's *Airport Compliance Manual* (FAA Order 5190.6B) presents all compliance requirements in detail. The grant assurances most applicable to development are discussed in this guidebook in Chapter 3, "Legal Considerations."



FAA

FAA grant assurances can control many critical aspects of airport development, including:

- **Maintaining compatible land uses in the airport vicinity**
- **Rates for land leases and sales, to reflect fair market value**
- **Limitations on use of airport revenue for airport purposes**
- **FAA approval of non-aeronautical land uses**
- **FAA approval of land sales through a land release**

If the airport is grant obligated, the airport sponsor must refer to the grant assurances when considering development alternatives. The airport's initial development concept may have to be adjusted after review to be compliant with applicable assurances, as they will affect many elements of development planning and implementation. **Case studies repeatedly revealed that the time required for a land release from FAA was longer than anticipated.** Ideally, any release of land for non-aeronautical use from FAA control should be done before marketing the property for lease or sale, as the time required can increase development costs and deter development interest.



In addition to Chapter 3 of this guidebook and the FAA *Airport Compliance Manual*, information sources include *ACRP Legal Research Digest 23: A Guide for Compliance with Grant Agreement Obligations to Provide Reasonable Access to an AIP-Funded Public Use General Aviation Airport* (February 2015). An additional ACRP resource is currently under development as part of ACRP Project 03-38, "*Understanding FAA Grant Assurance Obligations.*"

For airports subject to grant obligations, communication with FAA will be necessary early and throughout the process.


HAVE

The answers to the questions in this section of the toolkit clarify whether federal grant obligations are in place on property being considered for development. If the airport is considering selling the property outright or leasing it for non-aeronautical use, the property will need to be "released" by FAA. The complete FAA Grant Obligations Checklist is provided in Appendix A, "Chapter 4 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **IS THE AIRPORT GRANT OBLIGATED?** If the airport has received federal or state grants for airport improvements, the answer is, most likely, "Yes." Independently funded private airports may not be obligated.




- **IS THE LAND IDENTIFIED FOR DEVELOPMENT GRANT OBLIGATED?** Land designated for aeronautical use on the ALP would be affected by the grant obligations. Other parcels of land owned by the airport may have been acquired with airport funds, however, and may not be affected. The “five tiers” concept presented in Chapter 2 of this guidebook can help to explain this issue.

 Grant obligations	Yes	No	Notes
Airport?			
Received federal funds?			
Received state grants?			
Land for development?			
Aeronautical use on ALP?			
Owned by airport?			
Acquired with airport funds?			



- **IS NON-AERONAUTICAL LAND SHOWN AS SUCH ON THE ALP?** The answer to this question depends on the status of planning. Sites being considered for non-aeronautical development should be shown on the ALP as “future non-aeronautical” already, or the ALP should be updated.
- **HAS NON-AERONAUTICAL LAND BEEN RELEASED?** Has the airport completed the land release process to allow airport property to be sold or leased for non-aeronautical use? It is possible for land to have been designated for future non-aeronautical use on the ALP but not yet released by the FAA. If the land has not yet been released, this step will need to be carried out before any lease or sale arrangements take place.
- **WAS THE LAND ACQUIRED FOR NOISE MITIGATION?** If the answer to this question is “yes,” potential uses of the land may be subject to specific compliance requirements. This issue applies to only those airports that have completed a Part 150 Airport Noise Compatibility Planning Study.
- **DID THE ALP REQUIRE FAA ENVIRONMENTAL REVIEW?** If the ALP has been revised to remove land from aeronautical use, FAA may have exercised a federal requirement for environmental review. If an environmental review was completed and environmental data was collected for this process, that information may be useful in site evaluation and the development process.

FAA

 Non-aeronautical land	Yes	No	Notes
Identified as such on ALP?			
Released by FAA?			
Acquired for noise mitigation?			
ALP-required FAA environmental review?			

DO

The results of this exercise help guidebook users understand how grant obligations currently apply to airport property and how they may impact development choices and timelines. This information could be used to inform later decisions about land uses and other development criteria.



4.5 The ALP and the Airport Master Plan

KNOW



Research and case studies indicate that **successful airport management and development is contingent on careful planning**. For this reason, planning is encouraged for all airports whether or not it is legally mandated. The more that the airport is able to consider and document options for future development, the better positioned it will be to evaluate strategies, respond to opportunities for development, and demonstrate the capacity to accommodate it.

In the case of grant-obligated airports, a level of planning is mandatory. Some state grants have associated planning requirements. FAA Grant Assurance 29 requires maintenance of an updated ALP. An ALP can be an element of the Airport Master Plan or it can be a stand-alone document. The ALP includes drawings and a narrative component, describing:

- **Existing airport property boundaries**
- **All existing buildings, infrastructure and other improvements**
- **Off-site areas owned or controlled by the airport, including planned additions**
- **All proposed future airport facilities**
- **All existing and future non-aeronautical areas**

The narrative accompanying the ALP should include existing and projected aviation activity, the basis for proposed new facilities, environmental conditions, and a capital improvement plan. The ALP and any future adjustments are subject to FAA approval.

The ALP should clearly designate aeronautical land and future non-aeronautical land. Some future airport facilities may be proposed as aeronautical uses for revenue generation. For example, hangars or air cargo facilities may be built by the airport and leased to private users. For aeronautical uses—even those planned for revenue generation—designation on the ALP is sufficient. When land is developed for non-aeronautical uses, whether it involves a sale or a lease, an FAA land release is most likely required. Because the process of obtaining an FAA land release can be time consuming, it should be addressed early in the planning process.

An ALP is an important planning tool as well as a mandatory grant obligation for federally obligated airports. This planning approach is recommended for all airports—even those that are not grant obligated—as it provides a foundation for an Airport Master Plan. An Airport Master Plan is a detailed narrative and graphic plan that outlines the airport’s planning and development goals and needs on short-term (5-year), medium-term (10-year), and long-term (20-year) horizons. The airport’s planning goals are the result of an analysis of the airport’s capacity and needs. Capacity is explored through projections of future based aircraft, aircraft operations, and, for commercial service airports, passengers. These projections are used to evaluate and plan for:

- **Airport infrastructure**
- **Existing facilities and capacities**
- **Existing and projected deficiencies**

SOUND BITE

The airport is currently privately owned and not federally obligated, but the airport will require extensive future federal aid to correct airside infrastructure deficiencies.

- **Facilities needed to meet deficiencies**
- **Evaluation of alternatives**
- **Capital improvement programming**
- **Land uses on- and off-airport**

A master planning effort usually involves stakeholder input, and is a way to engage the surrounding community and coordinate goals of the airport with local economic development priorities.



FAA provides guidance for both Airport Master Plans and ALPs in AC 150/5070-6B, *Airport Master Plans*. A detailed description of master planning documents also is found in *ACRP Report 114: Guidebook for Through-the-Fence Operations*.

Comprehensive long-range planning is a key to identifying development opportunities and future airport facility needs. **Being proactive rather than reactive attracts market interest and sets the stage for orderly development.** Whether or not an airport is subject to grant assurances, planning efforts along the lines of an ALP and Airport Master Plan have been demonstrated to be instrumental in successful development efforts.



HAVE

Determine the current status of the airport’s ALP, Airport Master Plan, and other planning documents and review the information available to inform development decisions. The complete ALP and Master Plan Checklist is provided in Appendix A, “Chapter 4 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.


- **PLAN TYPES COMPLETED?** Are there an ALP and/or Airport Master Plan of record?
 - **Last Updated?** When was the ALP updated? Potential airport development areas may have been designated on an Airport Master Plan many years ago, and the ALP will need to be re-examined in detail to reflect present conditions.

↗		
Plan types completed	Check to select	Notes
<i>Airport Layout Plan (ALP)?</i>		
Update needed/planned?		
<i>Airport Master Plan?</i>		


- **TOTAL ACREAGE IN PLAN AREA?** How many acres are within the airport operations area (AOA)? What is the total acreage owned by the airport?
- **ACREAGES OF AERONAUTICAL AND NON-AERONAUTICAL LAND?** Are these acres designated on the plan? Both existing and future?
- **LAND USES DESIGNATED?** These designations can be general (e.g., terminals or commercial) or more specific if market sectors have been identified. Interim, non-structural, or lower-value uses also can be shown, such as agriculture or utility uses.

 Plan area characteristics	Size in acres		Notes
	Existing	Future	
<i>Total acreage in plan area?</i>			
Aeronautical acreage?			
Non-aeronautical acreage?			

- **PLANNING YEAR HORIZON?** Does the plan include strategies for the short term (5 years), medium term (10 years), and long term (20 years)? Is some development effort slated in each term?

 Planning year horizon	Check to select	Notes
Short term (5 years)?		
Medium term (10 years)?		
Long term (20 years)?		


- **IS THE CONTEMPLATED DEVELOPMENT CONSISTENT WITH THE ALP/AIRPORT MASTER PLAN?** Has the airport designated areas for aeronautical and non-aeronautical uses on the ALP? Are those areas consistent with the locations that are currently being considered for development? If not, FAA approval of a revised ALP will be necessary.

 Development Plan consistency	Check to select	Notes
ALP-designated aeronautical use?		
ALP-designated non-aeronautical use?		
Consistent with current development plans?		

- **MAPPING OF RUNWAY PROTECTION ZONES, HEIGHT RESTRICTED AREAS, AND OTHER FAA LIMITATIONS?** The ALP should show areas subject to limitations for safe airport operations, such as runway protection zones (RPZs), runway and taxiway safety areas, and obstacle and object-free zones. This information will help the airport evaluate whether development areas could be subject to regulatory controls limiting use or building mass.
- **MAPPING OF NOISE COMPATIBILITY (BUFFER) LAND?** If the airport has completed a Part 150 Airport Noise Compatibility Planning Study, the airport may have received FAA funding for purchasing land surrounding the airport as a noise buffer. The land should be shown on the ALP and/or the Airport Master Plan. Changes in the use or disposition of such lands are subject to FAA controls and approvals.

FAA

- **NOISE CONTOURS?** Noise often can be a contentious issue between the airport and the community. Noise contours for the airport may have been developed as part of a study such as an Environmental Assessment (EA) or, less frequently, for a Part 150 Airport Noise Compatibility Planning Study. The noise contours will show noise impacts from aviation activity, including impacts to off-airport property. If available, those studies may identify any areas where sensitive land uses should be avoided due to airport noise levels.
- **SHOWS FUTURE FACILITY IMPROVEMENTS?** An Airport Master Plan should show not only existing improvements and structures, but future improvements designed to replace aging facilities or to address projected demand. These designations are important, as commercial development should not be planned for areas that may be needed for future aviation use.

 Plan mapping	Check to select	Notes
<i>Runway protection zones (RPZs)?</i>		
<i>Runway and taxiway safety areas?</i>		
<i>Obstacle- and object-free zones?</i>		
<i>Noise compatibility (buffer) land on ALP?</i>		
On Airport Master Plan?		
<i>Noise contours?</i>		
<i>Future improvements identified?</i>		

- **TRANSPORTATION IMPROVEMENT NEEDS AND PLANS?** In the guidebook case studies and literature review, transportation access emerged as a critical issue in the success of airport-related development. The ALP or Airport Master Plan should document the existing transportation network (including surface roads, rail lines, and transit connections), and identify any planned future improvements.

SOUND BITE 

In addition to air service, the airport is near a major interstate and three U.S. highways, and has rail service adjacent to the property.

 Other	Notes
<i>Transportation network?</i>	
Is existing documented?	
Planned future improvements?	

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DO

The answers from this section of the toolkit can help guidebook users understand the current status of the airport's ALP or Airport Master Plan and the information that is available through these resources. This evaluation will also help to identify if there is a need to update the planning documents.

4.6 Airport Strategic Business Plan/Budgeting Process

KNOW

Successful planning for both airport business and real estate development requires a long-term view. Dependence on a short-term view may result in selling random parcels to meet budget gaps, which does not result in a cohesive development or long-term, predictable income.

A Strategic Business Plan is an ideal planning tool for long-term financial sustainability. A Strategic Business Plan is a document that sets out the mission and vision for the airport and identifies the economic place the airport wants to occupy in the region, its business direction, and its purpose. The plan articulates quantifiable long-term goals for the airport in terms of metrics such as revenue, passengers, or cargo volume. Those long-term goals provide a framework for shorter-term business objectives that will guide interim decisions and annual budgets as well as the daily actions of the airport's management.

SOUND BITE

One self-supporting case study airport had not received funds from the owner city for more than 30 years. Revenue streams included air service leases, supporting operations, and commercial lease property. The airport reported developing an annual budget but did not have any long-term budgeting projections.

ACRP has published several reference guides to assist airports in preparing strategic business plans, including *ACRP Report 77: Guidebook for Developing General Aviation Airport Business Plans* and *ACRP Report 20: Strategic Planning in the Airport Industry*. An up-to-date Strategic Business Plan will be a useful tool in evaluating development feasibility.

A Strategic Business Plan involves all sectors of the airport's operation and provides a comprehensive view of where the airport should be heading. Before embarking on a development project, management should evaluate whether the development would contribute to the airport's long-term goals. Will it help the airport to be self-sustaining? Will its revenue support new facilities to achieve the next level of aviation growth? Will the development leave enough land for future aviation needs?

It is important to remember that **an annual budget is not a business plan**. This principle was voiced often as a cautionary maxim during the ACRP Project 03-39 interviews. A short-term airport budgeting approach may not be aligned with long-term airport commercial and industrial development goals. Strategic business planning should drive airport investments and have multi-year planning horizons with measurable goals. Long-term projections will reveal strengths and weaknesses, enable an analysis of whether a development effort can be supported, and define the role of development-generated revenue in the financial context of the airport's Strategic Business Plan.




HAVE


The answers to the questions in this section of the toolkit help document more about the airport's current budgeting process, including methods of planning for the middle term and long term. The complete Airport Strategic Business Plan/Budgeting Checklist is provided in Appendix A, "Chapter 4 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

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- **STRATEGIC BUSINESS PLAN?** Does the airport have a Strategic Business Plan? If not, consider that a Strategic Business Plan is necessary in order to start development planning on a solid foundation. If yes, when was it adopted? If it was not adopted recently, the airport is advised to reexamine the Strategic Business Plan and revise it if necessary to reflect current goals and business direction. Such a review is especially important if the business plan was adopted prior to the 2007–2009 economic recession (the Great Recession).

		
Strategic Business Plan	Check to select	Notes
Strategic Business Plan?		
Adopted before 2009?		
Due for review and update?		
Plan has multiple horizons?		
Short-term goals?		
Mid-term goals?		
Long-term goals?		


- **PLANNING HORIZON?** Does the Strategic Business Plan have multiple horizons, identifying short-term, mid-term, and long-term goals?
- **BUDGETING HORIZON?** Which of the following terms describes the airport’s current budgeting horizon, including future expenses and revenue projections?
 - *Annual?*
 - *5-year?*
 - *10-year?*
 - *Longer?*

			
Budgeting horizon	Yes	No	Notes
Annual?			
5-year?			
10-year?			
Longer?			


- **ANNUAL OR 5-YEAR CAPITAL IMPROVEMENT PLAN (CIP)?** If a CIP is in place, does the CIP implement the Strategic Business Plan’s improvement program?

 Capital Improvement Plan	Yes	No	Notes
Annual?			
5-year?			
Implements the Strategic Business Plan's improvement program?			

- **MAJOR CAPITAL IMPROVEMENTS PLANNED?** What facilities will be improved? Will improvements provide necessary upgrades to existing facilities, or will they provide new levels of service for aviation users? Will there be revenue from development?


 Major capital improvements	Notes
Facilities to be improved?	
Improvements to existing facilities or new levels of service?	
Revenue generation?	

- **IS THE AIRPORT SELF-SUSTAINING?** Does the revenue generated by airport operations and activities support airport operations? Is this situation sustainable in the middle term and long term, according to the Strategic Business Plan? If not currently, does the plan project that the airport will be self-sustaining in the future?

 Revenue and sustainability	Yes	No	Notes
Revenue supports operations?			
Revenue sustainable according to mid-term plan?			
Revenue sustainable according to long-term plan?			
If not, is airport projected to be self-sustaining in future?			

- **PUBLIC SUBSIDY?** For a publicly owned airport, is government funding required to maintain operations? For a privately owned airport, have loans or grants from economic development agencies or other public agencies been obtained?

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 Public subsidy	Yes	No	Notes
Publicly owned?			
Dependent on government funding to operate?			
Privately owned?			
Recipient of public loans or grants?			

- **AIRPORT INCOME PROPORTIONS?** What is the breakdown of airport revenue from different sources? How does the Strategic Business Plan anticipate the current proportions might change? Does the airport already generate some revenue from on-airport development?

 Airport income proportions	Notes
Revenue breakdown by source?	
How might current proportions change?	
Current development generating revenue?	

DO

If the answers to the checklist questions reveal that short-term budgeting is the norm, or that the airport’s strategic plan is out of date, further business planning should be accomplished before pursuing development. It will be important to define a future vision and goals for the airport and develop a reasonable path to reach that goal. A Strategic Business Plan will help answer the question of whether development would contribute to the airport’s long-term goals for revenue generation.



4.7 Identifying Customer Base/Revenue Sources

KNOW

Identifying the sectors of an airport's customer base is an important component of a Strategic Business Plan. This exercise can help to define priorities and provide focus for growing airport business revenue. The Strategic Business Plan examines the sources of airport revenue, determines whether they are growing or declining, and defines their relationship to the surrounding economy. The results of the examination provide the basis for decisions in the strategic plan about where to focus airport resources and facility improvements, and can also inform marketing strategies for the proposed development. The composition of an airport's ongoing customer base can indicate potential users of an adjacent commercial or industrial development and can provide a focus for designing and marketing the future project.


SOUND BITE

There is an aviation niche in business and the airport is looking for part of that.

HAVE

The answers to questions related to the airport's current customer base and related trends help identify existing conditions and potential development markets. The questions in this section of the toolkit will help guidebook users identify major drivers of airport business activity, including commercial passengers, general aviation operations, and sources of direct lease revenue from existing development. The complete Airport Business Segments Checklist is provided in Appendix A, "Chapter 4 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **FREIGHT/CARGO?** Consider both aircraft operations and rent generated from cargo tenants at the airport.
- **BUSINESS PASSENGERS?** Do airport passengers come to or from corporate headquarters, training facilities, or office parks?
- **LEISURE PASSENGERS?** Could nearby tourist or cultural destinations draw travelers?
- **MEDICAL?** Does a major medical institution use the airport for medical travelers, shipments, or emergencies?
- **MILITARY?** Is a military base on or near the airport that accounts for significant activity?
- **EDUCATIONAL?** Do nearby schools and universities supply passengers? Is there a flight school on or near the airport?
- **CONCESSIONS?** Does the airport currently lease space for concessions or retail services in a terminal or other airport building?
- **LEASES?** Are ground leases currently a source of income?
- **THROUGH-THE-FENCE (TTF)?** Do existing agreements allow airfield access from any adjacent property? Consider both the revenue generated from this arrangement and the types of business uses.
- **CAPACITY ISSUES?** Are any business segments straining the capacity of current facilities? Will improvements be necessary to maintain that line of business?
- **OTHER?** Should other airport customers be considered in the planning process?

			
Major business sources/customers	Yes	No	Notes
Freight/cargo?			
Business passengers?			
Leisure passengers?			
Medical use?			
Military base on or nearby?			
Educational?			
Concessions?			
Leases?			
Through-the-fence?			
Capacity issues?			
Other?			

DO

Compare the information in the business plan (if available) with the information gathered in the toolkit/checklist to create a comprehensive picture of current airport business segments. Use this information to identify potential commercial and/or industrial uses that may benefit from existing business relationships with the airport and to rule out uses that may struggle.

For example, if business passengers are a major and growing component of the airport’s business, hotel and office development may be promising options. If the main business segment is cargo transport, distribution and warehousing are obvious choices. If the airport is in a flourishing second-home or tourist destination, that fact can guide development of on- and off-airport amenities. For example, Opa Locka Airport, in Florida, has developed facilities catering to private jet customers. On the other hand, if a significant business segment has been declining, it may not be a good target audience for additional development.



4.8 Dominant Industry or Company

KNOW

At some airports, a particular industry dominates business activity through a headquarters or major hub operation. That industry could be an anchor for developing facilities for similar business sectors or support services, as like industries often cluster together. Conversely, examination of a dominant industry may also reveal vulnerabilities, such as an over-reliance on that business and the need to diversify.


SOUND BITE

It was the city's interest in economic diversification, rather than a focus on generating revenue, that spurred the city's investment/interest in the airport. The development goal was to bring jobs to the local community and create a balanced, growing community.

HAVE

The answers to the questions in this section of the toolkit will help to identify whether a dominant industry exists in the area of the airport and whether that industry may be expanding. The complete Dominant Industry or Company Checklist is provided in Appendix A, "Chapter 4 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **DOMINANT INDUSTRY OR INDUSTRIES?** Does the area have a dominant industry? Are there many different businesses in the same field (i.e. distribution, manufacturing, insurance, high tech, or medical)? What percentage of airport revenue can be attributed to this industry or industries?
- **DOMINANT EMPLOYER, COMPANY OR MANUFACTURER?** Is there a dominant company in the area? Is there one, single company that provides a significant number of jobs in the area? What percentage of airport revenue can be attributed to it?
- **MILITARY BASE?** Is a military base on-airport or nearby? Is the airport part of a military facility? What percentage of airport revenue can be attributed to it?
- **CARGO HUB?** Are major freight carriers dominating the airport? What percentage of airport revenue can be attributed to these carriers?

 Dominant industries/companies	Notes	Percentage of airport revenue
Industry/industries in area?		
Employer(s) in area?		
Company/companies in area?		
Manufacturer(s) in area?		
Military base(s) in area?		
Airport on base?		
Cargo hub?		

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- **HOW MUCH AIRPORT REVENUE ATTRIBUTABLE?** For the purposes of this guidebook, the measure of a dominant industry or company is the percentage of airport revenue that can be attributed to it. Use the information gathered in the previous part of the checklist to consider how dominant the industry may be based on the comparative revenue to the airport.
- **DOMINANT INDUSTRY GROWING?** If a dominant industry is identified, look at market data to determine if it is growing as an industry and use airport data to look at trends in airport use.

↗	
Growth	Notes
Market data shows industry growth?	
Airport data shows use trends?	

DO

The answers to questions in this section of the toolkit will help guidebook users consider several possible impacts to on-airport development from the presence of a dominant industry. If there is a dominant industry, it is important to consider whether on-airport development strategies may benefit from its presence. Are there ways the airport can work to diversify revenue over time? It is also important to consider the impact to airport development investments if the dominant industry experiences a financial decline or collapse. A single market concentration may be seen as a higher risk factor for development.



4.9 Business Trends and Projections for Airport Revenue

KNOW

Just as important as identifying major business segments is reviewing their existing and continuing or changing role in the airport's revenue stream. Major business sectors can provide the rationale for a particular land use plan or development project if they are growing or have the potential to grow with improved airport facilities.

Some airports and their surrounding regions suffered greatly during the Great Recession. Some bounced back quickly, and others are still struggling. Economic shifts in the region over the past 5 to 10 years—whether positive or negative—have likely had a direct impact on the airport's revenue stream and general financial health. As part of this self-evaluation, it is important to consider what is happening with regional business sectors as well as what that means to the airport's current financial health.

In some instances, specific strategies were implemented to combat recession impacts on or around the airport. For example, the loss of air traffic at Bradley International Airport in Connecticut prompted a change in airport governance structure and the creation of development incentives. Guidebook users also can identify any special strategies that were employed to combat recession impacts.

HAVE

The answers to the questions in this section of the toolkit will help guidebook users create a profile of business trends and anticipate future directions. The complete Business Trends and Projections for Airport Revenue Checklist is provided in Appendix A, "Chapter 4 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

Airport revenue by segment:

- **AIRPORT REVENUE TRENDS?** Over the past 5 years, has airport revenue grown or contracted overall?
- **AIRPORT REVENUE SEGMENTS?** Over the past 5 years, what has happened with specific business segments? Have they increased or decreased?
 - **Have certain segments continued to grow?** Will these segments keep their importance in the airport's revenue projections? Which segments?
 - **Has there been decline in others?** Are these segments unlikely to have a role in attracting users to a development project? Which segments?
 - **Is there a decline in a business segment?** Is the decline due to a lack of airport facilities? Could the decline be stabilized or reversed by a development project or by airside improvements? Is the decline due to other factors and likely to continue despite a proposed development project?

SOUND BITE



Ag- and Bio Sciences is a focus industry as a result of the market study recently done for the city as a whole.


SOUND BITE



The regional economy is still depressed and the social circumstances (poverty, education level, local budgets for improvements) add another challenge to attracting businesses.


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- **MAJOR INDUSTRY TREND?** What is the trend of airport revenue from the dominant industry (if any)?

 Airport revenue by segment (Last 5 years)	Notes
Airport revenue trends?	
Grown or contracted?	
Airport revenue segments?	
Which have grown continuously and will remain important?	
Which have declined and are unlikely to attract development?	
Any declining that may improve through development or airside improvements?	
Major industry trend?	

The airport’s financial health:

- **HAS THE AIRPORT LOST OR GAINED MAJOR CUSTOMERS?** Are these losses associated with a dominant industry or employer? An airline?
- **WHAT IS THE AIRPORT’S GENERAL FINANCIAL STATUS?** Is the airport’s general financial status profitable? Stable with assistance? Uncertain? Weak or in decline?
- **HAS THE AIRPORT RECOVERED FROM RECESSION IMPACTS?** Can elements of the airport’s current financial status be traced to the Great Recession? Have airport revenues shown a rate of increase in recent years? Has the airport fully recovered from recession impacts?
- **HAS THE AIRPORT ADOPTED NEW INITIATIVES?** Have airport management or the ownership agency adopted new strategies to help the airport overcome the impacts of the recession specifically? Are there other new initiatives?

	
Airport financial health	Notes
<i>Major customers lost or gained?</i>	
<i>General financial status?</i>	
Profitable?	
Stable with assistance?	
Uncertain?	
Weak/declining?	
<i>Recovery from recession impacts?</i>	
What elements traceable to Great Recession?	
Has revenue increased? Is financial recovery ongoing or complete?	
What new strategies or initiatives are ongoing?	

DO

Use the information collected regarding business trends and projections to anticipate future trends of business segments in the area and the associated airport revenue. If market segments are expected to grow, that is positive for airport development plans. Information about market segments that are expected to grow can help to shape airport development strategies. However, if projections anticipate future decline in segments that account for significant portions of airport revenue, caution and more investigation is advised unless the decline can be addressed by providing a particular facility not currently available.

Consider also at this point the general financial health of the airport. If the airport’s current financial status is strong, that is positive for airport development plans. If the airport’s current financial status is uncertain or weak, and if development plans are being looked at as a solution, it will be important to understand the costs involved and the financial risk associated with development revenue strategies.



4.10 Funds for Development

KNOW

The development process, including planning, engineering, and approvals, can be lengthy and expensive. Before embarking on a project, the airport should identify the funding available to dedicate to this process, the origin of the funds, and the likelihood that funding will be available as needed over time.

SOUND BITE



The system is a free-enterprise fund, totally supported by revenue generated from its operations. Grants are used to cover capital expenses.

Because this is an initial step in the evaluation process, and a development budget is not yet available, broad estimates or orders of magnitude may be used at this point. The results will be general estimates rather than precise numbers, but the calculation has value. Identifying funding sources and considering whether uncertainties are associated with obtaining and maintaining funds can reveal issues that may affect the viability of pursuing a development project.

As funding sources are identified, a further consideration is whether existing restrictions on the use of airport funds may be imposed based on their source. AIP grant funds and passenger facility charge (PFC) revenue, for example, generally can only be used for projects that provide direct benefits and improvements to aviation operations or safety. These funds are usually not available for commercial development projects.

A final consideration is the amount of funds that will be needed “out of pocket” for the initial investigation phase described in this guidebook. This information can help to reach a “Stop” or “Go” decision about whether on-airport development is a feasible option for revenue generation. Dedicated staff time and some funding for consulting fees will be needed in order to gather accurate information on the real estate market, anticipated construction costs, and permitting requirements. In this guidebook, Section 6.22 on “Consulting Needs—Building the Project Team” provides a discussion of areas where consulting expertise may be needed. Legal guidance may be needed as well. Larger airports or airports owned by a larger municipality may have these professional skills in house, which will reduce consulting fees but increase the staff investment during the exploration period.

HAVE

The answers to the questions in this section of the toolkit will gather information about airport or municipal funds that may be dedicated to development. The complete Funds for Development Checklist is provided in Appendix A, “Chapter 4 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **CAN AIRPORT OR MUNICIPAL FUNDS BE DEDICATED FOR DEVELOPMENT?** Do budget projections show funds available that could be allocated to a project? Are the funds available for this purpose, or are they mandated to go back into airport operations? How much funding is available annually?



 Airport or municipal funds	Notes
Annual amount available?	

- **SOURCE OF FUNDS: PRIVATE, SUBSIDY, OPERATING INCOME?** If the current budget does not have funds that could be specifically dedicated to development, are fee increases permissible to support development? Is this feasible based on current political and economic conditions?
- **WILL FUNDS CONTINUE TO BE AVAILABLE OVER A 5- TO 10-YEAR HORIZON?** Can funds be committed for the course of the project? Are they subject to annual appropriations or a political process (that could be interrupted before completion)?
- **BONDING CAPACITY?** Does the airport ownership have the ability and debt capacity to issue bonds?
- **CAPITAL MARKETS/BANK LOANS?** What are loan availability and interest rates?

↗	
Funding sources	Notes
Sources of funding?	
Private?	
Subsidy?	
Operating income?	
Feasibility of fee increases?	
Potential budget adjustments?	
Fund availability over 5 to 10 years?	
Bonding capacity?	
Capital markets/bank loans?	
Availability?	
Interest rates?	

DO

The answers to the questions in this section of the toolkit can help guidebook users understand what funds may be available for the development project, both for the initial investigation phase and then over the course of the project, including the design, permitting, construction, and leasing phases.

The level of available funds can indicate whether a need exists for a joint venture partner or master developer. For airports with limited funding, further analysis is advisable to determine the most productive use for that limited investment, including whether it is best used for development or another revenue strategy. The Strategic Business Plan and budgeting projections can also reveal these issues. These topics are examined further in the guidebook in Chapter 6, “Implementation Toolkit.”



4.11 Risk Tolerance for Development Projects



KNOW

Real estate development always involves risk. In this conversation, *risk* refers to the possibility that a real estate development may lose money or may not produce revenue according to the desired schedule. This concept must always be kept in mind, particularly for an airport. Airports are unique because the core business is not real estate, and development will be an accessory business strategy intended to bring in extra revenue.

Why is real estate development risky? Even with extensive experience and informed decision making, development is risky because it is subject to external factors, such as:

- **The local market**
- **The national and regional economy**
- **Competition from other projects**
- **Unforeseen site and construction conditions**
- **Lengthy approvals**

Meanwhile, much investment can be required for land development, engineering, marketing, and construction. Construction may include building structures and/or installing infrastructure to make sites “shovel-ready.”

SOUND BITE



Because of the low investment risk and the positive support from the community and state, the development sites were created at the airport. However, development has been limited as predicted by the market conditions analysis.

Why is understanding the airport’s risk tolerance important? The purpose of spending money to reap a benefit from the investment. The airport sponsor must understand the level of risk that is acceptable in pursuit of commercial development. The acceptable level of risk is driven primarily by conditions at the airport and can depend on:

- **Available financial resources.** If these are not deep, there is little room for risk.
- **Governance.** For publicly owned airports, there may be legal or regulatory limits on investments that are not directly airport-related, as well as political sensitivities.
- **Timing.** The airport may need revenue enhancement in the short term, or it may be able to wait a longer time for an investment to mature and provide greater returns.

HAVE

Defining the right level of risk is a case-by-case effort, but should involve consulting with governance and examining financial reports and plans. The answers to the questions in this section of the toolkit may help provide insight into the risk tolerance of the airport. The complete Risk Tolerance for Development Projects Checklist is provided in Appendix A, “Chapter 4 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **IS GUARANTEED INCOME IMPORTANT?** The priority for the airport may be to create a fixed income source that will fluctuate minimally over time, with reliability and long-term leases preferred. This is suitable if the airport’s risk tolerance is relatively low.
- **ARE THERE LEGAL RESTRICTIONS ON RISK?** Are there relevant laws and regulations that may constrain the extent and type of investments the airport can make, including limitations on partnerships and revenue sharing? If so, these legal restrictions may limit the airport’s risk tolerance at the outset.
- **CAN THE AIRPORT ASSUME MARKET RISK FOR GREATER UPSIDE?** Airports with deeper resources can consider development plans for multi-phase, longer-term projects. These projects can be subject to business cycle changes, but they can also provide potentially greater revenue from rising prices and as multiple income sources develop over time. Long-term, detailed planning is essential for such projects to be successful, with particular phases of development defined for specific time horizons. Market risks and rewards can also be pursued through a partnership with a developer that includes cost and revenue sharing, and also participation in rent income. An airport’s ability to follow such a strategy indicates a higher risk tolerance.

↗	
Risk tolerance factors	Notes
<i>Importance of guaranteed income?</i>	
<i>Legal restrictions on risk?</i>	
Constraining laws/regulations?	
Partnership/revenue sharing limitations?	
<i>Assume market risk for return?</i>	
Long-term, detailed planning?	
Pursue developer partnership?	

DO

The information gathered in this section can be used to determine the level of risk that can be assumed by airport ownership:

- **High?** The airport has broad financial support from governing agencies or partners, and can afford investments that have longer-term or less certain returns but also have the potential for more income. A high risk project also has the potential for higher returns.
- **Moderate?** The airport can commit a more limited amount of resources (e.g., to achieve greater land or building rents) but may want protection from market uncertainties.
- **Low/minimal?** The airport cannot afford to expend a great deal on development preparation, and/or must look for stable income streams for minimal investment for financial, legal, or political reasons.

The determination of risk tolerance has a major effect on development strategy. Conclusions about the airport’s risk tolerance will be an important metric when considering development options through the rest of the guidebook activities. For example, if the tolerance for risk is low,



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strategy may be limited to subdividing parcels of land for sale or lease, aiming for reliable, stable revenue. If the risk tolerance is higher and the sponsor wants the opportunity to benefit from a good market, a strategy of percentage rents or equity participation with a partner may be chosen. An airport sponsor undertaking land improvements and building construction without a partner is assuming the greatest risk. This strategy will be explored in more detail in the subsequent toolkits.

4.12 Development Goals

KNOW

The self-assessment elements explored so far can be combined to reach a conclusion regarding the motivation of the airport for exploring development. The airport's motivation is a critical part of the self-assessment, because **it is important for the airport to have a realistic view of what development can or cannot accomplish for revenue enhancement**. For example, if the airport has a very urgent need for immediate revenue, a commercial development project—with its necessary time frames to yield income—may not be the best strategy. The airport's development goals also must be correlated with the conclusions about the airport's risk tolerance as developed from that checklist.



This self-assessment exercise also may be used to develop goal statements that are expressed quantitatively, such as these examples:

- **A statement defining the target revenue from a development project, and the associated timeframe of the return (short term, middle term, or long term).**
- **A statement that the airport is looking to achieve a stable revenue source from currently unproductive assets.**
- **A statement that the airport needs a cash infusion in the short term to continue to operate and a definition of the amount needed.**

Perhaps the airport functions as an economic development leader, or is being encouraged by other agencies to become one. The local government may approach the airport as a potential source of job creation, or the airport may have been approached by a developer with a proposal for a non-aeronautical use. If the idea of development has come from a third party, rather than as a conclusion of the airport's own planning process, it is even more important to examine the airport's goals and motivations to be sure the proposal will benefit the airport.

SOUND BITE



Revenue generation was not a key factor in the discussion, and at this time there are not any specific goals for revenue generation for the airport. Motivation comes instead from:

- ***Making a higher, better use of the land***
- ***Creating jobs***
- ***Community growth***
- ***Increasing air service and air cargo activity at the airport***

Articulation of goals also provides an initial basis for determining the best strategy for development, including the type of development, how much investment or construction should be undertaken, and whether to involve partnerships.

HAVE


The answers to the questions in this section of the toolkit will help guidebook users identify and articulate the airport's motivation for embarking on a development project. The complete Development Goals Checklist is provided in Appendix A, "Chapter 4 Checklists," and a

customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **EXCESS UNPRODUCTIVE LAND?** Is land available that is not needed for aviation use according to the ALP or Airport Master Plan? Is it bringing nothing to the airport's bottom line, or is it needed as a buffer for noise or safety?
- **JOBS FOR LOCAL ECONOMY?** Is the airport under pressure to produce jobs or tax revenue? Is the motivation coming from other governmental agencies? If the motivation is not internal, it is important to examine carefully whether the airport itself will benefit. Even if there are clear community benefits, such as new jobs or available development property, the development should still be evaluated in terms of cost or revenue to the airport.
- **ADDITIONAL REVENUE NEEDED FOR LONG-TERM AIRPORT SUSTAINABILITY?** Do airport business trends show the need for additional revenue? Do market trends suggest demand for commercial or industrial development?
- **CRITICAL TO SUPPORT AIRPORT OPERATIONS?** Will the airport fail without additional income in the short term? If the answer to this question is "Yes," that could signal an urgent situation that cannot wait for the development process.
- **REVENUE GOALS FROM DEVELOPMENT?** Has the airport identified specific revenue goals (i.e., *X* dollars over *Y* years) to support the airport?
- **SHORT TERM OR LONG TERM?** Are there immediate needs for an increased revenue stream, or is the goal to see development and revenue over the 20-year master plan horizon?
- **HOW LONG CAN THE AIRPORT WAIT TO RECEIVE REVENUE?** Can the airport continue operating in a financially sound manner until the development produces revenue? This could entail a wait of several years and some up-front financial investment, depending on the nature of the project.
- **HAS THE AIRPORT BEEN APPROACHED BY A DEVELOPER WITH A PROPOSAL?** If the initiative comes from a developer, what does the developer offer to the airport?
- **IS THERE GROWING MARKET DEMAND FOR COMMERCIAL/INDUSTRIAL LAND?** A healthy market and available land may present a good opportunity for new airport revenue.

SOUND BITE 

One airport that has had success attracting business development to the airport offered this advice: Ask companies to provide information about their financial capabilities, their first phase of market, and ask for earnest money that is 10% of the value. They should be able to talk about their infrastructure needs too. If they can't do those things, they are probably not yet a viable business option.

		
Factors for development	Check to select	Notes
<i>Excess unproductive land?</i>		
<i>Jobs for local economy?</i>		
<i>Additional revenue needed for long-term sustainability?</i>		
<i>Additional income critical to operations?</i>		
<i>Has airport identified revenue goals over time?</i>		
<i>Goals for increased revenue?</i>		
Short-term goals?		
Long-term goals?		
<i>Can airport remain financially sound between investment and return?</i>		
<i>Developer proposal on the table?</i>		
Benefit to airport?		
<i>Growing market demand for commercial/industrial land?</i>		

DO

The information gathered by answering the questions in this section of the toolkit can help guidebook users to clearly express the airport’s development goals both qualitatively and quantitatively. If the answers to these questions show that interest in development is motivated by an objective to provide additional revenue over time and not to respond to an immediate revenue shortfall, that presents a promising scenario for pursuing development. An urgent need for revenue or a desire for a windfall is a less positive or realistic situation. Also, an external initiative—whether from a developer or from a government agency seeking job creation—can reveal a new opportunity for the airport; however, it may not be in the airport’s best interest in terms of revenue and sustainability. This scenario needs to be carefully examined.



4.13 Community Context

KNOW



The airport's position in the community is a topic that is touched on at many points in this guidebook. One of the most salient principles conveyed in the industry interviews and case studies conducted for this research was that **community relations and alignment of goals between the airport, local government, and economic development agencies is critical to the success of an airport development project.**

Community relationships are critical and can affect the development process from the beginning to the end. For example:

Positive Relationships:

- Positive relationships with local and state jurisdictions can create partnerships for improving transportation and utilities to support new development.
- Good relationships between the airport and the community can help to spread accurate and positive information about an airport-related development project.
- Approvals may be fast-tracked if airport-related development is seen as a source of tax revenue and job growth.
- If the airport's goals are consistent with those of the municipality or region, economic development agencies can help to market the project to potential lessees or purchasers.

SOUND BITE



The city extended water and sewer to the industrial park area using a state revolving loan fund. This opened up more than 400 acres for industrial development. There is no master plan for development.

Negative Relationships:

- Negative relationships can foster community opposition that can derail development approvals or result in onerous conditions during the permitting process.
- Environmental, traffic, and air quality concerns can, if raised by a concerned public, create considerable delay and expense in the process.
- Mistrust of the airport or unresolved conflicts can result in inaccurate or alarmist information being circulated through the community. This can stop a development proposal in its tracks.

SOUND BITE



Citizens of the host municipality have a historic mistrust of what happens at the airport.

Alignment of goals between the airport and the governments, businesses, and residents of the surrounding community—the stakeholders—will be instrumental in the approval, funding, and implementation of a development project. If these relationships have historically been positive, that is a plus for the airport sponsor. If these relationships have historically been negative, some effort will likely be needed to repair and improve them in order for a development project to be successful. In one case study examined by the ACRP Project 03-39 research team, a new private airport owner working on improvement plans found himself a victim of the poor relationships that had existed between the community and the prior owner. Although the new owner was trying to reinvent the airport, years of mistrust were creating obstructions at every turn.

HAVE

Developing the answers to this part of the self-assessment will help guidebook users characterize and consider the existing relationships between the airport and key stakeholders. The complete Community Context Checklist is provided in Appendix A, “Chapter 4 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.


- **HAVE LOCAL STAKEHOLDERS BEEN IDENTIFIED? WHO ARE THEY?** Whether it is publicly or privately owned, the airport’s stakeholders are similar and include: nearby residents; business owners; elected officials on local, county, and state levels; economic development officials; business organizations; and competing real estate developers. Conducting an inventory to identify the local stakeholders is an important step.

Local stakeholders	Notes
<i>Identify local stakeholders?</i>	
Public?	
Private?	

- **SUMMARIZE RELATIONS BETWEEN THE AIRPORT AND THESE STAKEHOLDERS BASED ON THE SUGGESTED QUESTIONS AND OTHER AVAILABLE INFORMATION:**
 - **Local Government?** Do local government offices field complaints? Have they worked with the airport on compatible zoning? Does the airport have representatives on any local commissions or committees? If the airport is municipally-owned, are other municipal departments or officials supportive or adversarial?
 - **County/State Government?** If the airport is owned by the state or county, is the airport regarded as an asset and supported by elected and agency officials? Have they helped to get funding for airport projects?
 - **Surrounding Landowners?** Are surrounding landowners primarily residential (home-owners) or commercial (business owners)? Do they make use of the airport? Do they complain about noise, air quality, or traffic?
- **IS A LOCAL INDUSTRY ADVISORY BOARD OR OTHER SYSTEM IN PLACE TO REGULARLY COMMUNICATE WITH STAKEHOLDERS?** Some airports conduct regular outreach sessions with the community or create advisory councils that include participation by business and government leaders. The presence of this type of board is usually indicative of a positive relationship.
- **DOES A PUBLIC INVOLVEMENT PROGRAM EXIST? OTHER VEHICLES FOR COMMUNICATION?** Does the airport issue newsletters or electronic information telling the public what is happening at the airport? Does the airport communicate on social media? Are there “visitors’ days,” outreach to schools, or other types of public involvement?
- **IS THE AIRPORT CONSIDERED AN IMPORTANT ECONOMIC ASSET BY CITY OR REGION?** This is an important plus for development plans. If the airport is seen as a producer of jobs and tax revenue, it is likely to get support for actions to improve its financial standing.

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- **ARE THE AIRPORT’S GOALS ALIGNED WITH THOSE OF THE CITY AND REGION?** Do local and regional plans identify or allow for airport development? Do the surrounding communities agree that the airport should grow, and that what is good for the airport is good for the community? If not, what are their concerns?
- **HAS FRICTION OCCURRED BETWEEN THE AIRPORT AND THE COMMUNITY REGARDING OPERATIONS, EXPANSION, OR NOISE?** Have there been negative news stories regarding the airport? Are there frequent complaints? Do residents see the airport as a hazard?
- **HOW MANY JOBS ARE DIRECTLY AND INDIRECTLY SUPPORTED BY AIRPORT OPERATIONS? ARE LOCAL AND REGIONAL AGENCIES AWARE?** Does the airport sponsor or agency analyze and share information about airport jobs? Is this information published?
- **ARE MANY OTHER COMMERCIAL/INDUSTRIAL DEVELOPMENT PROJECTS IN THE AREA? WOULD THE DEVELOPERS VIEW AIRPORT DEVELOPMENT AS COMPETITION?** This situation can be tricky, especially for a publicly owned airport that may be viewed as having an unfair advantage or as taking business away from private developers. If heavy competition exists for a limited market, plans for airport development can cause friction. Regular outreach to the business community may head off these conflicts.

	
Relationships with stakeholders	Notes
<i>Summarize relations with local stakeholders?</i>	
Local government?	
County/state government?	
Surrounding landowners?	
<i>Local industry advisory board?</i>	
<i>Public involvement/other communication?</i>	
<i>Viewed as economic asset by city or region?</i>	
<i>Goals aligned with city and regional goals?</i>	
<i>Friction related to operations, expansion, or noise?</i>	
<i>Jobs directly and indirectly supported by operations?</i>	
Regional agency awareness of job support?	
<i>Other commercial/industrial developments in area?</i>	
Airport development viewed as competition?	

DO

If the answers to the questions in this section show active involvement with and support from the community, the airport can count that as a benefit to achieving a successful development project. If the answers show little involvement or poor relations, the airport should consider efforts to improve relationships and communication. *ACRP Report 155: Aligning Community Expectations with Airport Roles* provides guidance and supporting tools for community outreach efforts.



4.14 Summary

What should be the result of the self-assessment? The self-assessment should lead the airport sponsor to one of two conclusions, “Stop” or “Go.” The first is a determination that other strategies for revenue enhancement could be less expensive, more rewarding, or less risky. The second is a decision to proceed with the next steps in exploring a development project to augment revenue.

In determining whether to “Stop” or “Go,” an airport sponsor will examine the answers to the following questions:

- **Is the airport interested in pursuing development for the right reasons and with realistic expectations?**
- **Will the project consume funds that are better dedicated to improvement of aviation facilities?**
- **Can the airport commit staff and financial resources to investigate opportunities and design and implement a plan?**
- **Can the airport wait the period of time necessary to start receiving development revenue?**
- **Is there a realistic opportunity to absorb the expenses needed for a development project?**
- **Is development likely to be supported by the community?**
- **Is there a planning and management structure in place to manage the development process?**
- **Are new personnel required to lead the development effort?**
- **Is a partner essential for the development project?**
- **Are facility investments necessary to grow airport operations and attract development customers?**
- **Will airport users anchor demand for the proposed development?**
- **Which of the five tiers (introduced in Chapter 2) correctly classifies the airport land? How will that classification affect development planning?**

All of these questions can be summed up in two larger, fundamental questions:

1. Is development too risky, time consuming, or expensive for the airport’s economic position?
2. Alternatively, does development present a unique opportunity to sustain the airport’s financial feasibility over the long term?

If the self-assessment reveals many negative answers to critical questions, alternative approaches to revenue enhancement may need to be considered, possibly including TTF opportunities and encouraging off-airport development to increase the airport customer base. In this guidebook, Chapter 7, “Off-Airport Considerations and Revenue” provides a discussion of these opportunities. *ACRP Report 121: Innovative Revenue Strategies—An Airport Guide*, and *ACRP Report 114: Guidebook for Through-the-Fence Operations* are resources for more information.



Site Evaluation Toolkit

5.1 Introduction

The Self-Assessment Toolkit focused on internal airport operations and management. Airport sponsors that have worked through that toolkit will have concluded with a determination that development does or does not present a reasonable opportunity for enhancing airport revenue. Assuming that the conclusion is affirmative, the next step is to complete the Site Evaluation Toolkit, which analyzes the attributes of the land under consideration for commercial development. Many possible scenarios apply in this instance:

- **Land on or off the airport**
- **Land with and without airside or airport access**
- **Land that is—or is not—grant obligated**

The airport sponsor may have specific sections of property under consideration, or may be looking for an evaluation of all unutilized or underutilized property inside or outside the airport fence. In view of this variability, not all the criteria and checklist items in this toolkit may be relevant in every circumstance. Completion of the toolkit should be tailored to each airport's specific situation.

This chapter toolkit includes 14 checklist sections, which appear next to the explanations given in the text. In the header of each checklist section, the following icon is included as a reminder that complete copies of the 14 checklists are provided in Appendix B, "Chapter 5 Checklists," and that customizable copies of the same checklists can be downloaded from the *ACRP Research Report 176* webpage:



The 14 checklists are:

- **Airport Layout Plan (ALP) Status (With or Without Airport Master Plan)**
- **Land Availability**
- **Location and Access**
- **Physical Site Features**
- **Infrastructure—Sanitary Sewer Systems**
- **Infrastructure—Stormwater Systems**
- **Infrastructure—Water**
- **Infrastructure—Power/Telecom**
- **Surrounding Land Use**

- **Regulatory Constraints/Permitting**
- **Market Conditions**
- **Workforce Attraction**
- **Local/Regional Context**
- **Development Incentive Programs**



The five tiers discussed in Chapter 2 can help to organize the selection and evaluation of the land being considered by providing a classification according to the level of FAA regulatory control.

In this chapter, when the term *development* is used in coordination with the site evaluation, bear in mind that development can mean a host of options, ranging from simple to complex, including:

- **Installing roads and utilities**
- **Subdividing parcels**
- **Getting site plan approvals**
- **Clearing and grading land**
- **Constructing buildings**



Land may be considered for uses directly related to aeronautical uses, such as air cargo operations. A broader set of potential commercial uses also could be explored, such as industrial, hotel, or office uses. **Although the airport itself may be an attraction, the airport property must compete in the real estate marketplace with other non-airport sites to attract development interest.** The site evaluation is necessary to identify the assets and challenges of the land, and determine how it stacks up competitively against other sites. Even when land is physically suitable for development, issues may arise with transportation access or sewer capacity, or the region may not be growing enough to create demand for new development. All of these topics are explored in this toolkit.

Examination of the criteria in this toolkit will enable the airport sponsor to look at the property from a real estate perspective, reviewing important considerations for the feasibility of a commercial project. The criteria are detailed, but fall into a few general categories:

- **Location—Urban, suburban, or rural, and the airport’s accessibility**
- **Physical features—The nature of the land in question; whether it slopes or if wet areas would interfere with development; whether it is open, wooded, or rocky**
- **Infrastructure—The state of transportation and utilities available or needed to serve new development**
- **Market factors—Not only vacancy rates and supply and demand, but also quality-of-life factors that could attract employers and employees to the local area, which is information critical to selecting the development type(s) and the target market**
- **Legal and regulatory factors—Legal constraints on the use of the land (which might be deal-breakers in some cases but in others may be overcome by certain strategies or actions) and government incentives, which may provide benefits**

Certain criteria may be identified in the course of the planning process. For example, the need for permits may not be completely evident until a concept has been designed. However, the likelihood of such permits may be assessed to a degree based on the land analysis. In addition, several criteria deal with technical information for which professional expertise would be beneficial. Such expertise can be obtained by working with a consultant or with a staff person with professional credentials. In this guidebook, situations for which professional expertise is needed are noted both in the language of the text and in using the consultant experience icon, as shown in the margin.



Stop/Go Decision Format

On completing the Site Evaluation Toolkit, airport sponsors will have gathered the information needed to reach a “Stop” or “Go” decision and conclude that either:

- **Significant economic, political, financial, legal, or physical obstacles exist that would discourage development for the foreseeable future and indicate it would not be prudent to proceed—Stop.**
- **Land development is reasonably feasible, and no factors are apparent that would preclude proceeding to the next stage—Go.**

If the review lands somewhere in the middle, enough information should be available to decide whether the challenges can be addressed. If so, the development process can proceed. The planning team’s conclusions will depend to some degree on the risk tolerance identified in the Self-Assessment Toolkit.

If a “Stop” decision is made due to circumstances that the airport cannot control, it is possible that those circumstances may change over time, in which case the information compiled in the site evaluation toolkit will provide a basis for another look in the future. If the airport elects to continue development planning, working through the site evaluation toolkit will highlight challenges that should be examined closely before significant commitments or investments are made. The exercise of completing this toolkit will also help the airport to work with outside experts and consultants. If the airport sponsor does not control the adjacent property it wishes to see developed, additional information can be found in Chapter 7, “Off-Airport Considerations and Revenue.”

5.2 ALP

KNOW



The ALP has been defined and detailed in the Self-Assessment Toolkit (see Chapter 4); however, as an element in an Airport Master Plan—or if it is used as a master plan itself—the ALP acts as the departure point for development planning. Accordingly, it becomes the kickoff for the Site Evaluation Toolkit. **The ALP/Airport Master Plan provides the basis for successively more detailed development plans.** As confirmed by the case studies and interviews conducted for ACRP Project 03-39, detailed master planning yields many benefits for the airport and the development process.

If the ALP contains current information about aeronautical and non-aeronautical uses, existing and future facilities and uses, and buffer areas and adjacent land uses, it can be used for development planning without additional review or approval. If information is incomplete or too general for planning purposes, an ALP update is recommended. For grant-obligated airports, it is essential to confirm that FAA has granted a land release for airport property planned for non-aeronautical use before making significant development investments.

SOUND BITE

The property has been released for non-aeronautical development but not for sale. Leasing provisions are a challenge to development.

HAVE

This checklist section is used to determine the status of the airport's ALP as a tool for development planning. Some of the information needed can be transferred from the Self-Assessment Toolkit; however, most of this checklist is oriented to the development aspects of the ALP. The complete Status of ALP (With or Without Master Plan) Checklist is provided in Appendix B, "Chapter 5 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.


Status of ALP (with or without Master Plan)

- **FAA-APPROVED ALP?** Does the airport have a current, FAA-approved ALP?
 - **Last updated?** In what year was the ALP adopted/did it receive FAA approval?
 - **Land use plan adopted by airport ownership?** Even if an ALP is not required by FAA, an airport sponsor or owner may find it beneficial to create and maintain one.
 - **ALP reflects current conditions?** When an airport embarks on development planning, the ALP should be reviewed and updated if it is more than 3 years old or if conditions have changed on the airport since its creation.

	
Status of ALP	Notes
FAA-approved?	
Last updated?	
Land use plan adopted by ownership?	
ALP reflects current conditions (within 3 years or less)?	


Content of the ALP—Short-Term and Long-Term Land Uses

- **AERONAUTICAL USE?**
 - **Airport Operations Area (AOA) identified?** What areas are used for airport operations (“inside the fence”)?
 - **Short- and long-range airport expansion needs identified?** Are there areas that could have interim uses but that will be needed for airport facilities in the future? Are they shown on the ALP?
 - **Existing and future aeronautical facilities identified?** Does the ALP include accurate locations of the terminal, hangars, the Aircraft Rescue and Fire Fighting (ARFF) facility, and other facilities that will be used for airport operations and/or leased to private clients and generate revenue?
- **NON-AERONAUTICAL USE?**
 - **Non-aeronautical land released by FAA?** Has a land release procedure been completed? Has FAA granted a land release to allow the airport to use some land for non-aeronautical purposes?
 - **Uses identified for non-aeronautical land?** Are non-aeronautical uses identified by general categories, or are specific uses listed?
 - **Buffer requirements delineated?** Is any land area reserved to function as a buffer to neighboring areas? Such land areas may include land acquired for noise mitigation following the completion of a Part 150 Noise Study.
 - **Adjacent land use identified?** Are the land uses adjacent to the airport identified? What are they? Are they compatible with the land uses envisioned by the airport?

 Content of ALP	Check to select	Notes
<i>Aeronautical uses?</i>		
AOA identified?		
Short-range expansion needs identified?		
Long-range expansion needs identified?		
Existing facilities identified?		
Future facilities identified?		
<i>Non-aeronautical uses?</i>		
Non-aviation land released by FAA?		
Uses identified?		
General categories?		
Specific uses?		
Buffer requirements delineated?		
Adjacent land use identified?		

▪ **COMMUNITY SUPPORT?**

- ***Publicly available?*** Is the ALP available to view on the airport’s website?
- ***Shared with stakeholders?*** Has the Airport Master Plan been circulated to economic development officials, the city, and the county or state?
- ***Addresses master plans of surrounding town and county?*** Does the ALP show that uses at the perimeter of airport-controlled land are compatible with adjacent property with respect to local zoning and master planning?

 Community support	Check to select	Notes
ALP publicly available?		
Plan shared with stakeholders?		
Plan addresses master plans of surrounding town and county?		

DO

Based on the evaluation checklist, determine whether or not the ALP provides a solid departure point for development planning based on the following conditions:

- ***The ALP is current, and development strategies have been reviewed and approved by FAA and the airport sponsor in recent years.*** If the ALP is in good standing with regard to FAA approval, local approval, and review within the past 3 years, it should provide guidance for development planning without additional review or approval. If the ALP is out of date, if

recent changes are not reflected, or if non-aeronautical lands planned for development have not been released by FAA, the ALP should be updated and all issues revisited with the airport sponsor and the FAA before proceeding.

- ***The ALP content will inform development planning decisions including short-term and long-term land uses.*** An up-to-date ALP identifies existing uses and development objectives for aeronautical and non-aeronautical land in both the short term and the long term. The typical long-term planning horizon is 20 years. If the ALP does not extend to the long-term horizon, either because it is out of date or because recent changes are not reflected in the document, this should be revisited with the airport sponsor and FAA before proceeding.
- ***The ALP has community support as a result of communication and outreach efforts.*** If the ALP has been made available publicly and shared with stakeholders, and if it presents a plan for development that is compatible with adjacent property, then there is a foundation for community support. If this dialogue has not begun, or if the airport is proposing uses that are not compatible with adjacent community plans, some initial conversation is encouraged at this stage to gain community support for airport development ideas.

If these conditions all apply, then the airport is well-positioned to move forward with development planning based on the ALP. If any shortcomings have been identified, the airport sponsor is advised to consider actions to strengthen the ALP before proceeding with development planning efforts.



5.3 Land Availability

KNOW

How much land does the airport have to offer? Many developers or lessees are attracted to an airport location by the availability of open, reasonably affordable, unencumbered land. This factor topped many lists as the most important asset in the interviews and literature search for ACRP Project 03-39. The checklist in this section will enable guidebook users to review the acreage of land that can be offered for development, as well as identify property that may require resolution of restrictions before becoming part of a project.

SOUND BITE

The airport is located 6 miles outside of the city core and the airport is the only area where there are large parcels of land for development.




HAVE

Using the five-tier concept presented in Chapter 2, identify the tier(s) applicable to the available land. Airport-owned land will be classified in Tier 1, Tier 2, and/or Tier 3. The complete Land Availability Checklist is provided in Appendix B, “Chapter 5 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

Aeronautical Development


- **SIZE?** How many acres would be available for development?
- **CONTIGUOUS AREA?** Does the land consist of one tract, or are several parcels in various locations? Are any of the parcels further subdivided into smaller lots? Can they reasonably be included in one Development Plan?
- **ON- OR OFF-AIRPORT?** Is the land inside or outside the AOA?
- **RUNWAY ACCESS?** Are the lots adjacent to the runway? Could access be provided to the runway?

 Aeronautical development	Notes
<i>Size in acres?</i>	
<i>Contiguous area?</i>	
Subdivision into parcels or smaller lots?	
<i>On- or off-airport?</i>	
<i>Runway access?</i>	

Non-Aeronautical Development


- **SIZE?** How many acres would be available for development?
- **CONTIGUOUS AREA?** Does the land consist of one tract, or are several parcels in various locations? Are any of the parcels further subdivided into smaller lots? Can they reasonably be included in one development plan?

- **ON- OR OFF-AIRPORT?** Is the land inside or outside the airport boundary (airport ownership)?
- **PROXIMITY TO AIRPORT?** If outside, how far is it from the airport proper? Is the land adjacent to airport property or some distance away?
- **DESIGNATED AS NON-AERONAUTICAL ON ALP?** Does the ALP already designate the land for non-aeronautical uses or for aeronautical and (future) non-aeronautical uses? If not, the ALP should be revised to show these land use categories. A land release must be completed before FAA will permit non-aeronautical development on airport property.

	
Non-aeronautical development	Notes
<i>Size in acres?</i>	
<i>Contiguous area?</i>	
Subdivision into parcels or smaller lots?	
<i>On- or off-airport?</i>	
<i>Proximity to airport?</i>	
<i>Designated non-aeronautical on ALP?</i>	

Factors that Reduce Land Availability

- **OWNED BY AIRPORT SPONSOR?** Does the airport sponsor own the property outright? Is it owned by a larger government entity? Is it owned by private investors?
- **CLEAR TITLE?** Are there any clouds on the ownership of the land? A recent Title Report is probably available in the airport’s files. If not, a title company may be engaged to produce a new report. A prospective purchaser or ground lessee will likely order a report, but it is important for the airport sponsor to know the chain of title and any ownership disputes.
- **DEED RESTRICTIONS?** The Title Report also will identify any recorded restrictions on the use of the property, access rights, environmental notices, or other issues. Deed restrictions are important information for the airport to know as part of planning for development, as such restrictions may impact design and construction opportunities.
- **ENCUMBERED BY ANY EASEMENTS?** Property surveys will show whether there are easements through the land parcel for utilities or access to the benefit of governmental agencies or third parties. This information is also important for the airport to know as part of planning for development because it may impact design and construction opportunities.

			
Availability reduction factors	Yes	No	Notes
Owned by airport sponsor?			
Clear title?			
Deed restrictions?			
Encumbered by easements?			

DO

Working through the checklist in this section of the toolkit will show the extent of land available for development and whether ownership or easement issues will have to be accommodated, or possibly eliminated, before proceeding with development plans to generate revenue.



If the review shows a reasonable amount of land available for development for aeronautical or non-aeronautical use and does not reveal any major issues with ownership or encumbrances, then existing conditions are positive for on-airport development.



If the review reveals a limited amount of land available for development and/or complicated restrictions on the land, the concept for creating revenue through on-airport development may have to change focus. In this guidebook, Chapter 7, “Off-Airport Considerations and Revenue,” suggests strategies for obtaining revenue benefits from land adjacent to the airport (Tier 4 and Tier 5).

5.4 Location and Access

KNOW

It is often said that there are three criteria of real estate success: location, location, and location. This maxim is true for an airport development project. As a result, considering location is one of the first steps in examining the airport's position in the real estate market. **An airport development project will have to compete in the real estate market with many non-airport real estate projects to attract development interest.** Potential tenants and developers will look for easy access to the site and egress from the site to the surrounding region.



The availability of multiple modes of access (i.e., highways, railroad lines, and mass transit) is an advantage. Connection to urban, industrial, or other centers with likely customers for the new development, and access to residential areas for employees also are advantages. Conversely, limited accessibility and isolation can make the site less competitive. One question potential developers will likely ask is, "What is the transportation network?" Another question is, "What does it connect to the airport?" Transportation networks enhance the market position of airport development by providing connections to commercial markets and institutions that offer customers and suppliers for business operations. Also, when transportation networks provide access to a mix of housing choices, healthcare, and educational institutions that provide a high quality of life for employees, it is easier for businesses to attract and retain a quality workforce, which is an important location consideration.

SOUND BITE



Another important element for attracting commerce and industry is having neighborhoods and quality of life that appeal to corporate leadership and their families.

Gathering the answers to some of these questions will help guidebook users assess the airport's market position related to access, and it may also provide material for future marketing strategies.

HAVE


The questions in this section of the toolkit address the airport's current customer base and related trends to help identify existing conditions and potential development markets. The complete Location and Access Checklist is provided in Appendix B, "Chapter 5 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

Surface Transportation Connections

- **HIGHWAY INTERCHANGE ACCESS?** Does a major highway (state or Interstate) serve the airport?
- **DISTANCE TO NEAREST INTERSECTION WITH HIGHWAY?** If a highway interchange does not serve the airport directly, how far away is an interchange or intersection with a major highway?
- **ARTERIAL ROAD FRONTAGE?** Does the site front on a major arterial road?


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- **VISIBILITY FROM ROAD FRONTAGE?** Is the proposed development area visible from the road?
- **DISTANCE TO CITY OR TOWN CENTER?** How far is the development site from a local downtown or urban center?
- **ACCESS TO REGIONAL CENTERS?** How far is the site from a major city such as a county seat, state capital, or other large city with a concentration of businesses and potential tenants?

 Surface transportation connections	Check to select	Notes
Highway interchange access? If not, distance to nearest interchange?		
Arterial road frontage?		
Visibility from road frontage?		
Distance to city/town center?		
Access to regional centers?		

Multi-Modal Transportation Service


- **FREIGHT RAIL AT THE AIRPORT?** Is there freight rail service at the airport?
- **PORT OR RAIL CARGO ACCESS?** Is the site part of or close to a port facility? Is there a rail siding serving the airport? Serving the development site?
- **RAIL OR BUS TO AIRPORT?** Is commuter rail available for customers or employees? Bus service?
- **DISTANCE TO MASS TRANSIT?** If bus or rail systems do not serve the airport site, how far away is the nearest station, terminal, or stop?

 Multi-modal transportation service	Yes	No	Notes
Freight rail at airport?			
Port or rail cargo access?			
Rail or bus to airport?			
Distance to mass transit?			

Market Connections and Quality-of-Life Metrics

- **ACCESS TO INDUSTRIAL CONCENTRATIONS?** Are there transportation connections to industrial parks, plants, or corporate headquarters? How far away are they?

- **MAJOR RESIDENTIAL AREAS?** Are there easy commuting distances from residential areas? Is the airport close to a mix of housing options? Are there gaps in the housing market (i.e., lack of workforce housing or lack of rental options)?
- **UNIVERSITIES?** Are major educational institutions nearby? They can be a source of customers for the airport and also can support certain retail and hotel uses, provided they are accessible from the airport and development site.
- **HOSPITALS?** Are hospitals or medical research centers nearby? These institutions offer another support for retail and commercial development serving employees and visitors, as well as medical-oriented aviation activities.

 Market connections/quality-of-life metrics	Check to select	Notes
Access to industrial concentrations?		
Major residential areas nearby?		
Universities/colleges nearby?		
Hospitals/medical centers nearby?		

DO

Completing this checklist will show whether the development site is well situated to serve potential users.

Based on the evaluation checklist, the airport sponsor can determine whether the airport’s location and access will likely provide a market strength or advantage to development on airport property, considering:

- **The surface transportation network.** Does it provide convenient access to highways and arterial roads and nearby local and regional centers of commerce?
- **Existing multi-modal connections.** Do they provide an extended network for freight movement and for customers and employees to reach the airport?
- **Existing market connections to industry and institutions.** Do these businesses and institutions have ready access to the airport and the proposed development site? Do the employees and customers associated with these businesses and institutions enjoy access to markets and a high quality of life?

If this review finds that surface transportation connections are in place and that there are connections from the land proposed for development to existing markets and community resources, the airport development is well-positioned from the perspective of location and access. If this review finds that the site is far from sources of customers and resources for employees and/or is difficult to access, commercial development may not be the best option for increasing airport revenue.



5.5 Physical Site Features

KNOW

Many of the most important criteria in this toolkit relate to the location and context of the proposed development site, but the physical characteristics of the land are equally important.

Working through the questions in this section of the toolkit will reveal any prohibitive physical constraints or special considerations that would have to be addressed with expensive construction procedures. This information is important whether the airport will engage in the development or lease the property to a builder or developer. Any prospective developer or partner will need this information to review development feasibility and likely cost. Higher development costs reduce development revenue, which raises business risk and makes the development location less appealing.

This inventory will help to identify features that trigger any or all of the following:

- **Construction challenges**
- **Increased construction costs**
- **Regulatory controls and permitting requirements**

Regulatory issues are covered in more detail in Section 5.12, “Regulatory Constraints/Permitting,” but red flags may emerge in this part of the evaluation. Certain physical features can reduce the usable area of land that can be developed under zoning and state laws, or can trigger detailed permitting requirements if the development plans will include alterations to the land. Portions of the land may also have physical limitations. For example, a shallow depth to groundwater or bedrock or unstable soils can present problems for foundations, drainage, or supporting multi-story construction. Preliminary engineering studies may be necessary to identify these and other critical constraints.

HAVE

The questions in this section of the toolkit help guidebook users identify the physical land characteristics of the property. The complete Physical Site Features Checklist is provided in Appendix B, “Chapter 5 Checklists,” and a customizable copy of the same checklist can be downloaded from the ACRP Research Report 176 webpage.

Net Usable Land (Natural Features)

- **SITE SIZE?** Review the gross acreage of the parcel under study.
- **ADJUSTED SITE SIZE?** Remove acreage that is not available for development because of easements or other legal restrictions.
- **WETLANDS ACREAGE?** Wetlands are critical areas, from two perspectives: regulations and physical challenges to development. Special permits may be required to fill wetlands for development, secure foundations may be costly, and groundwater seepage may be a recurring problem. Wetland delineations may be available from state, county, or local natural resource inventories or surveys can be done, often in greater detail, by experts contracted by the airport. The presence, boundaries, and composition of wetlands are essential pieces of information. Large wetland areas can preclude economically feasible



development. Wetland areas do not all appear marshy with obvious standing water, so at minimum it is important to consult a wetlands inventory resource.

- **STEEP SLOPES?** Steep slopes may be defined by local ordinances, and alterations to slopes may be controlled to limit the allowable grading. Steep slopes also present construction challenges for commercial buildings, where level floor plates are needed. Slopes that are 15% or greater from the horizontal are considered steep, though lesser slopes may also be regulated and may pose construction challenges.
- **FLOODPLAIN ACREAGE?** Floodplains present a risk to structures and property from inundation by water and are highly regulated areas. Permits are required for grading, filling, or construction within floodplains. Maps of the 100-year floodplain are often available from state or local natural resource agencies and from the Federal Emergency Management Agency (FEMA) (see <https://msc.fema.gov/portal>). Floodplains are defined by both location and elevation, so if a potential floodplain impact exists, the services of a civil engineer may be needed. Floodplains should be deducted when calculating usable land area on the parcel being considered for development.
- **NET USABLE LAND CALCULATED?** Does the property contain other natural features, such as surface water, that may prevent or limit development? What is the land area available after deductions for wetlands, floodplains, or steep slopes?


 Net usable land area calculation	Acres	Notes
Gross acreage (A)?		
Wetland area?		
Steep slopes?		
Floodplains?		
Other features?		
Total land reductions (B)?		
Net usable land (A - B)?		

Land Characteristics

- **IS THE LAND SLOPING? LEVEL?** Level ground is desirable, enabling large footprints for industrial or commercial uses without extensive grading. Sloping land means higher construction costs and sometimes additional zoning restrictions.
- **IS THE LAND FORESTED?** Forested areas can provide buffers from surrounding uses but entail higher site clearing costs.
- **IS THE LAND DEVELOPED/PAVED?** Redevelopment of paved areas can be easier from an environmental/regulatory standpoint, as the areas have already been disturbed. Economic development agencies generally support reuse of empty buildings or underutilized sites. If existing development needs to be removed, demolition and removal will add to project cost.



- **ARE THERE STREAMS OR WATER BODIES?** Streams or water bodies may add an aesthetic benefit to site development and can aid in site drainage design. However, they may present some development concerns. Some water areas may be regulated wetlands. Streams may divide the site into smaller development areas or may increase development costs due to stream crossings.
- **ARE THERE STORM DRAINAGE/FLOODING ISSUES?** Whether or not the site contains delineated floodplains, existing storm drainage issues may be present on the site. Existing flooding issues are an indication that the design and installation of storm drainage systems to support additional development may be costly.
- **WHAT IS THE DEPTH TO BEDROCK?** Information about the depth to bedrock may be gleaned from other construction projects on or around an airport. If this is an area of concern, a geotechnical study is advisable to gather site-specific information. A geotechnical study will show construction limits, such as whether the land can support multi-level structures, or whether it will require a certain kind of foundation given the ground conditions. Shallow bedrock may require blasting, which increases project costs.
- **WHAT IS THE DEPTH TO GROUNDWATER?** Is ponding visible seasonally or after rain? Shallow depths to groundwater may indicate the presence of wetlands or that drainage systems will be required around the buildings.
- **WHAT ARE THE SOIL CONDITIONS?** Soil survey maps should be available from regional Soil Conservation Service offices. These reports will describe soil characteristics, which affect suitability for construction and drainage.
- **ARE THERE SEISMIC HAZARDS?** These concerns are specific to certain areas of the country. In such areas, particular building codes may apply to ensure occupant safety and resistance to seismic forces. The airport’s design professionals should research whether such codes apply in the project area.


 Land characteristics	Area of concern?		Notes
	Yes	No	
Sloping or level?			
Forested?			
Developed/paved?			
Agriculture?			
Streams or water bodies?			
Storm drainage/flooding?			
Shallow bedrock?			
Ponding/wetlands?			
Soil conditions?			
Seismic hazards?			

Environmental Considerations/National Environmental Policy Act (NEPA)

- **FORMER USE?** Sites used for industry in the past should be studied for potential contamination.
- **THREATENED/ENDANGERED (T/E) SPECIES HABITAT?** State or local resources can provide information on whether certain areas are mapped as T/E species habitats. These areas may carry federal- or state-level restrictions that prevent construction or increase construction costs.
- **HISTORICAL FEATURES ON OR AROUND SITE?** If the project will impact buildings or areas designated as historic at the local, state, or federal levels of government, special permitting and reviews may be required. Local boards may ask for special approval conditions, such as commemorative plaques or restorations.

SOUND BITE 

There is a Superfund site on the airport pertaining to groundwater contamination which complicates environmental permitting on the entire airport.

 Environmental topics	Area of concern?		Notes
	Yes	No	
Former industrial use? Potential contamination?			
Threatened/endangered species habitat?			
Historical features on or around site?			

DO

Although the list is not exhaustive, answering the questions in this section of the toolkit will provide an indication of whether the site is well suited for development based on natural characteristics and may point to potential limitations or challenges that relate to regulated environmental characteristics. After completing the checklist, guidebook users should consider the following questions:

- **Does the usable land provide a reasonable development area?**
- **Do the natural characteristics of the land present development challenges that could add excessive expense or time (e.g., for permitting) or that may be prohibitive to development?**
- **Does the land have other known characteristics that may add excessive cost or delay to the project (e.g., due to environmental regulations)?**

Some challenges are to be expected and can be overcome in a successful development project. If the development presents many challenges and limitations, or if the cost of addressing them appears to be high, before proceeding further the airport can investigate their potential impact more closely with the help of a development professional such as a civil engineer or environmental planner.



5.6 Infrastructure

Just as with location and access, the availability of utilities to support development is a critical consideration. The next few sections take the guidebook user through an evaluation of utility systems to serve new development. If the airport is in an urban area, it is likely that systems are in place. However, their age and capacity may signal the need for improvements in order to provide new, competitive development sites, or connection costs may be prohibitive. If the airport is in a rural area, on-site utility systems may be required, or the connection distance to existing utilities may be significant. These sections address major infrastructure categories, including sanitary sewer, storm sewer, water, and power and telecom.

5.7 Infrastructure—Sanitary Sewer Systems

KNOW

In most cases, sanitary sewer service is essential for a development of any size. This service includes both sewer piping and a treatment plant. In a best-case scenario, a municipal sewer system will be available near the airport and have the capacity to serve the proposed development with a gravity connection. Actual conditions may vary, however, and should be understood as part of this initial evaluation.

SOUND BITE



The city made infrastructure investments to provide water and sewer to the development area and expressed its willingness to create TIF [tax increment financing] districts to include new development as they arrive.

In some cases, pump stations may be needed to get effluent from the site to the larger conveyance system if the system is uphill from the development site. If capacity is not available in the existing treatment plant, a facility expansion might be necessary, which would be a costly item for the development project to support. A package treatment plant is another possibility but also can be very expensive. If the local treatment plant is in violation of any permit conditions, there may be restrictions on new connections. In addition, if local wastewater management plans do not include the airport's land in an existing or future service area, the sponsor may have to go through a regulatory process to amend the plan.

With respect to sewer conveyances, the airport sponsor must examine whether lengthy sewer main extensions are needed, or if the existing system needs larger piping to hold additional effluent.

Costs of any needed improvements, or fair share portions of those costs, may have to be assumed by the development project. If surrounding private development properties exist, it may be possible to join with other property owners in an agreement to share costs for improvements that would benefit all.


To develop an accurate picture of sewer availability, contact with the local authority is recommended so the airport sponsor can learn if there are any capacity issues, if the authority has plans for improvement, and how the connection and service costs would be calculated (i.e., via direct contributions or special assessments). Although a detailed Development Plan with land uses and building sizes may not be available at this point in the process, a rough estimate of sewer generation can be developed in accordance with the applicable government standards in order to compare demand versus capacity. Engineering expertise would be desirable here.

HAVE

The answers to the questions in this section of the toolkit will help guidebook users understand whether sanitary sewer service is available to serve the airport development and what costs and challenges might be encountered. The complete Infrastructure—Sanitary Sewer System Checklist is provided in Appendix B, “Chapter 5 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **IS THE AIRPORT SERVED BY PUBLIC SEWER?** Does the airport's own sewer service come from a private, on-site treatment plant? Is there service from a public system? Are there conveyance constraints in the system? Are the lines of sufficient size to accommodate additional flow?

- **WHO IS THE SEWER SERVICE PROVIDER?** Is the sewer service provider a municipality, or a regional sewerage authority?
- **IS THE SUBJECT LAND IN A SERVICE AREA?** Is the airport's land within the franchise or service area of the sewerage provider? This should be confirmed through direct communication with the provider.
- **IS THE LAND ADJACENT TO A SEWER MAIN?** Is an existing sewer main available in the abutting road or an adjacent property? Could service to a new building be provided with only a lateral line?
- **WHAT DISTANCE OF SEWER MAIN CONSTRUCTION IS NEEDED?** If the sewer main is not adjacent to the site, what is the length needed to bring it to the property?
- **ARE THERE ANY PLANT CAPACITY OR CONVEYANCE CONSTRAINTS?** Does the treatment plant have available capacity, or is the treatment plant operating at its capacity limit? Does the treatment plant face any restrictions on serving new customers because of citations/violations?
- **IS A PUMP STATION NEEDED?** Topography will dictate whether a pump station is required to convey sewerage uphill from the site to the treatment plant. This could be a significant cost item.
- **WHAT ISSUES/COSTS WILL APPLY FOR RESERVING CAPACITY?** What is the procedure to reserve sewage treatment capacity with the local sewerage authority or department? What is the charge to maintain the reservation? A reservation will most likely be contingent on site plan approval.
- **ARE THERE PLANNED SYSTEM IMPROVEMENTS?** Does the sewerage authority or municipality have any plans for improvements to the system? Are they scheduled for the short or long term? Information may be available on websites or in facility plans filed with the state or city or direct communication may be most effective.
- **WHAT IS THE ESTIMATE OF DEVELOPMENT PROJECT NEEDS?** Typical factors can be used to estimate how much sewage will be generated by different types of development, and thus the amount of capacity that needs to be available in treatment plants or conveyance systems. These standards should be set down in regulations administered by the entity that issues sewer connection permits. As an example, a typical generation rate for office uses is 0.1 gallons per day per square foot.
- **COULD A SHORTFALL OCCUR IN DEMAND VERSUS CAPACITY?** Will the intended development need more treatment capacity than is available? How much?

 Available service, costs and challenges	Notes
Public or private sewer service? Service provider?	
Is land in the service area (confirmed by provider)?	
Adjacent sewer main?	
Length of needed sewer main construction?	
Plant capacity/conveyance constraints?	
Need for pump station?	
Capacity reservation issues/costs?	
Planned improvements?	
Capacity needs estimate by type of development?	
Demand vs. capacity shortfall?	

DO

The information gathered from answering the questions in this section of the toolkit can be used to determine whether the airport’s current sanitary sewer service or access to the community sewer system will be adequate and cost-effective for the proposed development on airport property, considering:

- **Opportunity and cost to serve future development with the current sanitary sewer service at the airport, if applicable**
- **Opportunity and cost to reserve capacity within the public sanitary sewer system**
- **Opportunity and cost for a new connection to a public sanitary sewer service or to increase generation rates through an existing connection**

Completing the checklist will show whether the development site is well-positioned with regard to sanitary sewer service. If this review reveals access or capacity limitations to sewer service or that the cost for sanitary sewer service is high due to access or infrastructure construction costs, commercial development may not be the best option for increasing airport revenue.



5.8 Infrastructure—Stormwater Systems

KNOW

Identify municipal or regional stormwater systems and locate them in relation to the property. These systems are particularly important in urban and low-lying areas to deter ponding and flooding that can affect access to the developable land or the land itself. In some areas, regional stormwater management systems have been established, including regional detention basins. Often, a financial contribution to the system is required from new development that will drain into the system. Sometimes storm sewer mains will need to be improved or expanded for the development.


In other areas, regulations from regional water authorities or local zoning or subdivision rules may require development to incorporate on-site detention or retention facilities to hold back stormwater before it is discharged into local pipes. Such facilities would affect the land available for other uses in a development, including buildings and parking, and would also affect development costs. The design could involve lot-by-lot detention or a single facility serving an entire planned development. The character of the waterway receiving the stormwater discharge also can affect the system engineering; if the watercourse is considered sensitive, pre-treatment or additional buffer areas could be required.

HAVE

The answers to the questions in this section of the toolkit will help guidebook users identify any issues associated with permitting or system limitation that may impact development decisions. The complete Infrastructure—Stormwater Systems Checklist is provided in Appendix B, “Chapter 5 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.


Site-Specific Stormwater Management

- **STORMWATER PERMITTING?** Identify the authority for stormwater permitting.
- **ON-SITE REQUIREMENTS?** Do applicable codes or ordinances require stormwater to be detained on the site before it is discharged into the street system? On-site requirements mean that extra space must be allocated within the site, taking away from the developable area.
- **MULTI-LOT DEVELOPMENT?** In the case of a multi-lot development such as a business park, do ordinances or codes allow one or two basins to be engineered to serve the whole development?

	
Site-specific management	Notes
Who is permitting authority?	
Codes/ordinances requiring onsite detention before discharge?	
Required filtration/treatment before discharge?	
Basin requirements for multi-lot developments?	

Regional Stormwater Management

- **AUTHORITY?** Is there an authority that operates a regional system?
- **CAPACITY?** Are there capacity issues in the regional system that would prevent or limit discharge from airport development?
- **SYSTEM IMPROVEMENTS?** Does the regional authority have plans for system improvements?
- **PRE-TREATMENT/BUFFERS?** Are pre-treatment or additional buffer areas required as part of the engineering design?
- **COST?** Is there a cost to reserve access to the system?
- **PAYMENT?** What payment is required to discharge into the system?

	
Regional management	Notes
Who is regional permitting authority?	
Any capacity issues that prevent or limit discharge?	
System improvements planned by regional authority?	
Pre-treatment or buffer areas required in engineering design?	
Access reservation cost?	
Required payment amount for discharge into system?	

DO

The information gathered by answering the questions in this part of the toolkit can be used to determine whether on-site stormwater drainage design requirements and regional stormwater management systems will pose limitations to airport development due to:

- **The physical space required to meet surface water detention or retention requirements and associated drain infrastructure in relation to the land area available for development**

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- **The anticipated cost of design and construction for storm drainage infrastructure**
- **The capacity of the regional stormwater authority to accept the anticipated storm drainage discharge into the existing system**

The results of this portion of the self-assessment also can be used to consider whether the permitting issues seem to be manageable or whether some issues may present a significant challenge, delay, or cost. Depending on the scope of the project, the funds available, and the airport's risk tolerance, one or more issues may deter development at this stage. If this occurs, the project may be put on hold indefinitely or the airport may choose to investigate the issue more fully with the help of a civil engineer before proceeding.



If the overall result of the Site Evaluation Toolkit assessment is to move forward, the information discovered in this section can be used in the Implementation Toolkit (see Chapter 6) to fine-tune the development strategy, including site design, project timeline, and budget.

5.9 Infrastructure—Water

KNOW

Water service is an important infrastructure element and, as with sanitary sewer service, a preliminary estimate of a project's demand should be made to assess any capacity or supply issues. Consumption requirements can vary widely; a warehouse will require much less water than a hotel. Thus, any limits on water availability need to be fed back into the planning process that determines the land use plan. In addition to consumption, fire protection also needs to be reviewed to determine whether water capacity and pressure will be adequate to meet sprinkler requirements and other safety needs.

SOUND BITE

In order to give the industrial park a competitive edge, the airport pursued an accreditation by the state for industrial parks that meets a collection of eight criteria, including the ability to provide:

- ✓ *1 million gallons of water per day*
- ✓ *32,500 million cubic feet of natural gas per month within 9 months*
- ✓ *Immediate access to rail*
- ✓ *A location within 5 miles of an Interstate Highway*
- ✓ *A wetland delineation*
- ✓ *A Phase I environmental clearance*

As with sewer service, any shortfall in supply should be identified. If new water main extensions are required, that will be a cost factor in the later financial analysis. The airport sponsor can request a “will serve” letter from the water utility confirming that the proposed development can be provided with water.

There may be cases in which public water is not available and the proposed development, generally a small-scale project, will rely on well water. In this situation, the drinking water quality needs to be tested, as does the capacity of the well and pump equipment.

HAVE

The questions in this section of the toolkit relate to the system serving the development (public water or private water). The complete Infrastructure—Water Checklist is provided in Appendix B, “Chapter 5 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.


General Evaluation

- **DEVELOPMENT PROJECT NEEDS?** What will the water demand of the potential development be in broad terms, based on proposed land uses?
- **SERVED BY PUBLIC WATER?** Is the airport served by a public system or by a private, on-site well? What is the water source for the land under consideration for development?

	
General evaluation	Notes
Water demand based on proposed land use?	
Public service/private on-site well?	
Required filtration/treatment before discharge?	
Basin requirements for multi-lot developments?	

Public Water System

- **WATER SERVICE PROVIDER?** The provider could be a private company or a municipal or regional water department. Is the development site within the provider’s franchise or service area?
- **WATER SERVICE ADJACENT TO AIRPORT LAND?** Is a water main present in the street frontage of the development site?
- **SUPPLY SOURCES?** Does the water supply come from a municipal groundwater well or is a reservoir maintained for the public water supply?
- **ANY SUPPLY OR CONVEYANCE CONSTRAINTS?** Are there any concerns with the public water supply associated with water quantity or water quality? Have there been issues with inadequate pipe capacity or leaking pipes?
- **DISTANCE OF WATER MAIN?** Would a water main extension be required to serve the site by constructing new water lines from the development site to the nearest connection point? How long would the extension need to be? This could be a development cost.
- **ISSUES/COSTS FOR RESERVING CAPACITY?** What is the procedure for reserving capacity in the water supply system for a new development?
- **PLANNED SYSTEM IMPROVEMENTS?** Is a capital improvement program in place for the public system that could increase water supplies, replace old conveyance pipes, or make other improvements?

 Public water system (if served by public system)	Notes
Identify service provider?	
Water service adjacent to airport land?	
Identify supply source?	
Supply/conveyance constraints?	
Length of required water main extension, if any?	
Capacity reservation costs/issues?	
Planned improvements?	

Private Water Supply

- **WHAT IS THE WATER SUPPLY SOURCE AND CAPACITY?** Is there an on-site well, or are there geologic conditions that could yield adequate water? Would expansion of an existing well be required? Is the water yield sufficient?
- **ARE THERE ANY GROUNDWATER CONTAMINATION ISSUES?** Is there any history of groundwater contamination? Has an assessment been made of surrounding groundwater issues that may affect water quality? Have water quality tests been conducted from the existing source?

 Private water supply (if served by private supply)	Notes
Existing supply source/capacity?	
Well expansion required?	
Groundwater contamination?	

System Capacity

- **SHORTFALL IN DEMAND VERSUS CAPACITY?** Does the system (public or private) have adequate supply for the proposed development? Can the airport obtain a written confirmation that water can be provided? If the supply may not be adequate, how can the shortfall be met?

 Public/private system capacity	Notes
Demand vs. capacity shortfall?	

DO

Based on the answers to the questions in this part of the toolkit, guidebook users can determine whether water supply for the potential development will pose any limitations due to:

- **The safety and reliability of the water source serving the proposed development area**
- **The anticipated cost of design and construction for water infrastructure – whether for a public or private system**
- **The capacity of the public or private water supply system to provide the quantity of water needed to meet the anticipated demand of the proposed development based on type and size**

If a safe and reliable water source can serve the proposed development with adequate capacity and without excessive cost, then the water supply is likely not a limiting factor for development. If this review finds access or capacity limitations to water service, or that the cost for water service is high due to access or infrastructure construction costs, commercial development may not be the best option for increasing airport revenue. In this case, it would be advisable to identify cost-effective solutions or alternative land uses with reduced demand for water service before development plans move forward.



5.10 Infrastructure—Power/Telecom

KNOW

Electrical power, natural gas service, and reliable telephone and internet services are essential elements for today’s business facilities. Existing airport operations will already be operating with electrical and telephone service, but development of large tracts of land and particular uses, such as data centers, may require more power capacity than is currently available. The addition of substations and power plants has been important to certain airport developments, as upgraded electrical generation and distribution can be an attraction if not a requirement for industry. It is important to understand what is already in place and what may need to be added or improved as part of the development planning process.

SOUND BITE



[Having the pad] ready and advance work done on development sites gives an industrial park a considerable advantage over competing facilities.

HAVE

The answers to the questions in this section of the toolkit will help guidebook users understand the existing power and communications networks available in the area and the implications for the airport development. The complete Infrastructure—Power/Telecom checklist is provided in Appendix B, “Chapter 5 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.


Identify Utility Providers

- **ELECTRIC SERVICE PROVIDER?** Will the development be served by a private power company? A public provider? Is the land within an existing franchise area?
- **NATURAL GAS SERVICE PROVIDER?** Will the development be served by a private company? Is the land within an existing franchise area?
- **TELEPHONE PROVIDER?** Does the provider offer local and nationwide service or only local service?
- **INTERNET SERVICE PROVIDER?** Is Internet service provided through the telephone company? Are cable or satellite connections available?
- **FIBER OPTIC AVAILABLE?** Is there an option for VOIP (Voice over Internet Protocol) service via a high-speed fiber optic service?

Identify utility providers	Notes
Electric service?	
Natural gas?	
Telephone provider?	
Internet service provider?	
Fiber optic available?	

Connecting to Services

- **DISTANCE TO NEAREST ELECTRICAL/GAS CONNECTION?** If electrical or gas connections are not already present at the site, how far is the nearest supply line?
- **POWER COMPANIES FUND EXTENSIONS/CONNECTIONS?** Does the utility company install the service line for a potential ratepayer? This can be determined through a conversation with the power company.
- **UNDERGROUND INSTALLATION OR RELOCATION REQUIRED?** Does the approval authority (or a local ordinance) require that power lines be installed or relocated underground when new development is proposed? Installation or relocation can be very expensive, and the requirement should be identified early in the evaluation process by reviewing site plan and zoning standards.

 Service connection	Notes
Distance to nearest electrical/gas connection?	
Extension/connection funded by power company?	
Requires underground installation or relocation?	

Capacity

- **UTILITY CAPACITY CONSTRAINTS?** Are there any issues with the reliable electric, gas, or telephone supply? Is the system vulnerable to storms or flooding?
- **SYSTEM IMPROVEMENTS NEEDED?** Would any improvements have to be made by the power company to serve the future commercial development? Are there currently any capacity or peak-use issues?
- **PLANNED SYSTEM IMPROVEMENTS?** Is the utility company proposing to create additional capacity to improve resilience of the system?

 Capacity	Notes
<i>Utility capacity constraints?</i>	
Reliability issues?	
Vulnerable to storms/flooding?	
<i>Needed improvements?</i>	
<i>Planned improvements?</i>	

DO

Based on the answers to the questions in this section of the toolkit, guidebook users can determine whether power and telecom infrastructure for the potential development will pose any limitations due to:

- **The availability of required utility service, either at the site or within the service area**
- **The anticipated cost of design and construction/connection for utility infrastructure**
- **The utility capacity available and reliable to serve the anticipated demand based on the type and size of development**

If utilities are available, reliable, and have the capacity to serve the proposed development with a reasonable connection cost, then utilities would appear not to be a limiting factor for development. If this review finds access or capacity limitations to utility service or that the cost for utility service is high due to access or construction costs, commercial development may not be the best option for increasing airport revenue. It is advisable to identify cost-effective solutions or alternative land uses with reduced demand for utility service before development plans move forward.



5.11 Surrounding Land Use

KNOW

How will the development fit in? Reviewing surrounding land use means looking past the immediate borders of the airport to assess the character and use of developed property in the area. The limits of consideration may depend on how the land uses change with distance from the airport, or if there are physical barriers (e.g., streams, a highway, or a park) that affect the land use pattern.

Identifying surrounding land uses is a first step in:

- **Understanding the context of the proposed future development**
- **Evaluating the compatibility of proposed uses with surroundings**
- **Locating stakeholders who may support or oppose the future development**
- **Finding important synergies for project marketing**
- **Identifying potentially competing developments**

Surrounding land uses can be indicative of the type of support or opposition that may greet a proposed development at the airport. Adjacent residential development can signal potential opposition to airport land development in the approval process due to noise and traffic concerns. Existing industrial uses are not likely to have those concerns. Large institutions can indicate potential users for a development project and strategies for marketing the development to related businesses.

SOUND BITE



The traffic pattern for the airport is to the east side of the airport, so there are no school overflights. There are some noise complaints, but these noise complaints appear to be primarily related to helicopter training conducted at the airport.

The existing land uses around the airport may or may not align with best practices regarding airport land use compatibility. *ACRP Report 27: Enhancing Airport Land Use Compatibility* provides a comprehensive explanation of compatible and incompatible land uses around an airport and presents strategies for improving existing conditions. For purposes of the Site Evaluation Toolkit, the discussion of existing land uses is aimed at identifying the land uses that are in place rather than those that should be in place from the standpoint of airport land use compatibility.

Although surrounding land uses can be identified from personal observation and “windshield surveys,” broader information often can be obtained from aerial photographs, land use surveys, and master plan documents obtained from local planning offices. A Community Master Plan may describe the preferred future land uses through a 20-year planning view. Such a plan can be an indicator of what is to come over time. The Zoning Map will show what land uses are currently permitted around the airport property. It will be an indicator of new uses that would be permitted on vacant land near the airport or in existing buildings. In both cases, the new uses may differ from the existing uses.


HAVE

The answers to the questions in this section of the toolkit will allow guidebook users to establish a profile of the surrounding land use pattern. The complete Surrounding Land Use Checklist is provided in Appendix B, “Chapter 5 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **CHARACTER OF SURROUNDING LAND USE? Which of the following descriptors best captures the general character of the surrounding land uses?**
 - **Urban?** The property is in a highly developed area with busy streets and a mix of uses.
 - **Suburban?** The property is outside an urban area, with lower-density commercial and residential development.
 - **Rural?** The property is in the country, with few commercial uses apart from the airport itself.

↗	Surrounding land use character	Check to select	Notes
	Urban?		
	Suburban?		
	Rural?		

- **TYPE OF SURROUNDING LAND USES AND PROXIMITY TO THE AIRPORT?** Of the following land uses, which are present in the area surrounding the airport?
 - **Single-family residential?** Are homes adjacent to or near the development site? Do they have large lots?
 - **Multi-family residential?** Are apartments or townhouses adjacent to or near the development site?
 - **Local retail?** Are any commercial uses near the development site?
 - **Regional retail, medical facilities?** Are any regional facilities in the area? If so, they may represent potential sources for supporting businesses and suppliers that may want to locate nearby or, specifically, closer to the airport. Such facilities also may generate airport customers.
 - **Educational institutions?** Nearby universities, colleges, private schools, and training centers also can generate demand for space or related businesses.
 - **Industrial?** Are any heavy or light industry or business parks in the vicinity?
 - **Agricultural, recreation, open/vacant space?** Are parks or wildlife preserves near the airport that would be sensitive to commercial development?

 Land use types and proximity to airport	Check to select	Notes
Single-family residential?		
Multi-family residential?		
Local retail?		
Regional retail/medical facilities?		
Educational institutions?		
Industrial?		
Agricultural, recreation, open space/vacant?		

- **FUTURE LAND USES?** What types of new or future land uses are permitted near the airport?
 - **Types of Uses Permitted by the Current Zoning Map?** The Zoning Ordinance includes a Zoning Map that indicates what uses are currently permitted on which parcels of land. If the ordinance has been revised recently, the new map may show land uses that are different from the existing uses.
 - **Types of Future Land Uses in the Master Plan?** The Community Master Plan includes a Future Land Use map that defines the community’s long term land use vision. This may be different than existing uses.

 Future land uses	Notes
Types permitted by current Zoning Map?	
Types of future land uses in master plan?	

DO

Based on the answers to the questions in this section of the toolkit, guidebook users can determine the nature of the existing development surrounding the airport and consider whether it might have a positive or a negative influence on development plans based on both the character of the surrounding land use pattern and the types of land use development surrounding the airport.



If the results of this evaluation indicate that the proposed land uses for airport development would be compatible with existing and planned future development around the airport, this would appear to pose no limitation to development. In fact, compatible land uses around an airport can have a positive influence on future development through political and economic support. If the review finds that the character of land uses around the airport is not compatible with the proposed development concept at the airport, however, this should be taken into consideration. Extended public objections may be raised against incompatible airport



development proposals. These, in turn, can increase development costs through extended timelines for permitting and approval, and they can increase legal and other consulting fees. If community objections are likely, the airport is advised to consider an investment in public outreach to gauge public support and initiate an initial community conversation before proceeding.

5.12 Regulatory Constraints/Permitting

KNOW

Regulatory constraints are a major challenge for real estate development because of the time and resources required to work through them and, to some degree, because of the unpredictability of the process. Real estate development is subject to many regulatory controls, which vary depending on state and municipal location and applicable laws and standards. Some of the more common regulations are discussed in this section of the toolkit to identify permitting requirements for project evaluation purposes. Once specific regulatory constraints have been identified, the airport may find it is possible to minimize the amount of permitting required for the project through design choices that avoid regulatory triggers.

SOUND BITE

Recently, 42 acres of the industrial park have been certified under state law as "shovel ready" and available for fast construction permitting.



For airports, the first level of analysis is a review of the controls imposed by FAA grant assurances, regulations, and policies (see Chapter 3, "Legal Considerations"). For grant-obligated airports, a review of grant assurances with respect to a development proposal must be a first step.

FAA

- **FAA COMMUNICATION** Early and frequent communication with FAA is strongly advised to determine the need for FAA reviews and actions and to keep those processes moving.
- **DEVELOPMENT RESTRICTIONS** The land considered for airport development should be reviewed to identify areas subject to development restrictions on building height and location. These provisions are put in place to preserve airport safety and efficiency, which will always be of primary importance. At an airport, development preferences must be a secondary consideration. Examples of these restrictions include Runway Protection Zones (RPZs) and sight lines required for air traffic control towers (when present).

Federally obligated airports also are subject to NEPA requirements, which mandate a review of environmental impacts of federal and federally-funded actions. The level of detail required in an environmental review can vary depending on whether there is minimal site development or, at the other extreme, considerable excavation and construction. The level of a NEPA review will also vary depending on the environmental sensitivity of the development area.

The Physical Site Features Checklist will help guidebook users identify whether sensitive environmental features are present that may require a permit if there are impacts from the proposed development. For example, wetlands larger than 5 acres in size require permits for disturbance, and development in a regulated wetland area is restricted or heavily regulated. The wetland permitting process can be lengthy and expensive, and should be avoided where possible by directing development away from those areas. Habitats for threatened and endangered wildlife species also may generate potential development restrictions if such areas are present on the site. Wetlands and habitats for wildlife are considered as part of the NEPA review process and are permitted directly by the federal or state management agency.

Zoning regulations are commonly imposed at the local level, and may or may not apply to an airport's proposed development (see Chapter 2, "Fundamentals"). As a rule of thumb, local zoning control is usually applied only to areas outside of the AOA, which is generally described as

the area within the secured and fenced-in area of the airport. In some states, local zoning does not apply to any airport property. Where local zoning does apply, the airport's development plans and intended uses must be evaluated for compliance.

If the development is not permitted by local zoning regulations as proposed, obtaining zoning changes or variances may be an option but the potential for success or opposition must be assessed realistically, and the complete effort may add months or even years to the project timeline. It may make sense to pursue a zoning change if (1) community relations are sound, (2) the airport and municipality are on the same page regarding the need for economic development, and (3) a change would promote the highest and best use of the land. Making an adjustment to the proposed development plans may be another solution.

HAVE

The answers to the questions presented in this section of the toolkit provide information about regulatory agencies that may have jurisdiction over airport development projects and permits that may be required. This list is not intended to be exhaustive; rather, it identifies permits that are encountered fairly frequently in the land development process. The complete Regulatory Constraints/Permitting Checklist is provided in Appendix B, "Chapter 5 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

FAA Review and Actions

FAA does not issue permits, but the agency does review and take action on several things that may relate directly to plans for development on the airport. In some cases, FAA does not have direct legal authority to prevent an action, but may consider airport actions contrary to FAA direction as a violation of grant assurances. Gathering responses to the questions in this section and combining them with the answers from the Self-Assessment Checklist in Chapter 4 will enable guidebook users to consider which items may need to be reviewed by the FAA. This section in the toolkit also can function as a guide for a conversation with FAA's Airports District Office (ADO) about the development process and where FAA may need to become involved in a specific project.

FAA

- **DEVELOPMENT GENERALLY ACCEPTED?** Does the FAA generally approve of the development concept?
- **AIRPORT MASTER PLAN?** (See Chapter 2, "Fundamentals," for definition and discussion.)
- **ALP?** (See Chapter 2, "Fundamentals," for definition and discussion.)
- **EXHIBIT "A" AIRPORT PROPERTY MAP?** The Exhibit "A" document referenced in this guidebook is a snapshot of the inventory of parcels that make up dedicated airport property. Exhibit "A" indicates how the land was acquired, the funding source for the land, and if the land was conveyed as federal surplus land or government property. Other detached parcels owned by the airport sponsor that are dedicated to airport purposes also must be shown on Exhibit "A." The Exhibit "A" document must show all dedicated airport property regardless of the type of funds (AIP, state, local, etc.) used to acquire that property. All land described in a project application and shown on an Exhibit "A" constitutes the airport property federally obligated for compliance under the terms and covenants of a grant agreement.

- **FAA ARP SOP 3.00?** A standard operating procedure (SOP) document for FAA staff that establishes uniform procedures for reviewing and accepting Exhibit “A” Airport Property Inventory Maps.
- **LEASE TERMS?** (See Chapter 3, “Legal Considerations,” for information about FAA’s role in reviewing lease terms.)

Non-Aeronautical Use

- **LAND RELEASE?** (See Chapter 2, “Fundamentals,” for an explanation of a land release.)

Airspace Review

- **FAA FORM 7460-1 NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION?** This form implements the requirements of 14 CFR Part 77. Generally, this application is required for development of land both on and off airport property, for any construction or alterations which may affect navigable airspace.

FAA review and actions	Check to select	Notes
Checklist to discuss FAA involvement with FAA ADO?		
Development generally?		
Airport Master Plan?		
Airport Layout Plan?		
Exhibit “A” Airport Property Map?		
FAA ARP SOP 3.00?		
Lease terms?		
Non-aeronautical use?		
Land release?		
Airspace review?		
FAA Form 7460-1 Notice of Proposed Construction or Alteration?		

NEPA Environmental Review

- **NEPA REVIEW REQUIRED?** If a proposed airport improvement or development requires a federal action by FAA or another federal agency, it must adhere to NEPA. Some states also have legislation requiring environmental review. If a NEPA review is required, determine which of these two levels of review would be required.
- **CATEGORICAL EXCLUSION (CATEX) LIKELY?** A CATEX applies to categories of actions that FAA has determined, based on previous experience, do not have significant individual or cumulative impact on the quality of the human environment except in extraordinary circumstances. A CATEX is not an exemption or waiver of NEPA review; rather, it is a level

of NEPA review and documentation that must be prepared for the project file to identify why no additional environmental review is necessary.

- **ENVIRONMENTAL ASSESSMENT (EA) REQUIRED?** An EA is prepared by an airport sponsor to determine whether a proposed action will cause a significant effect on the human environment. A significant effect would exceed regulatory thresholds/limits. An EA describes a proposed project and its alternatives, summarizes the environmental analysis and conclusions, and is circulated to the public. The public may comment on an EA. Based on the EA analysis, FAA will either approve the proposed action by issuing a Finding of No Significant Impact (FONSI) document or require further analysis that is documented in a subsequent Environmental Impact Statement (EIS).

↗	Check to select	Notes
NEPA environmental review		
<i>Does NEPA apply?</i>		
<i>If yes, which review applies?</i>		
Categorical Exclusion (CATEX)?		
Environmental Assessment (EA)?		
<i>State-level legislation?</i>		


Environmental

- **CONTAMINATION PRESENT?** Is contamination known or suspected from past use? Are there records of past violations or reported spills? If so, environmental investigation will be needed. A significant amount of information is provided in this section because, should outstanding environmental contamination exist on the site, this issue will need to be resolved before the property can be developed or marketed to others for development. The investigation and remediation process is described in the following sections:
 - **Phase I Environmental Site Assessment (ESA) needed/completed?** A Phase I ESA is the first level of evaluation for environmental concerns such as contamination. In this process, the past use of the site and related records are examined, and a site evaluation is conducted to determine if there are any indications of contamination or other environmental liabilities. A specialized consultant should be engaged to perform this work. Prospective purchasers or lessees would likely require this level of analysis.
 - **Phase II ESA needed/completed?** If the Phase I ESA identifies areas of environmental liability, termed *recognized environmental conditions* (RECs), a second, more detailed evaluation should be completed by a specialized consultant. This evaluation is completed to determine if remediation or cleanup is required to address the RECs. The evaluation may include testing of soil, groundwater, or other media and comparison of the test results to regulatory environmental standards.
- **REMEDIATION PLAN NEEDED/COMPLETED/APPROVED?** If remediation is required, cleanup plans or other actions designed to address contamination or other RECs may be subject to review and approval by an agency or agencies at the state or federal level prior to implementation of the development plan. What agency controls remediation of



contaminated sites for the project location? It is important to secure the appropriate plan approvals before expending resources on remediation from the controlling agency.

- **REMEDIATION COMPLETED?** If cleanup has taken place, has the regulatory agency approved the work? Are there any restrictions on use of the site as a result of the contamination or remediation strategy? For example, soils contaminated from historic activity may be capped instead of removed, but use restrictions may be enforced that prevent specific uses. If a restriction is in place, was a deed restriction required? If a deed restriction is in place, it will show up in a title search.
- **REMEDIATION NOT COMPLETED?** If remediation has not been completed, when is it scheduled? In most cases, marketing a site to potential users will not be feasible if there is outstanding contamination.
- **WETLANDS FILL OR CROSSING PERMITS NEEDED?** The U.S. Army Corps of Engineers administers the day-to-day federal wetlands program, including individual and general permit decisions, although other federal agencies may also participate in the permit review process. In some states, the federal wetland permitting process may be administered by a state's environmental department. In some cases, a state and/or local government may administer an additional, more restrictive permitting process. Generally, expedited permits may be available for very limited wetland disturbance, such as constructing a crossing to access upland areas. Projects that disturb larger wetland areas are generally discouraged and restricted unless they will result in a significant public benefit.
- **FLOODPLAIN ENCROACHMENT PERMIT?** Floodplains are regulated under Executive Order 11988 (Floodplain Management) and administered at the state level by the state's environmental office and at the local level through various floodplain administration offices. Floodplains are defined by FEMA flood insurance rate maps (FIRMs) that can be found online. Construction projects are discouraged within a 100-year floodplain, but if impacts are unavoidable, they require a state permit and must also meet any local jurisdictional permitting requirements. As with wetlands, it is best to avoid encroachment to the extent possible and thus keep regulatory complications at a minimum.
- **FLOOD INSURANCE NEEDED?** If existing or proposed buildings are within the 100-year floodplain, flood insurance is likely to be required for any financing. The question of whether a building is in floodplain is determined by comparing the floodplain elevation with the elevation of the building's lowest floor level. The assistance of a consultant may be needed.

 Environmental	Check to select	Notes
Contamination present?		
Phase I Environmental Site Assessment (ESA) completed?		
Phase II ESA completed?		
Remediation plan approved?		
Remediation completed?		
Wetlands fill or crossing permits needed?		
Floodplain encroachment permit?		
Flood insurance needed?		

Zoning/Local Approvals


- **NON-AERONAUTICAL LAND IN A DESIGNATED REDEVELOPMENT AREA?** Redevelopment areas are an economic development tool enabled by state legislation. Procedures for redevelopment areas vary across the country but generally, designation as a redevelopment area means the land is subject to a special Development Plan that will supersede underlying zoning. Is the airport's land in such an area?
- **LOCAL ZONING APPLICABLE?** Does local zoning apply to the proposed project? If not, continue to the next section. If so, consider the following elements of zoning regulation:
 - **Regulating municipality?** Applicable zoning may be administered by the local municipality, the county, or the region. Identify the applicable zoning authority and associated requirements.
 - **Subject land zoning district(s)?** Is the land proposed for development within an airport district? An industrial zone? A business district? Another similar zone that would fit the proposed uses? If so, check the permitted uses within the zone. If not, consider a rezoning.
 - **Permitted uses?** Zoning districts have lists of permitted uses within the zone that vary by location. Do the uses permitted by the local zoning district match the commercial development theme?
 - **Rezoning required?** The zoning district applicable to the land proposed for development may not match the existing or intended land uses. Some ordinances are old and do not reflect current development patterns or market demand. In these cases, the local regulatory body might be approached to consider a change to the zoning category (i.e., rezoning). A rezoning request must align with the community's long-range planning document. Is the community's Comprehensive or Master Plan document compatible with the rezoning request? If not, it is possible that the Community Comprehensive Plan or Master Plan could be amended. Although they are feasible, amendments to community planning documents can take considerable time, and the effort will add time and expense to the development process. Based on current political conditions, would a rezoning request likely be approved?

- **Minimum lot size?** What is the minimum lot size permitted? The minimum lot size will determine how many lots the land can yield for ground leases or as building sites.
- **Maximum height?** What is the maximum building height permitted, and how is it measured? The maximum height is generally expressed in stories or feet, and it may be measured to the eave or the peak of the structure. FAA restrictions also may affect permitted building height, although FAA's restrictions may not be recognized by local zoning ordinances. The developer needs to be aware of both requirements.
- **Parking requirements?** Parking requirements are typically expressed in number of spaces per 1,000 square feet and the number of required spaces is usually higher in suburban areas, which are more auto-oriented. Office space requires the most parking spaces, and distribution and data centers generally require the fewest. Site areas for the necessary parking must be reserved in design concepts.
- **Max floor area ratio?** The maximum floor area ratio may be abbreviated as "FAR" on planning documentation. A maximum floor area ratio is expressed as the relationship between the lot area and square feet of building, and puts a density limit on the size of the building permitted on-site. For example, a floor area ratio of 0.15 means that if a lot is 10 acres, the building floor area is capped at 65,340 square feet based on the following calculation:
 - 435,600 square feet [lot size] x 0.15 [floor area ratio] = 65,340 square feet.
 - Will the maximum floor area ratio be sufficient to accommodate the proposed project?
- **Building and lot coverage?** Zoning ordinances typically set limits on the amount of permitted lot coverage. The regulations usually include proposed buildings and structures as well as parking areas (impermeable surfaces). Remaining lot area must be in open space or be designed with permeable surfaces. Can the lot coverage requirements be met?
- **Site Plan approval or Conditional/Special Use Permit needed?** Most commercial and industrial development will require some kind of Site Plan approval. More intense uses may require a Conditional or Special Use Permit that regulates the use of the site for impacts such as noise and hours of operation.
- **Subdivision, land division, or site condominium approval needed?** Depending on the proposed lot layouts and method of land division, some type of approval may be required. These regulations vary by state. The local zoning office can help determine whether any land division regulations apply.
- **Variations needed?** Variations may be needed from height, setback, lot size, or similar standards (bulk variations) if the proposed development design does not fit the district requirements for a unique reason. Special findings are required before a variance can be granted, and the benefits of requesting a change in the zoning ordinance versus a variance should be considered and discussed with the applicable authorities in advance. Some states may also allow a *use variance*—a special exception that permits a use that is otherwise prohibited.
- **Local cooperation likely?** Community relations are very important if local zoning decisions will impact the permitting process (i.e., site plan approval, special use permit, variations). If an established, positive relationship exists, this will likely be helpful to the airport in navigating the permitting process. If no relationship exists, or



if the relationship has been adversarial on other issues, this could hinder the local permitting process. In this case, the potential for additional delay and expense should be factored into a decision to move ahead.

- Other approvals required?** In addition to local land use permitting, some local governments may also issue permits for things such as stormwater management, soil removal, wetland alteration, and construction in the floodplain, which are in addition to county or state permits for the same activity. There may also be unique local requirements such as a tree removal ordinance. Regional planning entities may add another layer of permitting for coastal commissions, watersheds, airport land use commissions, or urban metropolitan areas. To the extent possible, it is advisable to reach out to local and regional planning offices to identify permitting requirements based on preliminary development ideas.

		
Zoning/local approvals	Check to select	Notes
Designated redevelopment area contains non-aeronautical land?		
Local zoning applicable?		
Regulating municipality?		
Subject land zoning district(s)?		
Permitted uses?		
Rezoning required?		
Minimum lot size?		
Maximum height?		
Parking requirements?		
Maximum floor area ratio?		
Building and lot coverage?		
Site plan approval/special use permit?		
Subdivision, land division, site condominium approval?		
Variances needed?		
Local cooperation likely?		
Other approvals?		

134 Generating Revenue from Commercial Development On or Adjacent to Airports

It bears repeating that the checklist in this section of the toolkit is not intended to be exhaustive but to touch on some common permits and regulatory constraints that may be encountered during development. Specific states and local governments may have additional permit programs affecting the disturbance of particular natural features or activities. For example, development in waterfront areas may require special permits and soil disturbance may require certification for erosion controls from regional soil conservation districts.



The list of potential permit requirements shows how complicated it can be to identify permitting requirements for development projects. It is important to know which permits will be necessary for the project up front, both in order to make site design decisions and in order to estimate the timeframe and expenses involved in getting to construction. Any of the permitting processes reviewed in this section can add months and even years to the project timeline, so they deserve careful evaluation at this stage. Depending on the skills of available staff, this may be a task that can be delegated internally. For airports owned by a municipality, the planning staff may be able to assist. If staff is not available to assist, a consultant may be needed to complete all or part of this evaluation task.

The answers to the questions in this section can help guidebook users identify potential permitting requirements and use the results to consider whether the permitting process seems manageable or whether permitting issues exist that may pose significant challenges, delays, or costs. Depending on the scope of the project, the funds available, and the airport's risk tolerance, one or more significant permitting issues may deter development at this stage.



If, on completion of the Site Evaluation Toolkit, the conclusion is to move forward, the information discovered in this section can be brought forward to the Implementation Toolkit (see Chapter 6) to fine-tune the development strategy, including the site design, project timeline, and budget.

5.13 Market Conditions

KNOW

Understanding market conditions is an up-front necessity. This sentence could be the number-one most important statement in this Site Evaluation Toolkit. The state of the market for commercial uses must be taken into account when planning the development and particularly when considering potential uses. If these decisions are made in a vacuum, the airport may end up with significant investment into a development that does not match market demand. It is important to know:

- **The availability of land or built space in the market area**
- **The supply of comparable projects**
- **Prices from sales or rents**
- **Vacancy rates**

This information provides a baseline to estimate the market potential of a project at the airport location and the best opportunities by sector. For example, if the area has an oversupply of Class A office space such that rents are down, then that use would not be a profitable focus for planning, approvals, and marketing, unless a unique market force is driving the need for office space at the airport.

SOUND BITE

The airport was told by the master developer, “Just because you want office development doesn’t mean it is going to happen that way.” The new approach is: “Let’s let the market decide.”

Markets are variable by location and by use. For example, in some areas industrial vacancy rates are very low and demand is high, while office absorption is stagnating. An airport or municipal employee may be able to do some initial research. As a start, considerable information is available about local and nationwide commercial real estate from online sources, often created by real estate services firms such as Cushman & Wakefield, JLL, CBRE, and others. Such firms prepare periodic reports on regional real estate trends, which may include the development area. Service providers such as the CoStar Group also provide data on property sales prices.

A detailed market analysis requires professional assistance. A real estate advisor will provide not only the data, but also recommendations for the direction of the development. A market assessment by a real estate professional will require an up-front financial investment, but will also lower the development risk. The goal of the market study is to arrive at realistic conclusions regarding the likely absorption for certain types of development and thus the best plan for the site. For example, there would be little promise for a new office park if considerable vacant space with similar or better attributes already exists in the area. Additional market factors include the trends in passenger and cargo traffic noted in Chapter 4, “Self-Assessment Toolkit,” as passenger and cargo activity may support specific development types.

SOUND BITE


The airport hired a consulting firm to do a market study including what uses would be viable and how much land would be viable.



HAVE

A detailed market analysis will explore and answer questions about the real estate market around the airport. An initial exploration by airport or municipal staff may offer a good starting place. The questions in this section of the toolkit focus on examples of the information that is important to understand, but the list is not exhaustive. The complete Market Conditions Checklist is provided in Appendix B, “Chapter 5 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **VACANCY RATES AND TRENDS?** What are the vacancy rate percentages in the area for potential uses (industrial/office/retail/logistics)? Have they been increasing or declining?
- **ABSORPTION RATES AND TRENDS?** How long has it taken for comparable space or land to be sold, leased, or rented? Faster absorption indicates more demand for that kind of space.
- **AVERAGE RENTS?** How have average rents been trending? Do they vary based on location, access, or type of building? How about ground leases at the airport?
- **LAND AND BUILDING SALES RECORDS?** Given that land sales are one option for airport revenue, what are current prices for raw land, subdivided land with utilities, and office, industrial, or retail buildings?
- **SIGNIFICANT RECENT SALES AND LEASE TRANSACTION?** Major real estate transactions in the area can indicate that significant space is coming on the market (or has been taken off), or what type of business or industry may be moving in.
- **INVENTORIES OF AVAILABLE SPACE AND LAND?** Where is the competition? Is there a glut of available business park land? Is it close to the airport? Will the airport’s site be the only available location for new development?
- **APPARENT GROWTH SECTORS?** Is there a trend in new medical office buildings? Modern, high-ceiling warehouses? What type of development is in highest demand?
- **ESTIMATE OF MARKET AREA FOR PROPERTY?** What is the likely area that the airport property will draw from for tenants, lessees, or purchasers? The metropolitan area? A bi-state region? Airport development is unique in that market competition also exists from similar airports across the country.
- **ATTRIBUTES OF COMPETING BUSINESS PARKS?** What do successful, comparable development projects offer? How do they compare to the airport project site with regard to accessibility? Do they have upscale design standards? Do they offer unique amenities? Do they have high-profile tenants? Such information will offer clues for features that should be programmed into a project to make it competitive.

	
Real estate market analysis	Notes
Vacancy rates (by percent) Increasing/declining?	
Absorption rates/trends?	
Average rents?	
Land/building sales prices?	
Significant recent sales/leases?	
Available space/land inventories?	
Apparent growth sectors?	
Estimate of market area for property?	
Competing business park attributes?	

DO

The results of the market conditions assessment can be used to inform an initial decision about whether on-airport development makes sense as a revenue generation strategy in the current market. The market conditions assessment provides guidance that will need to be measured against the airport’s risk tolerance. If there appears to be market demand, the information can be further refined.

The real estate market information is then combined with the other site assessment information to consider whether uses with strong market demand can be accommodated on the development sites available at the airport. This step can be part of the analysis provided by the market conditions assessment. (Generally, land uses have an associated lot size that can be used for planning purposes.) If the market demand can be served by the sites available for development at the airport, then indications are positive for potential revenue generation through on-airport development. If the real estate market is weak overall, or if the airport cannot provide the type of building site that is in demand, these conditions would suggest caution and further investigation.



5.14 Workforce Attraction

KNOW

The topic of workforce attraction may seem to be a detour from the subject of brick-and-mortar development, but it is a building block in the success of developments that must attract tenants, developers, and ground lessees, and workforce attraction can be a factor in the market conditions analysis.

A tenant, a potential master developer, or any user of the site will need to attract and retain workers and executives. Will this workforce want to live, shop, and raise families in the area surrounding the new development or within a reasonable commuting distance? If the local labor force is limited and employees must be recruited or relocated from other areas, will they be attracted to the airport location? The industry interviews conducted for the ACRP Project 03-39 research confirmed that workforce attraction is an important element of successful development efforts.

HAVE

The answers to the questions in this section of the toolkit will help guidebook users explore the existing conditions in the community related to workforce attraction. As with other sections in this guidebook, the list is informative but not exhaustive. The information can often be gathered from a local or regional chamber of commerce or other economic development office (in part because such entities may have already assembled the information for a business attraction initiative). The complete Workforce Attraction Checklist is provided in Appendix B, “Chapter 5 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **TRAINING PROGRAMS AVAILABLE?** Are training programs available to airport or development employees? Training can be sponsored privately or publicly. Some economic development agencies provide funding for training in targeted industries.
- **HOUSING CHOICES?** Is a supply of rental and for-sale housing available to serve various income levels? What are the average costs? If there is a shortage or a lack of low- to mid-range housing options near the airport, the general workforce may need to commute a distance for more affordable homes.
- **COST OF LIVING?** Housing costs are a major part of the cost of living (or the cost of maintaining a certain standard of living), but the cost of living also includes other factors, such as transportation, food, taxes, healthcare, and costs of other goods and services. Urban areas often have a higher cost of living but may also offer higher salaries. The cost of living in a particular area can be a complicated assessment, so a more general review makes sense at this point. Marketing advisors or economic development offices may be able to provide useful data, and several websites offer cost-of-living comparisons.
 - **High?** Costs of goods and services are relatively high; and more working hours or higher salaries are needed to pay for necessities.
 - **Moderate?** Expenses are lower, and more economic diversity may be represented in the population and among businesses.
 - **Low?** Expenses for basic necessities are lower, but average salaries may also be lower.

Existing conditions	Check to select	Notes
Training programs available?		
Housing choices?		
By income levels?		
Both rentals and for-sale?		
Average costs?		
Cost of living?		
High?		
Moderate?		
Low?		

- **SCHOOL SYSTEMS?** Often a major factor in attracting corporations and their executives and employees, a highly rated school system offers an area a competitive advantage. The school system should publish statistics that can reveal problems or benefits.
 - **Adequate facilities?** Are existing schools overcrowded? Are class sizes large? Have new facilities been constructed recently? Is there room for growth? What are the school budget trends? Does the population support the public school budget?
 - **Graduation rates?** If graduation rates are less than desirable, they may make the communities associated with those schools less attractive to incoming families and workers.
 - **College acceptance rates?** What percentage of the area’s high school graduates goes on to college? What proportion of the applicants from these schools is accepted at higher-ranked universities? Like high school graduation rates, college acceptance rates can be seen as a proxy for the overall health of a school system and its potential attractiveness to families.

- **ENTERTAINMENT/CULTURAL OPTIONS?** Entertainment and recreation are major aspects of the quality of life in a location. Are there theaters, local sports, and museums?

- **LANDSCAPE/NATURAL ATTRACTIONS/RECREATION?** Are natural features a source of recreation or local identity (e.g., beaches, mountains, state or national parks, or monuments)? A good park system also can be an important attraction.

- **POPULATION TRENDS?** Population trends can be collected from local or state planning offices or found online at the U.S. Census Bureau website (www.census.gov).
 - **Growing?** Are people moving to the area? Are businesses or institutions attracting new employees? Are new residential developments selling out or renting up?
 - **Declining?** Has the area been losing people due to job losses, crime, or other reasons?

- **HIGHER EDUCATION FACILITIES?** Are colleges or universities located in the area? Higher education facilities can be a workforce attraction because of the cultural and economic activity and general vibrancy that a college brings to a town.

 Existing conditions	Check to select	Notes
<i>School system available?</i>		
Adequate facilities?		
Graduation rates?		
College acceptance rates (%)?		
<i>Entertainment/cultural options?</i>		
<i>Landscape/natural attractions/recreation?</i>		
<i>Population trends?</i>		
Growing?		
Declining?		
<i>Higher education facilities?</i>		

The detailed, local nature of this list may suggest that these items require excessive effort to research, but much of this information is readily available, and local knowledge on the part of the airport sponsor will play a role in the assessment. The various educational, natural, and cultural assets of an area can be an element in the marketing strategy for the development.

DO

Based on the findings of this section, guidebook users can consider how the area under consideration for development—and the airport area specifically—stacks up against other development locations with regard to workforce attraction. If the market analysis indicates that the airport will be competing for development on a national or state-wide scale (e.g., against other airport locations or other certified industrial parks), this will be an especially important, distinguishing factor (whether positive or negative). If the assessment reveals concerns about the quality of life in the region and the associated ability to attract a qualified workforce, this will increase the development risk.



5.15 Local/Regional Context

KNOW

Is the local and/or regional economy strong enough to support a significant new commercial real estate development? The information collected regarding the role of the airport in the Self-Assessment Toolkit is also very applicable in this part of the Site Evaluation Toolkit. Whereas the earlier checklists focused on the role of the airport within the community, however, this section looks at broader conditions that feed into the issue of economic viability. If a professional market study is prepared, the items listed in this section will likely be considered and incorporated into the study's findings and recommendations. Information should also be available from government agencies, chambers of commerce, and similar sources.

SOUND BITE

The airport is in an economically depressed area overall, and the airport is located in the very lowest income area of the city. This makes it a tough sell to developers.

HAVE


The answers to the questions in this section of the toolkit will help guidebook users evaluate the general economic health of the region. The complete Local/Regional Context Checklist is provided in Appendix B, "Chapter 5 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

Economic Trends

- **UNEMPLOYMENT RATES AND TRENDS?** What were the local and regional unemployment rates during and since the Great Recession? Has employment rebounded, and if so, how significant is the rebound? What trends are projected for the next 5 years?
- **JOB GROWTH OR DECLINE?** Has the area been creating or losing jobs? In what sectors?
- **POPULATION TRENDS IN THE COUNTY OR REGION?** Looking beyond the municipality, what has been happening to the population in the larger region? Has the population been increasing or decreasing?
- **EMPLOYMENT TRENDS BY LOCATION?** What are the job and growth trends in the region's accessible urban centers? Are the urban centers becoming locations for job growth, or is the growth occurring in the suburbs?
- **GROWTH TRENDS OF MAJOR EMPLOYERS?** Are major industrial or commercial plants or corporations located in the region? If so, what's happening with their workforce? Are they adding employees? Have they laid off workers in the last few years?

Growth/Health of Retail Centers

- **NEW PROJECTS?** Has there been recent/new investment in retail use? Are there new downtown projects? New projects near the airport?
- **SHUTTERED MALLS?** Out-of-date malls with vacant storefronts are a challenge in many suburban areas. Are these found in the airport's immediate area? Have they been repurposed?

	
Economic trends	Notes
<i>Unemployment rates/trends?</i>	
During Great Recession?	
Since Great Recession?	
Locally/regionally?	
Five-year projections?	
<i>Job growth/decline?</i>	
<i>Sectors?</i>	
<i>County/region population trends?</i>	
<i>Employment trends by location?</i>	
<i>Major employer growth trends?</i>	
Growth/health of retail centers	Notes
New projects?	
Downtown/near airport?	
Shuttered malls?	

DO

Considering the responses to this section of the toolkit guidebook users can assess the overall strength of the regional economy. Are there signs of strength and growth based on employment, project development, and population trends? Conversely, are there signs that the regional economy is in decline? The information gathered in this section of the toolkit offers another way to assess market strength, and it factors into the project risk assessment. Are any findings of concern? The information generated in this assessment may not, by itself, determine the airport sponsor’s overall conclusion about a potential project; however, when added to other findings from checklists completed in earlier assessment sections, it may be the tipping point in a “Stop/Go” decision about whether on-airport development is likely to generate revenue for the airport.



5.16 Development Incentive Programs

KNOW

Incentives to attract development are used at all levels of government and can be helpful to a project's success. Some states and cities have become very aggressive in creating incentives to woo industry from neighboring locations. The literature review and case studies carried out for this project revealed a broad spectrum of incentives, ranging from none at all to tax credit programs and regulatory waivers.

In most cases, development incentives are created by statute and administered by regional or state agencies. The availability of such incentives can be an important selling point for an airport site. Depending on the locality, however, incentives can be politically controversial, and they can be attacked as providing an unfair advantage compared to private-sector competition. If no development incentive programs are available for airport development, it may be helpful to approach elected officials to ask whether such incentives can be adopted to benefit both the airport and other development projects in the community.

SOUND BITE

There is coordination with the taxation practices at the state and local level and tax advantages are very important to attracting new business. It's still hard to compete with other places that have huge incentives by comparison.

HAVE

The answers to the questions in this section of the toolkit will help guidebook users evaluate the current status of development incentives for airport development and to identify potential opportunities for increasing such incentives. The complete Development Incentive Programs Checklist is provided in Appendix B, "Chapter 5 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **INCENTIVE PROGRAMS USED IN THE REGION?** What incentive programs, if any, are currently in use in the region? Are multiple programs available? Do they focus on specific geographic areas? Urban areas? Economically disadvantaged areas? Airport areas?
- **ADMINISTERED BY?** Who administers the existing incentive programs in the region (i.e., the state, city, or county)?
 - **Tax credits for investment?** Are tax credits offered for specific investment actions? For capital investment in buildings? For purchases of manufacturing equipment? For purchases of land?
 - **Tax credits for job creation?** Are there tax incentive programs for job creation? Are they offered as tax credits per job? What are the specific requirements? Must the jobs be maintained or retained at a specific business location for a specific period of time?
 - **Tax credits for employee training?** Are there tax incentives to help fund special skills training? For a specific industry or business?
- **EXPEDITED PERMITS AND APPROVALS?** Some states employ "shovel-ready" programs to designate sites for expedited approvals or to designate areas where sites can receive preferential, top-of-the-pile treatment. Do such programs apply to airport development? Could such a program be developed?



- **ELIGIBILITY CRITERIA?** For the incentive programs that have been identified, what are the specific requirements for inclusion? Is there a need to add or expand incentive programs to support the airport development? Preliminary contact with officials is important to gauge the level of support available for an incentive program benefiting the airport.
- **INCENTIVE AREA INCLUDES AIRPORT?** If the incentive area is geographic, is the airport’s land for development located within that area? If not, can it be expanded? Which state or local officials are likely to support an incentive program for the airport’s land? This is another area in which positive community relations can benefit the airport. Political will and support are needed for an expansion or for a new program that would provide incentives for the airport land.
- **FOREIGN TRADE ZONES?** Is the airport land within a Foreign Trade Zone (FTZ)? This program allows businesses located within a designated FTZ to defer or avoid normal tariffs and duties on imported materials and goods that are held there; such tariffs and duties are charged only if and when the materials or goods are exported from the zone for domestic consumption.

Available incentives	Notes
Regional programs?	
Multiple programs available?	
Geographic focus area?	
Urban/disadvantaged areas?	
Airport areas?	
Program administrators?	
Regional?	
State?	
City?	
County?	
Tax credits?	
For investment?	
For job creation?	
For employee training?	
County?	
Expedited permits/approvals “shovel ready”?	
Eligibility criteria?	
Incentive area includes airport?	
Foreign Trade Zones (FTZs)?	

DO

The answers to the questions in this section of the toolkit will help guidebook users evaluate whether programs are already in place or whether it is likely such programs could be created or expanded to encourage on-airport development. If programs are in place, this is a positive indicator for on-airport development. If programs are not in place but there is political will to move in that direction, the airport will need to assign staff time and financial resources to coordinating this effort on behalf of the airport. This is a situation in which consistency of economic goals between the airport and local and state government—and good relations with the community—can produce good results. If no programs are in place and it is unlikely that programs will be added, airport development sites will be at a competitive disadvantage in the marketplace, a situation that increases the development risk. To compensate, the sites will need to demonstrate other benefits such as site amenities or a strong real estate market.



5.17 Summary

After working through the Site Evaluation Toolkit, the airport sponsor should have a comprehensive file of information on the development site. This information will then be available for consultants engaged for specific development, marketing, and other assignments. Having this groundwork available also will answer many questions for potential partners or investors. Primarily, though, the airport sponsor will use the product of the toolkit to assess whether the site in question can support a development project, and whether that project is likely to be successful and economically viable. The physical, market, regulatory, and other analyses should answer these questions:

- **Does the airport land have the attributes necessary to be competitive with other real estate locations?**
- **Does the site have serious physical constraints or regulatory barriers that would be costly to overcome?**
- **Is the net usable land area sufficient to construct a competitive development while maintaining adequate land for future aviation needs?**
- **Is the region growing to the extent of absorbing demand for new land or buildings?**
- **What real estate sector would be the most successful?**
- **Should the development focus on aviation-related businesses or more diverse industries?**
- **Is the airport's goal to sell parcels, lease sites, or construct buildings?**
- **Does the airport sponsor have the resources to develop the project independently, or would a partnership or joint venture be desirable?**
- **What FAA review will be required as part of the development process?**
- **Would the proposed development be consistent with local and regional economic development planning and goals?**
- **Should development planning and necessary commitment of resources proceed?**

The conclusions drawn from the Site Evaluation Toolkit will reflect the balancing of many factors. In some cases, the airport's direction and decision may be obvious: a site needing expensive construction techniques and subject to numerous regulatory hurdles is not a good bet in a market with low rents and demand for the intended land use. At the other end of the spectrum, a site with relatively low development costs, such as a large, flat, unconstrained site where industrial demand is growing and the local government is supportive of development, could likely command favorable rents and would be a good bet. In most cases, however, both positives and negatives will exist that must be weighed to reach a Stop/Go decision. A supportive political situation can provide a stimulus, but the market demand needs to be there.

Go decisions reflect positive scenarios with most or all of the following characteristics:

- **Developed planning tools in place**
- **Adequate unencumbered land**
- **An accessible location**
- **Anchor industries or institutions in the region**
- **Adequate utility capacity**

In addition to these features, a positive scenario also results from compatible land use and zoning; unmet demand for commercial, industrial or retail development; and community and political support for growth and airport success.

The lack of some of these features does not necessarily preclude a feasible development, but more expense, time, and risk will be involved to overcome the challenges that are present. If very few of these positive attributes are present, a development project may be very risky or unsuccessful. As the purpose of the development project is to enhance airport revenue, the profit (and revenue producing) potential of the development must be weighed against other strategies. *ACRP Report 121: Innovative Revenue Strategies—An Airport Guide* describes a collection of other revenue-producing options such as expanding airport-provided services (i.e., ground handling, fuel sales), natural resource and energy development, and value capture techniques. In this guidebook, the techniques outlined in Chapter 7, “Off-Airport Considerations and Revenue,” also suggest ways for the airport to generate revenue through off-airport development with less financial investment and lower risk. The airport may choose to pursue both on- and off-airport development strategies in parallel if resources are available. both on- and off-airport development strategies in parallel if resources are available.





CHAPTER 6


Implementation Toolkit

6.1 Introduction

The Self-Assessment Toolkit (Chapter 4) and Site Evaluation Toolkit (Chapter 5) were essentially fact-finding efforts, enabling guidebook users to assemble detailed information about the airport, its proposed development site, and the nature of its surrounding community. The steps in this Implementation Toolkit (Chapter 6) focus on taking action on the basis of that collected information.

Initiating this toolkit signifies that the airport sponsor has:

- **Completed the self-assessment and site evaluation analysis**
- **Determined that sufficient feasibility and opportunity exist to proceed to the next phase of analysis**
- **Determined that market and physical conditions are favorable or can be reasonably overcome**
- **Obtained governance approval to dedicate additional resources to continue development planning**
- **Defined the basics of a development concept plan**

The Implementation Toolkit includes two principal elements. The first element addresses a financial analysis, based on a preliminary plan, to project costs and revenue for the proposed development. At the end of this section, it will be possible to determine whether the development appears to be financially feasible. The second element considers a strategy for project development and management, including some action-oriented steps necessary to make the plan a reality. At the end of this section, the airport sponsor should have a solid understanding of who will be on the project team and how management responsibilities will be assigned. The 19 checklist sections inserted in the text include the following icon in the header as a reminder that the complete checklists can be found in Appendix C, “Chapter 6 Checklists,” and that customizable copies of the checklists can be downloaded from the *ACRP Research Report 176* webpage: 

The checklists cover the following topics:

- **Preliminary Development Plan**
- **Project hard costs**
- **Project soft costs**
- **Funding sources and typical revenue opportunities**
- **Miscellaneous revenue**



- **Development program refinement**
- **Internal project management structure**
- **Community outreach strategy**
- **Identifying stakeholders**
- **Creating a message**
- **Outreach portfolio**
- **Revealing project plans to the public**
- **Permits and approvals (in two parts)**
- **Project team components**
- **Incentives**
- **Funding and financing**
- **Development and partnership strategies**
- **Marketing**
- **Construction management/property management/operation**

This guidebook is not intended to replace proper professional expertise. At many points in the development planning process, consultants may be needed (e.g., in finance, marketing, legal services, or engineering). The specific needs of each project will require the skills of a team, the nature of which will depend on the size and skill set of the airport staff and the accessibility of other municipal staff resources. When consultants are needed to provide professional expertise, the investment is money well spent. Although consulting fees add up-front expenses to the project, these costs will help prevent costly problems down the line, and the consultants also provide reliable information for future decision-making.



Even if the airport sponsor will not be directly responsible for the execution of the financial analysis or the management decision to move forward, working through the Implementation Toolkit can still be of value. Consultants will gather information and offer options, but it will rest with the airport, as the property owner, to ultimately make decisions. By understanding the financial analysis process as well as the choices and decisions to be made, the airport can act as an informed client. From this position, it will be possible to provide input to the consultant based on local knowledge and make decisions with an understanding of how development decisions impact the project revenue stream.



6.2 Financial Analysis

At this point in the development analysis, the airport sponsor will need to conduct a basic financial review to confirm whether the investment in the project will be balanced by sufficient revenue and create a profitable center for the airport. Typically these numbers are projected over the construction and rental or sale of the completed project to determine when the revenues will pay for the investments, the potential profit, and the magnitude of the return to the airport.



Initially, an elementary analysis can be done using a set of assumptions and best estimates of costs and revenues for the project as a whole, undergoing more refinements and iterations when more specific details and project time frames are identified. A preliminary decision will need to be made regarding the implementation strategy (e.g., whether to sell parcels, lease sites, construct buildings, or partner with a developer). Once the template for the analysis has been set up, alternative scenarios for leasing, sales, or joint ventures can be tested. This provides a basic starting point for reviewing the project's financial feasibility: If the review supports the project's feasibility, the analysis will be redone frequently as more accurate information becomes available.

The responsibility for the financial review will be assigned depending on the capabilities of the airport organization. If the airport is part of a larger governmental organization or authority, in-house staff, likely in a financial department, may be familiar with project analysis. If not, the airport may engage an outside expert such as a real estate advisor. The information gathered for the financial review will be important in either case, as the advisor will look to the airport for key information about the project as inputs to the calculations.



Working through the financial analysis, certain assumptions will have to be made regarding the plan, development costs, and revenue. Many of these assumptions will come from the site evaluation work, such as the market analysis (see Chapter 5). If the financial analysis finds the project to be feasible, the second section of this Implementation Toolkit provides a path to refine the Development Program and review alternatives regarding financing, partnerships, construction, marketing, and managing the development. If the financial feasibility analysis shows that the development revenues are not likely to cover costs—or if the return does not match the risks or effort involved—the development concept may have to be adjusted. Alternatively, the concept could be abandoned altogether as too risky in favor of other options to increase airport revenue, such as those outlined in Chapter 7, “Off-Airport Considerations and Revenue.”



6.3 Preliminary Development Plan

KNOW

The financial analyses in this section of the toolkit will be based on the preliminary Development Plan that took shape at the conclusion of the site evaluation. A well-crafted preliminary Development Plan will:

- **Be rooted in the Airport Layout Plan (ALP) and other updated land use or master plans completed by the airport**
- **Be informed by the site evaluation to avoid constraints to the extent possible**
- **Build on the opportunities identified in the market analysis**

This plan must be more detailed than the documents on which it is based, because it will provide the basis for projecting costs and revenues. The airport may have the in-house expertise to prepare the plan, or may benefit from consulting assistance, particularly if it has an established relationship with a planning or engineering firm familiar with the site. Preliminary engineering input is important to identify grading, road, and utility design issues.



HAVE

The questions in this section of the toolkit walk through the information that should be contained in the preliminary Development Plan and offers a narrative explanation of each element, including considerations for decisions that may need to be made at this point and alternatives that may be considered. The complete Preliminary Development Plan Checklist is provided in Appendix C, “Chapter 6 Checklists,” and a customizable copy of the same plan can be downloaded from the *ACRP Research Report 176* webpage.

- **LAND AREAS FOR CERTAIN DEVELOPMENT TYPES?** This information may already be in some ALPs. The chosen development types will be guided by:
 - **Permitted uses in the local zoning ordinance**, unless variances or zone changes will be pursued
 - **Opportunities identified in the market conditions review**

The land use categories can be general (e.g., “industrial,” “retail,” or “business”) or more specific (e.g., “aviation services,” “distribution,” or “hotel”) if particular synergistic uses are being sought or the market study shows significant demand. Industrial and office space are perhaps most typical of airport-related developments, but a wide range of uses can be found across the country, including golf courses, training facilities, conference centers, entertainment venues, and even residential uses on certain sites.

SOUND BITE



Letters of Interest and Requests for Proposals have been used successfully by the airport to jump start the kind of development that is desirable to support airport operations and passenger services.

Plan elements	Notes
<i>Land areas for certain development types?</i>	
General?	
Specific?	

As discussed in Chapter 3, “Legal Considerations,” FAA grant assurances, height restrictions, and Runway Protection Zones (RPZs) must be taken into account in defining land use areas. Aviation support uses typically would be located adjacent to the airfield, and other uses located farther from the air operation boundaries. Retail and hotel uses need good visibility from major roads.

- **BUILDING LOTS?** Assuming the land area in question will accommodate more than one principal use, building lots need to be defined to obtain subdivision approval as well as to provide a basis for calculating costs and revenues. Decisions about how to divide the property into lots are based on regulations and site features, including the following:

 - **Zoning ordinances** will establish minimum lot sizes; in many cases, lots also will be defined to conform to the minimum size with the potential to merge in the future if a user needs a larger site.
 - **A larger land area** than the minimum may be defined if there are physical constraints on the lot, such as wetlands or slopes, that affect the usable area.
 - **A range of sizes** may be advisable depending on the land uses sought (e.g., the minimum lot size required for a 200-room hotel).
 - **Marketing data** may indicate demand for smaller or larger properties.
- **ESTIMATED BUILDING YIELDS?** Building yields can be estimated if buildings will be constructed for lease. Zoning ordinances usually indicate the floor area that can be built on a lot of a certain size. Site evaluation results can be used to estimate usable area for building footprints. Again, the market review should have indicated the demands for space in the area, and whether to target smaller-scale or large headquarters facilities in marketing efforts.
- **ROADS?** In certain cases, existing roads may be in place to access the land planned for development. In other cases, new or extended roads may be part of the development plan. If needed, road construction may be a significant part of development cost. If road construction is necessary:

 - **Road widths and lengths** should be identified to quantify costs of construction.
 - **New access roads** to highway interchanges may also need to be developed.



At the time the development seeks zoning or site plan approval, a traffic study may have to be presented defining improvements needed and proposed. A preliminary traffic review by a specialized consultant is helpful at this planning stage to identify the scale of improvements required to serve the proposed land uses. The volume of development of proposed uses, such as square feet of office or retail space or number of hotel rooms, should be estimated at least conceptually for such an analysis. In addition, mass transit connections and stops should be identified.

- **INFRASTRUCTURE?** The size and routing of new water and sewer lines should be shown on the plan. Stormwater management systems, such as piping and detention basins, also are generally required. Preliminary civil engineering analysis should be performed at this stage of planning.
- **LANDSCAPING AND AMENITIES?** Although these elements need not be shown in great detail at this point, zoning ordinances may require certain design features, such as landscaped buffers. It also may be helpful to establish a defined identity for the project and to include design elements, roadside landscaping, and signage. These amenities may not be a very large part of the development budget, but they could still be an important part of the overall development and approval process that should be considered.

Plan elements	Notes
Division of building lots?	
Zoning Ordinance minimums?	
Physical constraints increasing minimum area?	
Range of sizes by land use?	
Marketing data (demand)?	
Estimated building yields?	
Road construction?	
Identify widths and lengths?	
Identify new access roads?	
Infrastructure?	
Landscaping and amenities?	

DO

Together with the information gathered through the Site Evaluation Toolkit, the information presented in this section will help guidebook users create a preliminary Development Plan for the proposed development. The Development Plan should begin to contain more accurate site information, including preliminary civil engineering concepts for road and infrastructure, and market data information with regard to current demand in the area. The preliminary Development Plan also should reflect a realistic concept based on land use patterns and requirements.

Even if a consultant will create the Development Plan, the airport still has an active and valuable role: As the client, the airport can ask questions (e.g., asking about the assumptions made in the calculations). The airport also can provide input as needed based on the ALP and other planning documents, as well as local development requirements.

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Once complete, the preliminary Development Plan can be assessed based on the following questions:

- **Is the plan based on and aligned with the ALP and other planning documents completed by the airport?**
- **Does the plan avoid the site constraints identified by the site evaluation to the extent possible and provide space for required design elements including stormwater, parking, and landscaping?**
- **Does the plan aim to serve market opportunities identified in the market analysis?**



If all of these things are true, then the airport has a good starting point for the financial analysis.

6.4 Project Pro Forma

KNOW

What is a Pro Forma? As part of a Development Plan, a Pro Forma is a document that presents a set of calculations that use quantified data, such as acres of earth-moving, areas of paving, length of sewer line, and rents per square foot, to project costs and revenues and ultimately a net financial return over a period of time. Even if a development partner or master developer will be brought in on the project, the exercise of creating a Pro Forma is still important to demonstrate the basic financial feasibility of the development concept. Key inputs to the Pro Forma include:

SOUND BITE



When the city (airport) tries to be a developer, they are clueless. They have no idea how to do a Pro Forma—they are uninformed about development economics.



- **A project definition**
- **A project cost to build**
- **Revenues expected to be generated from the project**
- **An estimated construction schedule**
- **The amount of up-front cash investment**
- **The cost of the debt service**

The Pro Forma can be first executed on a preliminary basis, aggregating total costs, and revenues, to determine whether the project makes financial sense in the most basic way—that revenues will exceed costs, based on reasonable assumptions.

At this stage of the toolkit, the details in the Pro Forma will be limited, as some decisions are still in flux regarding construction, pricing, financing, and timing. Assumptions will have to be made about the key inputs based on the information available to date, such as the market and engineering studies obtained during the site evaluation effort, and the likely time it will take to construct the project. The initial Pro Forma functions as a tool to reveal fundamental issues regarding the profitability of the proposed project. The first analysis for this document can include as many cost and revenue elements as can be reasonably estimated considering the preliminary level of analysis and engineering likely at this stage.

Financial analysis is an ongoing process. The first Pro Forma will be refined frequently during the course of development planning as new and more detailed information becomes available regarding costs, revenues, financing, and the schedule of construction and sales or leases. The discussions of costs, revenues, planning, and management functions in the sections of this chapter toolkit will all tie back into the financial analysis. In this way, the project feasibility is constantly being checked. There may be a point where new information, such as unforeseen site conditions, will render the project unduly risky or unwise, even if it first appears sound.



The building blocks of the Pro Forma are projections of project costs, revenues, and financing. In more detailed versions, the document shows the sources (investors, construction loans) and uses of funds (e.g., construction costs, engineering costs, interest charges) over time. Costs for construction and operation are subtracted from revenues to determine net cash flow. The analysis then projects the rate of return to the developer (and the airport sponsor) to determine

whether the development project produces sufficient benefit for the risk. The return can be compared to other potential actions the airport could make to increase its income. For example, if the airport can achieve a 10% rate of return on another type of investment, does it make sense to take the risks of a real estate development if it is only going to yield the same return?

The riskier the venture, the higher is the expected rate of return. If the risk tolerance of the airport governance is low, on the other hand, high rates of return should not be anticipated.

HAVE

This section of the toolkit enables guidebook users to explore Pro Forma templates and industry references for examples and provides sources for more information. Pro Forma templates may be obtained by using an Internet search engine, or they may be provided by a financial advisor. *No specific worksheet is provided for this section.* For illustration, however, an initial summary Pro Forma could look something like the example shown in Figure 3:

Industrial/Office Park Subdivision—Lot Sales	
Project Revenues	
Number of Lots	25
Average Sale Price Per Lot	\$ 800,000.00
Gross Sales	\$ 20,000,000.00
Less Commissions (4%)	<u>-\$ 800,000.00</u>
Net Project Revenues	\$ 19,200,000.00
Project Costs	
Land Cost	\$ 2,575,000.00
Design, Engineering, Legal, Approvals	\$ 600,000.00
Sitework & Warehouse Construction	\$ 12,175,000.00
Amenities, Traffic Improvements	\$ 100,000.00
Management & Overhead	<u>\$ 1,760,500.00</u>
Total Project Costs	\$ 17,210,500.00
Net Cash Flow before Financing	\$ 1,989,500.00
Financing Interest	\$ 1,102,400.00
Net Cash Flow to Developer*	\$ 887,100.00
Cash Investment	\$ 1,020,600.00
Total Cash-on-Cash Return to Developer	86.90%
Annualized Cash-on-Cash Return to Developer	19.90%
Internal Rate of Return	22.40%
*Cash/cash returns would be shared between the developer and the airport/airport sponsor per their contractual arrangement.	

Source: Adapted from Lemmon, W. *Pro Forma 101* (2007), www.plannersweb.com

Figure 3. Illustrative summary Pro Forma.

A simple scenario could be installing roads and utilities for an industrial park and selling off lots. In this case, the revenue from the sales will be analyzed with respect to the investment to see whether it makes sense to implement the project.

There are many ways to structure a Pro Forma. Online sources can provide helpful templates, including some that are oriented to particular development types, such as multi-family sales, development for rentals, or office development. An easy-to-understand explanation of the pro forma process, originally published in the *Planning Commissioner's Journal*, is titled "Pro Forma 101: Getting Familiar with a Basic Tool of Real Estate Analysis" (Lemmon 2007). The complete article is available online at www.plannersweb.com. Other online resources include the "Professional Real Estate Development: Developer's Tool Kit," available online at www.ULI.org, "Quick Pro Forma," available at www.Realty-Developer.com, and others. Standard industry references include *Professional Real Estate Development: The ULI Guide to the Business* (Peiser and Hamilton 2012), and *Finance for Real Estate Development* (Long 2011).

DO

Whether the airport chooses to develop a Pro Forma independently or with the help of a consultant, the information gathered will provide the necessary inputs to financial analysis for the Pro Forma document. Take enough time before proceeding to become familiar with a Pro Forma using the online and the print resources noted here.



6.5 Development Program Overview



The key information that forms the basis for the Pro Forma is explained in the following sections. As the topics are presented, the checklist sections can be used to enter information about a specific Development Program.

First defined by the preliminary Development Plan, the project is further refined in the Development Program, which builds on the initial definition and reflects the information and insights gained by the site evaluation, notably the market analysis. As planning progresses and details are added, the preliminary Development Plan becomes a Development Program wherein the plan specifics are converted into quantified elements to estimate construction costs.

A Development Program will be affected by the airport sponsor's strategy, governance, and risk tolerance—as revealed by the self-assessment findings. A very conservative, low-risk program may start with selling raw land, then subdivision of building pads, and installation of roads and utilities. If the sponsor has the risk tolerance to act as the developer, the Development Program will itemize information, such as the number of square feet of office, hotel, industrial, or retail space to estimate costs of construction and lease or sale revenue. It is also a tool for showing the community and joint venture partners the vision of the development.

SOUND BITE



The airport was functioning like a city department rather than a property developer. The airport was very dependent on revenue from the airlines but has made changes and has been able to reduce the airline cost by 50%.

6.6 Project Hard Costs

KNOW

Project hard costs are the visible “sticks and bricks” costs of construction. Unless the airport sponsor is very familiar with construction projects, consultant assistance will be needed to identify unit costs for different improvements, contingency factors, and soft costs. Funds spent for the studies done in the site evaluation also can be considered as part of the project costs.



HAVE

The checklists in this section of the toolkit can help guidebook users identify all of the project’s hard costs and to provide an estimated dollar amount for each. For each item, some explanation is given to help explain the term and identify the source of the information. The complete Project Hard Costs Checklist is provided in Appendix C, “Chapter 6 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **LAND COSTS?** Land costs may be determined by a recent purchase price, if the airport recently acquired the property, or be expressed as book value for a property that has been held by the airport for many years, taking into account the money that has been spent for carrying costs (e.g., taxes, insurance) or improvements over time. An appraisal can be useful to pin down the current market value, particularly if the land is anticipated to be the airport’s contribution to a joint venture, or if the intent is to sell the property.

Land costs	Notes
<i>Recent purchase price?</i>	
<i>Book value?</i>	
Appraisal?	


- **HARD CONSTRUCTION COSTS?** At this point, the Development Program depends on estimated construction costs. Whether in-house or consulting, site engineering expertise is necessary for accuracy. A professional will be familiar with available computer software that can be used to estimate quantities and produce the necessary cost estimates most efficiently. Costs can be grouped in various ways, but the categories of costs that should be estimated include:
 - **Earthwork/grading?** Level terrain may require a minimum of cut-and-fill earthwork volume, whereas sloping sites may require grading of roadbeds to the correct engineering standards, creation of level building pads, and proper drainage of the site. Grading of individual lots will depend on whether the sponsor intends to construct buildings or offer shovel-ready sites.
 - **Road construction?** The preliminary Development Plan will show the length and width of proposed roads. Costs for a sub-base, paving, and drainage will be estimated based on the calculated areas and per-unit costs.
 - **Utilities?** The length and diameter of sewer lines, water lines, and storm drains should be available. If the site evaluation has revealed that treatment plant



expansions or other facilities are needed, a share of the cost for the expansions also should be estimated.

- **Building construction?** The decision to include building construction costs in the Pro Forma depends on the airport's chosen development strategy. Once the Pro Forma has been set up, alternative scenarios may be tested. At this stage of planning, however, a direction will likely be chosen to either (1) construct buildings, (2) lease or sell building sites, or (3) enter into a joint venture with a development partner. If building construction is anticipated, at this stage typical construction costs per square foot for the geographic area and building type (e.g., office, retail, or warehouse) can be utilized. If the intention is to modernize or rehabilitate existing buildings on the site, those costs also should be entered at this point.
- **Landscaping and amenities?** Detailed designs are unlikely at this point, but standard costs for lawns, entrance plantings, and any required buffers can be used in the estimate.
- **Environmental remediation?** If any on-site contamination must be cleaned up, a ballpark estimate should be obtained from a qualified consultant familiar with the investigation and included in the estimate. (See Chapter 5, "Site Evaluation Toolkit," for a discussion of Phase I and Phase II ESAs.)
- **Off-site costs?** If a traffic review was conducted with the site evaluation, it may have shown that improvements would be necessary in the area to handle traffic produced by the proposed development. These improvements could include road widening, traffic signals, turning lanes, or ramps to highway interchanges. The traffic engineer should be able to provide an estimate of the costs for the specified improvements. If local ordinances require contributions to municipal facilities on a fair-share basis, the engineer should be able to estimate those costs.
- **Demolition?** If the property targeted for development includes existing buildings that will be removed, demolition costs must be estimated, including any costs for asbestos abatement.
- **Contractor, construction management, and contingency fees?** These costs can be applied as percentages of the hard construction costs.



		
Hard construction costs	Check to select	Preliminary cost estimates
Earthwork/grading?		
Road construction?		
Utilities?		
Building construction?		
Landscaping and amenities?		
Environmental remediation?		
Off-site costs?		
Demolition?		
Contractor/construction management/contingency (as a percentage of hard costs)?		

DO

With the information gathered for this section in the toolkit, guidebook users can create a total anticipated hard cost of development for the proposed Development Program. If some of the costs are still unknown, it may be advisable to do additional research and develop preliminary cost estimates before proceeding with the development.



6.7 Project Soft Costs

KNOW

Whereas hard construction costs relate to the visible “sticks and bricks,” soft costs relate to the less tangible but still essential elements that make a real estate development happen. Soft costs may account for a significant portion of the total costs. Some of these expenditures may have taken place during the site evaluation. Area developers, architects, and other professionals can provide estimates for soft costs. Some items reflect the cost of obtaining permits and approvals, which in many locations can require substantial outlays for plan preparation, expert testimony, and land use attorneys. A complicated entitlement process with opposition from the community or approving body can be very expensive. This is another reason why community engagement is so important for the airport. Any lengthy delay in approval of controversial projects adds to the costs and lengthens the period before revenue comes in.



HAVE

Guidebook users are encouraged to identify the soft costs that are likely to be needed based on the answers to the questions in this section of the toolkit, and to provide an estimated cost for each soft cost item. Most items are fairly self-explanatory and do not include specific explanations. The complete Project Soft Costs Checklist is provided in Appendix C, “Chapter 6 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **TITLE INSURANCE?**
- **LAND PLANNING AND DESIGN?**
- **CIVIL ENGINEERING?**
- **ENVIRONMENTAL CONSULTING?**
- **TRAFFIC ENGINEERING?**
- **LEGAL REPRESENTATION AND ADVICE?**
- **MARKET STUDIES?**
- **ARCHITECTURE?**
- **SURVEYING?**
- **GEOTECHNICAL ANALYSIS?**
- **PROJECT MANAGEMENT?**
- **LEASING OR SALE COMMISSIONS?**
- **PERMITS AND APPROVALS?**
- **APPLICATION FEES?**
- **PERFORMANCE BONDS?**
- **REQUIRED CONTRIBUTIONS TO MUNICIPAL FACILITIES/IMPACT FEES?**
- **FINANCING COSTS?** These costs may include loan application fees, bank fees, interest payments, and costs incurred to issue bonds.
- **CARRYING COSTS?** These costs include insurance and property taxes.

- **OPERATING EXPENSES?** Soft costs for operating expenses will include costs associated with management and maintenance.

 Soft costs likely to be needed	Check to select	Preliminary Cost Estimates
Title insurance?		
Land planning and design?		
Civil engineering?		
Environmental consulting?		
Traffic engineering?		
Legal representation and advice?		
Market studies?		
Architecture?		
Surveying?		
Geotechnical analysis?		
Project management?		
Leasing or sale commissions?		
Permits and approvals?		
Application fees?		
Performance bonds?		
Required contributions to municipal facilities/impact fees?		
Financing costs?		
Carrying costs?		
Operating expenses?		



DO

With the information gathered for this section of the toolkit, guidebook users can create a total amount of anticipated soft costs of development for the proposed development. If some of the costs are unknown, it may be advisable to do additional research and develop preliminary cost estimates before proceeding with the development. Once both hard and soft costs have been calculated, they can be added together to create an overall estimate of project costs.



6.8 Funding Sources and Typical Revenue Opportunities



KNOW

Included in this topic are revenues from the development and sources of funds to pay for creating the project. The projection of project revenues will depend on the development strategy selected by the airport sponsor, as well as on the Development Program defined earlier in this chapter toolkit. Revenue projections will be based on assumptions about market rents, time for construction, and time on the market for leases or sales, as drawn from market studies. It is important to keep in mind that a vacancy rate will be experienced as facilities or parcels lease up. Revenue projections should take that period of time into account.

HAVE

Answers to the questions in this section of the toolkit can help guidebook users identify sources of revenue and project funding and provide an estimated dollar amount for each. The complete Funding Sources and Typical Revenue Opportunities Checklist is provided in Appendix C, “Chapter 6 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.


Funding Sources



- **GRANTS?** Is grant funding available from state transportation or economic development offices?
- **BOND PROCEEDS?** Does the airport have the necessary authorizing statutes and capacity to issue bonds? Legal analysis will be necessary to identify any restrictions in bond covenants.
- **FAA GRANT?** Is the proposed project eligible for FAA funding? FAA grants are generally limited to aviation and safety-related projects. Infrastructure improvements would have to primarily benefit air travel to be eligible for FAA funding.
- **GOVERNMENT APPROPRIATIONS?**
- **INVESTOR CONTRIBUTIONS?**
- **LOANS?**


SOUND BITE 

Financial institutions that will finance typically want to see a lease term of at least the mortgage term plus 10 years.

 Funding sources	Check to select	Preliminary funding estimates
Grants?		
Bond proceeds?		
FAA grants?		
Government appropriations?		
Investor contributions?		
Loans?		

Revenue Sources

- **GROUND RENT REVENUE?** This revenue source represents a lower-risk strategy, for which revenue is a contractual, fixed amount with escalation over time. A simple projection would include the number of parcels multiplied by the market lease rate, considering parcel acreage.
- **LAND SALE REVENUE?** If a land sale is the revenue source, the project’s duration will be fixed by the sale of all tracts. Revenue may be received on the sale of the entire tract, or apportioned by lot-by-lot sales.
- **BUILD-TO-SUIT SALES AND FEES?** This revenue source involves construction of structures to a future owner’s specifications.
- **BUILDING OR FLOOR SPACE RENTS?** If this revenue source is planned, buildings can be constructed “on spec” (without a tenant); however, that is a risky strategy in most markets. Pre-leasing of a certain percentage of space helps mitigate the risk and therefore is desirable before starting construction.
- **PERCENTAGE OF RENTS?** With this revenue source, the airport sponsor receives a portion of the rents charged by a joint venture partner or master developer, according to a prior agreement.
- **EQUITY PARTICIPATION?** This revenue source will involve a development partner, and/or a share of future revenue from an ultimate sale of the project.

 Revenue sources	Check to select	Preliminary funding estimates
Ground rent revenue?		
Land sale revenue?		
Build-to-suit sales and fees?		
Building or floor space rents?		
Percentage of rents?		
Equity participation?		

DO

The input gathered in this section of the toolkit will enable guidebook users to create estimates for total anticipated revenue and financial resources available for the proposed Development Program. If some revenue stream or funding sources are unclear or unknown, it would be advisable to do additional research and develop preliminary numbers before proceeding further with the development.



6.9 Miscellaneous Revenue


KNOW

In addition to the traditional revenue sources identified in the previous section, revenue may also be obtained from a number of other sources, depending on the type of land use, ownership, or control of the project elements. For example, parcel owners or ground lessees in a development can pay fees to the project owner for maintenance of common spaces. Parking revenue from a common garage is also possible.

HAVE

Answers to the questions listed in this section of the toolkit will enable guidebook users to identify potential miscellaneous revenue sources produced by the development and estimate income for each source. The complete Miscellaneous Revenue Checklist is provided in Appendix C, “Chapter 6 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **COMMON FACILITIES ASSESSMENT?**
- **HOTEL ROOM STAYS?**
- **PARKING FEES?**
- **RESIDENTIAL RENTS OR SALES?**
- **AIRPORT ACCESS FEES?**
- **RECREATION AREA FEES?**

 Potential sources	Check to select	Estimated income
Common facilities assessment?		
Hotel room stays?		
Parking fees?		
Residential rents or sales?		
Airport access fees?		
Recreation area fees?		

DO

The input gathered in this toolkit section will help the guidebook user estimate a total value of potential miscellaneous revenue for the proposed Development Plan. If miscellaneous revenue is not known, it should be left out of the equation at this point; however, if miscellaneous revenue is expected to be a significant part of the project revenue, it is advisable to develop preliminary numbers before proceeding further with the development. Updated numbers can be added to the other funding and revenue sources when they become available to create a total number for project revenue.



6.10 Detailed Pro Forma

This discussion of a detailed Pro Forma is not presented in a “Know, Have, Do” format, and no specific checklist or worksheet is provided in this section. Because the process is especially variable and complicated, the guidebook does not offer a specific guided exercise; rather, the information in this section will help guidebook users understand the content and value of a detailed Pro Forma. Whether the detailed Pro Forma is created by airport staff or by a consultant with the necessary skills, that person will have the templates and resources for the task.



The initial Pro Forma aggregates the total costs and income for the completed project, providing a snapshot of what the development can yield. In reality, however, it takes a number of years to complete a project of any complexity and produce revenue. The timeline to complete a project will be governed in large part by the approval and permitting process, the scale and scope of construction activities, and the market demand for the land, lots, or buildings that will be sold or leased, up to the point where it is fully occupied and under operation (or sold). Assumptions about the length of time needed for construction, and the rate at which the market will absorb the new space or available lots, are made based on market study results.



Time to completion will affect the cost of the project. A detailed Pro Forma takes the project timeline into consideration. In detailed Pro Formas, the costs and revenues are spread out over time in accordance with the details established in the Development Program. The more detailed information enables the project planners to gain a realistic sense of the likely cash flow over the life of the project. The following information is needed:

- **A schedule of construction**
- **A schedule of sales (land, buildings) or leases**
- **Construction loan proceeds and interest costs**

In its detailed form, the cash flow analysis allows the calculation of an internal rate of return (IRR). This statistic is the interest rate that will make the net present value of the net costs and revenues for the period of development equal to zero. For a project to be profitable, the IRR must be higher than the cost of funds used for the project.

The higher the IRR, the more desirable the project. Once defined, the IRR can be compared to the return of other potential investments, allowing the airport sponsor to evaluate whether the proposed development makes sense for the airport given its available resources and alternate opportunities for revenue. For example, if the calculated IRR for the development project is lower than the expected return for investing in the securities market, the development project may not be the best bet.

The cash flow analysis should show the following details:

- **When cash has to be invested in the development**
- **When financing is needed beyond available cash to fund improvements**
- **When interest payments will be incurred**
- **When revenues start to come in to balance expenses as buildings are built and rented or land parcels leased**
- **When losses might occur in the earlier stages of development**



Based on this information, the airport can evaluate whether the airport sponsor can support those losses, and when a drawdown of loans or grants will be necessary. Whether the airport can “support the losses” is essentially a question of how much the airport sponsor can afford to invest in the project. These questions relate back to the Chapter 4 self-assessment and the financial status of the airport, as well as to any legal limitations or restrictions on use of airport funds.

The risk tolerance of the airport governance also is an element to consider. To the extent that the project cannot be self-financed, grants or loans will have to be used to fund the project. Financing schemes and costs will relate to the public or private status of the airport, but those costs need to be included in the projection of cash flows over the term of the project. At the point where the airport has reached the limit of what it can invest to cover project costs, it will be necessary to draw down loan proceeds and incur interest costs.



Looking at cash flow over time will show that delays, such as long periods for approvals, environmental remediation, or unexpected field conditions, can have significant impacts on the profitability of the development because carrying costs and financing costs are extended while income to balance costs is postponed. This discussion is a reminder of the importance of the site assessment exercise. Of particular concern to FAA-obligated airports is the length of time needed for FAA review, approvals, and/or land releases. Reliable assumptions regarding this review time need to be factored into the analysis. Ideally, the need for non-aeronautical land release will be identified well before the project is initiated.



The detailed financial analysis will need to be reviewed and updated frequently. The project planning proceeds and estimated costs will be refined as new information is gathered (e.g., specific estimates from construction contract bids). Further, the template may be used to test different scenarios, showing the sensitivity of project feasibility to changes in assumptions, such as rents, time delays, increased per-square-foot construction costs, off-site exactions, rental rates, and financing costs. For example, assuming that ground leases will rent at a price at the top of the market may be too optimistic. Will the project still be profitable if more conservative assumptions are used?

6.11 Reality Check

For even a preliminary Pro Forma, working through the exercise of identifying costs and revenues is valuable. It compels the sponsor to evaluate what the proposed development can bring to the airport while taking into account the expenses that will be needed to achieve it. Although a detailed Pro Forma will take resources to accomplish properly, a conscientious effort will support an informed “reality check”—essentially, a second Stop/Go decision point for the airport sponsor. Is the development effort likely to be profitable given the identified market opportunities, costs, timeline, and site constraints? The following questions should be answered in order to make a Stop/Go decision at this point.

- **Will the development be profitable for the airport?**
- **How long will it take to be profitable?**
- **Is profitability dependent on a narrow range of market rents or sensitive to changes in construction costs?**
- **Are costs unpredictable?**
- **Can the sponsor fund the project until it turns a profit?**
- **Is a developer partner essential to share costs?**
- **Does the Development Program need to be refined to be less expensive, more limited, or less risky?**

If the Pro Forma shows a sufficient profit and return for the project needs and risk tolerance, the project may proceed to the next stage of planning for designing, permitting, funding, and implementing the Development Program. If the Pro Forma shows a high degree of sensitivity to market prices, construction cost increases, or other factors, it may be advisable to investigate a lower-risk strategy, develop an alternate Development Program, or perhaps consider another way entirely to increase airport revenue, including off-airport development.



6.12 Development and Management Plan

This section of the Implementation Toolkit provides a methodology for understanding and accomplishing key actions for implementing the development. After having created a Development Program and concluded that it is financially feasible, airport sponsors will need to identify the steps necessary to make the plan a reality. This section of the toolkit is less a checklist than a road map to building the project team.

This section of the toolkit does not replace the need for professional consultants. Even an airport with substantial in-house expertise will need input from marketing, legal, and engineering experts. The following sections provide basic guidance to help guidebook users as they:

- **Collect necessary information**
- **Make use of the site evaluation data**
- **Address a range of development decisions**
- **Formulate questions to ask consultants**
- **Evaluate the input and results of consultants' efforts**

By this point in the process, goals for the development project will have been defined, and the airport sponsor will have become familiar enough with the critical issues to act as an informed client, equipped to direct and review consulting efforts. A basic development strategy will also have been defined, including lease/sell/build options and whether the airport plans to enter into a joint venture for the project, undertake it alone, or seek a master developer. Although the strategy can continue to evolve during development planning, at this point there should be consensus on a starting point. Recapping the alternatives, the airport's strategies can include:

- **Lease land**
- **Sell land**
- **Construct buildings for sale or lease**
- **Pursue build-to-suit construction**
- **Act as sole developer**
- **Engage in a joint venture**
- **Engage a master developer**
- **Hand over the project to a real estate advisor or project manager**

The selected strategy will reflect the individual airport's financial resources and risk tolerance. For example, a program of ground leases will likely provide a reliable source of income, which will appeal to an airport that has a low risk tolerance. On the other hand, an airport with a higher risk tolerance and adequate financial resources may earn a greater return by constructing buildings for lease or by engaging with a joint venture partner to take advantage of possible market conditions improving rent or sale values.

6.13 Using the Toolkit for One Airport

This guidebook has been written to be intentionally broad to cover issues applicable to many airports and many potential development scenarios, including:

- **Private or public airports**
- **FAA grant-obligated land and land that is not-grant obligated**
- **Development projects with or without public bidding and bonding restrictions**

Each scenario involves a distinct level of regulatory control (see Chapter 2, “Fundamentals,” and Chapter 3, “Legal Considerations”). Additionally, even within one airport, several classifications of land can be considered for development (e.g., land within the airport boundaries, land outside the airport boundaries, land with and without airfield access, land that is grant obligated, and land that is not grant obligated). Each variation involves specific levels of FAA control over actions to reclassify, develop, fund, or lease property. As part of the Self-Assessment Toolkit, guidebook users gathered the information necessary to identify the applicable tier for development.



Airports also vary in their land resources and external conditions.

- **Airports with large holdings can contemplate a range of uses on different land parcels. Others may have fewer resources to be developed more intensively, or no non-aeronautical land. (In the latter case, Chapter 7, “Off-Airport Considerations and Revenue,” suggests alternative income strategies.)**
- **Market conditions may dictate certain use types closely associated with airport operations, or they may suggest an opportunity for capturing a demand associated with off-airport institutions.**
- **Financial considerations may also dictate development strategy. Cash-poor airports may need to limit risk and overhead and may prefer to turn those risks and functions over to a buyer or partner.**
- **Local political contexts also differ. Some governmental and economic development agencies may support the local revenue- and job-creation aspects of the development with or without concern as to how airport operations may be affected. Other airports may find that local government does not support airport development plans, even to the point of opposition.**



Given all the possible scenarios of airport land status and location, it is important for the guidebook user to remember that the toolkit checklists must be filtered through particular circumstances and local knowledge. Some implementation steps will be relevant and others will not be applicable. Also, the topics discussed in the next sections of the guidebook do not necessarily have to be approached sequentially. Some of the activities discussed can be carried out on parallel tracks, and some will be ongoing. For example, a community outreach strategy initiated early in the process and laying groundwork for permitting or incentives can be continued as a factor in marketing the project.

6.14 Development Program Refinement

KNOW

A preliminary Development Plan and the more detailed Development Program provide a basis for the costs and revenues that are put into the Pro Forma. Following the financial analysis, the Development Program is reviewed and adjusted as necessary for the most favorable yet reasonable financial feasibility, perhaps reducing certain costs or increasing higher value uses.

SOUND BITE 


One thing all developers want is predictability.

HAVE



The questions listed in this section of the toolkit function as prompts to consider whether any of the following possible refinements may make financial sense for the project. Guidebook users can re-run the Pro Forma to test any or all of the following adjustments. The complete Development Program Refinement checklist is provided in Appendix C, “Chapter 6 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **LAND USE DISTRIBUTION?** Consider changes in the distribution of land use areas (e.g., more industrial, less office, more open space).
- **LOT SIZE AND NUMBER?** Consider changes in the lot sizes and/or the number of development lots.
- **FLOOR AREA?** Can changes be made to the projected floor area of different uses while keeping within the boundaries of local land use regulations and market demand?
- **ROAD ALIGNMENT?** Consider designs that change road alignments and adjust widths while keeping within design requirements.
- **AVOID CONSTRAINT AREAS?** Do opportunities exist to relocate the proposed development away from problematic areas, such as wetlands or shallow bedrock or groundwater?
- **COSTS?** Can new information or different assumptions be used to update cost estimates?
- **TIMELINE?** What happens if there are updates to the time frames for infrastructure installation and development phasing?

 Refinement options	Check to select	Notes
Land use distribution?		
Lot size and number?		
Floor area?		
Road alignment?		
Avoid constraint areas?		
Costs?		
Timeline?		

DO

Answering the questions in this section of the toolkit offers guidebook users the opportunity to test some alternatives and assess whether there are immediate opportunities to improve the proposed development's potential for revenue generation. These types of refinements will continue throughout the development process in response to new information related to factors such as field conditions, market factors, or unforeseen circumstances. Both for this exercise and when changes occur during the development planning process, the Pro Forma should be re-run to reveal any critical issues.



6.15 Internal Project Management Structure

KNOW

In the Self-Assessment Toolkit (see Chapter 4), checklist items examined the structure of the airport's operations and whether staff would be responsible for management of a development project. At this point in the planning process, a decision should be made whether current employees can handle the project or if additional hires (or contracts with consultants) who have particular expertise are necessary.

SOUND BITE

The airport manager is an employee of the department of public works and spends two-thirds of his time on airport business and one-third of his time on municipal parking controls.

Larger airports and airport authorities may have a larger employee base or be able to draw expertise from other public agency departments. Smaller airports will have to weigh the needs of their particular projects against in-house expertise. The investment needed to hire qualified personnel to manage a development project can be compared to the cost of relying on more consultants, particularly if there are large land resources or if the project will take several years to complete. More in-house management can provide better internal control. If the decision is made to hire new employees, the salary cost will need to be allocated to the project expenses or, if the position is broader than just the development project, to general overhead.

SOUND BITE

The airport has recently hired a dedicated marketing and communications director to promote development at the airport.


HAVE

Answering the questions listed in this section of the toolkit will enable guidebook users to develop a task-based job description for the project manager. The complete Internal Project Management Structure Checklist is provided in Appendix C, "Chapter 6 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

Of the following responsibilities and tasks, which will be relevant to the project manager for the specific development the airport is considering?

- **PRESENTATION OF DEVELOPMENT PROGRAM TO AIRPORT GOVERNANCE?**
- **REFINEMENT OR DIRECTION OF PROGRAM?**
- **FINANCIAL ANALYSIS?**
- **SELECTION AND COORDINATION OF CONSULTANTS?**
- **MANAGEMENT OF THE APPROVAL PROCESSES?**
- **NEGOTIATION WITH POTENTIAL DEVELOPMENT PARTNERS?**
- **NEGOTIATION OF LEASE TERMS WITH LESSEES?**
- **COORDINATION AND APPLICATIONS TO FAA IF LAND GRANT-OBLIGATED?**
- **REVIEW OF ASSURANCES?**
- **CONSTRUCTION OVERSIGHT?**

- **MARKETING THE PROPERTY?**
- **COMMUNITY ENGAGEMENT?**
- **PROPERTY MANAGEMENT?**

 Relevant tasks for project manager	Check to select	Notes
Presentation of Development Program to airport governance?		
Refinement or direction of program?		
Financial analysis?		
Selection and coordination of consultants?		
Management of the approval processes?		
Negotiation with potential development partners?		
Negotiation of lease terms with lessees?		
Coordination and applications to FAA (if land-grant obligated)?		
Review of assurances?		
Construction oversight?		
Marketing the property?		
Community engagement?		
Property management?		

DO

The responsibilities and tasks selected in this section of the Implementation Toolkit can be used in combination with the results of the Self-Assessment Toolkit (see Chapter 4) to prepare the job description for the project manager and make an initial decision about whether the position will be internal or external. Is a staff person available who is largely capable of the task? If not, does the airport prefer to hire a staff person who can fill the role and complement the skill sets already provided by existing airport or municipal staff? What tasks will be assigned directly to the project manager and what tasks will be delegated to others? The cost of any such hire will need to be allocated appropriately in the Pro Forma.



6.16 Community Outreach Strategy

KNOW



With a feasible, well-designed plan and a professional project team, one might expect the approval schedule to be smooth sailing. For better or worse, however, **unpredictability is always part of real estate development**. Unanticipated objections, questions, and complications can always come out of the woodwork; new environmental or engineering problems might be discovered on the site. This is one reason why it is so important to remember that the airport does not operate in a vacuum; it is part of a surrounding community whose stakeholders can be supporters, partners, or objectors. Having taken the necessary time and effort to lay a strong foundation by nurturing relationships with community members in the residential, business, and public sectors will likely pay off in getting the proposed development project off the ground. This is why community context is touched on so often in this guidebook, and why it is discussed in this section of the Implementation Toolkit, before identifying permits and approvals. Community outreach is a long-term, ongoing process that should be underway before the project is introduced to the public in the permit process and that continues throughout and beyond the development implementation.



HAVE


At this point, guidebook users can refer back to the information collected in the Site Evaluation Toolkit to assess the airport's place in the community. The more the airport is integrated into the land use and economic planning of the area, the easier it will be to present airport development as not only beneficial to the airport (which is, after all, the main point of the development effort), but also as beneficial to the larger community. This section of the toolkit addresses some of the issues to consider as part of developing a community relations strategy. The complete Community Outreach Strategy Checklist is provided in Appendix C, "Chapter 6 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **HISTORY/CHALLENGES?** It's wishful thinking to believe that an airport development project will be supported or swiftly approved if there has been a history of conflict between the airport and the community. Even if frictions seem minor, the time to address them is before a development proposal is introduced. Particularly in more developed areas, issues of noise, safety, and traffic, among others, can fester for many years and only get worse if not addressed. As evidenced by the case studies in the research for this project, a new airport owner with only the best of intentions toward the community can find a proposed project undermined by a background of poor community relations caused by their predecessors.
- **PROACTIVE EFFORTS ALREADY UNDERWAY?** The larger point here is that communication with the community should be a proactive, ongoing part of airport operations. If the airport is in the preliminary stages of considering development on non-aeronautical land, if such proactive communication is not already happening, some initial outreach efforts to connect with the community should be initiated prior to communications regarding the specific plan for development. For example, information about the economic impact of the airport could be shared generally. Establishing and maintaining positive relationships requires a continuous effort.

- FENCES TO MEND?** If areas of conflict or concern exist between the airport and the community, the airport should make the move to mend those fences well before detailed development plans are made public. Reacting in response to complaints provides little lasting strategic benefit to the airport. A more successful approach is to develop connections with local leaders in the community and spread the message that the airport recognizes their concerns and wants to find common ground to resolve them. The results of ACRP Project 03-31, "Aligning Community Expectations with Airport Roles," (online release pending), will be a resource on this specific topic.

SOUND BITE 

There was initially a challenge addressing concerns by adjacent private land owners. Some land owners felt the public entity has an unfair advantage and should not be doing private development.

 Examples of considerations	Check to select	Notes
History/challenges?		
Frictions, even minor?		
Issues of noise, safety, traffic?		
Other issues?		
Relationship with previous owner/authority?		
Ongoing proactive efforts?		
Outreach ongoing? If not, initiated before announcing development plans?		
Fences to mend?		
Conflicts to be resolved before publicizing development?		
Established network of community leaders?		
Means of collecting concerns and working to find common ground?		

DO

Airport sponsors are encouraged to develop a community outreach strategy that takes into account the airport’s existing relationship with the community, existing efforts that may already be underway to build and maintain relationships, and any specific topics that may currently or historically have caused concern. The strategy should recognize if there is already a program in place that simply needs to be continued. If there is not a program in place, the strategy should consider both the short-term and the long-term. Staffing and associated costs should also be included in the strategy. The toolkit sections that follow will help guidebook users gather information about key stakeholders, outreach options, and potential community concerns.



6.17 Identifying Stakeholders

KNOW


Depending on the location and urban development of the airport area, many types of stakeholders may be found in the community. Stakeholders may be public or private. It is important to keep in mind that business groups can play a major role in supporting airport activities both before and after development.

Case Study: Bradley International Airport, Connecticut

The Bradley Development League, a non-profit organization formed with local business support to advocate for Connecticut's Bradley International Airport and the industries that have congregated around the airport, provides a good example of support from stakeholders. The League promotes airport operations and helps to market available sites, providing information on local incentives, the workforce, and the economic benefits of the airport. The League also coordinates with four area towns to provide expedited permit processing in the airport zone—an excellent example of how municipalities can act together to strengthen the airport along with its economic benefits.

HAVE

The following checklist will help guidebook users identify potential stakeholders. The complete Identifying Stakeholders Checklist is provided in Appendix C, "Chapter 6 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

 Possible stakeholders	Check to select	Notes
Neighborhood and homeowners' groups?		
Local and regional chambers of commerce?		
Other business and industry organizations?		
Local government agencies and officials?		
County and state government agencies and officials?		
Pilots' organizations and airplane hobbyists groups?		
Economic development departments and agencies?		
School districts and higher education?		
Youth groups?		
Travel agencies and professionals?		
Airport tenants?		
Commercial aviation companies and trade groups?		

DO

Answering the questions listed in this section of the toolkit will enable guidebook users to better understand who the potential project stakeholders are and identify a specific contact person for each group. Stakeholders can be incorporated into the airport's proactive outreach efforts immediately and should also be specifically brought in to the plan to reveal the project to the public (see the section on creating a message in this chapter).



6.18 Creating a Message


KNOW

The airport has a positive economic impact on the community. To the degree that benefit is recognized and accepted by local elected officials and residents, an airport-sponsored development will be more easily supported. The airport sponsor should consider how to craft public relations material that clearly articulates the airport’s specific benefits. Economic impact studies covering these issues already may have been done by the airport, by local economic development agencies, or by a local academic institution. If the information does not already exist, the airport can check to see if statewide aviation data are available that may be used effectively or look to national aviation organizations for general numbers.

HAVE

The questions listed in this section can enable guidebook users to identify economic benefits of the project to the airport and the broader community. The complete Creating a Message Checklist is provided in Appendix C, “Chapter 6 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **JOBS PROVIDED DIRECTLY BY AIRPORT OPERATIONS?**
- **JOBS PROVIDED BY BUSINESSES TIED TO THE AIRPORT OR LOCATED IN THE AIRPORT’S VICINITY?**
- **INCOME GENERATED BY THOSE JOBS?**
- **INDIRECT BENEFITS OF AIRPORT OPERATIONS TO LOCAL BUSINESSES?** Typical businesses receiving such indirect benefits might include restaurants and hotels.
- **PROPERTY TAXES AND PAYROLL TAXES PAID BY BUSINESSES TIED TO THE AIRPORT?** If the airport is not tax exempt, the development will contribute property and payroll taxes that help support the community.
- **INVESTMENT BY THE AIRPORT IN FACILITY IMPROVEMENTS ON AND OFF-AIRPORT?**
- **AIRPORT-SPONSORED ACTIVITY/PHILANTHROPY IN THE COMMUNITY?**

		
Potential benefits to airport	Check to select	Notes
Jobs due to airport operations?		
Jobs due to businesses tied to airport or nearby?		
Income generated by jobs?		
Indirect benefits to local businesses, such as hotels?		
Businesses tied to airport add to property and payroll tax bases?		
Investment by airport in facility improvements on- and off-airport?		
Airport-sponsored activity/philanthropy in community?		

DO

The airport sponsor can use the data collected in this section of the toolkit to craft a message that the development project should increase community economic activity and wealth by attracting investors who will add to the job base and tax base. The emphasis should be on the common goals of community economic growth that will be furthered by the development project. If the local data are not available, the airport sponsor can consider opportunities to have a study done. A local university or economic development organization may be a cost-effective partner for the study.

As a cautionary note, the project priority for the airport sponsor must be on those projects that promote airport self-sustainability and revenue growth, although messages to the community can focus on the resulting community benefits. The case studies for this project have shown instances where land sales or leases have been encouraged that provided jobs for the community but little revenue for airport operations. Although community support is important to the development's implementation strategy and potentially to its revenue potential, the community's desire for new jobs and additional development should not replace sound financial planning decisions about how best to generate revenue for the airport. (See the Chapter 4 discussion about evaluating development proposals from outside agencies and how to screen out ideas that are unlikely to help the airport.)



6.19 Outreach Portfolio

KNOW



The strategic importance of proactive communication has already been stressed. The results of the Self-Assessment Toolkit (Chapter 4) will have established whether the airport has a regular outreach program for communication between the airport and stakeholders. This mechanism is important for garnering support not only for any new development project, but also for regular airport operations. Therefore, it should be an ongoing effort. This section of the Implementation Toolkit explores various outreach and engagement techniques the airport can employ to build relationships with the community. Not every strategy will be appropriate for every airport or situation. Smaller airports with smaller budgets will be in a very different position than larger airports which may be able to support more extensive efforts.

Case Study: Manchester International Airport, United Kingdom

The Manchester International Airport in the United Kingdom has a Community Relations Manager and team that hold regular open meetings with the community in multiple locations as well as sessions with elected officials. The result of this ongoing outreach effort is a continuing “two-way street” of information and feedback: advance information flows to the community about airport changes and initiatives, and procedures for accepting and responding to feedback from the community (including complaints) are well organized and familiar.


The Manchester airport also conducts an annual “Community Impact Review” and publishes a brief report covering outreach, philanthropic, and other activities. It also publicizes job opportunities, reinforcing the economic benefit of the airport. It stands to reason that if the airport is a big local employer, the community will want it to thrive.

HAVE

The list of outreach options presented in this section of the toolkit can be used to develop a comprehensive outreach portfolio that best fits the airport’s needs and resources. The complete Outreach Portfolio Checklist is provided in Appendix C, “Chapter 6 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage. The online product (pending release in 2017) of ACRP Project 03-31, “Aligning Community Expectations with Airport Roles,” offers extensive information about these strategies.


Internal

- **ADVISORY BOARD?** Does the airport have (or can it create) an advisory board made up of representatives from community and business groups and elected officials, to set up regular communication?
- **COMMUNITY RELATIONS STAFF?** Has the airport designated a community relations employee at the airport to act as a point person for information and complaints, and disseminate information about the airport or the development project?
- **AIRPORT MASTER PLAN?** Does the airport encourage public engagement in the airport master planning process as a way to encourage public “buy in” for a development concept in the very early planning stages?

 Internal techniques/resources	Check to select	Notes
Advisory Board?		
Community representatives?		
Business groups?		
Elected officials?		
Community relations staff?		
Airport Master Plan?		

External

- OFFER WEBSITE INFORMATION?
- PUBLISH NEWSLETTERS (PRINT AND ONLINE)?
- OFFER AIRPORT TOURS?
- SPONSOR LOCAL EVENTS AND ORGANIZATIONS?
- OFFER SCHOLARSHIPS AND GRANTS?
- OFFER PROGRAMS FOR YOUTH INTERESTED IN AVIATION CAREERS?
- SEND SPEAKERS TO COMMUNITY GROUPS?

 External techniques/resources	Continue	Add	Notes
Offer website information?			
Publish newsletters (print, online)?			
Offer airport tours?			
Sponsor local events and organizations?			
Offer scholarship and grants?			
Offer programs for youth interested in aviation careers?			
Send speakers to community groups?			

DO

The answers to the questions in this section of the toolkit can contribute to a comprehensive outreach strategy that best fits the airport’s needs and resources.



6.20 Revealing Project Plans to the Public



KNOW

The decision to release airport development plans to the public is a strategic one. The most suitable strategy will vary with the particular community and, as noted earlier in the toolkit, with any past conflicts. The airport sponsor will be most aware of the particular local political nuances, and how and whether to use the suggestions listed in this section of the toolkit.

There are benefits to getting the community in the loop at the earliest possible point in the process. Announcing plans early can be part of the airport's regular public outreach and can contribute to a sense of transparency and to building a foundation of trust between the airport and the community. Some stakeholders may also have marketing or development expertise that they can contribute to the airport, or they may be able to offer funding ideas and connections.

The sponsor also needs to be aware that the process of gathering information and assembling studies to create a plan will make certain individuals and businesses in the community aware of the airport's intent. Even if preliminary plans are not released to the public, the airport should be ready and open to respond to inquiries.


In general, the time for opening preliminary development plans to the public would be after:

- **Research for the project is complete**
- **There is a rationale for the plan**
- **The airport is ready to explain the benefits and respond to comments**

HAVE

Community concerns about airport development may result from the airport's history with the community or may be due to specific features of the development being proposed. Some concerns may need to be addressed with the help of experts, who can be identified in the checklist that accompanies this section of the toolkit. In preparation for sharing development plans with the community, answering the questions in this section of the toolkit can enable guidebook users to anticipate community concerns and consider how to respond. The complete Revealing Project Plans to the Public Checklist is provided in Appendix C, "Chapter 6 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **LAND USE COMPATIBILITY ISSUES?**
- **IMPACTS TO CIRCULATION (TRAFFIC)?**
- **NOISE?**
- **PUBLIC SAFETY?**
- **ENVIRONMENTAL IMPACTS?**
- **PROJECT FUNDING SOURCES?**
- **CONSISTENCY WITH LOCAL ECONOMIC DEVELOPMENT GOALS?**

 Concern about development	Area of concern?		Expert assistance needed?	Who could provide expertise?
	Yes	No		
	Land use compatibility issues?			
Impacts to circulation (traffic)?				
Noise?				
Public safety?				
Environmental impacts?				
Project funding sources?				
Consistency with local economic development goals?				

DO

If public outreach and stakeholder involvement strategies are proactive, the airport has the opportunity to both resolve concerns before they take root and garner support for the airport’s development efforts. For example, small-scale meetings and public sessions can be used to provide information about the project and take the community’s “temperature” before a planning board hearing. In preparing for such meetings or for other outreach strategies, the answers to the questions in this section of the toolkit can help guidebook users anticipate likely concerns that may be raised about the development, so the airport can be prepared to address them. The airport’s response should clearly explain how the development plan is consistent with and supportive of the community’s own master plan and economic development goals, and the benefits the proposed development will provide. It is important to be familiar with and understand those larger regional goals.



6.21 Permits and Approvals

KNOW

It has been pointed out several times throughout the guidebook how important and potentially expensive the permitting process can be. Approvals can be required at all levels of government: federal, state, county, and local. Once the Development Plan and Development Program have been refined, steps can be taken to prepare for and expedite approvals. These steps include identifying the scope of necessary permits and approvals by answering the following questions:

- **Which agencies will be involved?**
- **What documentation will be required for approval?**
- **What is the sequence of the approvals needed?**
- **What expertise is required?**

This section of the Implementation Toolkit walks the guidebook user through the permitting and approval process using a series of questions and checklists.

SOUND BITE

Delays or unpredictability in a development schedule are distinctly harmful to the development and redevelopment process.

FAA

Compliance with FAA grant assurances and land releases will be necessary for grant-obligated airports. If private airports that may not have been grant obligated in the past wish to seek FAA funds for future improvements, the airports need to be aware they will be subject to compliance for future development on land that has not been released from FAA jurisdiction. Advance planning is important to show that the development land has been classed as non-aeronautical in required planning documents, such as the ALP.

Required approvals can differ depending on ownership status. Private airports would be treated as private developers. Publicly-owned airports, by contrast, may not be required to obtain local site plan approval for locations on airport property or within the AOA. A review of relevant laws and regulations can confirm which agencies have approving authority. Airport sponsors are advised to bear in mind that, even when a project may be exempt from local approval, community coordination remains highly important. Local opposition can still complicate the development process.



HAVE


Permits and approvals could include, but are not limited to, the items listed in this section of the toolkit. The checklist is intended to track whether or not commonly needed permits or reviews are required. Additional permits or reviews can be added to the list as they are discovered. The complete Permits and Approvals Checklist is provided in Appendix C, “Chapter 6 Checklists,” along with a blank permitting matrix. A customizable copy of the same checklist and permitting matrix can be downloaded from the *ACRP Research Report 176* webpage.

SOUND BITE

Leasing is not popular with developers. There has been trouble getting financing for projects on long-term lease properties. It has also been difficult to come to terms with the FAA on “fair market value” of a lease.

FAA Actions—If Grant Obligated


- **ALP REVISION APPROVAL?**
- **LAND RELEASE REVIEW?**
- **NEPA DETERMINATIONS FOR ENVIRONMENTAL REVIEW?** Subsequent Categorical Exclusion (CATEX), Environmental Assessment (EA), or Environmental Impact Statement (EIS); air quality impacts?
- **LEASE REVIEW?** Fair market value, term limit, renewal options, reversions?
- **COMMUNICATION AT START OF DEVELOPMENT PROCESS?**
- **OTHER?**

 FAA actions (If grant obligated)	Check to select	Notes
<i>ALP revision approval?</i>		
<i>Land release review?</i>		
<i>NEPA determinations for environmental review?</i>		
Subsequent CATEX?		
Subsequent EA?		
Subsequent EIS?		
Air quality impacts?		
<i>Lease review?</i>		
Fair market value?		
Term limit?		
Renewal options?		
Reversions?		
<i>Communication at start of development?</i>		
<i>Other?</i>		

Environmental Permits—Federal, State, or Local


- **SOIL EROSION?**
- **WETLANDS FILL OR CROSSING?**
- **COASTAL JURISDICTION?**
- **REMEDICATION (ADDRESSING SITE CONTAMINATION)?**
- **FLOODPLAIN ENCROACHMENT?**
- **STORMWATER DETENTION AND DISCHARGE?**
- **WATER SUPPLY ALLOCATION OR MAIN EXTENSION?**
- **SEWER SYSTEM CONNECTION?**

- **CONTAMINATION INVESTIGATION AND REMEDIATION?**
- **FISH AND WILDLIFE/ENDANGERED SPECIES?**
- **SOLID WASTE MANAGEMENT?**

 Environmental permits (federal, state, or local)	Permit required?		Notes (including agency identification)
	Yes	No	
Soil erosion?			
Wetlands fill/crossing?			
Coastal jurisdiction?			
Remediation?			
Floodplain encroachment?			
Stormwater detention and discharge?			
Water supply allocation or main extension?			
Sewer system connection?			
Contamination investigation and remediation?			
Fish and wildlife/endangered species?			
Solid waste management?			


Land Use and Zoning Approvals—Local or Regional

- **ZONING CHANGE?**
- **VARIANCE(S)?**
- **SITE PLAN APPROVAL?**
- **SUBDIVISION APPROVAL?**
- **REDEVELOPMENT AREA PLAN/AGREEMENT?**

 Land use and zoning approvals (local or regional)	Approval required?		Notes
	Yes	No	
Zoning change?			
Variance(s)?			
Site Plan approval?			
Subdivision approval?			
Redevelopment area plan/agreement?			

Transportation—State, County, or Local Jurisdiction

- NEW OR MODIFIED HIGHWAY ACCESS?
- RAMP OR ROAD EXPANSION?
- INTERSECTION AND SIGNAL IMPROVEMENTS?
- ROAD DRAINAGE?
- BUS ROUTING?
- TRANSIT STATION LOCATIONS?

 Transportation (state, county, or local)	Check to select	Notes
New or modified highway access?		
Ramp or road expansion?		
Intersection and signal improvements?		
Road drainage?		
Bus routing?		
Transit station locations?		

DO

Once the research has been completed, it can be helpful to group the required permits into a matrix like the example shown in Table 1. In the table, review times are examples; actual review times will depend on local regulations. A blank permitting matrix has been provided in Appendix C, along with the checklist for this section of the toolkit.

The matrix will need to be populated for each specific development proposal, and the timeline for the permitting will need to be verified locally. Time-frames for permit review often can be found in the statutes or regulations that established the permit procedures, so those sources should be consulted in laying out a timetable. It is critically important to build sufficient time into the schedule to obtain permits, particularly when negotiating with a potential user or funding source. Some time-frames are quite extended, and only begin when an application is declared complete.

Identifying the scope of required permits will help airport sponsors refine the cost estimates and schedule to feed back into the Pro Forma.



Table 1. Permitting matrix example.

Agency	Permit Type	Documentation	Consulting	Review Time
Planning board— Municipal	Site Plan approval, Variances	Site plans, Traffic studies, Planning reports	Engineering, Architecture, Traffic, Planning	120 days
State department of transportation	Highway access	Driveway access, Drainage plans	Engineering, Traffic	90 days
Planning board— County	Site Plan approval	Site plans, County road studies	Engineering, Architecture, Traffic, Planning	120 days
State department of environmental protection	Sewer connection, Flood plain	Wastewater calculations, Main extensions	Engineering, Water quality	90 days
Water department or municipal utility	Water use	Water consumption calculations, Main extensions	Engineering	60 days
U.S. Army Corps of Engineers or local environmental agency	Wetland or stream stormwater discharge, Road crossing	Wetlands limits, Site plans	Environmental, Engineering	180 days
FAA	Land release	Revised ALP, Joint venture/ lease approvals	Legal, Aviation planning	270 days

6.22 Consulting Needs—Building the Project Team

KNOW

Even with strong in-house management capabilities, and even with small-scale projects, some consulting expertise will probably be necessary to assist with engineering, legal, permitting, or design details. Expertise is needed both to address the permitting needs and to provide construction plans and specialized technical knowledge.

SOUND BITE



The airport has a real-estate agreement with two large commercial real estate firms to market airport properties.



Given the potential scope of consultants, clearly a central coordination role at the airport is needed to monitor milestones, review consultant work products, and maintain the schedule.

HAVE

Table 2 lists the consulting professionals who are most likely to be needed. A blank project team components checklist is provided in Appendix C, “Chapter 6 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage. Guidebook users can fill in the blank table to identify who will be part of the project team. The complete project team will include airport and/or municipal employees as well as consultants.

Table 2. Example of project team and contributions by role.

Title	Contributions/Focus
Land planner	Airport Master Plan, Development Plan, approvals, or variance testimony before planning board
Civil engineer	Road and utilities design, drainage, grading, Site Plan preparation, planning board testimony, cost estimating
Architect	Conceptual Site Plan, building design, planning board testimony
Land use attorney	Airport representative before planning board, direction of testimony, suggestions for strategy; preparation of drafts and review of agreements, easements
Environmental remediation professional	Assessment of site conditions, development of remediation plan, management of cleanup, obtain approvals from relevant agency
Environmental resource or impact consultant	Wetlands and wildlife studies, Environmental Impact reports for municipal approvals or state permits
Traffic engineer	Traffic impact studies and improvement recommendations, coordination with transportation agencies, planning board testimony
Transaction attorney (leases, sales)	Airport representative in negotiation of lease and sales terms
Aviation attorney (FAA issues)	Identification of grant assurance issues and approval procedure, preparation of approval documents, coordination with FAA, identification of land use conflicts, review of leases for FAA compliance
Real estate advisory/broker services	Market analysis, identification of potential lessees/purchasers, marketing strategy, project management
Capital markets advisors, bond counsel	Bond financing

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DO



The answers to the questions in this section of the toolkit can be used to walk through the process of putting together the project team members. It may be too early in the planning process to identify every team member specifically, but there should be a basic understanding of which resources will be needed, which needs can be filled using the internal staff, and which will be brought in on a contract basis. Identifying the consultants who will be part of the team also will help to refine the cost estimates to feed back into the Pro Forma.

6.23 Incentives

KNOW

Tax incentives are commonly used to attract business to airport development zones throughout the United States, and should be considered in the project's planning stages. Incentives can vary and may come from federal, state, or local sources. If the airport land is located within an economic development zone, that fact should be featured prominently in marketing and outreach strategies.

SOUND BITE

City council took action and offered an abatement on aircraft maintenance facilities and other aviation-related businesses. The waiver of local taxes has helped spur development.

HAVE

The lists in this section of the toolkit can enable guidebook users to determine which tax and non-tax incentive programs may already be in place for the airport and which ones might be worth pursuing as an incentive for business attraction. The complete Incentives Checklist is provided in Appendix C, "Chapter 6 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **FOREIGN TRADE ZONE?** Foreign Trade Zone (FTZ) designation is a common airport-related incentive. FTZs are designated geographic areas within which merchandise is considered to be outside U.S. Customs territory. The designation allows businesses within the FTZ to defer or avoid normal tariffs and duties on imported materials and goods. There are nearly 300 FTZs throughout the United States. Additional information on FTZs is available at www.enforcement.trade.gov/ftzpage/applications.html or www.foreign-trade-zone.com/index.html.
- **AIRPORT DEVELOPMENT ZONE?** The designation of Airport Development Zone is a popular option for states and counties to stimulate investment. This designation may come with a variety of tax and non-tax incentives.
- **TAX INCENTIVES?**
 - **Income tax credits?** Credits at the state or federal level—or both—can be granted on the basis of job creation or the level of investment by a new business.
 - **Sales and use taxes?** These taxes also are abated in some programs for aviation-related businesses. Examples include the Bradley Airport Development Zone in Connecticut and the Economic Incentive Zone and Aviation Development Zone in Colorado Springs.
- **NON-TAX INCENTIVES?**
 - **Training programs?** To attract business, training programs may be made available to development zone employees.
 - **Expedited permit processing?** In this context, expedited permit processing refers to fast-tracking the review and permitting process for the businesses that will be attracted to the new development.
 - **Low-interest loans?** The purpose of these loans is to support capital asset financing for relocating companies.

↶	Check to select	Notes
Incentives		
<i>Foreign Trade Zone?</i>		
<i>Airport Development Zone – tax incentives?</i>		
Income tax credits?		
Sales and use taxes?		
<i>Airport Development Zone – non-tax incentives?</i>		
Training programs?		
Expedited permit processing?		
Low-interest loans?		

Case Study: Raleigh–Durham International Airport, North Carolina

Resistance to the use of incentives on publicly-owned airport land may occur in some locales because the incentives can be viewed by the private sector as conveying an unfair advantage. A ULI panel study examining future development potential at Raleigh–Durham International Airport recommended against establishing incentives for just this reason. Raleigh–Durham already enjoys many attributes that are attractive to business, and incentives would be less justifiable there than in a less attractive location. Nationwide, controversy and debate about the use and efficacy of incentive programs certainly occurs, and the benefits and costs of such programs with respect to airport development is a worthy subject for potential further research.

DO

The availability and suitability of incentives should be explored early in the process. If suitable incentive programs are available, they can be highlighted in the proposed development’s marketing strategy. An important part of this exploration, however, is determining whether airport leadership, local elected officials, and the business community are receptive to the use of incentives. Opposition is best identified and addressed early on, so that a general level of consensus can be created before pursuing efforts to secure the incentives. Political entities may be responsive to initiatives that carry potential for economic revitalization. Federal and state elected officials are a good place to begin the conversation about establishing incentives for airport development. For example, if the airport is not already in an economic development zone, the airport may consider advocating for the county or state to designate a zone and formalize an incentive program.



6.24 Funding and Financing

KNOW

The project Pro Forma provided the base reference for the funding needed to implement the project. The estimates on the Pro Forma should have allowed the airport sponsor to determine the portion of funding that could be provided through airport operations, the amount that would have to be financed, and when the funding would be needed. Shortly before proceeding with the development is a good time for the sponsor to review and update the expense projections and funding and financing plan. The funding that will be needed may come from one source or from a variety of sources.



HAVE


Several sources exist from which the necessary funding can be assembled to complete the development project. The information gathered in this section of the toolkit will help guidebook users research and track information about funding options. The complete Funding and Financing Checklist is provided in Appendix C, “Chapter 6 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **INTERNAL SOURCES?** Reserves or free net revenue from airport operations can be dedicated to fund initial planning and design efforts. In most cases, project scale will dictate that other funding will be necessary for the construction costs. If the airport has already received FAA grants, the grant assurances must be carefully examined to make sure that any restrictions on revenue use would not be violated. The same caution would apply to any outstanding bonds issued for earlier projects.
- **GRANT AND LOAN SOURCES?** The project may qualify for federal or state grants from several sources, including but not limited to the following:
 - **Regional Economic Development Authorities?** Grants or loans may be provided for projects that create jobs and leverage other investment, or which generally improve public infrastructure, such as airport access roads or drainage.
 - **State Transportation Aviation Agencies?** Similar grant and loan programs may be provided by these agencies.
 - **Community Stakeholders?** Stakeholders may be helpful in identifying grant and loan opportunities from a variety of sources.
- **APPROPRIATIONS?** For airports with county, municipal, or state ownership, direct appropriations from state aviation funds or general funds might be possible. As such appropriations have political aspects, it is here that positive community and stakeholder relations can be of significant help in advocating and securing funding. Departments of transportation also can make appropriations for road improvements that would serve new development, improve airport access, and broadly benefit public use.
- **BONDS?** The airport sponsor may be able to issue bonds through its own organization or through a city, county, or state government. These bonds could be tax-exempt based on the likely share of public benefit, and typically take the form of either general obligation bonds backed by the government entity’s general revenue and taxing ability, or airport revenue bonds supported by the airport’s own net revenue. Further research, and likely the assistance of an underwriter or capital markets advisor, would determine the likely credit rating and interest rate on the debt, as well as legal and other costs of issuance.



Bond funds can be used for project engineering and design costs, construction of infrastructure, as well as the development project itself. For a general obligation bond, the issuing municipal entity would have to determine that it has sufficient legal and taxing capacity to support the new debt. For a revenue bond, the financial advisor, along with an engineering/feasibility consultant, can help determine that the airport has the revenue capacity to support the proposed bond debt service. In either case, bond counsel would be employed to assist the airport or municipality in bonding decisions and issuance. In all cases, existing bond resolutions and rate covenants must be examined for restrictions applicable to new issues.

- **PARTNERS?** Joint venture partners can be a source of funding, either through forms of cost-sharing, apportioning, or taking responsibility for construction costs. (Additional information on joint venture partnerships is provided in this toolkit in the section labeled “Development and Partnership Strategies.”)
- **VALUE CAPTURE?** Value capture encompasses other forms of bond financing. The concept is relatively simple, and its application to various projects in the United States was explored in detail in *ACRP Report 121* (2015). The model assumes that certain properties and users benefit from the proximity to an airport, and the airport generates both direct and indirect economic impacts through job growth, property tax appreciation, and more passenger ridership and access. In this guidebook, these techniques are explored in more detail in Chapter 7, “Off-Airport Considerations and Revenue.”

 Potential sources	Check to select	Notes
Internal sources?		
Grant and loan sources?		
Regional economic development authorities?		
State transportation aviation agencies?		
FAA-sponsored Airport Improvement Program (AIP) grant?		
Community stakeholders?		
Appropriations?		
Bonds?		
General obligation?		
Revenue?		
Partners?		
Value capture?		

DO

The information collected in this section of the toolkit can be used to determine which funding sources are available, what amounts might be provided through each source, and the associated timeline for each funding source. For example, appropriations may be a politically viable funding option, but they may require some lead time to be put into the budget for the next fiscal year. Bonds may be a funding option, but they may require a public vote, and it may take several years to put the funds in place. As noted in the discussion of financial analysis, funding strategies and conditions, such as sources and interest rate costs, must be factored back into the refinements made to the Pro Forma.



6.25 Development and Partnership Strategies

KNOW

At this point in the development planning, thinking about scenarios for ownership and project implementation should be fairly far along. The information gathered thus far on risk, professional expertise, and financial resources will all help shape a decision about whether the airport will “go it alone,” find a joint venture partner, or enter into an agreement with a master developer.

Partnerships can be a good source of funding and offer a way of sharing the risks of development, but a partnership may not be appropriate for all situations. The plans for the development may be limited enough that the project can be self-financed through airport revenues or the parent entity without need for a partner. In the case of publicly owned airports, private participation can be constrained by statutory or regulatory constraints.

After preparation of the Pro Forma, however, it may become clear that the airport does not have the resources, time, or expertise to complete the development project alone. In this case, it could make sense to seek a joint venture partner or perhaps turn the project over to a master developer.

If a developer partner is brought in, it is helpful to remember that one of the most important aspects of a project is predictability. Complete predictability is impossible, but the more that potential issues and risks have either been resolved or accurately framed in advance, the more attractive the development opportunity becomes. Some tension may occur over issues of land control. Developers investing in long-term development involving significant vertical construction typically want as much control of the land as possible, but that may not be advisable or even possible for the airport. Land leases may offer the most long-term income dependability, but a partner may prefer the quicker turnaround of lot sales. Generally, for land leases, developers will look for as long a term as possible, which may conflict with FAA policies. For grant-obligated airports, lease terms are subject to FAA review. (For more information, see Chapter 3, “Legal Considerations.”)

If the airport does not have the land resources to undertake development on its own, it also may be possible to enter into a joint venture with off-airport landowners or developers. The off-airport development may bring new customers and revenue to the airport. In such cases, the key is to determine what the airport is contributing to the deal: for example, the airport may contribute capital, infrastructure work, or other grant proceeds. If the airport governance has a low risk tolerance, an off-airport partnership may be worth exploring. (See Chapter 7 for additional details related to this topic.)

HAVE

The information assembled using this chapter’s sections on “Finding Partners,” “Evaluating Partners,” and “Determining the Deal” can be helpful if the airport is considering a joint venture partnership. Finding the right partner will be important to the success of the project. The airport may need to consider several potential partners before finding the right match.

Rather than a joint venture partner, the airport may prefer to work with a master developer. Unlike a venture partner, the master developer will most likely manage all aspects of design, approvals, construction, leasing, and property management. There is a trade-off with this arrangement: although it minimizes the resources that need to be invested by the airport sponsor, it reduces the sponsor’s day-to-day control. This arrangement may be suitable if the



FAA



primary concern is with the results of the development and not the process. The complete Development and Partnership Strategies Checklist is provided in Appendix C, “Chapter 6 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

Finding Partners

Potential joint venture partners can be found through networking and business outreach activities—another key benefit of community involvement. The question-prompts in this section of the toolkit will help guidebook users identify potential partners.

- **PROFESSIONAL NETWORKING?** Acquaintances in real estate, banking, and economic development may know of individuals or institutions looking for an opportunity or who have participated in public/private partnerships.
- **PROFESSIONAL REAL ESTATE ADVISOR?** A professional real estate advisor can be engaged to provide guidance and to locate investors. Ideally, the real estate advisor will have some knowledge of aviation, public finance, and/or other topics that may be unique to the project. In the case of publicly owned airports, engaging a real estate firm may also be beneficial as the firm may be better able to speak in “development language” to a potential partner who is not familiar with public-sector projects.
- **ECONOMIC DEVELOPMENT AGENCY?** A partner need not be a private developer. Economic development agencies can contribute funding and expertise to a project.




Finding partners	Check to select	Notes
Professional networking?		
Professional real estate advisor?		
Economic development agency?		

Evaluating Partners

Potential joint venture partners must be evaluated and selected carefully. A partner should be someone who “pulls together” as a teammate, and who can comfortably work in a partnership through the duration of the project. Consider those developers or partners that would be most interested in the project and the opportunities it represents. Examine their business history or record of development success and their references and consider the following:

- **DIRECT EXPERIENCE?** Does the potential partner have direct experience in the type of development proposed? The premise in seeking a development partner is that the partner contributes the expertise to accomplish the development efficiently and not get stuck on a learning curve.
- **AIRPORT EXPERIENCE?** Has the potential partner worked with other airports or public partnerships? Is the project a natural progression for them?
- **REFERENCES?** Are references available? Are there built projects?
- **INVESTMENT CAPITAL?** Does the potential partner have the liquidity and capital to invest in the project and hold up their commitment to project costs?


- **COMPATIBLE GOALS?** Are the airport’s goals compatible with the partner’s goals with respect to risk-sharing, investment returns, and long-term objectives?

 Evaluating partners	Yes	No	Notes
<i>Direct experience?</i>			
<i>Airport experience?</i>			
<i>References?</i>			
<i>Investment capital?</i>			
<i>Compatible goals?</i>			
Risk-sharing?			
Investment returns?			
Long-term objectives?			

Determining the Deal

No partnership exists without an agreement on the financial terms. Before the airport sponsor begins to look for a partner, it would be wise to have an internal understanding of the airport’s expectations on these four key elements of a partnership agreement:

- **SHARES OF INVESTMENT?** In most cases, the airport’s capital contribution to the joint venture would be the value of the land it is providing to the deal. That value should be confirmed independently with a professional appraisal conducted by a third party.
- **PERCENTAGE RETURN?** How much risk to share with the partner is primarily a function of the airport’s own risk tolerance, but risk-sharing for a public airport may also be constrained by statutes and regulations. Generally, risk is proportional to reward: the more risk a partner is expected to shoulder (i.e., the more the partner is “risk-burdened”), the more upside revenue the partner will naturally expect.
- **ROLES AND RESPONSIBILITIES?** What roles and responsibilities will the airport have? The partner? Up front, the partners must reach an agreement about the responsibilities of each through the process: which entity will obtain the approvals, manage contractor bids, manage construction and leasing, and so forth.
- **SPLIT OF EXCESS PROFITS AND RESIDUAL VALUE?** What provisions will be made to divide returns that may grow over time and exceed initial estimates?

 Determining the deal	Addressed in deal?		Notes
	Yes	No	
	<i>Shares of investment?</i>		
Confirmed by third-party appraisal?			
<i>Percentage return?</i>			
<i>Roles and responsibilities?</i>			
Airport?			
Partner?			
<i>Split of excess profits and residual value?</i>			

DO

Joint Venture Partner

To help decide this sharing of risks and responsibilities, the financial Pro Forma should be run using numbers that reflect several scenarios of investment, cost, and revenue sharing assumptions. The airport sponsor will have to enter the negotiation knowing the arrangement that will best serve its own interests, and where compromises can be made. This is another instance in which professional real estate and legal representation will be an advantage.



Master Developer

The airport may prefer to work with a master developer. If the airport opts for the help of a master developer, it will essentially turn over all development responsibilities to a professional development company, releasing far more control over the project than in a typical joint venture. Often, the master developer obtains a ground lease for the property from the airport sponsor and proceeds to install infrastructure, prepare sites, and construct and rent buildings. Many airports have employed this approach. Examples include Southern California Logistics Airport in Victorville, California; Dayton–Wright Brothers Airport in Ohio; and the Indianapolis Airport Authority.

A master developer is typically chosen through a Request for Proposals (RFP) process that is administered either by the airport sponsor or by the airport’s governing entity. The RFP defines the objectives for the project; provides a property description and mapping; describes the site’s location and the demographic and economic context; and identifies zoning and land use parameters (e.g., zones for aviation and commercial uses). The RFP also may include design guidelines. FAA restrictions, lease term limits, and other lease provisions should be noted. The time-frame desired for development phasing and completion also can be specified. For more information, *ACRP Report 47: Guidebook for Developing and Leasing Airport Property* (2011) is a pertinent reference that contains a detailed checklist for identifying key components of lease agreements.

SOUND BITE



A master developer was selected through a public selection process.

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Prospective developers who respond to the RFP are asked to present their proposed development concepts. They also are asked to present financial information demonstrating their ability to undertake the project, as well as references confirming their real estate development experience. The proposal also includes the fee and pricing structure and/or joint venture terms, if applicable. Acceptance of a proposal is followed by negotiation of a Developer's Agreement that outlines the responsibilities and obligations of both parties.

The scope of the RFP will vary depending on the airport's needs. If the airport has already done extensive groundwork in development planning, specific parcels may have already been identified for sale. If this is the case, the developer will only be asked for targeted assistance in marketing those sites. In other cases, the master developer will be asked to undertake all of this work—to conduct due diligence, undertake land use planning and infrastructure improvement, and propose unique, creative ideas for parcel use.

The terms of a joint venture deal or agreement with a master developer must be factored into further refinements of the Pro Forma. For example, a partner may take on certain responsibilities that relieve the airport of approval costs, for example, but may also require a larger share of the revenue from the development.



6.26 Marketing

KNOW

Whether the development effort is led by the airport sponsor, a joint venture partner, or a master developer, a marketing strategy is necessary for its success. Joint venture or master developer partners often are contractually responsible for marketing operations. Regardless, the airport sponsor should be aware of the underlying marketing strategy and review and contribute to it based on operational knowledge. Marketing strategy decisions do not wait until the last minute. Once approvals are in hand, it is time to begin discussions with marketing advisors.

Here, coordinating with local economic development agencies can be very helpful, as they should be very willing to highlight the development project in their online or print marketing materials to attract businesses. Brokers or real estate advisory firms are another way to identify prospective tenants or lease holders. They can be engaged or provided with information to spread the word to their network about the development opportunity. Notes about working with a broker, are provided in the “Do” section. For larger or longer-term development projects, a marketing design or strategy firm may be employed to recommend graphics, logos, and media placement.


HAVE

The organization and intricacy of a marketing program will depend on the nature of the project to be promoted. Projects involving multiple uses, buildings, features, and land use plans will require a more structured and detailed program than a development project limited to ground leasing land parcels, though in either case a sustained effort is required to achieve the absorption goals of the project. Answering the questions in this section of the toolkit will help guidebook users consider several important elements of a marketing campaign tailored to the project needs. The complete Marketing Checklist is provided in Appendix C, “Chapter 6 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **BRANDING?** Establish an identity for the project. If the airport already has a strong market image, that is a good head start, particularly if the development project is aviation oriented. Otherwise, develop a name and a theme for the project that links it to the airport focus, signals the desired land uses for the project (e.g., town center, logistics park, flight training), and fixes an easily recognizable geographic location or other identity.
- **COMPETITIVE ADVANTAGE?** What makes the airport development site desirable? Airfield access? Intermodal availability? Larger, less expensive sites? Private jet services? Business travel for corporate headquarters? Mass transit access? Multimodal transportation? Infrastructure investment that has created shovel-ready parcels can really pay off in creating competitive advantage, as can other features and amenities that distinguish the development.
- **COMMUNITY RELATIONS?** Efforts at community relations can be of immense help in creating a positive presence in the community. Airport officials who are active in the community can promote awareness of the project, perhaps as speakers at economic development events. Business networking is a key part of marketing the project, especially within real estate organizations.



- **ADVERTISING?** Advertising can be expensive, but ads most likely have a role in the marketing campaign. Effective advertising is about timing as well as placement; paying close attention to both will help the airport sponsor make the best use of the budget.
- **MEDIA RELATIONS/SOCIAL MEDIA?** Engaging a professional firm may be the most effective way to tap the media as part of the marketing strategy. The media strategy may include placing news stories about the project and providing updates on available sites and project progress on websites, Facebook pages, and Twitter feeds.
- **POINT PERSON?** Has a consistent point of contact been identified for inquiries about the project from potential users or lessees? This contact can be a designated in-house individual, if resources allow, or a member of the contracted broker or real estate advisory firm.

	Check to select	Notes
Marketing campaign elements		
Branding?		
Ties with airport identity?		
Themed and recognizable?		
Competitive advantage?		
Community relations?		
Officials active in community?		
Business networking ongoing?		
Advertising?		
Media relations/social media?		
Internal staff efforts?		
Hired professional firm?		
Point person?		
Internal staff member?		
Contracted broker or real estate advisory firm?		

DO

The airport sponsor will have reached an initial decision as to whether the marketing will be done by internal staff or through a contract arrangement through the exercise on market conditions in Chapter 5, "Site Evaluation Toolkit." Completing the checklist in this section of the toolkit will help guidebook users fine-tune the marketing strategy and related efforts. The combined decisions also will help refine the marketing costs, which can then be entered in the Pro Forma.



The marketing strategy can help find potential customers, but a broker can play a more direct role in finding real prospects. A real estate broker can be directly engaged on an exclusive basis, although a broker agreement establishing the agreed fees and responsibilities will be necessary.

Engaging a real estate broker does add another layer of complexity to the project, which may or may not be worth the effort. If the airport chooses to work with a broker, it is important that the selected broker or real estate advisor be familiar with the FAA grant assurances that may apply to the project, including limitations on lease terms, building height limitations, and fair market value requirements. With public airports, an RFP process may be required to identify and select an exclusive broker.

Any contracts with marketing or real estate firms, including commission agreements with brokers, need to be reflected in the Pro Forma.

Note that an experienced attorney will be needed to draft and negotiate lease and sale documents for the airport's development property or buildings. FAA will review lease terms to confirm compliance with grant assurances. If the airport is grant obligated, the attorney should be familiar with FAA requirements. Key issues are lease terms and fair market value. (For more information on this topic, *see* Chapter 3, "Legal Considerations.")



6.27 Construction Management/Property Management/Operation

KNOW

Property management involves various elements and challenges as the project develops; accordingly, the management strategy needs to shift as the project moves from its construction phase, through lease-up, and into operations. For example, the development stage can easily result in disruption to airport circulation if access needs are not anticipated and minimized with effective planning. Traffic management plans should be in place during road and utility construction, and local approval conditions may require extra traffic officers and approval of detour plans. Similarly, as new sections of the development are opened, construction management and property management personnel should cooperate to preserve access and enforce soil erosion and noise controls.

An airport sponsor can take the responsibility for construction, but more often it will be the purview of a joint venture partner or master developer. The latter approach is wise if the type and extent of construction are outside the airport's experience. A developer partner also may have relationships with local contractors. A joint venture or developer agreement should address the construction contractor selection and approval process, with appropriate approval rights for the airport sponsor. As with the developer or partner selection itself, the specifics of selecting and approving contractors may be affected by public bidding requirements. In any event, references should be required.

Property management needs are dependent on the nature of the project: a development consisting solely of parcels to be ground leased will involve only limited property management obligations, but they may still include maintenance of common landscaping areas, signage and other amenities, and road maintenance if roads are private. Management of lease payments and other lessee issues will still need to be handled. Projects involving new structures and leasing of space to tenants will entail additional responsibilities, such as tenant improvements, communication with and touring prospects, addressing building operations and complaints, and many other details.

The airport's strategy for ongoing management of the development must take into account the airport sponsor's own resources and capabilities for maintenance, accounting, and tenant relations. Is the responsibility for property management something the airport can comfortably handle, or is it best undertaken by a partner or a third party? This section of the Implementation Toolkit presents three possible scenarios for property management.

- **AIRPORT AS CONSTRUCTION MANAGER/PROPERTY MANAGER?** If the airport already undertakes construction and property management, the new development may be assigned to an airport employee or added to the department that now handles property issues on the airport itself.
- **MANAGEMENT ASSIGNED TO PARTNER OR MASTER DEVELOPER?** If it appears best to assign construction management and/or property management to a joint venture partner or a master developer, a formal agreement will be needed. As with a joint venture or developer construction agreement, the management agreement should address contractor selection and the approval process, specifying appropriate approval rights for the airport sponsor. As with the developer or partner selection, the selection of contractors may be affected by public bidding requirements. For property management, if


the property is owned by a partnership, all partners’ names should be stated in the management agreement, and all should sign the document.

- **OUTSOURCED?** Construction and/or property management responsibilities may be wholly outsourced to a construction contractor, management firm, or real estate services firm. As part of the selection process, a sponsor taking this approach should request a copy of the firm’s contractor’s license, property management license, and/or real estate license. Most states require these licenses.

HAVE


The question-prompts in this section of the toolkit can help guidebook users decide whether the airport has (or would like to hire) staff capable of executing property management responsibilities. The complete Construction Management/Property Management checklist is provided in Appendix C, “Chapter 6 Checklists,” and a customizable copy can be downloaded from the *ACRP Research Report 176* webpage. With regard to typical construction management responsibilities, who will be responsible for:

- **DEVELOPMENT OF BID DOCUMENTS?**
- **CONSTRUCTION CONTRACTOR SELECTION AND APPROVAL?**
- **CONSTRUCTION OVERSIGHT?**
 - *Compliance with building codes?*
 - *Soil erosion control?*
 - *Noise ordinances?*
- **SAFETY PLAN DEVELOPMENT AND OVERSIGHT?**
- **TRAFFIC PLAN DEVELOPMENT AND COORDINATION?**

 Construction management responsibilities	Check to select	Notes
<i>Development of bid documents?</i>		
<i>Construction contractor selection and approval?</i>		
<i>Construction oversight?</i>		
Building code compliance?		
Soil erosion control?		
Noise ordinances?		
<i>Safety plan development and oversight?</i>		
<i>Traffic plan development and coordination?</i>		


With regard to typical property management responsibilities, who will:

- **ACT AS THE TENANT LIAISON?**
 - *Monitor tenant with respect to lease obligations?*
 - *Collect lease payments?*
 - *Respond to tenant complaints and issues?*
 - *Coordinate move-in process, tenant improvements?*
 - *Sign leases on the owner’s behalf (possibly)?*

 Property management responsibilities	Area of concern?		Notes
	Yes	No	
<i>Tenant liaison?</i>			
Monitor tenant for lease obligations?			
Collect lease payments?			
Manage tenant complaints/issues?			
Coordinate tenant move-in and improvements?			
Sign lease on owner’s behalf?			


As appropriate to the project and the plan, who will be responsible for:

- **FACILITY MANAGEMENT?**
 - *Management of physical structures, outdoor spaces, and common spaces?*
 - *Monitoring provision of any services provided by owner?*
 - *Purchasing materials required for maintenance?*
 - *Selecting and maintaining relationships with contractors for repairs and regular maintenance?*
 - *Monitoring quality of repairs and maintenance work?*

 Facility management responsibilities	Area of concern?		Notes
	Yes	No	
<i>Facility management?</i>			
Physical structures (inside, outside, common areas)?			
Monitor service provisions?			
Materials purchasing?			
Ongoing contractor coordination for maintenance?			
Maintenance quality monitoring?			

As appropriate to the project and plan, who will be responsible for:

- **FINANCE AND ADMINISTRATION?**
 - *Preparation of budgets for capital improvements and scheduled maintenance?*
 - *Regular reporting to owner?*
 - *Management of events and tours to promote space?*
 - *Hiring and managing of employees?*
 - *Collection of rents and disbursement of funds for property and employment taxes?*
 - *Maintaining complete records of tenant interactions, complaints, repairs, and taxes paid?*
 - *Familiarity with all applicable laws and regulations?*

 Finance and administration responsibilities	Area of concern?		Notes
	Yes	No	
<i>Finance and administration?</i>			
Budget preparation?			
Regular reporting to owner?			
Event coordination and leadership?			
Hiring/managing employees?			
Accounts payable and receivable?			
Accurate documentation skills?			
Compliance monitoring?			

DO

Decisions on property management cannot wait until construction is completed. The strategy should be selected in advance in order to hit the ground running when the project is ready for occupancy. Because a property manager has responsibilities in several different areas, the responsibilities may be divided among two or more members of the airport’s staff, or they may be divided between airport staff and a development partner. Property management responsibilities also may be outsourced. The checklists in this section of the toolkit can help guidebook users make a decision about how the project management responsibilities can best be assigned.

With regard to construction management, as schedules, estimates, and bids for the construction work are obtained, that data must be factored into refinements of the Pro Forma. For public airports, there may be regulatory requirements to accept the lowest bid.

Once decisions have been made regarding property management responsibilities, the Pro Forma should be updated with revised property management and operations cost projections, including the negotiated management fee or new in-house management costs.



6.28 Summary

This Implementation Toolkit has been designed to help guidebook users define the Development Program that best fits the airport's needs and guide decisions regarding strategies and actions to implement the project. It is possible to pursue certain avenues concurrently; for example, it is possible to assemble the project team while at the same time carrying out actions that are part of the community outreach strategy and identifying funding sources. It will be critically important to dedicate enough staff time and resources for effective management and coordination.

Considered together, the toolkits have taken the guidebook user through the process of self-assessment, site evaluation, and implementation, offering a step-by-step procedure for examining the factors involved in undertaking an airport real estate development project. By finding answers to the questions needed to complete each section of the toolkits, a wealth of information has been assembled, providing a head start for making the development a reality. The purpose of this guidebook is to minimize surprises, present the many issues that can arise or be anticipated, and present options for addressing them. Many of these issues may be relevant only to specific airports and development concepts. The complexity in planning and implementation shown in these chapters may discourage some sponsors, and may be enthusiastically embraced by others.

If the world of development still looks complicated—it is! But take heart: by maintaining a focus on priorities and goals, assembling the right professional expertise, and paying attention to market and financial information, the development can be successful—both as an income source for the airport and an economic benefit to the community.

Interest and enthusiasm for the development opportunity must always be tempered by a reality check. After working through the toolkits, it should be possible to answer the following questions:

- **Are the FAA review and approval issues defined and initiated?**
- **What is the development strategy?**
- **Who are the consultants to be retained?**
- **Are there funds available to hire consultants?**
- **Have funding sources been identified?**
- **Is a development partner needed?**
- **Do financial projections show that the development project is feasible?**
- **Will community support from the development be forthcoming?**
- **Do any critical obstacles require re-examination of the project as a revenue generator?**
- **Does the development project remain consistent with the airport's land planning and revenue goals?**

The complete set of checklists, including all the worksheets and tables presented in the toolkit chapters, is provided in the appendices to this guidebook. The checklists coordinate with the topics discussed in the chapters and help guidebook users collect and review site evaluation criteria and options for development implementation. At this point, the airport sponsor has reached a final Stop/Go decision point. There may be a need to stop and gather more information, adjust the development design, or find the right staff person before continuing with the development project and taking it to completion.



Chapter 6 concludes the toolkits developed for airport use in planning for on-airport development. As described in Chapter 1, “Introduction,” the toolkit presented in Chapter 7 focuses on the special considerations involved in generating revenue from off-airport property that is not controlled by the airport.



CHAPTER 7

Off-Airport Considerations and Revenue



7.1 Introduction

Earlier sections of the guidebook addressed the topic of on-airport development for revenue generation. This chapter considers opportunities for airports to generate revenue from off-airport property development. Creating or participating in off-airport economic activities and development is a powerful way for an airport to integrate itself as part of the economic life and vision of the community and businesses it serves.

Airport authorities have always had an interest in the uses of land adjacent to the airport. In most cases, airport authorities are satisfied if such land uses are airport compatible. In reality, however, this is not a completely successful land use outcome. Airport authorities should aim not only for compatible land uses, but also for land uses that will contribute, either directly or indirectly, to airport revenues.

Revenue generation from off-airport property—land that the airport does not control—can be the result of various strategies that are explored in this chapter. Airports are seldom thought of as active partners in a conversation about community economic development. For several reasons, however, this approach may be selected either in place of or in addition to on-airport development. They include the following:

- **Risk is lower.** The airport does not necessarily have a direct financial investment in the development.
- **It can be quicker.** Private development is not subject to federal funding processes or to FAA review (beyond the requirements that apply to all development, such as Form FAA 7460-1, Notice of Proposed Construction or Alteration).
- **It may be the only land available.** Off-airport land may be the only option if no remaining land exists on-airport to accommodate development activities (i.e., all available airport land is fully developed).
- **The off-airport land may be better served by utilities and/or have fewer development restraints.**

The toolkit chapters in this guidebook included Stop/Go decision points at which the airport sponsor was asked to consider whether the concept of on-airport development made sense financially. Would the development likely be profitable for the airport while remaining within an acceptable risk tolerance? If the answer was “no,” the airport was directed to this chapter for more information on options for off-airport development as a revenue generator.

As the airport sponsor explores this path, it will be important to recognize that the airport has the economic potential to attract and support development. The airport can serve business

interests directly, by transporting goods or sales and service (employees) to and from the airport location. In this case, private development remits revenue directly to the airport sponsor through access or user fees. The airport also can serve business interests indirectly, by bringing clients to the area and by supporting the case for business location in the area. In this case, the airport receives incremental business revenue from increased use of airport facilities. The community may recognize that the airport's presence adds value to the area because it is an important part of the transportation network, representing a significant public investment as well as access to air travel. At the same time, the airport may recognize that what happens on the other side of the fence has a potential economic impact on the airport.

With this in mind, a creative airport manager can begin to consider how the economic value of the airport can be leveraged to stimulate development-related revenue for the airport. Rather than waiting for development to happen, the airport can be proactive and encourage the type of development that will provide revenue for the airport. **Airports should feel completely empowered to be proactive and to actively encourage off-airport developments that can contribute to airport revenues.** Although the airport does not control off-site property, the airport can think outside its boundaries and work with adjacent property owners to create a mutually beneficial development synergy. The airport also can think about how to work with local policy makers to influence policy decisions and encourage investments on off-airport property that benefit the airport. To this end, this chapter includes discussion of all of the following topics:



- **TTF Operations (Tier 4)**
- **Community Land Use Planning for Revenue Generation (Tier 4 and Tier 5)**
- **Economic Development and Business Attraction (Tier 4 and Tier 5)**
- **Public Finance Tools for Airport Revenue Generation (Tier 4 and Tier 5)**

Each discussion includes text and checklist sections. As in the preceding toolkit chapters, an icon provided in the title bar of checklist sections acts as a reminder that the complete checklist is included in the guidebook appendix:



If the airport sponsor does not initiate planning for development of property near the airport but such planning or development is begun by other sources, airport management is encouraged to join the conversation as an active participant to investigate and develop proactive approaches that ensure the airport's interests are represented. As was discussed in the earlier chapters, the airport needs to consider whether a development initiative from another source is likely to generate airport revenue, given that new development near the airport does not automatically result in revenue for the airport.

The means and strategies discussed in this section of the guidebook can create airport revenue opportunities and also can serve as a powerful foundation for integrating the airport with the economic goals, land use zoning, local workforce, and infrastructure planning and investment of the host community. In lieu of outright ownership or control, an airport can use its local influence and economic significance to partner with other landowners, businesses, and local public entities for the economic and social benefit of all concerned. Creating or participating in off-airport economic activities and development is a powerful way for an airport to integrate itself as part of the economic life and vision of the community and businesses it serves.

7.2 Developing Airport Revenues from Tier 4 and Tier 5 Properties



Tier 4 and Tier 5 properties have been identified as properties neither owned nor controlled by the airport and without access to the airport airfield (see “The Five Tiers,” in Chapter 2). They may immediately adjoin the airport and share a common property line, or they may be near the airport but not share a common property line. The purpose of this section in the guidebook is to explore and identify means and strategies by which an airport can accrue revenues, either directly or indirectly, from Tier 4 and Tier 5 properties that are neither owned nor controlled by the airport. Off-airport revenue generation has a high potential to generate revenue for the airport while at the same time offering a lower risk/liability exposure.



Developing reliable airport revenues from properties not owned or controlled by the airport is doable. Numerous implementable means and strategies exist by which airports can reliably develop, over time, consistent and significant direct and/or indirect revenues from Tier 4 and Tier 5 properties. It is true that ownership and/or control of property provides more means by which to directly manage revenue-generating opportunities, but it is not always required. In lieu of outright ownership or control, an airport can use its local influence and economic significance to beneficially and cooperatively partner with other landowners, businesses, and local public entities for the economic and social benefit of all concerned.

Airport management teams should consider taking a broad and strategic view in respect to revenue generation and not limit themselves to on-airport revenue opportunities alone. Airport participation in the off-airport economy has the powerful and tremendous advantage of further integrating the airport into the economic life and vision of the host community. Such community economic integration is absolutely vital for developing and reinforcing community support of the airport and its relevance to the community and region.

Many traditional airport revenues fall under certain very recognizable general sources. These classic general sources include:

- **Direct land lease revenues**
- **Leasing of structures**
- **Fuel flowage fees**
- **Landing fees**
- **Passenger enplanement fees**
- **Tiedown fees**

Two very serious issues can arise when, or if, an airport is almost completely dependent on these classic revenue sources. The first issue is price-based competition from or against other airports. This occurs when one airport reduces its fees and charges to capture market share from another airport. That airport may retaliate by reducing its fees and charges even more. And so it can go, back and forth, until neither airport generates sufficient net revenues to adequately support its operational and capital budget needs. Such race-to-the-bottom bidding wars on revenue sources can be very destructive. The second serious issue for airports with an undiversified revenue base is economic exposure during an industry recession or downturn. A generalized industry downturn can put airports with undiversified revenues into a very difficult financial crisis. The long-term defense against—and a solution to—such exposure is for an airport to develop a

diversified revenue base that is less dependent on the volume of the airport's aviation activity alone.

Airport management teams do have opportunities to develop reliable and long-term revenue sources that go beyond the routine and traditional sources. These opportunities can go beyond the airport boundaries and involve properties or activities neither owned nor controlled by the airport. It is entirely appropriate for airport management teams to look beyond the airport boundary at available property and land developments occurring adjacent to or near the airport that are owned or controlled by other parties. **Airport management teams should view properties adjacent to or near the airport as potential partners with shared and common interests in coordinated land use or development.**



Several of the means and strategies identified in this section may involve long-term or quite detailed local and regional planning efforts, coordination and partnering with non-airport parties, the enactment of specialized local land use zoning, and potentially even special local or state legislation. Almost every strategy discussed in this section creates opportunities for airports to engage in community outreach and involvement initiatives.

7.3 Through-the-Fence Operations (Tier 4 Property)

KNOW



Through-the-fence (TTF) operations combine off-airport development with access to the airport's airside infrastructure. A TTF operation takes place on property adjacent to the airport that is not owned by the airport, and access is provided from that property onto the airfield. This is Tier 4 property as defined in Chapter 2 of this guidebook.

In this situation, private development takes place on private property with private financing, which allows the development to occur at market speed with no financial investment from the airport sponsor. The airport may collect revenue from the business operation through charges for access and other fees. This arrangement offers the revenue benefits of commercial activity without the unique challenges of on-airport development. In Arizona, Scottsdale Airport provides an excellent example of how commercial TTF operations can be incorporated into airport operations (see "Success Stories" in Chapter 1).

TTF arrangements are not, however, a quick fix for generating airport revenue. Specific challenges are associated with granting airfield access to a TTF operation. Federally-obligated airports must comply with grant assurances that do not specifically address TTF access and operations but do have performance requirements for the resulting activity on the airport. Most state grant funds have similar requirements. For airports that are not grant-obligated, the goals of safety, utility, and efficiency are beneficial if not required. Airports considering TTF operations should take care to put plans and regulations in place and establish written TTF agreements to protect the airport.

This section of the guidebook addresses TTF operations in a summary fashion. *ACRP Report 114: Guidebook for Through-the-Fence Operations* provides complete and detailed guidance. Just as *ACRP Report 114* is not intended to replace professional expertise when needed, this section of *ACRP Research Report 176* is not intended to replace the comprehensive guidance provided in the earlier report. However, this section does provide a topic overview and a basic understanding of the techniques and benefits. In the context of an airport sponsor's self-evaluation, the information provided is enough for guidebook users to determine whether further investigation is warranted.

As described in *ACRP Report 114*, TTF operations occur when an airport sponsor grants an entity ground access to cross the airport's property boundary from property adjacent to the airport (and not owned by the airport) to access the airport's infrastructure and facilities. Typically, TTF operations involve access granted to privately owned aircraft to enter airport property to access airside infrastructure (e.g., runways and taxiways) and engage in associated activities. TTF access also can be granted to vehicles and pedestrians and for a variety of uses including:

- **Residential.** Access to the airport from adjacent residential properties.
- **Commercial Aeronautical.** Access to the airport by businesses whose activities are related to operation of an aircraft or conducting aircraft operations.
- **Non-Commercial Aeronautical.** Access to the airport by businesses that use aircraft for incidental or ancillary purposes such as transporting employees or customers.
- **Non-Aeronautical.** Access to the airport by business uses that are not directly related to the operation of aircraft.

- **Government or Military.** Access to the airport by federal and state government and military agencies and institutions that primarily benefit the airport, the community, and/or national defense.

Approval of a TTF agreement is not part of the statutory authority of FAA; but the agency, if invited, will review and comment on a proposed TTF agreement. FAA will also evaluate a TTF operation once it is implemented as part of an overall determination of that airport's compliance with its federal grant obligations. This compliance includes being as self-sufficient as possible given the circumstances that exist and ensuring the safety, utility, and efficiency of the airport for the benefit of the public. Although TTF operations are not prohibited (except for new residential TTF activities at federally-obligated commercial service and private reliever airports), FAA discourages TTF operations so that they do not interfere with an airport sponsor's ability to maintain compliance with grant obligations. If FAA determines that a federally-obligated airport is not compliant with its grant obligations, the airport could be forced to repay grant monies already issued and/or may be barred from receiving future grant funds.

FAA

This information is not provided with the intention of discouraging TTF operations. Rather, it is provided to encourage airports that are considering a TTF operation to understand the need for care when setting up and overseeing a TTF agreement. A TTF agreement is a written contract or other legal instrument that permits TTF operations and describes the associated conditions including fees. TTF operations present an opportunity for an airport to be as self-sufficient as possible, complying with one of the grant assurances. Compliance with other grant assurances can be demonstrated with a series of policy and regulatory documents.




Airport sponsors are advised to keep in mind that a TTF operation—especially a commercial aeronautical operation—could be perceived as economic competition or an economic threat if similar business operations are operating at the airport. Current business owners and operators at the airport should be included as valued stakeholders in the planning process for the TTF agreement.

HAVE

The process of evaluating the type and extent of the impact TTF operations will have on airport land, infrastructure, and improvements goes beyond the scope of this section of the guidebook but a detailed discussion and customized worksheets are available in Chapter 5 of *ACRP Report 114*. The following sections list a series of administrative documents that should be developed or modified to correctly reflect the airport sponsor's position with respect to TTF access and operations. The information is presented to give the guidebook user a sense of the complexity of granting TTF access while maintaining compliance with grant assurances. For airports without grant obligations, reviewing these documents is still a recommended practice for effective decision-making. *ACRP Report 114* also contains information on assessing, structuring, and managing TTF operations, which is valuable if the airport sponsor decides to investigate this topic further. The complete Through-the-Fence Operations Checklist for *ACRP Research Report 176* is provided in Appendix D, "Chapter 7 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.


- **PLANNING DOCUMENTS NEEDED (OR NEED UPDATING)?** Understanding the purpose of and developing and implementing primary planning documents can help airport management and policymakers assess, structure, and manage TTF operations. Has the airport developed or updated key planning documents, including the:
 - **Airport Layout Plan?**

- ***Airport Master Plan?***
- ***Strategic Business Plan?***

 Planning documents	Have	Need	Current	Needs updating
Airport Layout Plan?				
Airport Master Plan?				
Strategic Business Plan?				


- **ORDINANCES?** Municipalities that own and operate an airport can adopt an airport ordinance governing the planning, development, operation, and management of the airport. If an airport sponsor decides to permit, restrict, or prohibit TTF operations, the ordinances for the airport will need to be modified accordingly. Airport sponsors that do not have delegated powers to adopt ordinances (e.g., airport authorities, private entities, etc.) can work cooperatively with the local county or municipality in which the airport property is located to adopt an ordinance that addresses TTF operations. If the adoption of an ordinance is not possible, an airport policy addressing the same aspects as the ordinance can serve a similar purpose.

- ***Airport can adopt an ordinance?***
- ***Airport can request that an ordinance be adopted?***
- ***Airport can adopt a policy in lieu of an ordinance?***

 TTF ordinance options	Check to select	Notes
Airport adopts an ordinance?		
Airport requests adoption of ordinance?		
Airport adopts policy in lieu of ordinance?		


- **PRIMARY MANAGEMENT AND COMPLIANCE DOCUMENTS?** These documents make up the administrative toolkit for TTF agreements and operations. They all can be developed or modified to incorporate airport policies, standards, rules, and regulations pertaining specifically to TTF operations.
- **LEASING/RENTS AND FEES POLICY?** This policy sets forth the parameters for leasing airport land and improvements and outlines the process for establishing and adjusting rents and fees.
- **MINIMUM STANDARDS?** These standards convey the qualifications and minimum requirements that must be met as a condition for the right to conduct a commercial aeronautical activity at an airport.
- **RULES AND REGULATIONS?** Rules and regulations ensure the safety, utility, and efficiency of the airport for the benefit of the public.

- **DEVELOPMENT STANDARDS?** These standards govern the design, construction, or modification of infrastructure, improvements, and facilities on the airport.

 Primary management and compliance documents	Check to select	Notes
Leasing/rents and fees policy?		
Minimum standards?		
Rules and regulations?		
Development standards?		

- **STAKEHOLDERS AND INTERESTED PARTIES?** As the airport sponsor considers granting TTF access, a number of stakeholders can provide value to the conversation by providing guidance, bringing a new perspective, or expressing concerns. Consider gathering input from all of the following stakeholders:

- *FAA?*
- *State aviation organization?*
- *Airport sponsor?*
- *Airport operators, tenants, and users?*
- *Adjacent property owners?*
- *Community?*

 Stakeholders and interested parties	Check to select	Notes
FAA?		
State aviation organization?		
Airport sponsor?		
Airport operators, tenants, and users?		
Adjacent property owners?		
Community?		

DO

Like on-airport development, TTF development arrangements can be complicated; however, TTF operations can be effective in generating airport revenue. The information presented in this section of the guidebook can help guidebook users gain an initial understanding of the benefits, complexities, and risks of a TTF agreement and TTF operations. The section has presented a brief overview of the topic, walking guidebook users through some of the documents and tools that should be developed or revised if the airport plans to move forward with a TTF agreement or operation. If this approach to revenue generation seems to be a good match for the airport, guidebook users are encouraged to refer to *ACRP Report 114* for more information.



7.4 Community Land Use Planning for Revenue Generation

KNOW

Destination zoning around an airport is one strategy to promote the development and implementation of compatible land use zoning around airports. It is also a strategy to generate revenue for the airport. The phrase *destination zoning* describes the creation of land uses around an airport that will, in and of themselves, generate traffic and new business for the airport. Traffic and new business is generated by businesses that will use the airport for:

- **Business travel for executives, sales representatives, and clients**
- **Delivery of products and supplies**
- **Training and conference attendance**

A 200-acre industrial park next to an airport with various high technology businesses is an example of destination zoning and development because it has a high likelihood of developing additional traffic and providing new revenues to the airport through business travel, hangar rental, and delivery of products and supplies in and out of the park. Tenants in an industrial park may use general aviation, air cargo, and/or commercial air services. This type of development can benefit airports that do not have commercial air service. A conference center and hotel complex is another example of destination zoning and development because it, too, has a high likelihood of increasing airport revenues and traffic through increased commercial service travel by people attending events in the conference center.

Airports have a considerable self interest in promoting zoning and land uses in areas around the airport that not only are compatible, but also will specifically help generate additional airport traffic and sales. Airports are encouraged to be proactive in proposing zoning and land development plans that will be revenue positive to the airport. To implement destination zoning, the airport sponsor will need to work cooperatively with the local land use authority. Depending on the airport's location, the effort may extend to two or more municipalities.

HAVE


The checklist approach used in this section of the guidebook explores the current land use around the airport, whether it supports uses that generate revenue for aviation activities, and whether the airport has an existing connection with the local planning staff and planning commission. The complete Community Land Use Planning for Revenue Generation Checklist is provided in Appendix D, "Chapter 7 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **LOCAL LAND USE AUTHORITIES?**—Who are the local authority/authorities that make land use decisions for the areas adjacent to the airport? These authorities may include a city, township, county, or regional planning authority. Who are the key staff people in each office?


SOUND BITE



The airport has tried to do as much as possible to set the stage for the right zoning framework.

 Local land use agencies	Authority		Key staff names/titles?
	Yes	No	
City?			
Township?			
County?			
Regional planning authority?			
Other?			
Additional notes:			

- **CURRENT LAND USES AROUND THE AIRPORT?** Do the current land uses that are permitted near the airport generate revenue for the airport? The Zoning Map, which is contained in the Zoning Ordinance, will indicate the zoning districts. The Zoning Ordinance itself will define the permitted uses in each district.
 - *Zoning districts?*
 - *Permitted uses?*

 Current land use around airport	Notes
Identify zoning districts	
Identify permitted uses in each district	

- **FUTURE LAND USES AROUND THE AIRPORT?** Do the future land uses permitted near the airport include uses that will generate revenue for the airport? The Future Land Use Map, which is contained in the Community Master Plan, will indicate the future land uses. The text of the Community Master Plan will define the permitted uses in each district.
 - *Future land uses?*
 - *Permitted uses?*

 Future land uses	Notes
Identify future land uses	
Identify permitted uses	

DO

The information gathered in this section can help guidebook users discover the current conditions related to destination zoning districts near the airport. If current and planned (future) land uses are already in a destination zoning category, that's great! If they are not, the airport sponsor can begin a dialogue to change the planning framework to permit and even encourage destination zoning uses near the airport. This conversation can also work to establish compatible land uses and site design standards near the airport. The key idea is that the airport sponsor can be an active part of the community land use conversation and advocate for policies that benefit the airport.

Whether the land uses are already in place or need to be modified, it is advantageous for the airport sponsor to establish relationships and a communication pipeline with planning boards and community leaders. This can be done by attending planning meetings or monitoring business items through a review of agendas and meeting minutes every month. When action items may potentially impact land uses around the airport, the airport manager or another airport spokesperson should attend and speak at the meeting or send a letter to be read into the record. Such action items might include a Zoning Ordinance update or a proposed site plan for a new development. The airport sponsor also can offer to make an annual presentation to the planning commission or to a joint meeting of the planning commission and elected officials about the airport and its contributions to the local community and economy, which demonstrates the need for coordination with local land use decisions.



7.5 Economic Development and Business Attraction

KNOW

By providing access to air transportation services, airports play an important role in supporting local and regional economies. Airports offer businesses a means of connecting to broader markets beyond the local area by facilitating transport of inbound goods and outbound products on the freight side, and by transporting business travelers and incoming tourists on the passenger side. Beyond this role, however, airports also can serve as regional job centers and influence development in their vicinity. Specifics will depend on the airport's size, the characteristics of the surrounding community and region, and the airport's functional role within the aviation network. Each airport contributes in a unique way to its regional economy; however, in each case, the airport can be included not only as a regional transportation asset but also as a business attraction tool and an important feature in the area's economic development strategy. This topic is explored in detail in *ACRP Report 155: Aligning Community Expectations with Airport Roles* in the discussion titled "Being Part of the Location Decision."

Case Study: Sebastian Municipal Airport, Sebastian, Florida

The City of Sebastian, Florida, has made the Sebastian Municipal Airport (see <http://www.sebastianairport.com/>) the centerpiece of local economic development, and provides information about land and infrastructure available within the airport's boundaries on the city's economic development website (see <http://sebastianbusiness.org/airport.html>).


As was noted in the section on destination zoning, a key idea is that **the airport can go beyond its traditional transportation role to take an active part in business attraction initiatives and economic development policy decisions**. This is accomplished primarily by participating in work groups and serving on boards and commissions associated with economic development. Although the airport can contribute to economic development initiatives in the community, the economic development itself can increase airport revenue indirectly through increased aviation activity, and it may also generate direct revenue through on-airport or TTF development.




HAVE

The answers to questions in this section of the guidebook can help guidebook users assess their region's current economic development landscape. The complete Economic Development and Business Attraction Checklist is provided in Appendix D, "Chapter 7 Checklists," and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage.

- **EXISTING ECONOMIC DEVELOPMENT ORGANIZATIONS' ACTIVITIES?** What boards, commissions, and organizations currently promote economic development in the community and region? More than one organization may serve the same area, and the airport may impact several different jurisdictions. These organizations may include all of the following:
 - ***A local economic development corporation, downtown development authority or other public organization?***
 - ***A regional economic development organization?***
 - ***A local chamber of commerce or other membership organization?***
 - ***A state economic development initiative?***

 Economic development activities by regional authorities or organizations	Notes
Local economic development corporation?	
Downtown development authority?	
Other public organization(s)?	
Regional economic development corporation?	
Local chamber of commerce or other membership organization?	
State economic development initiative?	
Other?	


- **CURRENT INITIATIVES?** What are the community and the region currently doing to promote economic development?
 - *Tax incentives?*
 - *Shovel-ready development sites (roads and utilities in place)?*
 - *Labor force initiatives (job training)?*
 - *Community investments in quality-of-life features (housing, parks, schools, medical facilities)?*

 Current economic development initiatives	Check to select	Notes
Tax incentives?		
Shovel-ready development sites?		
Labor force initiatives?		
Community investments in quality of life features?		

- **AIRPORT PARTICIPATION STRATEGY?** What is the airport’s strategy for participation? Is the airport sponsor already represented on economic development boards, commissions, or organizations? Does the airport participate as a voting member or general attendee? Can the airport offer to make a presentation to one or more of these groups to begin a conversation? The “Notes” part of the checklist for this section can be used to list participation ideas that fit community and airport needs.

SOUND BITE 

The airport manager is part of the regional development team.

	
Airport participation strategy	Notes
Attendance or active membership on development boards, commissions, organizations?	
Presentations to these organizations?	
Other ideas to participate in the community and promote economic development?	

DO

The public participation strategy notes and other information gathered in the checklist can be used as a starting point for a conversation about what makes sense for the airport. If programs are currently in place, opportunities may exist for the airport to participate. If no specific initiatives are underway, the airport may have the opportunity to serve as an initial convener of interested parties to begin a community conversation.



7.6 Public Finance Tools and Other Opportunities for Airport Revenue Generation

KNOW

ACRP Report 121: Innovative Revenue Strategies—An Airport Guide describes a broad range of tools and techniques that airport operators can use to improve revenue streams, recover costs, or achieve operational efficiencies. Chapter 5, “Airport Entrepreneurial Activity—Part II,” addresses airport participation in real estate development and natural resource development; however, because real estate development is only one of many topics covered in *ACRP Report 121*, it is addressed at a higher level than in this guidebook. Conversely, this section of *ACRP Research Report 176* only briefly introduces a sample of public finance tools that are covered in greater detail in *ACRP Report 121*, Chapter 6, “Value Capture and Other Innovative Financing.” That chapter explores the history of value capture and its use in different modes of transportation, and suggests that untapped opportunities exist for airports to produce revenue through value capture strategies. These benefits can be tapped in the form of taxes or special assessments on the benefit itself, as opposed to a general obligation tax levy on the entire community. For additional information on value capture tools, the guidebook user is directed back to Chapter 6 of *ACRP Report 121*.

The introduction to *ACRP Report 121*, Chapter 6, describes value capture techniques as follows:

The strategy merits consideration as a way to finance airport improvements and recover improvement costs from beneficiaries of airport business and services. In this context, value capture applies to situations in which an airport sponsor is able to capture additional revenue as property values increase and/or commercial or industrial development take place because of proximity to the airport. Off-airport parking, rental cars, and hotels are examples of businesses that benefit directly by their proximity to an airport and candidates for value capture techniques.

In addition to value capture techniques, *ACRP Report 121* presents other ideas airports can use to generate revenue by selling services or access directly to tenants and passengers. In each case, the airport is identifying a market demand and positioning itself to collect revenue by meeting that demand.



HAVE

Guidebook users can use the checklist for this section to inventory programs that are already available as well as programs that are of interest for further investigation. The complete Public Finance Tools and Airport Revenue Generation Opportunities Checklist is provided in Appendix D, “Chapter 7 Checklists,” and a customizable copy of the same checklist can be downloaded from the *ACRP Research Report 176* webpage. In this guidebook, the following public finance and value capture techniques are introduced only briefly in this “Have” section, using simple descriptions quoted directly from *ACRP Report 121* (Kramer et al. 2015):

- **TAX INCREMENT FINANCING (TIF)?** “Within a designated geographic impact area (a district), bonds are issued to pay for infrastructure improvements that are expected to increase property values within the district, thus increasing property tax revenues. All increases in property taxes collected because of the

SOUND BITE



The current off-airport development produces revenue through a TIF district.

increase in value are set aside to pay the debt service on the bonds. In the case of an airport, a TIF for airport support or projects might be justified if the airport is essential to the activities and businesses in the defined district.”

- **SPECIAL ASSESSMENT DISTRICT?** “A ‘special assessment district’ is a value capture technique that imposes specific charges on property owners within a geographic area to cover the cost of an improvement of a facility with direct benefit to the property owners.”
- **BUSINESS IMPROVEMENT DISTRICT (BID)?** “A BID is a geographic area inside which property owners will benefit from capital improvements, maintenance activities, special services, and marketing. A BID is established when a majority of the property owners within the area vote to pay a fee to help cover the costs for these benefits. The most common applications of BIDs are downtown and commercial district Transportation Utility Fees.”
- **TRANSFER OF DEVELOPMENT RIGHTS (TDR)?** “The TDR provides a mechanism for landowners to retain existing rights to use their land, but if development is restricted, the development rights can be separated and sold to a TDR bank or to a developer and transferred to another site within a given jurisdiction.”
- **CONNECTION FEES?** “A connection fee is a one-time fee charged to a private landowner to allow a direct connection to a transportation infrastructure investment, utility line, or other facility. Airport sponsors can charge connection fees for access to airport provided utilities or Internet backbones. Furthermore, if security and TTF agreements are addressed, an airport sponsor can levy connection fees on tenants in adjacent industrial parks that request gates or access roads to the airport property.”
- **LOCAL INCOME AND PAYROLL TAX?** “Local income or payroll taxes include taxes on income (assessed on individuals) or payroll (assessed on businesses) within impact areas that benefit from a transportation investment. More than 20 states authorize the imposition of local income and payroll taxes including Oregon and New York.”
- **SALES TAX/OCCUPANCY TAX?** “States, counties, or municipalities can levy special sales taxes in an area that will benefit from a transportation facility (the impact area) to create financing specifically dedicated to that facility. A variation of this approach for airports could be a statewide or countywide hotel occupancy tax.”
- **LAND VALUE TAX?** “Land value taxes separate the value of the land itself from the value of any development (anything that may be built on the land). With regard to undeveloped land, conventional approaches to property tax will capture some of this differential in value, but a separate land value tax will reflect a greater portion of the value generated by development.”
- **FOREIGN TRADE ZONE (FTZ)?** “An FTZ is a designated geographic area within which merchandise is considered to be outside U.S. Customs territory, allowing businesses within the zone to defer or avoid normal tariffs and duties on imported materials and goods. FTZ designation is a common airport-related incentive. There are close to 300 FTZs throughout the country.”
- **JOINT DEVELOPMENT?** “Public private partnerships (P3s) involve partnerships between a public agency and a private developer to develop a site, usually on publicly-owned land, wherein project participants will both help pay for the costs of and share in the revenues generated by the development.”

- **SALE OF AIRPORT SERVICES?** In *ACRP Report 121*, Chapter 4, “Airport Entrepreneurial Activity—Part I” explores the sale of airport-provided services and Chapter 7, “Improvements to Existing Airport Businesses” looks at ways to produce more revenue from existing services such as parking and concessions. Airport-provided services are delivered directly or indirectly to airport tenants and passengers by the airport for profit. Examples of these services are passenger processing for the airlines, above-the-wing and below-the-wing ground services, logistical support for concessionaires, and waste removal services for tenants.
- **ACCESS FEES AND PRIVILEGE FEES?** “Most airports levy airport access fees and some privilege fees on off-airport users. Some airports choose to impose a per trip cost, which varies depending on the type of vehicle or the number of passengers the vehicle carries. However, airport sponsors are moving toward charging companies a percentage of gross revenues for airport access. As with other tools, access and privilege fees most often require local ordinances or state legislation.”

Revenue generation opportunities	Current practice?		Permitted?	
	Yes	No	Yes	No
Tax increment financing (TIF)?				
Special assessment district?				
Business improvement district (BID)?				
Transfer of development rights?				
Connection fees?				
Local income and payroll tax?				
Sales tax/occupancy tax?				
Land value tax?				
Foreign Trade Zone (FTZ)?				
Joint development?				
Sale of airport services?				
Access fees and privilege fees?				

DO

The information gathered in answering the questions in this section of *ACRP Research Report 176* can be used as a starting point to determine if any strategy described in this section is already being used by the airport and/or whether it is already authorized by state legislation. Although these are innovative revenue strategies, it is important to keep in mind that they are tied to action by the local taxation authority, which means there is a political element to them. If enabling legislation is required from the state legislature, the political element is larger.

Guidebook users are also encouraged to refer to the results of the section on community context in the Self-Assessment Toolkit (see Chapter 4) to consider whether a positive relationship has already been established with the community or whether this is an area that needs some additional work.

If these revenue strategies appear to have some potential for revenue generation, or simply for more information, guidebook users also can see *ACRP Report 121: Innovative Revenue Strategies—An Airport Guide*.



Case Study: Pocatello Regional Airport, Pocatello, Idaho

The Pocatello Development Authority in Pocatello, Idaho, operates a number of TIF Districts, including an urban renewal district at Pocatello Regional Airport, where TIF funds extend or improve infrastructure for businesses locating at the Pocatello Regional Airport Business Park. Planned projects include a new water tank, water and sewer upgrades, franchise utility upgrades, and road, curb, and gutter improvements. The TIF approach has also been used at Dayton-Wright Brothers Airport in Ohio, and for redevelopment of the former George Air Force Base into the Southern California Logistics Airport in Victorville, California.

Case Study: Skypark Airport, Bountiful, Utah

Skypark Airport has an innovative approach for providing stable and predictable long-term revenue streams. Skypark Airport is located within a larger industrial park that has both aviation and non-aviation enterprises. The individual land parcels within the industrial park have deed covenants and restrictions that require individual lot owners to contribute to the airport a proportional share of annual airport expenses according to a pre-set formula. This approach has been tested in the courts and upheld. All airports selling excess land parcels should consider including deed covenants and restrictions that require individual lot owners to make future financial contributions to the airport.



Abbreviations and Glossary

This list of abbreviations and glossary were developed specifically for this guidebook. The glossary is organized in three parts:

- **Aviation/Airport Development Terms**
- **General Land Use/Development Terms**
- **Real Estate Development Terms**

Abbreviations

AAAE	American Association of Airport Executives
AC	Advisory Circular
ACIP	Airports Capital Improvement Plan
AIP	Airport Improvement Program
ALP	Airport Layout Plan
ALUCP	Airport Land Use Compatibility Plan
AOA	Airport Operations Area
AOPA	Aircraft Owners and Pilots Association
APA	American Planning Association
ARFF	Aircraft Rescue and Firefighting
CATEX	Categorical Exclusion
CC&Rs	Covenants, Conditions, and Restrictions
CFR	Code of Federal Regulations
DHS	Department of Homeland Security
DOT	Department of Transportation
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FBO	Fixed-Base Operator
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Findings of No Significant Impact
FTZ	Foreign Trade Zone
GA	General Aviation
IRR	Internal Rate of Return
MRO	Maintenance Repair and Overhaul (<i>ACRP Report 114</i>)
NAIOP	Commercial Real Estate Development Association (formerly the National Association for Industrial and Office Parks)

NBAA	National Business Aviation Association
NEPA	The National Environmental Policy Act of 1969
NPIAS	National Plan of Integrated Airport Systems
PFC	Passenger Facility Charge
PPP	Public-Private Partnerships
REC	Recognized Environmental Condition(s)
RFP	Request for Proposals
RPZ	Runway Protection Zone
T/E	Threatened/endangered (species)
TIF	Tax Increment Financing
TSA	Transportation Security Administration
TTF	Through-the-Fence
ULI	Urban Land Institute
U.S.C.	United States Code

Aviation/Airport Development Terms

100 Low-lead Fuel Leaded, 100 octane (100LL) aviation gasoline (avgas) that is typically used in propeller driven aircraft with piston engines.

Advisory Circulars (ACs) A series of FAA publications consisting of all non-regulatory material of a policy, guidance, and informational nature (*ACRP Report 113*).

Aeronautical Use Any activity that involves, makes possible, or is required for the operation of aircraft or that contributes to or is required for the safety of such operations (*ACRP Report 114*).

Aerotropolis A wider geography that hosts businesses requiring significant volume of airport business travel services or air freight services, and that are supported by efficient surface transportation connections to an airport. Businesses that do not have a major reliance on airport services, as well as residential development, may be interspersed within an aerotropolis (*ACRP Report 121*). The term was coined originally in the book *Aerotropolis: The Way We'll Live Next* by John D. Kasarda and Greg Lindsay (2011).

Airport Improvement Program (AIP) An FAA-administered program to provide financial grants-in-aid for airport planning, airport development projects, and noise compatibility programs. The program was established through the Airport and Airway Improvement Act of 1982, which was incorporated as Title V of the Tax Equity and Fiscal Responsibility Act of 1982 (P.L. 97-248) (*ACRP Report 113*).

Airport Layout Plan (ALP) A document that graphically depicts existing land, infrastructure, and improvements on an airport and identifies the planned capital improvement projects for the airport (*ACRP Report 114*).

Airport Master Plan A long-range plan for development of an airport, including descriptions of the data and alternative analyses on which the plan is based (*ACRP Report 47*).

Airside On-airport areas consisting of the runways, taxiways, taxilanes, aprons, roadways, lighting, utilities, navigational equipment, imaginary obstruction identification surfaces, airport design surfaces, etc. (*ACRP Report 114*).

Bond Covenants An agreement between the bond issuer and bond holder specifying what the issuer will or will not do over the life of the bond, and recourse by bondholders if the issuer, such as an airport authority, defaults. (Adapted from entry at www.investopedia.com)

Bonding Capacity The ability an airport sponsor may have to issue bonds through its own organization or through a city, county, or state government. The sponsor must determine that it has the debt capacity to support the proposed bond, and that the project revenue can cover debt obligations (*ACRP 11-05, Task 4, p.34*).

Economic Non-discrimination Airports, their facilities, and services must be available on reasonable terms and without unjust discrimination (FAA Airport Sponsor Assurance 22). (*ACRP Report 113*, p.37)

Exhibit "A" The Exhibit "A" is a snapshot of the inventory of parcels that make up dedicated airport property. It indicates how the land was acquired, the funding source for the land and if the land was conveyed as Federal surplus land or Government Property. Other detached parcels owned by the Airport Sponsor that are dedicated to airport purposes must also be shown on the Exhibit "A". The Exhibit "A" must show all dedicated airport property regardless of the type of funds (AIP, state, local, etc.) used to acquire that property. All land described in a project application and shown on an Exhibit "A" constitutes the airport property federally obligated for compliance under the terms and covenants of a grant agreement. New airports receiving a grant for the first time must submit an Exhibit "A" depicting the land required to support the facilities needed to operate the airport (FAA Airports Organization (ARP) Standard Operating Procedure (SOP) 3.00).

FAA 5190 Release The guidelines set forth in the *FAA Airport Compliance Manual, Part VII: Releases and Property Reversions* (Order 5190.6B), which provides a detailed overview on the release and disposal of airport land (adapted from *ACRP Report 47*, p.37).

FAR Part 77 Federal Aviation Regulations Part 77, Objects Affecting Navigable Airspace, which establishes standards for determining obstructions and conducting aeronautical studies to determine the potential effects of obstructions on aircraft operations. According to FAR Part 77, objects are considered to be obstructions to air navigation if they exceed certain heights or penetrate certain imaginary surfaces established in relation to airports. Objects classified as obstructions are subject to an aeronautical study by FAA to determine their potential effects on aircraft operations (*ACRP Report 113*).

Federally Funded Actions Any project or projects that involve federal funding, work performed by the federal government or permits issued by a federal agency. The definition of a federally funded action is significant because it is the trigger for applying the NEPA environmental review process to a project.

Grant Assurances Certain obligations with which federally obligated airports must comply in order to receive AIP funds (*ACRP Report 114*; see the section describing airport sponsor assurances).

Grant Obligations Include statutes, regulations, assurances, executive orders, policies, and guidance that are used by federal and state agencies to ensure that an airport is planned, developed, operated, and managed for the benefit of the public in a way that will not adversely affect the safety, utility, or efficiency of the airport (*ACRP Report 114*; see the section describing airport sponsor obligations).

Hazard Removal and Mitigation Action to assure that such terminal airspace as is required to protect instrument and visual operations to the airport (including established minimum flight altitudes) will be adequately cleared and protected by removing, lowering, relocating, marking, or lighting or otherwise mitigating existing airport hazards and by preventing the establishment or creation of future airport hazards (FAA Airport Sponsor Assurance 20, in *FAA Airport Sponsor Assurances*).

Height-restricted Areas Areas on or near an airport that have restrictions on building or object heights to avoid creating a hazard to air navigation or penetrating FAR Part 77 imaginary surfaces.

Instrument Approach An air navigation procedure used to guide aircraft to a safe landing beginning at an initial approach point and ending at a point near enough to the ground to permit a visual landing (adapted from *ACRP Report 113*).

Land Release Involves the disposal of airport lands, and, more specifically, FAA approval to release land that has been acquired with federal funds (thus allowing the airport sponsor to dispose of the land or allow it to be used for non-aeronautical purposes). The airport sponsor may dispose of land if said land is deemed unnecessary for aeronautical purposes. However, the airport sponsor may be required to reimburse FAA, or FAA may stipulate how land sale proceeds are to be spent by the airport sponsor (*see ACRP Report 47, p.37*).

Landside On-airport areas consisting of public roadways, public vehicle parking, lighting, utilities, etc. (*ACRP Report 114*).

Noise Compatibility Relates to measures proposed or taken by the airport operator to reduce existing non-compatible land uses and to prevent the introduction of additional non-compatible land uses within the area (adapted from FAA AC 150/5020-1, 5.i. Definitions).

Noise Mitigation Actions taken by an airport sponsor to reduce or eliminate the impacts of airport noise on nearby properties.

Planning-year Horizon The short- (5-year), medium- (10-year), and long-term (20-year) planning and development goals for an airport (adapted from *ACRP Report 114*).

Rate Covenants Documents defining the rights and responsibilities of issuers and bondholders, and how bond funds should be used.

Runway Protection Zones (RPZ) A trapezoid-shaped area off the runway end that enhances the protection of people and property on the ground (*ACRP Report 47*).

Surplus Property (Federally Owned or State Owned) Real property and related personal property that is owned by the federal government or a state government. Surplus property can be transferred at no cost to eligible local airport sponsors for airport purposes. The surplus property that is conveyed to an airport may include non-aeronautical use property intended to generate revenue for airport operations, maintenance, and development (Finding of Task 3 of ACRP Project 03-39).

T-hangars Rectangular-shaped buildings that are split into numerous sections (often in the shape of a “T”) and that are used to store multiple smaller aircraft. Typically, doors on both sides of the structure provide access for each owner/lessee to their aircraft and their section of the hangar (*see ACRP Report 113, p.16*).

Through-the-fence (TTF) An arrangement by which the public airport sponsor permits access to the public landing area by independent operators undertaking aeronautical activities from privately owned land adjacent to, but not a part of, the airport (*ACRP Report 47*).

General Land Use/Development Terms

Airport Zoning District Laws and regulations, generally at the city or county level that control the use of land, allowable construction, and improvements to property within a given area or zone surrounding an airport (adapted from *ACRP Report 47*).

Arterial Road A primary roadway with high traffic volumes that connects to highways and collector streets.

Building The percentage of a lot covered by a building, normally used as part of a zoning code (*also see* Floor Area Ratio).

Categorical Exclusion (CATEX) A CATEX refers to a category of actions that do not individually or cumulatively have a significant effect on the environment and do not require the preparation of an EA or EIS. A CATEX is not an exemption or waiver of NEPA review; it may be considered the

lowest level of NEPA review (FAA Website at <https://www.faa.gov/airports/resources/sops/media/arp-SOP-500-catex.pdf>).

Coastal Jurisdiction An area near a coastline that may be protected as part of a state's Coastal Zone Management Plan or similar program, as funded by the Coastal Zone Management Act of 1972 (CZMA) (adapted from *Environmental Planning Handbook for Sustainable Communities and Regions*).

Conveyance Constraints Limitations on the capacity of public utilities, such as a municipal sewer and water systems, to deliver adequate collection or distribution to a particular site or land use.

Development Program A specific development proposal expressed in quantitative terms, such as square feet or floor area of specific uses, feet of roadways or driveways, number of parking spaces, or other details.

Environmental Assessment (EA) A statement prepared under the requirements of NEPA Section 102(2)(c). The EA represents a federal agency's evaluation of the effects of a proposed action on the environment. At the conclusion of an EA, a determination is made by FAA regarding the significance of the expected impacts (*ACRP Report 113*).

Environmental Impact Statement (EIS) An EIS is the most detailed environmental review required by NEPA. At the end of the EIS, FAA prepares a public record of its decision addressing the findings of the analysis. An EIS is conducted because (1) an EA has determined that the environmental consequences of a proposed project or action may be significant, (2) FAA has determined that the project is environmentally controversial, or (3) FAA anticipates the project may significantly impact the environment (*see ACRP Report 114*, p. 32).

Environmental Remediation The removal, containment, and/or cleanup of land, soil, or groundwater contaminated with hazardous waste according to an approved plan.

EPA Superfund Site Property that has been designated as severely polluted by EPA under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). This designation gives EPA the power to hold liable past and present owners for site cleanup and remediation; CERCLA also created a "Superfund" to pay for EPA activities related to Superfund sites (adapted from *Environmental Planning Handbook for Sustainable Communities and Regions*).

Expedited Approval The process of receiving building permits on an accelerated timeline if the proposed site meets certain predetermined requirements. Also called *fast track permitting*.

Floodplain An area subject to flooding, usually referring to an area with a 1% chance of flooding in a given year (100-year floodplain) (adapted from *ACRP Report 113*).

Floor Area Ratio The ratio of the gross square footage of a building to the land on which it is situated. Floor area ratio is calculated by dividing the total square footage within the building by the square footage of the land area within the leasehold. Some municipalities require the floor area ratio to be based on net lot area rather than gross lot area (*ACRP Report 47*).

Foreign Trade Zone (FTZ) A restricted access site supervised by U.S. Customs and Border Protection (CBP) in or adjacent to a CBP port of entry. Under FTZ procedures, the usual formal customs entry procedure and payment of duties are not required on the foreign merchandise, unless and until it enters Customs territory for domestic consumption (adapted from *ACRP Report 121*).

Geotechnical Study An analysis of subterranean soil and rock properties to identify the appropriate type and structural needs for buildings and infrastructure at a particular site.

Gravity Connection A sewer or water connection where the intended direction of flow follows the terrain and is moved by the force of gravity.

Greenfield A building site or lot that has not been previously developed.

Herbaceous Vegetation and plants that have non-woody stems (i.e., that are not shrubs or trees) (based on information from *USDA Website*).

Intermodal/Multimodal A concentrated geographic area with immediate access to more than one major transportation mode (e.g., air, freight rail, passenger rail, other transit, highway, marine), and supporting facilities (e.g., a loading zone to support transfer of cargo from airplane to truck) (*ACRP Report 121*).

Lateral Line A sewer or water connection between a specific property and a major utility line.

Lot A tract of land, or one of several contiguous parcels of land making up a fractional part or subdivision, the boundaries of which are shown on recorded maps and “plats” (*ACRP Report 47*).

Lot Coverage The percentage of a lot covered by impervious surfaces, including building footprint, driveways, and parking.

Main A major utility line serving multiple properties and linking to a larger line or central facilities.

Master Plan A long-range plan for development that usually includes analysis of the future transportation, housing, recreation, and economic requirements for a community. May also be called a Comprehensive Plan. (For airport planning documents, see Airport Master Plan.) (adapted from *ACRP Report 47* [see section describing the Airport Master Plan] and *Black’s Law Dictionary, 4th Pocket Ed.*).

Maximum Height The maximum height allowable for a building, in stories and/or feet as defined by a municipal or airport zoning ordinance.

Net Usable Land The area of a parcel of land remaining after subtraction of wetlands, floodplains, steep slopes, and other regulated or unsuitable areas. Specific definitions may be included in local zoning ordinances (adapted from *ACRP Report 47*).

On-site Stormwater Management A specific collection and detention system that is developed to control the volume and rate of discharge of stormwater draining from impervious surfaces within a particular lot or tract of land.

Over the Road Transportation Moving goods via roadways and highways, typically using semi-trucks.

Package Treatment Plant A small, self-contained, often privately owned, sewage treatment facility intended to serve one or a limited number of properties or buildings, such as an office building or golf course.

Parking Requirements The amount of automobile parking that must be provided for a specific land use as required by zoning and development codes. This may be expressed as a specific number of parking spaces for each 1,000 square feet of building area, or one space per a specific number of square feet, which generally varies with the type of building use. For example, four parking spaces per 1,000 square feet, or one space per 250 square feet (adapted from *ACRP Report 47*).

Permitted Use Structures and/or use of land that complies with allowable use provisions of the applicable Zoning Ordinances, to include any amendment(s) to the ordinances (*ACRP Report 47*).

Redevelopment Area Plan/Agreement An agreed-upon plan for a specific geographic area that outlines a specific redevelopment, which may or may not involve eminent domain condemnation. It is generally accomplished according to a specific legislated procedure of

delineation and plan development, requiring public notice, and often represents an exception to the underlying zoning.

Request for Proposals (RFP) In this guidebook, a report prepared by an entity seeking a master developer, joint venture partner, or similar function to develop airport property. The RFP contains a description of the project site, goals for the project, zoning parameters and other requirements, and requests a response outlining a development program and financial plan.

Sewer Conveyances The system of pipes transporting sewage effluent from properties to the sewage treatment plant.

Sewer Main A major sewer line or conveyance serving many properties and linking to a larger line or sewage treatment plant.

Site Plan A detailed depiction of proposed improvements to a given parcel of land, to include a description of how the proposed site development will comply with zoning ordinances (*ACRP Report 47*).

Subdivision Approval An approval by a local authority that allows the division of land into multiple parcels, typically to facilitate the development of lots for building (adapted from *Real Estate Market Analysis: Methods and Case Studies, 2nd Ed.*).

Threatened or Endangered Species Specific animals or plants identified by the U.S. Fish and Wildlife Service, through the Endangered Species Act of 1973 (ESA), that could become extinct without proper protection (adapted from *Environmental Planning Handbook for Sustainable Communities and Regions*).

Transfer of Development Rights (TDR) The purchase and sale of development rights for a specified property based on the underlying zoning, which are then transferred from a sending zone to a receiving zone within a given jurisdiction (*ACRP Report 121*).

Urban Design Plan A development plan that includes certain physical design elements of the built environment, such as street and sidewalk layouts or building and landscape architecture features.

Variance (Use or Bulk) Refers to permission given to a property owner to depart from the literal requirements of a zoning ordinance that, because of special circumstances, cause a unique hardship. Variances may be granted for a specific use that is not allowed by right (use variance) or for relief from the physical development requirements such as height, lot coverage, or setbacks (bulk variance) (adapted from *ACRP Report 47*).

Wetlands Lowlands covered with shallow and sometimes temporary or intermittent waters. This includes, but is not limited to, swamps, marshes, bogs, sloughs, potholes, wet meadows, river overflows, tidal overflows, estuarine areas, and shallow lakes and ponds with emergent vegetation (*FAA Environmental Desk Reference for Airport Actions*).

Zoning A police power measure, enacted primarily by units of local government, in which the community is divided into districts or zones, within which permitted and special uses are established. Regulations governing lot size, building bulk, placement, and other development standards are examples of zoning criteria. Requirements vary from district to district, but they must be uniform within districts (*ACRP Report 47*).

Real Estate Development Terms

Absorption Rate The rate at which available square feet of retail, office, or commercial space in the marketplace is leased during a predetermined period of time. Also referred to as *market absorption* (*ACRP Report 47*).

Book Value The value at which an asset is carried on a balance sheet. Generally, the original cost of an asset plus capital additions minus the accumulated depreciation.

Building Yield The number of buildings that can actually be built on a parcel of land based on site conditions and compliance with zoning or development requirements.

Class “A” Office Building classifications in most markets refer to Class “A,” “B,” “C,” and sometimes “D” properties. While the rating assigned to a particular building is very subjective, Class “A” properties are typically newer buildings with superior construction and finish, in excellent locations with easy access, attractive to credit tenants, and that offer a multitude of amenities, such as on-site management or covered parking. These buildings, of course, command the highest rental rates (*ACRP Report 47*).

Clear Title Describes title to property that is free of liens and any other encumbrances. Also known as “free and clear” (*ACRP Report 47*; see text under the heading “Unencumbered”).

Contingency Fees A fee paid on the basis of achieving a particular outcome (based on *Black’s Law Dictionary, 4th Pocket Ed.*).

Covenants, Conditions, and Restrictions (CC&Rs) A series of governing documents and bylaws for a private residential development, legally enforced by a private entity such as a homeowners association (HOA), that outlines certain limitations, rights, and responsibilities of owners or tenants (see *ACRP Report 114*, pp.97, 154, and 170).

Deed Restriction A deed is a written instrument conveying an interest in real property; a deed restriction is a limitation on the use or enjoyment of real property that is included in a deed (*ACRP Report 114*).

Draw-Down Spending a portion of available loan proceeds for development costs.

Easement A right of use over the property of another, created by grant, reservation, agreement, prescription, or necessary implication. An easement is typically granted either for the benefit of adjoining land (*appurtenant*), such as the right to cross *A* to get to *B*, or for the benefit of a specific individual (*in gross*), such as a public utility easement that allows entry and maintenance within the easement area (*ACRP Report 47*).

Fair Market Value The highest price a property would command in a competitive and open market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently and knowledgeably in the ordinary course of trade (*ACRP Report 47*).

Fair Share Portion A share of the cost of a utility, road or other public facility improvement, typically allocated to several users or beneficiaries based on the level of likely use of the improved facility.

Ground (Land) Lease A long-term land lease, generally for the purpose of erecting a building or buildings, or for constructing improvements to the land to be used by lessee. At the end of the lease term, the land and all structures and enhancements revert to the owner. Land leases should follow the basic format of the hangar lease and include all of the same references to the airport’s rules, regulations, and minimum standards. The land lease price per square foot could vary by location, and possibly by the length of the term, and may also be connected to a business permit or an FBO lease (*ACRP Report 47*; see the section describing *Land Lease*).

Internal Rate of Return (IRR) A metric used in capital budgeting measuring the profitability of potential investments. IRR is a discount rate that makes the net present value (NPV) of all cash flows from a particular project equal to zero. An IRR greater than the cost of capital generally indicates a profitable project.

Lease Terms The conditions set out in a ground or building rental agreement, including the price, the length of time the lease is to be in effect, escalation of rent, tenant and landlord responsibilities, and other parameters.

Market Area The area or region from which a majority of the clients and competition is located for a particular development or business sector (adapted from *Real Estate Market Analysis: Methods and Case Studies, 2nd Ed.*).

Master Developer An approach to development in which the developer acts as the airport owner's master lessee and is responsible for development. The airport owner and developer share in the revenues under various formulas. Often the developer is required to contribute to a repair and replacement fund to cover certain repair and replacement costs (adapted from *ACRP Report 66*; see the section describing the master terminal concession developer).

Mineral Estate Participating Leases A lease with mineral rights, giving the lessee the right to drill or mine through the surface. A royalty paying oil and gas lease is typically the governing document for oil and gas exploration on airport property (adapted from *ACRP Report 47*; see the section describing surface rights; also see *ACRP Report 121*, pp.5–11).

Pro Forma A financial analysis that uses specific criteria to forecast future operating revenues of a development (adapted from *Real Estate Market Analysis: Methods and Case Studies, 2nd Ed.*).

Public-Private Partnerships (PPP or P3) A contractual agreement between public and private sector entities that includes active private sector participation in the design, building, and operation of infrastructure or development (*ACRP Report 121*).

Rate of Return The gain or loss on an investment over a specified time period, expressed as a percentage of the investment's cost. Gains on investments are defined as income received plus any capital gains realized on the sale of the investment.

Real Estate Market Analysis A forecast of future demand for real estate with certain attributes, which generally includes an estimate of the square footage that can be absorbed and the rents that can be charged. Marketability Study is another terminology used for this activity (*ACRP Report 47*).

Special Assessment A fee levied on properties within a specific geographic area and dedicated to public improvements that benefit those property owners (adapted from *ACRP Report 121*).

Special Covenant A written agreement inserted into deeds or other legal instruments stipulating performance or non-performance of certain acts, or uses or non-use, of a property and/or land (*ACRP Report 47*).

Tax Increment Financing (TIF) Within a specified district, bonds are used to pay for infrastructure that will help increase the value of the land within the district. All increases in property taxes collected as a result of the increase in value are set aside to pay off the bonds (*ACRP Report 121*).

Title Report The result of research into the chain of ownership of a property, determining the owner's rights to the parcel and identifying any liens, encumbrances, deed restrictions or limitations affecting the use of any portion of the property.

Vacancy Rate The total square feet of available retail, office or commercial space compared to the total inventory of space and expressed as a percentage. Vacancy rate is calculated by multiplying the vacant space by 100, then dividing it by the total inventory (*ACRP Report 47*).



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APPENDIX A

Chapter 4 Checklists

4.2 Airport Ownership

Airport ownership options	Check to select	Notes
Private?		
Individual?		
Family?		
Corporation or partnership?		
Public?		
City or county?		
Independent airport authority?		
Port authority?		
State?		
Evaluation		
Benefits and limitations of the airport's ownership structure and access to financial resources?		
Conclusion:		



A-2 Generating Revenue from Commercial Development On or Adjacent to Airports

4.3 Management Structure

Airport management structure	Notes
<i>Who sets airport policy?</i>	
<i>How is policy implemented?</i>	
<i>Who creates the airport budget?</i>	
<i>Who approves the budget?</i>	
<i>Where does authority lie?</i>	
To engage in development?	
To sign a deal?	
To issue bonds?	
<i>How many employees per department?</i>	
<i>Property/development manager?</i>	
<i>Enabling/governing legislation?</i>	
<i>Bond resolution/restrictions?</i>	
<i>Rate covenants?</i>	
Evaluation	
Who will make decisions?	
Who will implement initiatives?	
How will enabling legislation and existing financial agreements/restrictions impact development?	
Conclusion:	



4.4 FAA Grant Obligation Checklist

Grant obligations	Yes	No	Notes
Airport?			
Received federal funds?			
Received state grants?			
Land for development?			
Aeronautical use on ALP?			
Owned by airport?			
Acquired with airport funds?			
Non-aeronautical land	Yes	No	Notes
Identified as such on ALP?			
Released by FAA?			
Acquired for noise mitigation?			
ALP-required FAA environmental review?			
Evaluation			
How do grant obligations currently apply to airport property?			
How do current grant obligations impact development choices and timelines?			
Conclusion:			



A-4 Generating Revenue from Commercial Development On or Adjacent to Airports

4.5 ALP and Master Plan Checklist

Plan types completed	Check to select		Notes
Airport Layout Plan (ALP)?			
Update needed/planned?			
Airport Master Plan?			
Plan area characteristics	Size in acres		Notes
	Existing	Future	
Total acreage in plan area?			
Aeronautical acreage?			
Non-aeronautical acreage?			
Planning year horizon	Check to select		Notes
Short-term (5 years)?			
Medium-term (10 years)?			
Long-term (20 years)?			
Development Plan consistency	Check to select		Notes
ALP-designated aeronautical use?			
ALP-designated non-aeronautical use?			
Consistent with current development plans?			
Plan mapping	Check to select		Notes
Runway protection zones (RPZs)?			
Runway and taxiway safety areas?			
Obstacle- and object-free zones?			
Noise compatibility (buffer) land on ALP?			
On Airport Master Plan?			
Noise contours?			
Future improvements identified?			
Other			Notes
Transportation network?			
Is existing documented?			
Planned future improvements?			

4.5 ALP and Master Plan Checklist (Continued)

Evaluation

Does the current airport ALP and/or Master Plan and associated information need updating?

Conclusion:



4.6 Airport Strategic Business Plan/Budgeting

Strategic Business Plan	Check to select		Notes
Strategic Business Plan?			
Adopted before 2009?			
Due for review and update?			
Plan has multiple horizons?			
Short-term goals?			
Mid-term goals?			
Long-term goals?			
Budgeting horizon	Yes	No	Notes
Annual?			
5-year?			
10-year?			
Longer?			
Capital improvement plan	Yes	No	Notes
Annual?			
5-year?			
Implements the Strategic Business Plan's improvement program?			
Major capital improvements	Notes		
Facilities to be improved?			
Improvements to existing facilities or new levels of service?			
Revenue generation?			
Revenue and sustainability	Yes	No	Notes
Revenue supports operations?			
Revenue sustainable according to mid-term plan?			
Revenue sustainable according to long-term plan?			
If not, is airport projected to be self-sustaining in future?			
Public subsidy	Yes	No	Notes
Publicly owned?			
Dependent on government funding to operate?			
Privately owned?			
Recipient of public loans or grants?			

4.6 Airport Strategic Business Plan/Budgeting (Continued)

Airport income proportions	Notes
Revenue breakdown by source?	
How might current proportions change?	
Current development generating revenue?	
Evaluation	
Is further business planning warranted?	
Are the current airport vision, development goals, and the path to reach those goals clear?	
Does the business plan help evaluate the airport development's contribution toward future revenue?	
Conclusion:	



A-8 Generating Revenue from Commercial Development On or Adjacent to Airports

4.7 Airport Business Segments

Major business sources/customers	Yes	No	Notes
Freight/cargo?			
Business passengers?			
Leisure passengers?			
Medical use?			
Military base on the airport or nearby?			
Educational?			
Concessions?			
Leases?			
Through-the-fence?			
Capacity issues?			
Other?			
Evaluation			
Compare the airport's Strategic Business Plan (if available) to the list of businesses dependent on the airport.			
What commercial and/or industrial uses will make beneficial targets for development?			
What potential commercial and/or industrial uses can be ruled out?			
Conclusion:			



4.8 Dominant Industry or Company

Dominant industries/companies	Notes	Percentage of airport revenue
Industry/industries in area?		
Employer(s) in area?		
Company/companies in area?		
Manufacturer(s) in area?		
Military base(s) in area?		
Airport on base?		
Cargo hub?		
Growth	Notes	
Market data shows industry growth?		
Airport data shows use trends?		
What benefits could be realized due to presence of dominant industry?		
How might the airport be able to diversify revenue over time because of the dominant industry's presence?		
What are the risks, if any, due to the presence of the dominant industry?		
Conclusion:		



4.9 Business Trends and Projections for Airport Revenue

Airport revenue by segment (Last 5 years)	Notes
<i>Airport revenue trends?</i>	
Grown or contracted?	
<i>Airport revenue segments?</i>	
Which have grown continuously and will remain important?	
Which have declined and are unlikely to attract development?	
Any declining that may improve through development or airside improvements?	
<i>Major industry trend?</i>	
Airport financial health	Notes
<i>Major customers lost or gained?</i>	
<i>General financial status?</i>	
Profitable?	
Stable with assistance?	
Uncertain?	
Weak/declining?	
<i>Recovery from recession impacts?</i>	
What elements traceable to Great Recession?	
Has revenue increased? Is financial recovery ongoing or complete?	
What new strategies or initiatives are ongoing?	
Evaluation	
What market segments are expected to grow?	
What market segments tied to significant airport revenue may decline?	
How does the airport's current general financial status impact development plans in light of cost and risk?	
Conclusion:	



4.10 Funds for Development

Airport or municipal funds	Notes
Annual amount available?	
Funding sources	Notes
Sources of funding?	
Private?	
Subsidy?	
Operating income?	
Feasibility of fee increases?	
Potential budget adjustments?	
Fund availability over 5 to 10 years?	
Bonding capacity?	
Capital markets/bank loans?	
Availability?	
Interest rates?	
Evaluation	
What funds may be available for the development project immediately and over time?	
In light of available funds, is there a need for a joint venture partner or master developer?	
Is funding limited to the extent that further analysis is warranted?	
Conclusion:	



4.11 Risk Tolerance for Development Projects

Risk tolerance factors	Notes
<i>Importance of guaranteed income?</i>	
<i>Legal restrictions on risk?</i>	
Constraining laws/regulations?	
Partnership/revenue-sharing limitations?	
<i>Assume market risk for return?</i>	
Long-term, detailed planning?	
Pursue developer partnership?	
Evaluation	
Does airport have broad financial support from governing agencies/partners enabling long-term investments with less certain returns but more income potential (high risk)?	
Can airport commit limited resources to increase income, but desires protection from market uncertainty (moderate risk)?	
Is the airport in a position to only seek stable income streams for minimal investment due to financial, legal or political reasons (low risk)?	
Conclusion:	



4.12 Development Goals

Factors for development	Check to select	Notes
<i>Excess unproductive land?</i>		
<i>Jobs for local economy?</i>		
<i>Additional revenue needed for long-term sustainability?</i>		
<i>Additional income critical to operations?</i>		
<i>Has airport identified revenue goals over time?</i>		
<i>Goals for increased revenue?</i>		
Short-term goals?		
Long-term goals?		
<i>Can airport remain financially sound between investment and return?</i>		
<i>Developer proposal on the table?</i>		
Benefit to airport?		
<i>Growing market demand for commercial/industrial land?</i>		
Evaluation		
Is the development interest motivated by objective for additional revenue over time (promising scenario) or for immediate shortfall (less positive scenario)?		
Is the external initiative, whether driven by developer or government agency, in the best interest of the airport as far as revenue and sustainability?		
Conclusion:		



4.13 Community Context

Local stakeholders	Notes
Identify local stakeholders?	
Public?	
Private?	
Relationships with stakeholders	Notes
Summarize relations with local stakeholders?	
Local government?	
County/state government?	
Surrounding landowners?	
Local industry advisory board?	
Public involvement/other communication?	
Viewed as economic asset by city or region?	
Goals aligned with city and regional goals?	
Friction related to operations, expansion, or noise?	
Jobs directly and indirectly supported by operations?	
Regional agency awareness of job support?	
Other commercial/industrial developments in area?	
Airport development viewed as competition?	
Evaluation	
Is the community actively involved and supportive of development?	
Do little involvement and poor relations with the community warrant additional efforts to improve relationships/communication?	
Conclusion:	





APPENDIX B

Chapter 5 Checklists

5.2 Status of ALP (with or without Master Plan)

Status of ALP		Notes
FAA-approved?		
Last updated?		
Land use plan adopted by ownership?		
ALP reflects current conditions (within 3 years or less)?		
Content of ALP	Check to select	Notes
Aeronautical uses?		
AOA identified?		
Short-range expansion needs identified?		
Long-range expansion needs identified?		
Existing facilities identified?		
Future facilities identified?		
Non-aeronautical uses?		
Non-aviation land released by FAA?		
Uses identified?		
General categories?		
Specific uses?		
Buffer requirements delineated?		
Adjacent land use identified?		
Community support	Check to select	Notes
ALP publicly available?		
Plan shared with stakeholders?		
Plan addresses master plans of surrounding town and county?		
Evaluation		
What is the status of the ALP and required FAA review and approval?		
Does the ALP content inform development planning decisions for short- and long-term land uses?		
Has enough communication and outreach been conducted to generate appropriate community support?		
Conclusion:		



B-2 Generating Revenue from Commercial Development On or Adjacent to Airports

5.3 Land Availability

Aeronautical development		Notes		
<i>Size in acres?</i>				
<i>Contiguous area?</i>				
Subdivision into parcels or smaller lots?				
<i>On- or off-airport?</i>				
<i>Runway access?</i>				
Non-aeronautical development		Notes		
<i>Size in acres?</i>				
<i>Contiguous area?</i>				
Subdivision into parcels or smaller lots?				
<i>On- or off-airport?</i>				
<i>Proximity to airport?</i>				
<i>Designated non-aeronautical on ALP?</i>				
Availability reduction factors		Yes	No	Notes
Owned by airport sponsor?				
Clear title?				
Deed restrictions?				
Encumbered by easements?				
Evaluation				
What is the extent of land available for development?				
What ownership of easement issues will have to be accommodated or eliminated to proceed?				
Conclusion:				



5.4 Location and Access

Surface transportation connections	Check to select		Notes
Highway interchange access? If not, distance to nearest interchange?			
Arterial road frontage?			
Visibility from road frontage?			
Distance to city/town center?			
Access to regional centers?			
Multi-modal transportation service	Yes	No	Notes
Freight rail at airport?			
Port or rail cargo access?			
Rail or bus to airport?			
Distance to mass transit?			
Market connections/quality-of-life metrics	Check to select		Notes
Access to industrial concentrations?			
Major residential areas nearby?			
Universities/colleges nearby?			
Hospitals/medical centers nearby?			
Evaluation			
How do these results indicate the airport is or is not well-positioned to provide market strength or advantage through property development?			
Conclusion:			



B-4 Generating Revenue from Commercial Development On or Adjacent to Airports

5.5 Physical Site Features

Net usable land area calculation	Acres		Notes
Gross acreage (A)?			
Wetland area?			
Steep slopes?			
Floodplains?			
Other features?			
Total land reductions (B)?			
Net usable land (A – B)?			
Land characteristics	Area of concern?		Notes
	Yes	No	
Sloping or level?			
Forested?			
Developed/paved?			
Agriculture?			
Streams or water bodies?			
Storm drainage/flooding?			
Shallow bedrock?			
Ponding/wetlands?			
Soil conditions?			
Seismic hazards?			
Environmental topics	Area of concern?		Notes
	Yes	No	
Former industrial use? Potential contamination?			
Threatened/endangered species habitat?			
Historical features on or around site?			
Evaluation			
Does the net usable land provide a reasonable development area?			
Are there development challenges that may add excessive expense and/or time for permitting?			
Could any other known characteristics add excessive cost or delay due to environmental regulations?			
Conclusion:			



5.7 Infrastructure—Sanitary Sewer Systems

Available service, costs and challenges	Notes
Public or private sewer service? Service provider?	
Is land in the service area (confirmed by provider)?	
Adjacent sewer main?	
Length of needed sewer main construction?	
Plant capacity/conveyance constraints?	
Need for pump station?	
Capacity reservation issues/costs?	
Planned improvements?	
Capacity needs estimate by type of development?	
Demand vs. capacity shortfall?	
Evaluation	
Is the site well positioned in terms of sanitary sewer service relative to access, capacity limitations, and cost?	
Conclusion:	



B-6 Generating Revenue from Commercial Development On or Adjacent to Airports

5.8 Infrastructure—Stormwater Systems

Site-specific management	Notes
Who is permitting authority?	
Codes/ordinances requiring onsite detention before discharge?	
Required filtration/treatment before discharge?	
Basin requirements for multi-lot developments?	
Regional management	Notes
Who is regional permitting authority?	
Any capacity issues that prevent or limit discharge?	
System improvements planned by regional authority?	
Pre-treatment or buffer areas required in engineering design?	
Access reservation cost?	
Required payment amount for discharge into system?	
Evaluation	
Do permitting issues seem manageable in light of project scope, funding availability, and risk tolerance?	
If not, what issues require further investigation with the help of a civil engineering consultant?	
Conclusion:	



5.9 Infrastructure—Water

General evaluation	Notes
Water demand based on proposed land use?	
Public service/private on-site well?	
Required filtration/treatment before discharge?	
Basin requirements for multi-lot developments?	
Public water system (if served by public system)	Notes
Identify service provider?	
Water service adjacent to airport land?	
Identify supply source?	
Supply/conveyance constraints?	
Length of required water main extension, if any?	
Capacity reservation costs/issues?	
Planned improvements?	
Private water supply (if served by private supply)	Notes
Existing supply source/capacity? Well expansion required?	
Groundwater contamination?	
Public/private system capacity	Notes
Demand vs. capacity shortfall?	
Evaluation	
Can water be safely and reliably supplied with adequate capacity and without excessive cost?	
If not, what are some cost-effective solutions or alternative land uses with reduced water service demand that can advance development plans?	
Conclusion:	



B-8 Generating Revenue from Commercial Development On or Adjacent to Airports

5.10 Infrastructure—Power/Telecom

Identify utility providers	Notes
Electric service?	
Natural gas?	
Telephone provider?	
Internet service provider?	
Fiber optic available?	
Service connection	Notes
Distance to nearest electrical/gas connection?	
Extension/connection funded by power company?	
Requires underground installation or relocation?	
Capacity	Notes
Utility capacity constraints?	
Reliability issues?	
Vulnerable to storms/flooding?	
Needed improvements?	
Planned improvements?	
Evaluation	
Are utilities available and reliable, and do they have adequate capacity without excessive connection costs?	
If not, what are some cost-effective solutions or alternative land uses with reduced utility service demand that can advance development plans?	
Conclusion:	



5.11 Surrounding Land Use

Surrounding land use character	Check to select	Notes
Urban?		
Suburban?		
Rural?		
Land use types and proximity to airport	Check to select	Notes
Single-family residential?		
Multi-family residential?		
Local retail?		
Regional retail/medical facilities?		
Educational institutions?		
Industrial?		
Agricultural, recreation, open space/vacant?		
Future land uses	Notes	
Types permitted by current zoning map?		
Types of future land uses in master plan?		
Evaluation		
Are the proposed land uses compatible with existing and planned future development?		
If not, what strategies can be used to increase community, political, and economic support?		
Conclusion:		



B-10 Generating Revenue from Commercial Development On or Adjacent to Airports

5.12 Regulatory Constraints/Permitting

FAA review and actions	Check to select	Notes
<i>Checklist to discuss FAA involvement w/FAA ADO?</i>		
Development generally?		
Airport Master Plan?		
Airport Layout Plan?		
Exhibit "A" Airport Property Map?		
FAA ARP SOP 3.00?		
Lease terms?		
<i>Non-aeronautical use?</i>		
Land release?		
<i>Airspace review?</i>		
FAA Form 7460-1 Notice of Proposed Construction or Alteration?		
NEPA environmental review	Check to select	Notes
<i>Does NEPA apply?</i>		
<i>If yes, which review applies?</i>		
Categorical Exclusion (CATEX)		
Environmental Assessment (EA)		
<i>State-level legislation?</i>		
Environmental	Check to select	Notes
<i>Contamination present?</i>		
Phase I Environmental Site Assessment (ESA) completed?		
Phase II ESA completed?		
<i>Remediation plan approved?</i>		
<i>Remediation completed?</i>		
<i>Wetlands fill or crossing permits needed?</i>		
<i>Floodplain encroachment permit?</i>		
<i>Flood insurance needed?</i>		

5.12 Regulatory Constraints/Permitting (Continued)

Zoning/local approvals	Check to select	Notes
Designated redevelopment area contains non-aeronautical land?		
Local zoning applicable?		
Regulating municipality?		
Subject land zoning district(s)?		
Permitted uses?		
Rezoning required?		
Minimum lot size?		
Maximum height?		
Parking requirements?		
Maximum floor area ratio?		
Building and lot coverage?		
Site plan approval/special use permit?		
Subdivision, land division, site condominium approval?		
Variances needed?		
Local cooperation likely?		
Other approvals?		
Evaluation		
Does the permitting process seem manageable, or are there issues that may pose a significant challenge, delay or cost?		
Will internal staff be able to manage the process, if moving forward, or will help be needed from a consultant?		
Conclusion:		



B-12 Generating Revenue from Commercial Development On or Adjacent to Airports

5.13 Market Conditions

Real estate market analysis	Notes
Vacancy rates (by percent) Increasing/declining?	
Absorption rates/trends?	
Average rents?	
Land/building sales prices?	
Significant recent sales/leases?	
Available space/land inventories?	
Apparent growth sectors?	
Estimate of market area for property?	
Competing business park attributes?	
Evaluation	
How does the market conditions assessment measure against the airport's risk tolerance?	
If favorable, analyze real estate market information together with site condition assessment to consider accommodation (on available development sites) of uses with strong market demand.	
Conclusion:	



5.14 Workforce Attraction

Existing conditions	Check to select	Notes
<i>Training programs available?</i>		
<i>Housing choices?</i>		
By income levels?		
Both rentals and for sale?		
Average costs?		
<i>Cost of living?</i>		
High?		
Moderate?		
Low?		
<i>School system available?</i>		
Adequate facilities?		
Graduation rates?		
College acceptance rates (%)?		
<i>Entertainment/cultural options?</i>		
<i>Landscape/natural attractions/recreation?</i>		
<i>Population trends?</i>		
Growing?		
Declining?		
<i>Higher education facilities?</i>		
Evaluation		
How does the area – and specifically the airport area – stack up against other development locations?		
Conclusion:		



B-14 Generating Revenue from Commercial Development On or Adjacent to Airports

5.15 Local/Regional Context

Economic trends	Notes
<i>Unemployment rates/trends?</i>	
During Great Recession?	
Since Great Recession?	
Locally/regionally?	
5-year projections?	
<i>Job growth/decline?</i>	
<i>Sectors?</i>	
<i>County/region population trends?</i>	
<i>Employment trends by location?</i>	
<i>Major employer growth trends?</i>	
Growth/health of retail centers	Notes
New projects?	
Downtown/near airport?	
Shuttered malls?	
Evaluation	
What signs of local/regional economic strength and growth exist?	
What signs of local/regional economic decline exist?	
Any red flags?	
Conclusion:	



5.16 Development Incentive Programs

Available incentives	Notes
Regional programs?	
Multiple programs available?	
Geographic focus area?	
Urban/disadvantaged areas?	
Airport areas?	
Program administrators?	
Regional?	
State?	
City?	
County?	
Tax credits?	
For investment?	
For job creation?	
For employee training?	
County?	
Expedited permits/approvals "shovel-ready"?	
Eligibility criteria?	
Incentive area includes airport?	
Foreign Trade Zones (FTZs)?	
Evaluation	
What programs are already in place that encourage on-airport development?	
Are there other programs that would move forward with the investment of airport staff and financial resources?	
Conclusion:	





APPENDIX C

Chapter 6 Checklists

6.3 Preliminary Development Plan

Plan elements	Notes
<i>Land areas for certain development types?</i>	
General?	
Specific?	
Plan elements	Notes
<i>Division of building lots?</i>	
Zoning Ordinance minimums?	
Physical constraints increasing minimum area?	
Range of sizes by land use?	
Marketing data (demand)?	
<i>Estimated building yields?</i>	
<i>Road construction?</i>	
Identify widths and lengths?	
Identify new access roads?	
<i>Infrastructure?</i>	
<i>Landscaping and amenities?</i>	



C-2 Generating Revenue from Commercial Development On or Adjacent to Airports

6.6 Project Hard Costs

Land costs		Notes
<i>Recent purchase price?</i>		
<i>Book value?</i>		
Appraisal?		
Hard construction costs	Check to select	Preliminary cost estimates
Earthwork/grading?		
Road construction?		
Utilities?		
Building construction?		
Landscaping and amenities?		
Environmental remediation?		
Off-site costs?		
Demolition?		
Contractor/construction management/contingency (as a percentage of hard costs)?		
Evaluation		
What is the total anticipated hard cost of development for the Proposed Development Plan?		
Are there unknown costs for which additional research should be conducted and preliminary cost estimates developed?		
Conclusion:		



6.7 Project Soft Costs

Soft costs likely to be needed	Check to select	Preliminary cost estimates
Title insurance?		
Land planning and design?		
Civil engineering?		
Environmental consulting?		
Traffic engineering?		
Legal representation and advice?		
Market studies?		
Architecture?		
Surveying?		
Geotechnical analysis?		
Project management?		
Leasing or sale commissions?		
Permits and approvals?		
Application fees?		
Performance bonds?		
Required contributions to municipal facilities/impact fees?		
Financing costs?		
Carrying costs?		
Operating expenses?		
Evaluation		
Create a total amount of anticipated soft costs for the proposed Development Plan.		
Are there unknown costs that require further research and preliminary cost development?		
Use final anticipated project hard and soft costs to create overall estimate of project costs.		
Conclusion:		



C-4 Generating Revenue from Commercial Development On or Adjacent to Airports

6.8 Funding Sources and Typical Revenue Opportunities

Funding sources	Check to select	Preliminary funding estimates
Grants?		
Bond proceeds?		
FAA grants?		
Government appropriations?		
Investor contributions?		
Loans?		
Revenue sources	Check to select	Preliminary funding estimates
Ground rent revenue?		
Land sale revenue?		
Build-to-suit sales and fees?		
Building or floor space rents?		
Percentage of rents?		
Equity participation?		
Evaluation		
Create totals for the anticipated revenue and the amount of financial resources available for the proposed plan.		
Are there unknown revenue streams or funding sources that need further research and preliminary estimates before proceeding? What are they?		
Conclusion:		



6.9 Miscellaneous Revenue

Potential sources	Check to select	Estimated income
Common facilities assessment?		
Hotel room stays?		
Parking fees?		
Residential rents or sales?		
Airport access fees?		
Recreation area fees?		
Evaluation		
Create a total value of miscellaneous revenue for the proposed Development Plan.		
If “unknown revenue” is anticipated to be a significant part of project revenue, it is recommended to add this as a line item and develop estimated numbers before proceeding.		
Conclusion:		



C-6 Generating Revenue from Commercial Development On or Adjacent to Airports

6.14 Development Program Refinement

Refinement options	Check to select	Notes
Land use distribution?		
Lot size and number?		
Floor area?		
Road alignment?		
Avoid constraint areas?		
Costs?		
Timeline?		
Evaluation		
When was the last time the airport development plan was refined? Does the current plan reflect changes or new information?		
Has the Pro Forma been re-run following refinement and updates to the Development Plan?		
Conclusion:		



6.15 Internal Project Management Structure

Relevant tasks for project manager	Check to select	Notes
Presentation of development program to airport governance?		
Refinement or direction of program?		
Financial analysis?		
Selection and coordination of consultants?		
Management of the approval processes?		
Negotiation with potential development partners?		
Negotiation of lease terms with lessees?		
Coordination and applications to FAA (if land-grant obligated)?		
Review of assurances?		
Construction oversight?		
Marketing the property?		
Community engagement?		
Property management?		



C-8 Generating Revenue from Commercial Development On or Adjacent to Airports

6.16 Community Outreach Strategy

Examples of considerations	Check to select	Notes
History/challenges?		
Frictions, even minor?		
Issues of noise, safety, traffic?		
Other issues?		
Relationship with previous owner/authority?		
Ongoing proactive efforts?		
Outreach ongoing?		
If not, initiated before announcing development plans?		
Fences to mend?		
Conflicts to be resolved before publicizing development?		
Established network of community leaders?		
Means of collecting concerns and working to find common ground?		
Evaluation		
How is the airport's existing relationship with the community? Are there any areas where it could be strengthened?		
What ongoing efforts are being made to build and maintain community relationships?		
What are the historic or current issues that cause conflict or concern?		
Conclusion:		



6.17 Identifying Stakeholders

Possible stakeholders	Check to select	Notes
Neighborhood and homeowners' groups?		
Local and regional chambers of commerce?		
Other business and industry organizations?		
Local government agencies and officials?		
County and state government agencies and officials?		
Pilots' organizations and airplane hobbyists groups?		
Economic development departments and agencies?		
School districts and higher education?		
Youth groups?		
Travel agencies and professionals?		
Airport tenants?		
Commercial aviation companies and trade groups?		
Evaluation		
How can the airport incorporate the listed stakeholders into (or further into) proactive outreach efforts?		
How can the airport specifically reach out to these stakeholders in terms of the development plan and sharing the information with the public?		
Conclusion:		



6.18 Creating a Message

Potential benefits to airport	Check to select	Notes
Jobs due to airport operations?		
Jobs due to businesses tied to airport or nearby?		
Income generated by jobs?		
Indirect benefits to local businesses, such as hotels?		
Businesses tied to airport add to property and payroll tax bases?		
Investment by airport in facility improvements on- and off-airport?		
Airport-sponsored activity/philanthropy in community?		
Evaluation		
How can the results of this checklist be crafted into a message that emphasizes common goals for community economic growth, and how will the airport's Development Plan further those goals?		
Would further study strengthen the case for that message? If so, what local organization may be a good fit to team with on that effort?		
Conclusion:		



6.19 Outreach Portfolio

Internal techniques/resources	Check to select		Notes
Advisory board?			
Community representatives?			
Business groups?			
Elected officials?			
Community relations staff?			
Airport Master Plan?			
External techniques/resources	Continue	Add	Notes
Offer website information?			
Publish newsletters (print, online)?			
Offer airport tours?			
Sponsor local events and organizations?			
Offer scholarship and grants?			
Offer programs for youth interested in aviation careers?			
Send speakers to community groups?			
Evaluation			
How can the listed techniques/resources be incorporated into a comprehensive community outreach strategy?			
Conclusion:			



6.20 Revealing Project Plans to the Public

Concern about development	Area of concern?		Expert assistance needed?	Who could provide expertise?
	Yes	No		
Land use compatibility issues?				
Impacts to circulation (traffic)?				
Noise?				
Public safety?				
Environmental impacts?				
Project funding sources?				
Consistency with local economic development goals?				
Evaluation				
Based on the results of this checklist, do issues or concerns exist that may generate controversy or require additional preparation before the airport holds public meetings or gains community support? What are they?				
How can these concerns be effectively, proactively addressed?				
Conclusion:				



6.21 Permits and Approvals

FAA actions (if grant obligated)	Check to select		Notes
<i>ALP revision approval?</i>			
<i>Land release review?</i>			
<i>NEPA determinations for environmental review?</i>			
Subsequent CATEX?			
Subsequent EA?			
Subsequent EIS?			
Air quality impacts?			
<i>Lease review?</i>			
Fair market value?			
Term limit?			
Renewal options?			
Reversions?			
<i>Communication at start of development?</i>			
<i>Other?</i>			
Environmental permits (federal, state, or local)	Permit required?		Notes (including agency identification)
	Yes	No	
Soil erosion?			
Wetlands fill/crossing?			
Coastal jurisdiction?			
Remediation?			
Floodplain encroachment?			
Stormwater detention and discharge?			
Water supply allocation or main extension?			
Sewer system connection?			
Contamination investigation and remediation?			
Fish and wildlife/endangered species?			
Solid waste management?			

(continued on next page)

6.21 Permits and Approvals (Continued)

Land use and zoning approvals (local or regional)	Approval required?		Notes
	Yes	No	
Zoning change?			
Variance(s)?			
Site Plan approval?			
Subdivision approval?			
Redevelopment area plan/agreement?			
Transportation (state, county, or local)	Check to select		Notes
New or modified highway access?			
Ramp or road expansion?			
Intersection and signal improvements?			
Road drainage?			
Bus routing?			
Transit station locations?			
Evaluation			
Using the listed information, group the required permits into a matrix that includes the agency, permit type, documentation, consulting expertise and review times to streamline the process and keep things on track for development. (Table 1 in Chapter 6 of the guidebook provides an example; a blank template for a permitting matrix follows this checklist.)			
Conclusion:			



Permitting Matrix

Agency	Permit type	Documentation	Consulting	Review time
--------	-------------	---------------	------------	-------------

6.23 Incentives

Incentives	Check to select	Notes
Foreign Trade Zone (FTZ)?		
Airport Development Zone – tax incentives?		
Income tax credits?		
Sales and use taxes?		
Airport Development Zone – non-tax incentives?		
Training programs?		
Expedited permit processing?		
Low-interest loans?		
Evaluation		
Does the information listed support the pursuit of incentives for airport development?		
If not, what potential is there for the airport to start the conversation with federal and state officials about establishing incentives?		
Conclusion:		



6.24 Funding and Financing

Potential sources	Check to select	Notes
Internal sources?		
Grant and loan sources?		
Regional economic development authorities?		
State transportation aviation agencies?		
FAA-sponsored Airport Improvement Program (AIP) grant?		
Community stakeholders?		
Appropriations?		
Bonds?		
General obligation?		
Revenue?		
Partners?		
Value capture?		
Evaluation		
What funding sources are available, and in what amounts?		
What timeline is recommended for each type of funding source?		
Conclusion:		



6.25 Development and Partnership Strategies

Finding partners	Check to select		Notes
Professional networking?			
Professional real estate advisor?			
Economic development agency?			
Evaluating partners	Yes	No	Notes
<i>Direct experience?</i>			
<i>Airport experience?</i>			
<i>References?</i>			
<i>Investment capital?</i>			
<i>Compatible goals?</i>			
Risk-sharing?			
Investment returns?			
Long-term objectives?			
Determining the deal	Addressed in deal?		Notes
	Yes	No	
<i>Shares of investment?</i>			
Confirmed by third-party appraisal?			
<i>Percentage return?</i>			
<i>Roles and responsibilities?</i>			
Airport?			
Partner?			
<i>Split of excess profits and residual value?</i>			
Evaluation			
Based on these results, is it in the best interests of the airport to pursue self-financed development, a joint venture partner, or a master developer?			
If the airport is electing to work with a master developer, what will be included in the scope of tasks and the RFP?			
Conclusion:			



6.26 Marketing

Marketing campaign elements	Check to select	Notes
Branding?		
Ties with airport identity?		
Themed and recognizable?		
Competitive advantage?		
Community relations?		
Officials active in community?		
Business networking ongoing?		
Advertising?		
Media relations/social media?		
Internal staff efforts?		
Hired professional firm?		
Point person?		
Internal staff member?		
Contracted broker or real estate advisory firm?		
Evaluation		
Based on these results and the checklists on market conditions completed in Section 5.13 (see Appendix B), what elements will be a part of the airport's development project marketing?		
Do any elements need to be refined before cost estimates are entered into the Pro Forma?		
Conclusion:		



6.27 Construction Management/Property Management/Operation

Construction management responsibilities		Check to select		Notes
<i>Development of bid documents?</i>				
<i>Construction contractor selection and approval?</i>				
<i>Construction oversight?</i>				
Building code compliance?				
Soil erosion control?				
Noise ordinances?				
<i>Safety Plan development and oversight?</i>				
<i>Traffic Plan development and coordination?</i>				
Property management responsibilities		Area of concern?		Notes
		Yes	No	
<i>Tenant liaison?</i>				
Monitor tenant for lease obligations?				
Collect lease payments?				
Manage tenant complaints/issues?				
Coordinate tenant move-in and improvements?				
Sign lease on owner's behalf?				
Facility management responsibilities		Area of concern?		Notes
		Yes	No	
<i>Facility management?</i>				
Physical structures (inside, outside, common areas)?				
Monitor service provisions?				
Materials purchasing?				
Ongoing contractor coordination for maintenance?				
Maintenance quality monitoring?				

(continued on next page)

6.27 Construction Management/Property Management/Operation (Continued)

Finance and administration responsibilities	Area of concern?		Notes
	Yes	No	
<i>Finance and administration?</i>			
Budget preparation?			
Regular reporting to owner?			
Event coordination and leadership?			
Hiring/managing employees?			
Accounts payable and receivable?			
Accurate documentation skills?			
Compliance monitoring?			
Evaluation			
Based on these results, how will development management responsibilities be assigned: by airport staff, an outside contractor, a development partner, or some combination?			
Does the construction management/property management strategy require refinement to the cost projections in the Pro Forma?			
Conclusion:			





APPENDIX D

Chapter 7 Checklists

7.3 Through-the-Fence Operations (Tier 4 Property)

Planning documents	Have	Need	Current	Needs updating
Airport Layout Plan (ALP)?				
Airport Master Plan?				
Strategic Business Plan?				
TTF ordinance options	Check to select	Notes		
Airport adopts an ordinance?				
Airport requests adoption of ordinance?				
Airport adopts policy in lieu of ordinance?				
Primary management and compliance documents	Check to select	Notes		
Leasing/rents and fees policy?				
Minimum standards?				
Rules and regulations?				
Development standards?				
Stakeholders and interested parties	Check to select	Notes		
FAA?				
State aviation organization?				
Airport sponsor?				
Airport operators, tenants, and users?				
Adjacent property owners?				
Community?				
Evaluation				
Based on the benefits, complexities, and risks discovered in this evaluation, is TTF an option for airport development as a potential revenue generator?				
What additional guidance (<i>see ACRP Report 114: Guidebook for Through-the-Fence Operations</i>) applies to this option for your airport?				
Conclusion:				



D-2 Generating Revenue from Commercial Development On or Adjacent to Airports

7.4 Community Land Use Planning for Revenue Generation

Local land use agencies	Authority		Key staff names/titles?
	Yes	No	
City?			
Township?			
County?			
Regional planning authority?			
Other?			
Additional notes:			
Current land use around airport			Notes
Identify zoning districts			
Identify permitted uses in each district			
Future land uses			Notes
Identify future land uses			
Identify permitted uses			
Evaluation			
What current and planned land uses fall into the destination zoning category?			
If none, which individuals can be approached to start a dialogue to change the planning framework to permit and encourage destination zoning uses near the airport?			
Conclusion:			



7.5 Economic Development and Business Attraction

Economic development activities by regional authorities or organizations		Notes
Local economic development corporation?		
Downtown development authority?		
Other public organization(s)?		
Regional economic development corporation?		
Local chamber of commerce or other membership organization?		
State economic development initiative?		
Other?		
Current economic development initiatives	Check to select	Notes
Tax incentives?		
Shovel-ready development sites?		
Labor force initiatives?		
Community investments in quality-of-life features?		
Airport participation strategy	Notes	
Attendance or active membership on development boards, commissions, organizations?		
Presentations to these organizations?		
Other ideas to participate in the community and promote economic development?		
Evaluation		
Which current programs offer the opportunity for the airport sponsor to become involved in furthering economic development that will be beneficial for the airport and community?		
If there are none, how can the airport sponsor convene interested parties to initiate the conversation?		
Conclusion:		



D-4 Generating Revenue from Commercial Development On or Adjacent to Airports

7.6 Public Finance Tools and Airport Revenue Generation Opportunities

Revenue generation opportunities	Current practice?		Permitted?	
	Yes	No	Yes	No
Tax increment financing (TIF)?				
Special assessment district?				
Business improvement district (BID)?				
Transfer of development rights?				
Connection fees?				
Local income and payroll tax?				
Sales tax/occupancy tax?				
Land value tax?				
Foreign Trade Zone (FTZ)?				
Joint development?				
Sale of airport services?				
Access fees and privilege fees?				
Evaluation				
Do these results show promise for potential revenue generation for the airport?				
Which opportunities, if any, will require political measures to enable implementation?				
What additional guidance (see <i>ACRP Report 121: Innovative Revenue Strategies—An Airport Guide</i>) applies to the airport’s plans and goals?				
Conclusion:				



Abbreviations and acronyms used without definitions in TRB publications:

A4A	Airlines for America
AAAAE	American Association of Airport Executives
AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
ACI-NA	Airports Council International-North America
ACRP	Airport Cooperative Research Program
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
DHS	Department of Homeland Security
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FAST	Fixing America's Surface Transportation Act (2015)
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
HMCRP	Hazardous Materials Cooperative Research Program
IEEE	Institute of Electrical and Electronics Engineers
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute of Transportation Engineers
MAP-21	Moving Ahead for Progress in the 21st Century Act (2012)
NASA	National Aeronautics and Space Administration
NASAO	National Association of State Aviation Officials
NCFRP	National Cooperative Freight Research Program
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
PHMSA	Pipeline and Hazardous Materials Safety Administration
RITA	Research and Innovative Technology Administration
SAE	Society of Automotive Engineers
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005)
TCRP	Transit Cooperative Research Program
TDC	Transit Development Corporation
TEA-21	Transportation Equity Act for the 21st Century (1998)
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation

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