



Innovative Revenue Strategies – An Airport Guide

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AIRPORT COOPERATIVE RESEARCH PROGRAM

ACRP REPORT 121

**Innovative Revenue Strategies—
An Airport Guide**

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AIRPORT COOPERATIVE RESEARCH PROGRAM

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

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

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ACRP REPORT 121

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ACRP Report 121: Innovative Revenue Strategies—An Airport Guide was prepared under ACRP Project 01-15. The Project Research Team was composed of prime contractor KRAMER aerotek inc., with subcontractors Economic Development Research (EDR) Group; Schnader Harrison Segal & Lewis LLP; and Michael G. Moroney & Associates. The Principal Investigator was Lois Kramer, CEO of KRAMER aerotek. Steven Landau, Vice President of EDR Group, served as a key researcher, as did Jeffrey Letwin, formerly a Partner at Schnader Harrison Segal & Lewis LLP, now Special Counsel at Saul Ewing LLP, and Michael Moroney, Principal of Michael G. Moroney & Associates. Julie Ervin of EDR Group helped to edit the document. Deanne Roberto and Melissa Ureksoy provided graphics support. The authors also wish to thank the large number of individuals who provided vital input to the Airport Guide through their participation in discussions and meetings conducted by the Research Team and contribution of case study information for the project.

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FOREWORD

By Lawrence D. Goldstein

Staff Officer

Transportation Research Board

ACRP Report 121: Innovative Revenue Strategies for Airports—An Airport Guide is a resource that describes a broad range of tools and techniques for airport operators to improve revenue streams, recover costs, or achieve operational efficiencies. The Airport Guide presents ways for airport operators to (1) develop new sources of revenue; (2) increase airport sponsor participation in tenant revenues; and (3) improve the planning, administrative process, and management of existing airport businesses.

The Airport Guide is built on the premise that not only are changes in funding and financing demands and opportunities inevitable, but these changes are happening at an accelerated pace, requiring airport operators to be creative innovators at all times. The document offers a range of ideas for enhanced revenue generation, coupled with a framework that relates described strategies and techniques to functional areas of airport operation. The Guide addresses in detail opportunities that are grouped into five functional areas: (1) customer needs and wants; (2) airport-provided services/shared services, facilities, and equipment; (3) revenue participation in real estate and natural resource development; (4) value capture and other innovative financing opportunities; and (5) improvements to existing airport businesses. Each of these strategic areas is examined in detail. The Guide also presents comprehensive summaries of several case studies, indicating how and where innovative approaches to revenue generation might apply to the airport environment.

Under ACRP Project 01-15, the KRAMER aerotek team was tasked to identify alternative methods for funding and financing airport activities at all levels. The analysis was driven by an understanding that changing domestic and world economic conditions are exerting stress on the financial health of the aviation industry as a whole and the airport environment in particular. In response to these changing and sometimes volatile conditions, some airports have looked to new and innovative revenue generating techniques to supplement more traditional methods.

The identification and development of innovative revenue strategies emerged through a comprehensive research approach that combined stakeholder outreach coupled with detailed evaluation of experience drawn from several in-depth case studies. The case studies helped illustrate how airport operators and others have implemented a range of potential strategies for generating additional revenue. Overall, the process drew not only from the airport environment but also from experience in other transportation modes and related development experience.

The Airport Guide collects information about and analyzes effectiveness of new and innovative techniques for generating airport revenue in a manner that builds on and extends current practice. Given the classification system incorporated in the presentation, airport operators and other stakeholders can use this Guide to identify tools and techniques applicable to their particular circumstances while also exploring opportunities for innovation.



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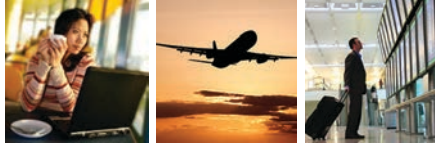
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Innovative Revenue Strategies— An Airport Guide



Preface

It seems the aviation industry is constantly at a crossroads. Decision points for airports and airlines continually arise at a faster pace. This “new normal” has several attributes particularly relevant for airports:

- Innovative technology and its adoption is occurring at an accelerating pace
- Demand for change is coming from multiple directions, including management, customers, the airlines and other airport tenants, airport sponsors, and regulatory groups
- A steady stream of unexpected events caused by weather, disease, terrorism, and government gridlock contributes to an atmosphere of uncertainty and of aversion to risk

The dialectic of the new normal on the one hand requires change and on the other hand argues for caution. These are interesting times.

This Airport Guide embraces the idea that change is not only inevitable, but happening at an accelerated pace, requiring airport operators to be nimble innovators at all times. Change is taking place so fast that, in the course of this research, examples of innovation selected at the beginning of the project exist as regular practice at the conclusion of the project. To stay relevant to readers, the approach taken here is to introduce five basic strategies to stimulate an innovative environment within an airport organization that continually strives to deliver an excellent airport product to customers and to increase net revenues to the airport sponsor.

The original scope of work for the project offered the following guidance:

- Innovative revenue sources and techniques can include practices that are:
 - Currently in use or being considered for use by airports, but not yet widely known
 - Used by other transportation modes or other industries, but not at airports
- Revenue generation opportunities can come from:
 - Airport users and tenants
 - The entrepreneurial use of airport assets
 - The regional economy that benefits from airport activities

Both the subject matter and the audience are very broad. The Research Team recognized the importance of a conceptual framework to communicate on such a wide range of topics. The framework of the five strategies grew out of the collective effort of many individuals. For all of the review and excellent suggestions, the Research Team is most grateful.

One goal of this Airport Guide is to stimulate discussion and innovation among airport practitioners. It is our hope that the Guide will inspire a few good ideas and new approaches to revenue development at your airport.

Lois Kramer, Principal Investigator



Summary

Innovative Revenue Strategies—An Airport Guide

- S.1 Backstory
- S.2 Project Objectives and Research Approach
- S.3 Innovative Revenue Strategies
- S.4 Implementation of the Strategies
- S.5 Airport Guide Organization
- S.6 Conclusions

S.1 BACKSTORY

Airports are complex organizations that increasingly depend on a variety of revenue sources to fund maintenance of airport facilities, day-to-day management of operations, capital improvements, marketing, and business innovations. If an airport is fortunate enough to own large tracts of land, real estate or natural resource development may provide the opportunity for significant revenue development. For the majority of airports, achievement of new net revenues to the airport sponsor involves incremental actions that take advantage of multiple opportunities.

Mobile technologies are changing the way that passengers use the terminal and airport tenants communicate with their customers. Point of sale (POS) systems provide concessionaires with detailed information about what customers buy and when. Technology presents opportunities to alter use of space in the terminal and focus more precisely on customer needs and wants. In this sense, airports are following in the footsteps of other travel industries, such as hotels and airlines, by getting to know exactly who are their best customers.

Some airports are taking over businesses that airlines or other companies once provided or managed. These include services such as ground handling, gate management, central logistics and warehousing, and trash and recycling. In smaller markets, airport operators are consolidating and managing services and facilities that benefit multiple users, such as janitorial services, communications systems, and consolidated cargo facilities.

Increasingly, airport sponsors are experimenting with different types of participation in real estate development and natural resource extraction. While a ground lease continues to be the most common

way to participate in on-airport development, some airport sponsors are foregoing a portion of ground rent for a future share of tenant rent or gross revenues or for an equity share in the project. Airports that sit on land with natural resources and decide to develop the mineral estates can collect bonus payments, royalties, and rent for use of surface areas. Both airports owned by municipalities and by authorities have experimented with participatory leases. The policies of the airport's governing entity shape the ways that an airport can participate in a development project.

Other modes of transportation, such as highways and public transit, have recognized the value added by construction or improvements to these systems. Beneficiaries of these projects often participate in their financing through user fees and special taxation districts. While airports attract economic activity near the airport, airports do not usually employ value capture techniques, except to charge access fees to off-airport shuttles and parking facilities for use of the airport. Some airports, such as Denver International, Detroit Metropolitan Wayne County, Memphis International, and Hartsfield-Jackson Atlanta International, are pursuing airport city concepts that recognize the contribution of industry and commerce near an airport.

Perhaps one of the most fruitful areas of potential innovation resides within existing airport businesses. Passenger-dependent enterprises, such as parking, rental cars, and concessions, each present tangible opportunities for airport operators to actively manage program offerings, secure the best tenants for the airport, and increase net revenues to the airport sponsor.

5.2 PROJECT OBJECTIVES AND RESEARCH APPROACH

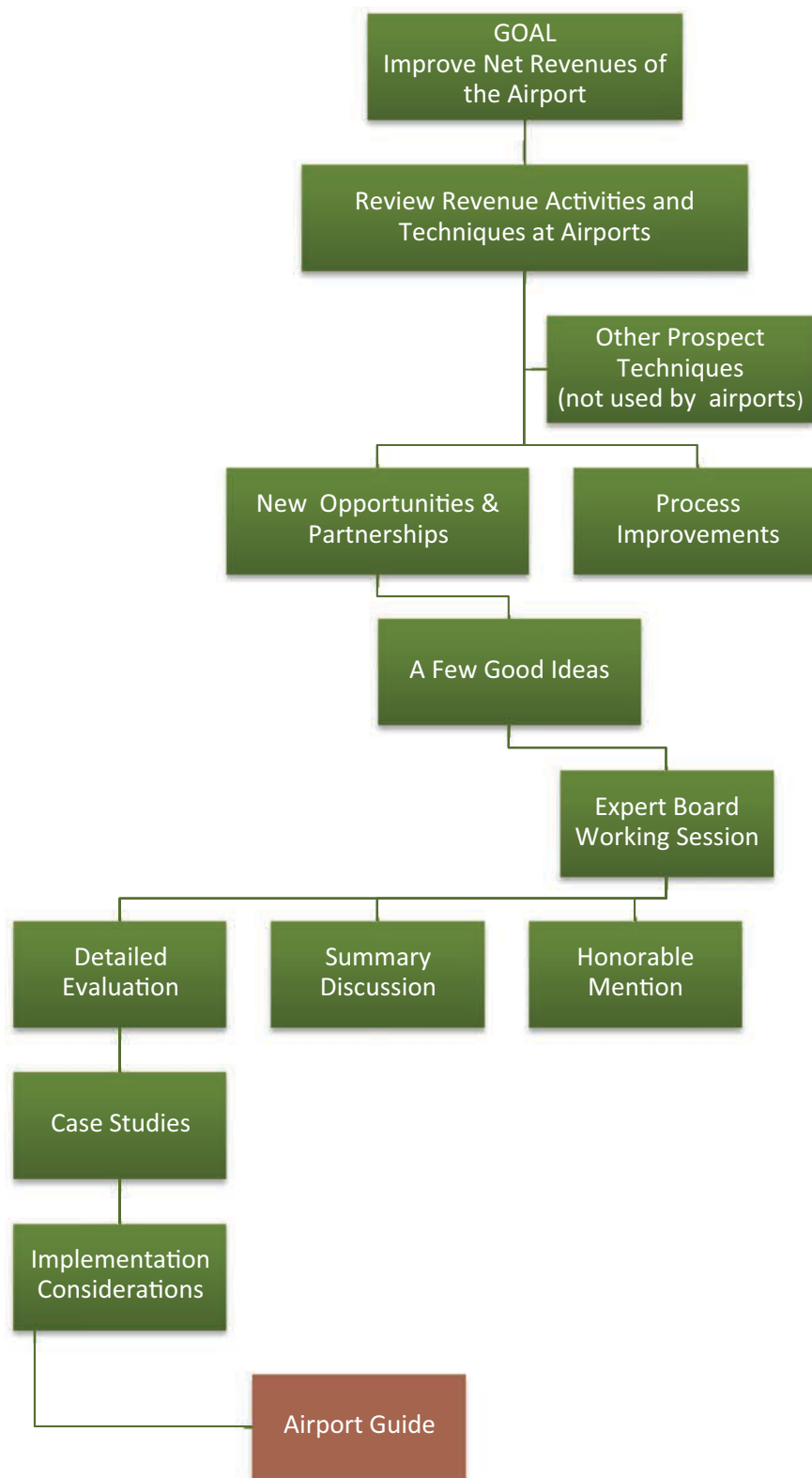
The objective for this Airport Guide is to organize and describe a broad palette of strategies and techniques used by airports and other modes of transportation to improve existing revenue sources or to engage in new businesses or services.

This Airport Guide seeks to encourage airport operators to envision innovative revenue opportunities as a start-up company would, by:

- Recognizing and responding quickly to the opportunities
- Embracing a culture of change
- Using available information to gauge market demand and project feasibility
- Understanding the level of acceptable risk to airport sponsors and taking action accordingly

To arrive at a set of useful strategies, the Research Team embarked on the process described in **Figure S-1**. Many groups and individuals participated in the effort, representing a rich knowledge base that included airport executives and managers, FAA, TRB, experts in airport financing, airport directors, chief financial officers (CFOs), business development and property managers, concession and advertising specialists, and experts in parking, rental cars, ground transportation, and value capture. One expert was from Canada and at least two have had extensive international experience. Airport staff and economic development entities also contributed to in-depth case studies of Indianapolis International Airport, Springfield-Branson National Airport, Pittsburgh International Airport, McCarran International Airport (Las Vegas), Dallas/Fort Worth International Airport, and the Boston Convention and Exhibition Center.

Figure S-1: Research Process



Prepared by: KRAMER aerotek inc. 2014

S.3 INNOVATIVE REVENUE STRATEGIES

Ultimately, the Research Team built this Airport Guide around five strategies.

- 1. Focus on Airport Customer Needs and Wants**
 - a. Customers = airlines, passengers, general aviation, and airport tenants
 - b. Objectives = enhanced customer experience, greater customer satisfaction, and increased customer spending
- 2. Airport-Provided Services/Shared Services, Facilities, and Equipment**
 - a. Greater efficiencies and cost savings through shared use of equipment and facilities
 - b. Where feasible, airport provides services to tenants and passengers using airport staff or through direct management of third-party contractors
- 3. Revenue Participation in Real Estate and Natural Resource Development**
 - a. Leases and equity shares
 - b. Direct ownership
 - c. Public-private partnerships (P3s)
 - d. Joint development
- 4. Value Capture and Other Innovative Financing**
 - a. Airport access and privilege fees
 - b. Improvement districts
 - c. Tax sharing
 - d. Tax increment financing
 - e. Infrastructure banks and TIFIA (the Transportation Infrastructure Finance and Innovation Act)
- 5. Improvements to Existing Airport Businesses**
 - a. Management alternatives
 - b. Administrative program development
 - c. Performance measures
 - d. Information technology to support revenue development

This Airport Guide presents innovative revenue strategies and 96 techniques that can be used to implement those strategies. The multitude of ways to implement the strategies speaks to the fact that every airport operator will arrive at a unique combination of solutions to improve net revenues to the airport sponsor. The strategies provide a useful framework to consider revenue opportunities and the techniques serve as examples of ways to implement each strategy.

S.4 IMPLEMENTATION OF THE STRATEGIES

Within the airport complex, implementation of the strategies will occur across multiple departments and functional areas. To locate implementation options that may hold promise, each of the techniques is numbered and associated with a primary functional area.

- Aircraft and Passenger Services – AS
- Business Development – BD
- Cargo – CA
- Concessions – CN
- Energy Management and Alternatives – EN

- Environmental – EV
- Finance and Property Management – FN
- Ground Transportation – GT
- Information Technology – IT
- Legal and Contracts – LC
- Parking – PK
- Planning, Design, and Administration – PL
- Service Quality – SQ
- Terminal Operations – TO

Table S-1 presents a master list of the revenue techniques and links each technique to a primary functional area and a primary strategy. Obviously, there are interrelationships. For example, tax increment financing is listed as a financing technique that also would involve legal and contracts. Similarly, improvements to an existing parking program would engage both parking staff and planning, design and administration staff, and probably also legal staff. Airports also organize functions differently. For example, at the largest airports, Finance is often a separate department from Properties, whereas at smaller airports these functions may occur in one department. **Table S-1** is intended to help readers find specific discussions in this Airport Guide and should be used as a navigation tool.

S.5 AIRPORT GUIDE ORGANIZATION

This Airport Guide presents a macro approach to innovative revenue strategies with many ideas and additional references for further information. The organization of the Airport Guide is intended to make it easy for readers to search the document and find topics of interest.

Chapter 1 presents an overview of why a discussion of innovative revenue strategies is relevant. Chapter 2 explains each of the five revenue strategies. The next five chapters discuss each strategy and present implementation techniques and examples. Chapter 8 offers six in-depth case studies from organizations that have tried various techniques described in this Airport Guide.

- Indianapolis International Airport, for its innovative concession program
- McCarran International Airport and Pittsburgh International Airport, for their use of different types of participatory leases
- Springfield-Branson National Airport, for its ground-handling enterprise
- Dallas/Fort Worth International Airport, for its foreign trade zone and use of value capture
- The Boston Convention and Exhibition Center, for its combined state and local effort to use value capture to help finance the project

There are three appendices. Appendix A is an annotated bibliography. Appendix B lists definitions and abbreviations. Appendix C is an index of the revenue generating techniques discussed in the Airport Guide, with page numbers to facilitate finding discussions of a particular topic.

S.6 CONCLUSIONS

Today, there is no such thing as a simple commercial airport. Most airports oversee a complex set of enterprises. Except at their largest connecting hubs, airlines depend more on airport sponsors and third-party contractors to provide ground support, passenger processing, and baggage handling. While the financial contribution of airlines to airports remains very significant, airport operators are seeking additional ways to pay for maintenance, day-to-day operations, and capital projects. For most airports, increasing net revenue to the airport sponsor comes from cost savings, improvements to existing airport businesses, and engagement in new, non-aeronautical activities. This approach calls on airports to have vision, a strategy, and an activist approach to recognizing opportunities, evaluating risk, and engaging in innovation. The U.S. domestic system of airports offers many examples of innovation.

This Airport Guide provides five strategies to increase net revenues to the airport sponsor. Implementing the strategies is likely to be a continuous process of incremental improvements. Each airport will find its own combination of techniques that work, and every airport can contribute additional ideas and its own experience of ways to implement the strategies.

Table S-1: Index of Implementation Techniques and Revenue Strategies

Primary Code	Innovative Techniques and Improvements	Customer Focus	Shared Services, Facilities, Systems, and Equipment	Revenue Participation	Value Capture	Improvements to Existing Businesses
Aircraft & Passenger Services – AS						
AS-1	Above the Wing		X			
AS-2	Below the Wing		X			
AS-3	Deicing		X			
AS-4	Glycol Recovery and Recycling		X			
AS-5	Fuel Sales and Fueling Vehicles		X			
AS-6	Consolidated Fuel Farm		X			
AS-7	Ground Services Equipment and Maintenance Facility		X			
Business Development – BD						
BD-1	Passenger Services	X				
BD-2	Business Services	X				
BD-3	Leisure Services	X				
BD-4	Other Services	X				
BD-5	Communication Systems and Cell Phone Towers		X			
BD-6	Joint Marketing and Advertising		X			
BD-7	Airport Cities				X	
BD-8	Foreign Trade Zones (FTZs)				X	
BD-9	Marine Port Districts				X	
Cargo – CA						
CA-1	Consolidated Air Cargo Facility		X			
Concessions – CN						
CN-1	Concession Mix – Time, Price, Concept, and Brand	X				
CN-2	Conversion of Non-Revenue Space	X				
CN-3	Incubator/Assistance Programs	X				
CN-4	Point of Sale (POS) Data Collection	X				
CN-5	Direct Contracts with Individual Brands or Brand Families					X
CN-6	CONRACs and QTAs					X

(continued on next page)

Table S-1 (Continued).

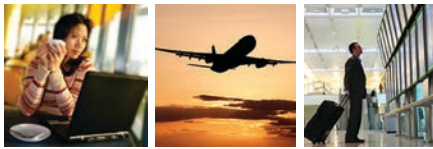
Primary Code	Innovative Techniques and Improvements	Customer Focus	Shared Services, Facilities, Systems, and Equipment	Revenue Participation	Value Capture	Improvements to Existing Businesses
CN-7	Definition of Terms in Rental Car Agreements					X
CN-8	Bid Document and Concession Agreements					X
CN-9	Rental Car Facility Rents (if not in a CONRAC)					X
CN-10	Off-Airport Privilege Fee					X
CN-11	Audits					X
CN-12	Environmental Mitigation					X
CN-13	Rental Car Trash Recycling					X
CN-14	Letters of Credit					X
CN-15	Direct Contracts with In-Terminal Concessionaires					X
CN-16	Fee Manager Alternative					X
CN-17	Master or Prime Concessionaire Alternative					X
CN-18	Third-Party Developer Alternative					X
CN-19	Combined Management Approach					X
CN-20	Program Strategy, Vision, Goals, and Objectives					X
CN-21	Selection of Concession Management Alternative					X
CN-22	Market Research					X
CN-23	Commercial Plan					X
CN-24	Facilities Requirements					X
CN-25	Procurement Methods					X
CN-26	Concession Documents					X
CN-27	Communications and Monitoring					X
Energy Management & Alternatives – EN						
EN-1	Utilities Reimbursement/Separately Metered Utilities		X			
Environmental – EV						
EV-1	Trash Removal and Recycling		X			
Finance & Property Management – FN						
FN-1	Participating Leases and Equity Participation			X		
FN-2	Direct Ownership			X		
FN-3	Public-Private Partnerships (P3)			X		

Primary Code	Innovative Techniques and Improvements	Customer Focus	Shared Services, Facilities, Systems, and Equipment	Revenue Participation	Value Capture	Improvements to Existing Businesses
FN-4	Joint Development			X		
FN-5	Mineral Estate Participating Leases			X		
FN-6	Airport Access and Privilege Fees				X	
FN-7	Tax Increment Financing (TIF) District				X	
FN-8	Local Income and Payroll Tax				X	
FN-9	Sales Tax/Occupancy Tax				X	
FN-10	Transfer of Development Rights (TDRs)				X	
FN-11	Connection Fees				X	
FN-12	Business Improvement Districts (BIDs)				X	
FN-13	Special Assessment/Betterment District				X	
FN-14	Land Value Tax				X	
FN-15	Transportation Utility Fees (TUFs)				X	
FN-16	Infrastructure Bank				X	
FN-17	TIFIA				X	
Information Technology – IT						
IT-1	Mobile Applications	X				
IT-2	Free Wi-Fi to Airport Passengers	X				
IT-3	Digital Advertising	X				
IT-4	Social Technologies	X				
Parking – PK						
PK-1	Parking Product Mix	X				
PK-2	Parking Reservation and Payment Systems	X				
PK-3	Guidance Systems	X				
PK-4	Parking Loyalty Programs	X				
PK-5	Self-Operation					X
PK-6	Management Contract					X
PK-7	Concession Agreement					X
PK-8	Combined Approach					X
PK-9	Parking Analytics and Alternatives					X

(continued on next page)

Table S-1 (Continued).

Primary Code	Innovative Techniques and Improvements	Customer Focus	Shared Services, Facilities, Systems, and Equipment	Revenue Participation	Value Capture	Improvements to Existing Businesses
PK-10	Performance Monitoring					X
PK-11	Technologies that Support Parking Revenue Development					X
Planning, Design, & Administration – PL						
PL-1	Badging		X			
Service Quality – SQ						
SQ-1	Quality Assurance	X				
SQ-2	Customer Assistance	X				
SQ-3	Special Assistance	X				
SQ-4	Loyalty Programs	X				
Terminal Operations – TO						
TO-1	Passenger Processing	X				
TO-2	Way-Finding	X				
TO-3	Airport Cleanliness	X				
TO-4	Baggage Delivery Services		X			
TO-5	Building Services to Airlines/Concessionaires		X			
TO-6	Curbside or Remote Baggage Drop-off/Check-in		X			
TO-7	Janitorial		X			
TO-8	Logistics Services and Warehouses for Concessionaires		X			
TO-9	Lounges/Clubrooms		X			
TO-10	Meeting Rooms		X			
TO-11	Shared Gates		X			
TO-12	Wheelchair Services		X			



Chapter 1

Introduction

- 1.1 Decade of Amazing Change and Disruptions
- 1.2 Shifts in the Airport Operating Environment
- 1.3 Funding and Financing Airport Projects and Services
- 1.4 Evolving Airport Business Model
- 1.5 Purpose of the Airport Guide
- 1.6 Airport Guide Organization
- 1.7 Additional References

Chapter 1 of this Airport Guide examines the contributing factors that have motivated airport operators to seek additional sources of revenue to supplement operating revenues from aeronautical activities. Airline consolidation plus effective capacity control and price discipline has led to a more compact domestic airline system. To address structural changes within the airline industry, airport operators have deployed a variety of innovative strategies to stabilize and grow revenues and to make use of new technologies. A vigorous pursuit of revenue opportunities has forced an evolution of the traditional airport business model from one that emphasizes provision of support for air transport to a management model that includes a diverse portfolio of airport facilities and services.

The chapter also describes the organization of this Airport Guide and provides additional references for changes and innovation in the aviation industry.

1.1 DECADE OF AMAZING CHANGE AND DISRUPTIONS

In many respects, the adoption of changing technology over the last decade has dramatically influenced how airports operate and how passengers and airlines interact with the airport. Some examples of changes in airport and tenant operations affecting the experience of passengers are:

- GPS use has become mainstream.
- Video streaming and digital media have transformed the delivery of news, music, books, film, and advertising.
- Online retail shopping now competes heavily with built stores.

- Mass adoption of cell phones, digital cameras, and open mobile platforms has changed how passengers check in, print boarding passes, process luggage, reserve or pay for parking, and order food in an airport terminal. Mobile platforms continue to replace paper and credit cards, and serve as point of sale (POS) devices. Handheld devices also deliver personalized information to airport customers, such as flight and gate information, advertisements, and receipts.
- Communication has become less hierarchical. User-generated content (e.g., Wikipedia, YouTube, crowd sourcing) and social networks allow individuals to express opinions and deliver digital information. Communication used to be primarily from one person or organization to another; today, it is possible to communicate from one person or many people to many others. Opportunities for sharing volumes of data have accelerated change, coupled with a need for accelerated response.
- Internet capability has enabled organizations to function without walls. Global outsourcing has moved a large amount of technical and customer support offshore.
- Hybrid cars and compressed natural gas (CNG) buses have altered fuel consumption and the cost of operating these vehicles.

Each of these technological changes has contributed to a transformation of how airports and airlines conduct business and carry out economic transactions across the United States and the world.

Other exogenous events have also dramatically altered commercial aviation. Many of these changes stem from the tragic events of the September 11, 2001 (September 11) terrorist attacks and subsequent security concerns, but other changes are due to U.S. and international economic conditions, the economic health of the airline industry, and noteworthy weather events.

For many years before 2001, airports considered the airlines their principal customers. Critical aircraft requirements, the number of operations, peak hour demands, gate requirements, and aircraft servicing needs determined the length and configuration of runways and taxiways. Signatory airlines had exclusive or preferential use agreements for gates and hold areas in the terminals. Peak hour flows of air passengers determined space requirements for check-in, baggage handling, and security.

As the airline industry expanded its domestic and international networks, the trajectory of demand for airport use and space also increased at many airports. Up through 2000, advances in aircraft size and technology required airport sponsors to modernize facilities continuously



Original Pan Am Worldport (1980)

Source: Port Authority of New York and New Jersey

and to improve operational efficiencies. The need to re-engineer passenger terminals was most visible at JFK International Airport, where iconic terminals, such as the original Pan Am Worldport and the TWA Flight Center, designed before widespread use of jet bridges and large-capacity aircraft, had become functionally obsolete.

Airport sponsors continue to keep up with changing aircraft technologies and scale. With the startup of Airbus 380 aircraft service in October 2007, many airports had to widen taxiways to accommodate the wingspan of the aircraft, increase the height of terminal gates, and expand gate areas to handle 525 to 853 passengers.

Other catalysts have turned airport operator attention toward expanding the scope of the airport's businesses. Following September 11, both airlines and airport sponsors abruptly switched course from a growth-oriented philosophy to a more risk-averse approach that continued for the next decade.

Figure 1-1 highlights a succession of disruptions: terrorism, bankruptcies, natural disasters, and the largest recession since the Great Depression. September 11 was followed by anthrax attacks, an outbreak of severe acute respiratory syndrome (SARS), invasions of both Iraq and Afghanistan, and the subprime mortgage crisis that led to the Great Recession at the end of 2007.

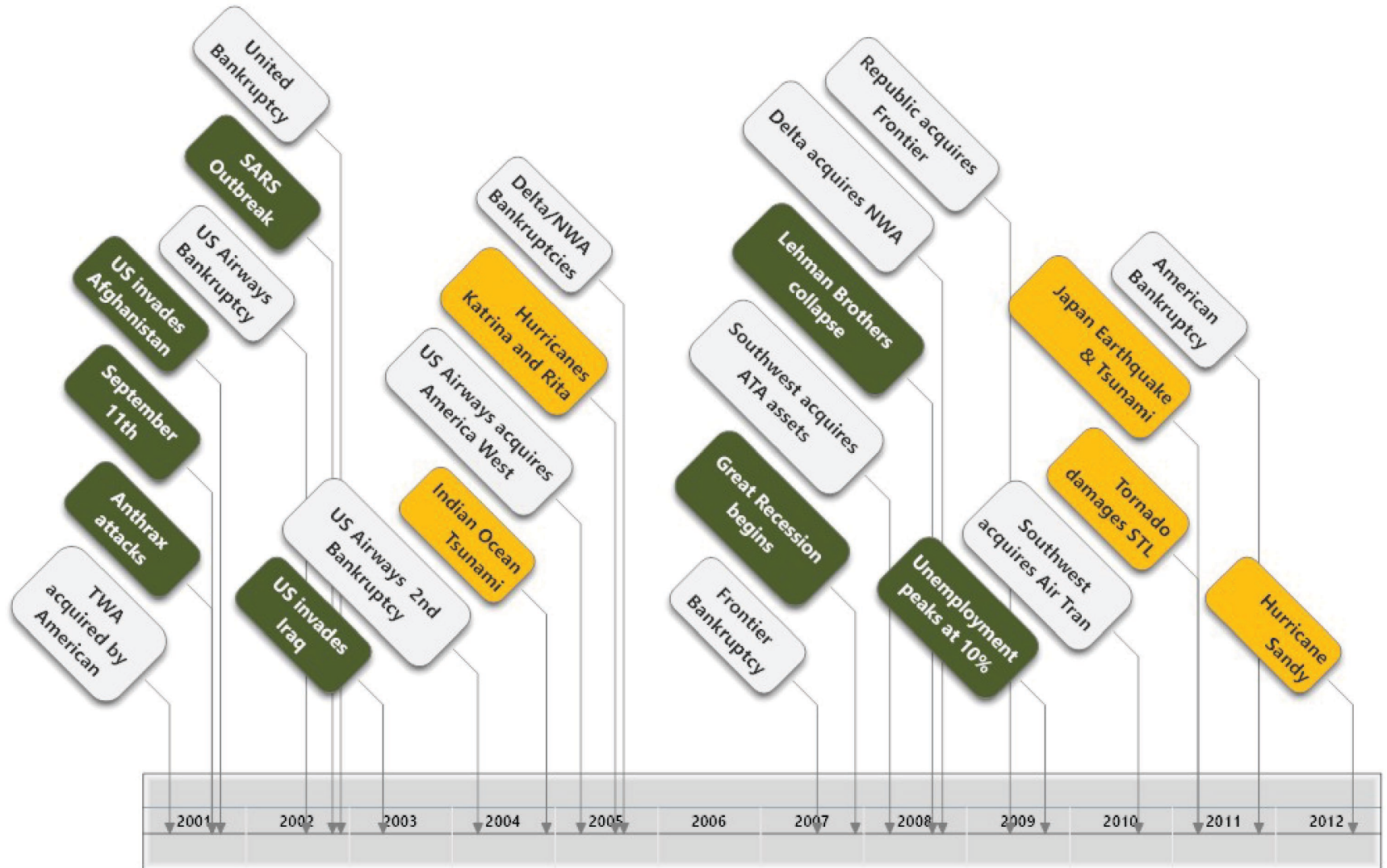
During the first half of the decade, almost every network carrier, with the exception of Alaska Airlines, went bankrupt. Perhaps because most of the airlines had restructured their networks, capacity, and fleet during this time, they went into the Great Recession at the end of 2007 with leaner operations as well as pricing and capacity discipline. In 2007, the carriers responded immediately to the financial crisis. Almost every airport experienced a loss of flights and seats, especially medium hub and small hub airports. Many non-hub airports lost all service. To gauge the extent of change, in 2007 there were 476 primary airports in the United States with more than 10,000 enplaned passengers. This group included 140 small hub airports and 269 non-hub airports. By 2013, there were 392 primary airports, including 71 small hub airports and 258 non-hub airports. Eighty-four small hub and non-hub airports lost status as a primary airport grid and more than half of these airports lost commercial air service entirely.

The period from 2007 to 2012 involved substantial losses of seat capacity offered at U.S. airports:

- -4% percent for large hub airports
- -20% for medium hub airports
- -14% for small hub airports
- -13% for non-hub airports

The Great Recession and the subsequent slow recovery marked a definite shift in the airline and airport industries from a focus on growth to one of financial survival and avoidance of risk.

Figure 1-1: Decade of Disruptions



Source: KRAMER aerotek inc., 2014

Table 1-1 compares changes in the number of enplaned passengers at airports serving as connecting hubs for U.S. airlines from 2000 to 2013 and clearly demonstrates how changes in airline connecting networks can severely affect levels of activity at a particular airport. Former connecting hubs Lambert-St. Louis International, Cincinnati/Northern Kentucky International, Pittsburgh International, Memphis International, San Jose International, and Cleveland Hopkins International are among the airports that have lost 30% to 75% of enplaned passengers and faced sudden vacancies in their terminals. Alternatively, at airports where the airlines concentrated connecting activity, such as Charlotte Douglas International, John F. Kennedy (JFK) International, Denver International, and Hartsfield-Jackson Atlanta International, the number of enplaned passengers has grown rapidly.

Table 1-1: Changes in Enplaned Passengers at Hub Airports, 2000 versus 2013

Hub Airports	CY 2000	CY 2013	Gain or Loss of Enplaned Passengers	00-13 Change
Charlotte	11,469,282	21,346,601	9,877,319	86.1%
New York (JFK)	16,155,437	25,036,358	8,880,921	55.0%
Denver	18,382,940	25,496,885	7,113,945	38.7%
Atlanta	39,277,901	45,308,407	6,030,506	15.4%
Miami	16,489,341	19,420,089	2,930,748	17.8%
Chicago Midway	7,059,520	9,915,646	2,856,126	40.5%
Seattle	13,875,942	16,690,295	2,814,353	20.3%
Houston (George Bush) Intercontinental	16,358,035	18,952,840	2,594,805	15.9%
Las Vegas	17,424,214	19,946,179	2,521,965	14.5%
Philadelphia	12,294,051	14,727,945	2,433,894	19.8%
San Francisco	19,556,795	21,704,626	2,147,831	11.0%
Baltimore	9,675,681	11,132,731	1,457,050	15.1%
Phoenix	18,094,251	19,525,109	1,430,858	7.9%
Washington Dulles	9,643,275	10,570,993	927,718	9.6%
Dallas/Fort Worth	28,274,512	29,038,128	763,616	2.7%
Newark	17,212,226	17,546,506	334,280	1.9%
Los Angeles	32,167,896	32,425,892	257,996	0.8%
Salt Lake City	9,522,344	9,668,048	145,704	1.5%
Columbus	3,441,286	3,063,822	(377,464)	-11.0%
Minneapolis-St. Paul	16,959,014	16,280,835	(678,179)	-4.0%
Raleigh/Durham	5,191,077	4,482,016	(709,061)	-13.7%
Kansas City	5,903,296	4,836,221	(1,067,075)	-18.1%
Chicago O'Hare	33,845,895	32,317,835	(1,528,060)	-4.5%
Detroit	17,326,775	15,683,523	(1,643,252)	-9.5%
San Jose	6,170,384	4,315,839	(1,854,545)	-30.1%
Cleveland	6,269,516	4,375,448	(1,894,068)	-30.2%
Memphis	5,684,619	2,301,003	(3,383,616)	-59.5%
Pittsburgh	9,871,995	3,812,460	(6,059,535)	-61.4%
Cincinnati	11,223,966	2,776,377	(8,447,589)	-75.3%
St. Louis	15,288,493	6,216,104	(9,072,389)	-59.3%
Total Primary Airports	708,638,875	738,365,312	29,726,437	4.2%

Source: FAA Air Carrier Activity Information System Database (ATADS)

1.2 SHIFTS IN THE AIRPORT OPERATING ENVIRONMENT

As the Great Recession changed the ways that both airlines and airports conduct business, airport sponsors have taken on new responsibilities and assumed additional risks to address:

- Shortened durations on airline/airport operating agreements
- Reduced seat capacity in the domestic system and more concentration in the largest markets, usually at the largest airports
- Increased competition among airports for air service, passengers, and investment
- Fewer customer service representatives of airport tenants on airport premises
- Reduced federal funding for Airport Improvement Program (AIP) grants-in-aid with passage of the FAA Modernization and Reform Act of 2012
- A ceiling of \$4.50 on passenger facility charges (PFCs) (set in 2000 and not increased)
- Challenges to fund capital projects because traditional long-term revenue streams from airlines are more uncertain

In addition to these challenges, airport management must: (a) deliver safe and secure operations; (b) plan for future growth; (c) maintain a good credit rating and positive cash flow to fund operating expenses and maintenance and to fund debt service; and (d) position the airport competitively to retain/enhance air service and customers.

To operate nimbly and effectively in this environment, airport organizations are striving to be **self-sufficient, flexible, and agile**.

1.3 FUNDING AND FINANCING AIRPORT PROJECTS AND SERVICES

Airport operators depend on a variety of sources to fund capital projects and pay for operations and maintenance.

1.3.1 Funding Sources

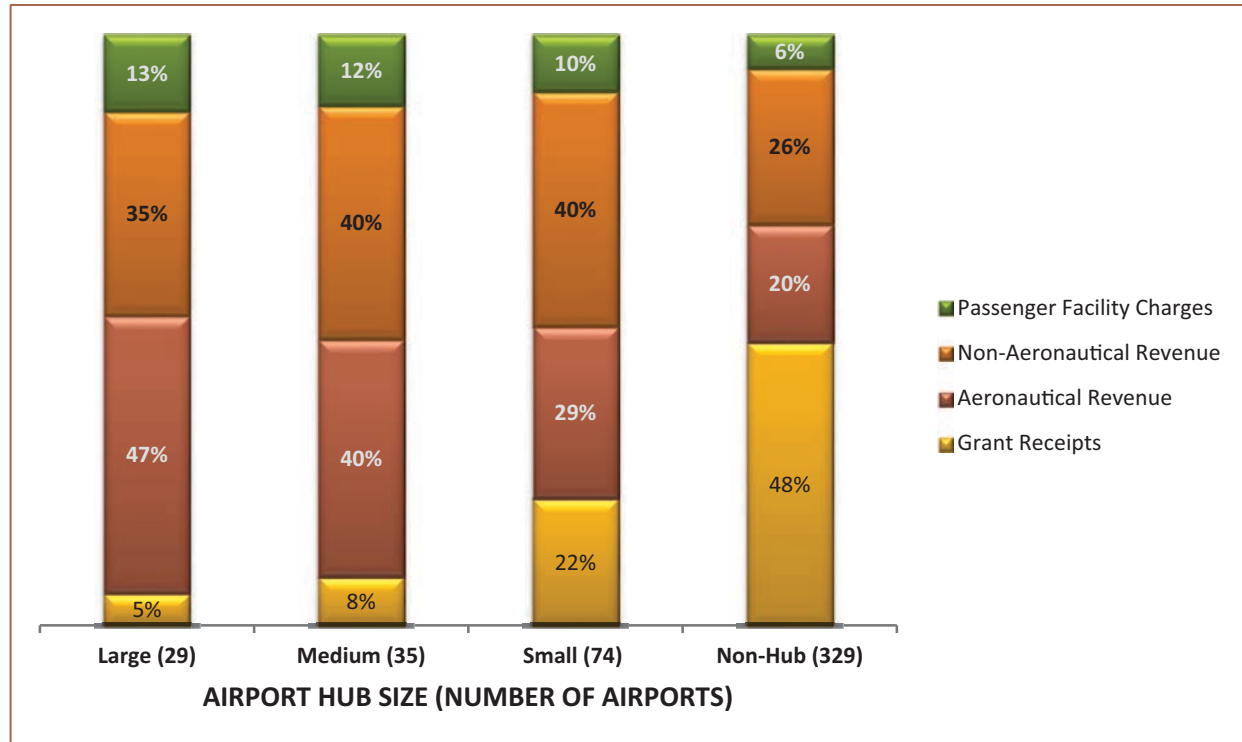
Funding refers to revenue streams that airport operators can use to pay for a project or a service. Examples of traditional airport funding sources include:

- Aeronautical income from use of the airfield and terminal area by airlines, aircraft owners, or fixed-base operators (FBOs)
- Non-aeronautical income from concessions, parking, rent on land and non-terminal facilities, and sale/resale of utilities
- PFCs collected by airlines for each enplaned passenger
- Grant receipts from the AIP administered by the FAA and funded through the Airport and Airway Trust Fund (AATF), established in 1970 to finance capital improvements at U.S. airports. The AATF is funded from excise taxes paid by air passengers

The relative contribution of airport funding sources varies by size of airport, as **Figure 1-2** shows. For the smallest commercial airports, grant receipts are the largest funding source; for large hub airports,

aeronautical revenue contributed in 2013, 47% of funding sources. Non-aeronautical and aeronautical revenues are also important sources to all airports.

Figure 1-2: Relative Contribution of Funding Sources by Airport Hub Size, 2013



Source: FAA, AAS-400: CATS Report 127, 2013

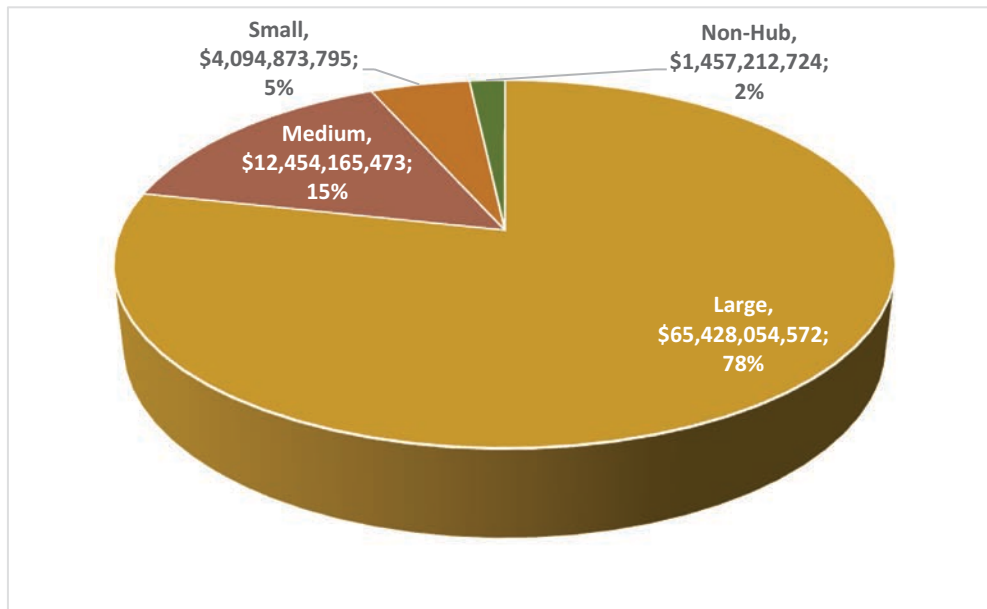
1.3.2 Financing

Most airports depend on various forms of debt, equity, and capital leases to provide for immediate cash requirements to pay for capital projects. Financing, unlike funding, creates an obligation to the entity providing the financing. Bonds are the most common mechanism that airports use to finance long-term capital projects, including:

- General obligation bonds (GOs) – backed by the overall tax base of the issuing entity
- General airport revenue bonds (GARBs) – repaid by airport general revenue
- PFCs – backed bonds secured by PFC revenue
- Special facility bonds – repaid by revenue from a facility [ACI-NA]

At the end of 2013, U.S. airports reported \$83.4 billion of indebtedness (see **Figure 1-3**). Ninety-seven percent of airport indebtedness was financed with long-term bonds.

Figure 1-3: Airport Indebtedness by Airport Hub Size, 2013



Source: FAA, AAS-400: CATS Report 127, 2013

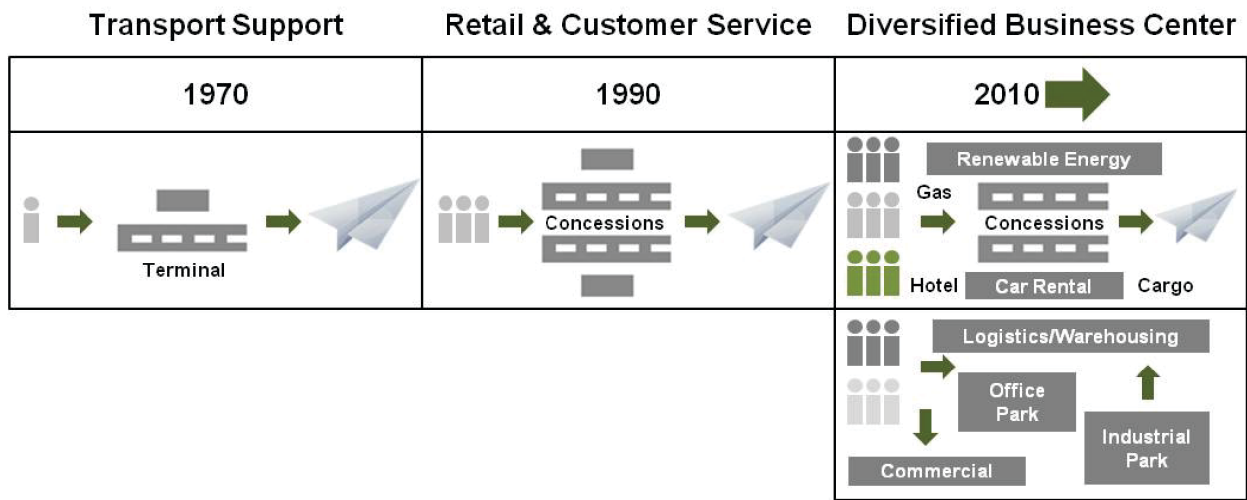
1.4 EVOLVING AIRPORT BUSINESS MODEL

The economic and political upheavals of the past decade helped to solidify a view held by many airport operators that (1) traditional methods to fund and finance capital projects, airport operations, and maintenance may, on their own, be insufficient in the future, and (2) airports needed to reduce dependence on aeronautical revenue and federal grants. The exploration of new funding sources coincided with an already-changing business model.

Figure 1-4 traces the evolution of airports. In the 1970s, the airlines were the principal customers and the airport served as the ground-to-air connection for passengers. By the 1990s, airport terminals had evolved into destination spots for originating and connecting passengers as operators developed diversified concession programs and services. Today, the airport business model has expanded further to incorporate a wide range of commercial and industrial activity, customer services, natural resource development, and public-private partnerships (P3s). The expanded airport model includes a diversified portfolio of services and facilities that generates revenue by providing to a captured customer base of airline personnel, tenants, and airline travelers:

- Retail, food, and beverages
- Executive and general aviation
- Non-aeronautical enterprises

Figure 1-4: Evolving Airport Enterprise



Sources: Adapted by KRAMER aerotek inc. from Oliver Wyman Inc.

1.5 PURPOSE OF THE AIRPORT GUIDE

The purpose of this Airport Guide is to discuss strategies that can increase net revenues to the airport sponsor and competitively position an airport in its region, as well as in domestic and international markets.

The objective of this research is to produce a guide to help airport professionals identify, evaluate, and implement innovative strategies for generating revenues. This guide should identify innovative revenue sources and techniques currently in use, or being considered for use by airports, but not widely known. Innovative revenue sources should also include techniques in practice by other transportation modes or other industries but not attempted at airports. In preparing this Guide, the research team should investigate a range of revenue-generation opportunities from a variety of sources including, but not limited to, airport users, the entrepreneurial use of airport assets, and the regional economy that benefits from airport activities. *[Original ACRP Problem Statement]*

This Airport Guide has both a broad mandate and a broad audience. It offers a framework to organize revenue development strategies for airports, focusing on some of the most effective and innovative ideas.

1.6 AIRPORT GUIDE ORGANIZATION

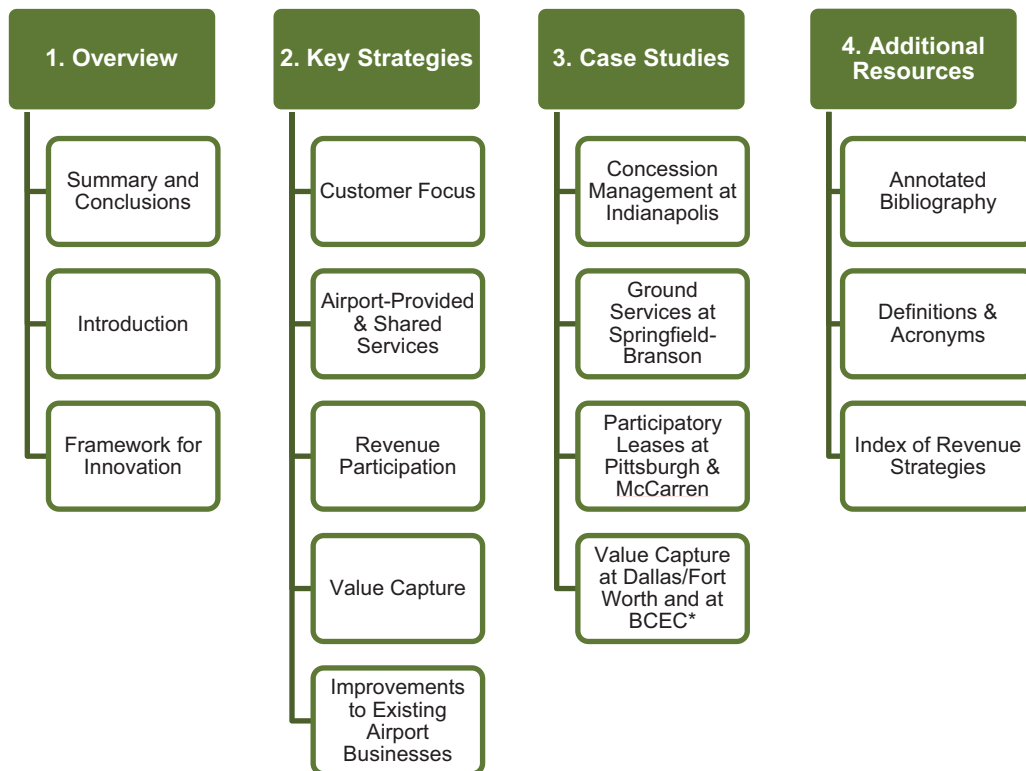
There are four components to the research presented in this Airport Guide (see **Figure 1-5**):

1. Summary and conclusions, introduction, overview of the strategies that set the framework for the Airport Guide
2. A discussion of each innovative revenue strategy

3. Case studies that exemplify successful application of particular strategies
4. A bibliography, a set of definitions, and an index readers can use to locate specific revenue strategies and techniques

Chapter 2 introduces each of the revenue strategies. Chapters 3-7 describe each of the strategies in more detail. Chapter 8 presents the case studies. Three appendices provide additional resources. Appendix A provides an annotated bibliography. Appendix B provides definitions of terms and abbreviations. Appendix C is a quick index to the implementation techniques used in this Guide.

Figure 1-5: Organization of the Airport Guide



*BCEC = Boston Convention & Exhibition Center

1.7 ADDITIONAL REFERENCES

ACRP Report 20: Strategic Planning in the Airport Industry (Ricondo & Associates, Inc., et al.), Transportation Research Board of the National Academies, Washington, DC, 2009, http://onlinepubs.trb.org/onlinepubs/acrp/acrp_rpt_020.pdf

ACRP Report 74: Application of Enterprise Risk Management at Airports (Marsh Risk Consulting, HNTB Corporation, and Direct Effect Solutions, Inc.), Transportation Research Board of the National Academies, Washington, DC, 2012, http://onlinepubs.trb.org/onlinepubs/acrp/acrp_rpt_074.pdf

ACRP Report 76: Addressing Uncertainty About Future Activity Levels in Airport Decision Making (Kincaid, I. et al.), Transportation Research Board of the National Academies, Washington, DC, 2012, http://onlinepubs.trb.org/onlinepubs/acrp/acrp_rpt_076.pdf

ACRP Report 77: Guidebook for Developing General Aviation Airport Business Plans (Aviation Management Consulting Group), Transportation Research Board of the National Academies, Washington, DC, 2012, http://onlinepubs.trb.org/onlinepubs/acrp/acrp_rpt_077.pdf

Davidson, N. and S. Van Beek, “Airport Strategic Planning, Time to Take a Fresh Look,” *Focus*, LeighFisher, 2012

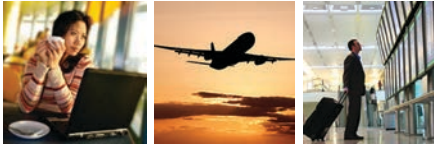
Economic Affairs and Research, *Economic Bulletin*, 4th Edition, ACI-NA, Washington, DC, March 2013

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Office of Inspector General, *Aviation Industry Performance, A Review of the Aviation Industry, 2008-2011*, Number CC-2012-029, September 24, 2012, Washington, DC

United States Government Accountability Office. GAO-13-261, GAO Report to Congressional Requesters: National Airspace System Airport-Centric Development, GAO-13-262, U.S. GAO, Washington, DC, 2013, <http://www.gao.gov/assets/660/653427.pdf>



Chapter 2

Overview of Revenue Strategies

- 2.1 Agility in Changing Times
- 2.2 What Is Innovative for Airports?
- 2.3 Strategies Selected
- 2.4 Strategy Evaluations
- 2.5 Key Functional Areas Involved with Strategies
- 2.6 Wrap-up
- 2.7 Additional References

Chapter 2 presents the factors that went into selection of the strategies, an overview of the strategies themselves, and a discussion of how implementation of the strategies relates to different functional areas of the airport.

2.1 AGILITY IN CHANGING TIMES

Given the turmoil and structural changes of the last decade, airport operators have focused on ways to enhance the financial strength and resilience of the airport enterprise. From a planning perspective, this focus involves clarity of strategic vision and concentration in several key areas:

- Increased airport revenues and funding sources
- Improved performance in all functional areas of the airport
- Optimized use of airport assets
- Competitive differentiation from other airports
- An airport organization that is responsive at all levels

Figure 2-1 summarizes the key attributes of a diversified airport enterprise.

Figure 2-1: Key Attributes of a Diversified Airport Enterprise



Source: KRAMER aerotek inc., 2014

2.2 WHAT IS INNOVATIVE FOR AIRPORTS?

Innovation involves finding new ways to deliver a service or produce an outcome through adoption of new technology and systems, improvements to processes, or changes in organizational structure [Schumpeter]. For private companies, innovation is adopted if there is an opportunity to reduce costs and/or increase profits. For publicly owned airports, innovation can also include strategies to change the culture of the airport organization and its business partners or to use airport assets as catalysts for economic development. Innovation for airport organizations is multidimensional and involves the following parameters:¹

- New service concepts
- New customer interactions
- New business products
- New net revenues to the airport sponsor
- New delivery systems (personnel, organization, culture, technology)

¹ Adapted from Den Hertog et al. 2010

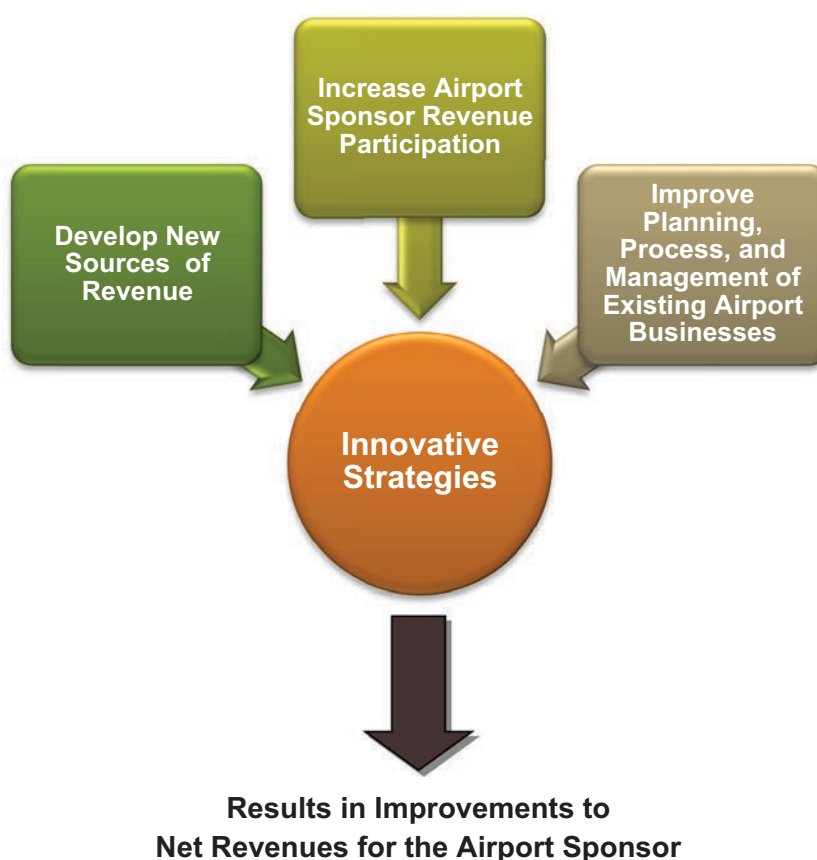
2.3 STRATEGIES SELECTED

The innovative strategies described in this Airport Guide result directly or indirectly in cost savings or net revenue increases to the airport sponsor. There are three basic ways to increase net revenues to the airport sponsor:

1. Develop new sources of revenue
2. Increase airport sponsor participation in tenant revenues
3. Improve the planning, administrative process, and management of existing airport businesses

Figure 2-2 shows these approaches.

Figure 2-2: Ways to Improve Net Revenues



Source: KRAMER aerotek inc., 2014

The five strategies described in this Airport Guide are summarized briefly in this section. A separate chapter is devoted to each strategy.

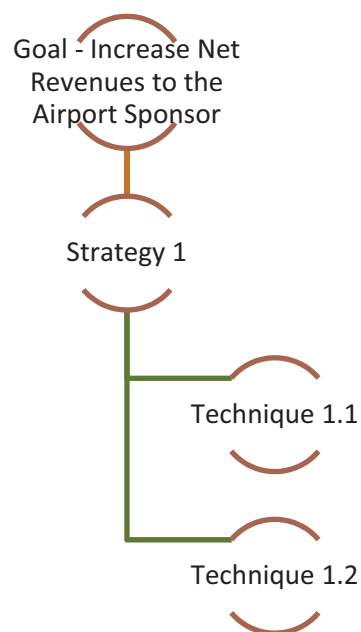
1. **Customer Focus** – This strategy presents a number of new ideas to increase focus on customer needs and wants, achieving more sales of in-terminal concessions, advertising, parking, and added customer services.

2. **Airport Entrepreneurial Activity—Part I (Airport-Provided Services and Shared Services, Facilities, and Equipment)** – This strategy examines how greater efficiencies and cost savings can be achieved through shared use of equipment and facilities among tenants or through cross-utilization of airport staff. Major elements of the strategy include (a) shared services (e.g., passenger processing, aircraft processing, terminal services) and (b) common use facilities, equipment, and software (e.g., cargo facilities, display systems, check-in areas, gate management, deicing, ground services, and parking aprons). Where feasible, the airport sponsor can provide services to tenants and passengers at private-sector mark-up and generate additional operating revenue.
3. **Airport Entrepreneurial Activity—Part II (Revenue Participation in Real Estate and Natural Resource Development)** – This strategy examines an expanded role for airports in real estate development. The traditional model involves a ground lease for a specified term based on the real estate’s appraised value. The strategy explores equity participation in projects; participating leases; direct ownership, development, and management of a project; public-private partnerships (P3s); and joint development.
4. **Value Capture & Other Innovative Financing** – Value capture strategies allow an airport to capture all or part of the added value in cases where property values and economic development “outside the fence” are clearly attributable to airport activity. Value capture techniques have been used extensively in public transit developments. Privilege fees charged to off-airport parking and rental car companies are a variant of value capture already in use by airports. This strategy investigates more traditional value capture methods, such as special districts, development fees, and property tax sharing, and their applicability to airports.
5. **Improvements to Existing Airport Businesses** – This strategy focuses on ways that airports can manage existing passenger concessions and services to achieve new revenue. It is most relevant for commercial service airports at which passenger-dependent activities are a significant contributor to operating revenues.

2.4 STRATEGY EVALUATIONS

Each strategy is evaluated and described in subsequent chapters according to a common framework, as follows:

- Scope of the Strategy
 - General description
 - Objectives
 - Applicability to different types of airports (all, commercial, general aviation, cargo)
 - Prevalence (used regularly, used rarely, not tried at airports, used for other modes)
 - Special requirements, if any, to accomplish (e.g., land, passengers, natural resources, etc.)
 - Functional areas and key departments impacted
- Key Elements of the Strategy
 - Description
 - Examples
- Application of the Strategy to Airport Activities
 - Description of the technique(s) that lead(s) to execution of the strategy
 - Why the technique(s) is (are) useful to the particular airport activity
 - Description of how techniques improve net revenue to the airport sponsor
- Summary Assessment (high, moderate, low)
 - Potential for improved net revenues
 - Airport sponsor capital required
 - Degree of airport sponsor assumption of risk
 - Complexity to implement
 - Political/institutional challenges
- Implementation Issues (if any)
- Conclusions
- References for Additional Information



2.5 KEY FUNCTIONAL AREAS INVOLVED WITH STRATEGIES

In practice, implementation of revenue strategies will engage personnel from different departments or functional areas of an airport. This is also true of day-to-day operations at an airport. However, adoption of the goal to increase the airport sponsor’s net revenues would typically be integrated into an airport’s strategic plan. Its implementation would engage all levels of the airport organization while including performance measures to track progress. For this reason, it is important to connect the strategies to key functional areas of the airport. **Table 2-1** identifies the key functional areas important to implementation of the strategies discussed in this Airport Guide. Depending on which revenue-generation technique is selected and how an airport is organized, other departments or functional areas might also be involved. Airport organizations vary widely. For example, at the largest airports, finance and property management often take place in separate departments. At smaller airports, these functions may reside in the same department.

Table 2-1: Examples of Revenue Techniques by Key Functional Area

Key Functional Areas	Examples of Revenue Generation Techniques
Aircraft and Passenger Services	Airport provides ground-handling service, deicing, catering, aircraft parking, passenger processing (ticketing, check-in, baggage, gate services), shared clubrooms
Business Development	Airport develops and improves traveler and tenant services, joint marketing and advertising campaigns, foreign trade zones, and pursues commercial or industrial development adjacent to the airport
Cargo	Airport participates in development of shared cargo warehouses, dedicated equipment, logistics centers, and value capture techniques for just-in-time manufacturing and logistics centers off the airport
Concessions	Airport engages directly in concept innovation, mobile applications to support concessions, conversion of non-revenue space to food & beverage, retail, and services, seasonal and niche markets, internet commerce
Energy Management & Alternatives	Airport operates utilities for tenants and participates in renewable energy and alternative fuel projects
Environmental	Airport offers opportunities for waste management and recycling, and agriculture for land stabilization
Finance & Property Management	Airport works with other public and private entities to initiate and obtain alternative sources of funding and financing for capital projects, operations, and maintenance Airport strives to maximize use of airport property and may participate as developer, manager, partner, or joint venture in new ventures
Ground Transportation	Airport pursues management alternatives, smart technology, alternative fee structures, better curbside management for revenues, operation of intermodal transfers
Information Technology	Airport pursues strategies for Wi-Fi, shared backbone services, digital displays, customer segmentation
Legal and Contracts	Legal department is involved with innovative lease and concession agreements, third-party contracts, revenue sharing, profit sharing, equity participation, privilege fees, royalties, intellectual property rights, exclusive product selling rights
Parking	Airport introduces targeted product mix, concierge services, online reservations, privilege fees, cost recovery for employee parking
Planning, Design, & Administrative Process	Procurement and administration improves plans and specifications for concessions, customer service offerings, document preparation, solicitation, offer & award, revenue development incubators
Service Quality	Airport pursues a practice of exceptional customer service, quality assurance, and performance measurement (happy customers spend more money)
Terminal Operations	Airport improves passenger processing, janitorial, and way-finding to enhance the customer experience; airport also offers logistics support to tenants at market rates

Source: KRAMER aerotek inc., 2013

Table 2-2 relates the key functional areas to the strategies themselves. In the table, a diamond indicates that this functional area is important to the implementation of the strategy.

Table 2-2: Key Functional Areas Involved with Strategies

Functional Areas	Code	Customer Focus	Shared Services & Facilities	Revenue Participation	Off-Airport Value Capture	Improvements to Existing Businesses
Aircraft & Passenger Services	AS	◆	◆			
Business Development	BD	◆	◆	◆	◆	◆
Cargo	CA		◆		◆	◆
Concessions	CN	◆		◆		◆
Energy Management & Alternatives	EN		◆			◆
Environmental	EV		◆			
Finance & Property Management	FN	◆	◆	◆	◆	◆
Ground Transportation	GT	◆	◆		◆	◆
Information Technology	IT	◆	◆			
Legal & Contracts	LC		◆	◆	◆	◆
Parking	PK	◆		◆	◆	◆
Planning, Design, & Administrative Process	PL		◆			◆
Service Quality	SQ	◆	◆			◆
Terminal Operations	TO	◆	◆			◆

Sources: Functional areas adapted from *ACRP Report 19A: Resource Guide to Airport Performance Indicators*; chart prepared by KRAMER aerotek inc.

2.6 WRAP-UP

Chapter 2 presented an overview of revenue strategies that could be used by airports to increase net revenues to the airport sponsor and outlined the framework for evaluating each strategy. Implementation of these strategies was also linked to key departments or functional areas at an airport. The next chapters delve more deeply into each strategy and provide examples of techniques used to implement the strategy. Highlights from the case studies completed for this research are also included where relevant.

2.7 ADDITIONAL REFERENCES

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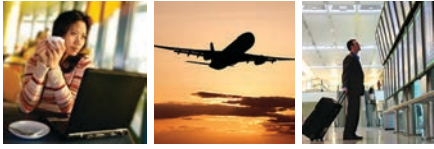
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Chapter 3

Customer Focus

Increased Customer Satisfaction/Better Market Penetration

- 3.1 Starting Point – The Indianapolis Concession Program Initiative
- 3.2 Scope of the Customer Focus Strategy
- 3.3 Related Strategies
- 3.4 Overview of Techniques to Implement the Strategy
- 3.5 Techniques by Element
- 3.6 Qualitative Evaluation
- 3.7 Wrap-up
- 3.8 Additional References

As air passengers have begun to spend more time in airport terminals, airport sponsors have stepped up initiatives to improve a customer’s experience and increase spending at the airport. This chapter examines the different customer segments at an airport, ways to stimulate customer spending, and what tools are available to track the effectiveness of new customer initiatives.

3.1 STARTING POINT – THE INDIANAPOLIS CONCESSION PROGRAM INITIATIVE

Indianapolis International Airport (IND) opened its Midfield Terminal complex in 2008, with an innovative concept design for its passengers. The new terminal includes a spacious central plaza and a concession program that emphasizes contact with passengers from the time they enter the terminal to the time they arrive at the gate. The Airport Authority (Authority) implemented a direct contracting approach to development and management of the concession program to assure a vibrant mix of local and national brands. The Authority wanted to optimize the space available, convey a sense of place and identity with Indianapolis, and project a high level of quality and friendly service to customers. Why the special attention to customers? The Authority recognized that an exceptional concession program would differentiate the airport from its competitors. By careful selection of concessionaires, the Authority sought to deliver an innovative, stable, and diverse concession program to its customers.

The results were dramatic. In 2007, IND had 4.1 million enplanements and \$4.3 million in retail and food and beverage concession revenue. Given the Great Recession, by 2013 enplanements had fallen to

3.6 million; even so, concession revenue to the airport grew to \$6 million.¹ On a per enplanement basis, concession revenue grew by 50% (\$1.05 in 2007 versus \$1.67 in 2013).

IND took the opportunity to redesign its concession program from scratch, but many lessons learned from IND’s experience are applicable to a wide variety of airport concession programs. Highlights of the IND program include:

- Focus on customers and customer service first, not revenue
- Active airport authority participation in the design and development of the concession program
- Emphasis on local businesses at the airport
- Use of innovative approaches to solicit concession business partners
- Custom concession agreements for each selected partner
- A lean management and staffing approach to Authority oversight of the program

These aspects of the IND concession program are discussed in detail as a case study in Chapter 8.

IND is but one airport that has strategically focused on its customers. According to the J.D. Powers and Associates 2010 North America Airport Satisfaction Study, “When passengers reported high levels of satisfaction with an airport, they tended to increase retail spending . . . by a factor of 45% over those passengers that ranked themselves as ‘disappointed’.”²



Source: IIAC Stargarden inside ICN Incheon International Airport, Seoul, Korea

¹ FAA Compliance Activity Tracking System (CATS), Operating and Financial Summary Report 127, 2007 and 2013

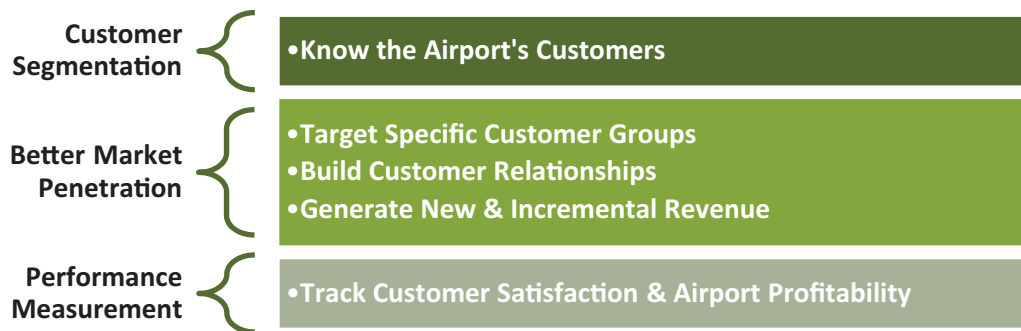
² LeighFisher, “The Role of the Airport Experience in a Changing Global Economy,” *Focus*, October 2012

Many U.S. and international airports view customer satisfaction as a means to deepen passenger loyalty, increase repeat business, and add to non-aeronautical revenues. Customer focus has become a strategic priority for many airports and already has led to improved quality of service, more efficient passenger processing, loyalty programs, and a panoply of new or enhanced in-terminal customer services. For example, Nashville International Airport and Austin-Bergstrom International Airport both offer local live music performances in the terminal; at Munich Airport, departing passengers can relax in Napcab sleeping cabins; and Incheon Airport takes the concept of an airport well beyond an air transportation hub by offering theater, shopping, a golf course, and movies within the terminal complex. Improving the customer experience presents an opportunity for low risk experimentation in many functional areas of an airport.

3.2 SCOPE OF THE CUSTOMER FOCUS STRATEGY

The customer focus strategy involves three elements as described in **Figure 3-1**. Each element is important to implementation of the strategy: (1) know the customers; (2) achieve better market penetration; and (3) measure results with each customer initiative. The strategy is useful for airports of all sizes and types, although implementation of the strategy will differ widely among airports.

Figure 3-1: Principal Elements of a Customer Focus Strategy



Source: KRAMER aerotek inc., 2014

3.2.1 Customer Segmentation

In private industry, businesses go to great lengths to understand existing customer preferences and spending habits in an effort to expand their customer base. For example, the airlines segment their customers by characteristics such as:

- *Price* – first class, business, economy plus, economy, low cost, ultra-low cost
- *Purpose of Travel* – leisure, business
- *Demand for Services* – road warrior, easy travel, luxury
- *Status* – premier, frequent flyer, loyalty
- *Travel Habits* – always early, last minute³

What do these customers want?

- Suits on the Fly
- Experience Seekers
- Sufferers
- Gate Potatoes
- Open-minded Chillers
- Employees

– Oliver Wyman

³ Hazel, R. and O. Wyman, "Customer Profitability," ACI-NA Economics and Finance Conference, Nashville, TN, May 2012

Each customer reflects a combination of these characteristics. In practice, the airlines target their most profitable and loyal customers with recognition and appreciation for business. Recognition may come in the form of upgrades or special communications from management, flight attendants, or others.

Airports also segment their customers. Airport operators know that there is no “general airport customer,” and that customer groups have personal reasons for selecting services and concessions for the terminal area. One of the most diverse suites of products offered on an airport is parking. Parking products target weekday travelers, weekend travelers, meeters and greeters, and long-term travelers. Some airports strive for a balanced mix of parking products. Some airports analyze revenues by determining the demand for and the revenues from different parking products. Similarly, restaurants, shops, and services attract different customers based on price and the variety of products and services offered.

Air passengers in the airport terminal are an important group, but not the only airport customers. As airport operators increasingly turn to alternative streams of revenue, recognition of different customer groups is growing. As **Figure 3-2** suggests, airports today serve a diverse cadre of internal and external customers. Internal customers include airport tenants, employees, and third-party contractors or consortiums. External customers include passengers, meeters and greeters, general aviation pilots, and other individuals visiting the airport. When considering the needs and wants of many different customer groups, a segmented approach makes sense.

Figure 3-2: Internal and External Airport Customers



Source: *ACRP Synthesis 48: How Airports Measure Customer Service Performance*, 2014

This element of the strategy focuses on ways that airports can better understand the needs and wants of all their customers and on ways to analyze the profitability of specific products and services offered. Understanding the profitability of individual products and services offered may result in surprises, but it will also help airports make better decisions about investments in services, facilities, and technology.

3.2.2 Better Market Penetration

The second element of the strategy focuses on ways to optimize the mix of products and services offered to customers, thereby increasing net revenues to the airport sponsor. Data on airport concession spending suggests that concessions offer high potential for increasing non-airline revenues. **Table 3-1** shows 2012 average sales per enplanement for different types of concessions.

Table 3-1: Concession Sales per Enplaned Passenger (Excluding Duty Free), 2012

U.S. Hubs	Number Reporting	Enplaned Passengers (EP)	Food & Beverage Sales/EP	Specialty Retail Sales/EP	News & Gifts Sales/EP	Total Sales/EP
Large Hubs	22	447,537,720	\$6.14	\$1.76	\$1.90	\$9.79
Medium Hubs	15	89,841,431	\$5.74	\$1.28	\$2.12	\$9.14
Small Hubs	13	30,187,067	\$5.34	\$1.33	\$2.65	\$9.32
Total Sample	50	567,566,218	\$6.07	\$1.65	\$1.92	\$9.64

Source: R. Chinsammy Consulting, *Airport Revenue News Fact Book*, 2014

Average expenditures per transaction at U.S. airport concessions are estimated at \$14.50 for food and beverage, \$22.50 for specialty retail, and \$8.50 for news and gifts.⁴ These transaction averages suggest there is considerable room for increased sales in the existing enplaned passenger base, and reason to look closely at achieving deeper market penetration for airport concessions. **Table 3-2** estimates capture rates (transactions per enplaned passenger) using average expenditures per transaction. In 2012, U.S. airports had a capture rate of 42% of enplaned passengers for food and beverage, 7% for specialty retail, and 23% for news and gifts. Even assuming one transaction per enplaned passenger for all three in-terminal concession categories, approximately 30% to 40% of passengers are not making any purchases.

Table 3-2: Estimated Percent of Enplaned Passengers Using Concessions, 2012 Capture Rate

U.S. Hubs	Airports Reporting	Food & Beverage	Specialty Retail	News & Gifts
Large Hubs	22	42%	8%	22%
Medium Hubs	15	40%	6%	25%
Small Hubs	13	37%	6%	31%
Total U.S. Sample	50	42%	7%	23%

Sources: *Airport Revenue News Fact Book 2012*; Transaction & Capture Rate Analysis, R. Chinsammy Consulting 2014

⁴ R. Chinsammy Consulting

Use of survey research and analytics to optimize product and service mix are the foundation of this element. However, achievement of better market penetration also comes by building relationships with different customer groups through direct communications via the Internet, mail, and social technology. The last and critical component of increasing market penetration focuses on airport management of commercial activity. That management includes the details of revenue shares, minimum guarantees established, rents, and charges. These management aspects are discussed separately in Chapter 7, Improvements to Existing Airport Businesses.

3.2.3 Performance Measurement

The third element of the strategy involves on-going measurement of customer satisfaction and profitability of products and services offered at the airport. Survey research, mystery shopper programs, and data collection are ways to gather information and analyze customer experience. Data capture, management, and analysis of sales information are effective ways to identify different customer groups, achieve better market penetration, and track profitability of different airport enterprises.

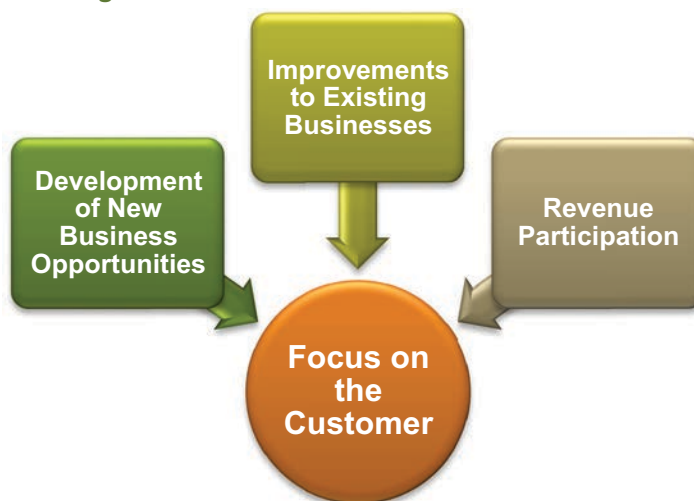
3.3 RELATED STRATEGIES

In addition to the three strategy elements already discussed, other strategies in the Airport Guide are important to implementation of a customer focus strategy. They are:

- Development of new business opportunities
- Revenue participation in concessions and third-party projects
- Improvements in existing business practices

Figure 3-3 shows the strategies that work together to focus on the customer and to return additional net revenues to the airport.

Figure 3-3: Interrelated Strategies



Source: KRAMER aerotek inc., 2014

3.4 OVERVIEW OF TECHNIQUES TO IMPLEMENT THE STRATEGY

A wide range of techniques may be used to implement this strategy, and new ideas are emerging rapidly. This section highlights some of the more effective techniques and organizes them by functional area. **Table 3-3** lists the techniques providing an estimate of the relative cost to implement each technique (\$-\$\$\$\$) and the perceived effectiveness of each technique to increase customer satisfaction and achieve better market penetration at commercial or general aviation airports (◆-◆◆◆). If differences of opinion were noted about the perceived effectiveness of a particular tool, this is indicated with an “○”. Techniques considered higher priority are identified with a “★”. **Table 3-3** presents a simplified look at techniques available. The particular circumstances of an airport will ultimately determine if a technique is appropriate and effective, regardless of the overall rating in this Airport Guide. Following **Table 3-3** is a brief discussion of each technique.

Table 3-3: Techniques to Implement Customer Focus Strategy

Code	Innovative Techniques and Improvements	Higher Priority	Cost	Strategy Effectiveness	
				Commercial Airports	General Aviation Airports
Business Development – BD					
BD-1	Passenger Services	★	\$-\$\$\$\$	◆◆	◆
BD-2	Business Services		\$	◆	◆
BD-3	Leisure Services		\$-\$\$\$	◆	○
BD-4	Other Services		\$-\$\$	◆	○
Concessions – CN					
CN-1	Concession Mix - Time, Price, Concept, and Brand	★	\$\$-\$\$\$\$	◆◆◆	◆
CN-2	Conversion of Non-Revenue Space		\$-\$\$\$	◆◆	◆◆
CN-3	Incubator/Assistance Programs		\$-\$\$	◆◆	◆
CN-4	Point of Sale (POS) Data Collection		\$\$\$-\$\$\$\$	◆◆◆	○
Information Technology – IT					
IT-1	Mobile Applications		\$-\$\$	◆◆	◆
IT-2	Free Wi-Fi to Airport Passengers	★	\$-\$\$	◆◆◆	◆◆
IT-3	Digital Advertising		\$-\$\$	◆◆	◆
IT-4	Social Technologies	★	\$-\$\$	○	○
Parking – PK					
PK-1	Parking Product Mix	★	\$-\$\$\$\$	◆◆◆	○
PK-2	Parking Reservation and Payment Systems		\$-\$\$\$	◆◆	○
PK-3	Parking Guidance Systems		\$\$\$\$	◆◆◆	○
PK-4	Parking Loyalty Programs		\$-\$\$	◆◆◆	○

(continued on next page)

Code	Innovative Techniques and Improvements	Higher Priority	Cost	Strategy Effectiveness	
				Commercial Airports	General Aviation Airports
Service Quality – SQ					
SQ-1	Quality Assurance	★	\$-\$\$	◆◆	◆◆
SQ-2	Customer Assistance		\$-\$\$	◆	◆◆
SQ-3	Special Assistance		\$-\$\$	◆	◆
SQ-4	Loyalty Programs		\$-\$\$	◆	○
Terminal Operations – TO					
TO-1	Passenger Processing	★	\$-\$\$\$	◆◆◆	○
TO-2	Way-finding		\$-\$\$\$	◆◆	○
TO-3	Airport Cleanliness	★	\$-\$\$	◆◆◆	◆◆

Key

- Higher Priority ★
- Costs \$-\$\$\$\$
- Strategy Effectiveness ◆-◆◆◆
- Divided Opinion ○

Source: KRAMER aerotek inc., 2014

3.5 TECHNIQUES BY ELEMENT

This section describes techniques that apply to each element of the customer focus strategy.

3.5.1 Element #1: Customer Segmentation

To recap, Element #1 concentrates on identifying the different customer groups, their needs and wants, and analyzing the profitability of products and services offered at the airport. The techniques are largely analytical. Depending on the airport’s size and mission, the focus of this element will vary. However, its primary use is for in-terminal activities at commercial service airports or concession demand in other areas of the airport, such as car parking, cell phone waiting areas, or ground transportation centers.

CN-4: POINT OF SALE (POS) DATA COLLECTION

Cost	Strategy Effectiveness	
	Commercial Airports	General Aviation Airports
\$\$\$-\$\$\$\$	◆◆◆	○

A number of revenue management systems, such as parking transactions and concession purchases, collect POS transaction information. These data systems manage concession or third-party contracts, automate billing, and conduct audits. The transaction data generated by these systems can also be used to analyze demand for specific products and services. Some systems can combine transaction data with passenger and flight information to compare sales by product category, airport location, date, and time of day. Transactional data is then linked with specific flights or routes. This type of analysis makes it

possible to adjust product mix and test the effectiveness of certain promotions or advertising based on actual demand and experience. Many POS systems are now web-based and include summary dashboards to monitor results continuously.⁵

Revenue management systems are implemented primarily at medium or large hub airports. Passenger intercept surveys and market research can accomplish similar objectives and are lower in cost to implement; however, sample sizes and frequency of surveys must be controlled carefully for valid results.

IT-4: SOCIAL TECHNOLOGIES

Cost	Strategy Effectiveness – Priority ★	
	Commercial Airports	General Aviation Airports
\$-\$	○	○

Social technologies have emerged as a way to seek and share information. Airports can engage their customers in conversations and develop a better understanding of actual customer experiences at the airport and gain new insight about airport products, services, and marketing. According to McKinsey Global Institute, in 2011, “1.5 billion people around the globe have an account on a social networking site, and almost 1 in 5 online hours is spent on social networks, increasingly on mobile devices” [McKinsey & Company]. Social technologies offer opportunities to create an environment in which information sharing enables innovation and collaboration, and ultimately drives productivity.

For many airports, adoption of social technologies began in the marketing and IT departments as a way to obtain and respond to customer feedback. Its potential is much greater, however, as it can also transform the culture of airport organizations, provide a platform for experimentation and learning, track impacts, and evolve metrics.

One of the earliest successful implementations of social technology at an airport occurred at Ottawa International Airport when the Authority initiated a campaign to engage in a two-way conversation with different customer groups to collect ideas about how to improve the airport. The airport used a website to invite airport users to make suggestions, discuss ideas, and rank the ideas in order of priority. Airport staff were surprised about some of the ideas and priorities and, ultimately, converted the results of the campaign into a series of action plans. The crowd sourcing idea campaign was widely advertised through print and social media and on signs posted throughout the terminal. The airport is considering other idea campaigns that will focus on particular user groups, such as employees, tenants, or meeters and greeters.

When the MITRE Corporation “identified an urgent need for employees to collaborate more easily with colleagues and external partners, it used open-source social-networking software to build and customize its own social platform, called Handshake. The platform is secure, by invitation only, and integrated with MITRE’s collaboration and knowledge-management tools, so staff can start using the tool and make it part of their daily work seamlessly.”

– McKinsey & Company

⁵ A dashboard refers to organizing and presenting key information in a way that is easy to read and understand.

Crowd sourcing is a relatively low cost technique to engage customers in a conversation about different aspects of the airport experience. It is an option for airports of all sizes to consider as a technique for understanding their customers’ needs and wants.

The speed and scale of social technologies’ adoption suggest a very powerful, customer-oriented, and democratic approach to airport market research, demand analysis, product development, and performance measurement. Airports today have a real opportunity to benefit from customer and employee insights and to make changes in how the airport operates.

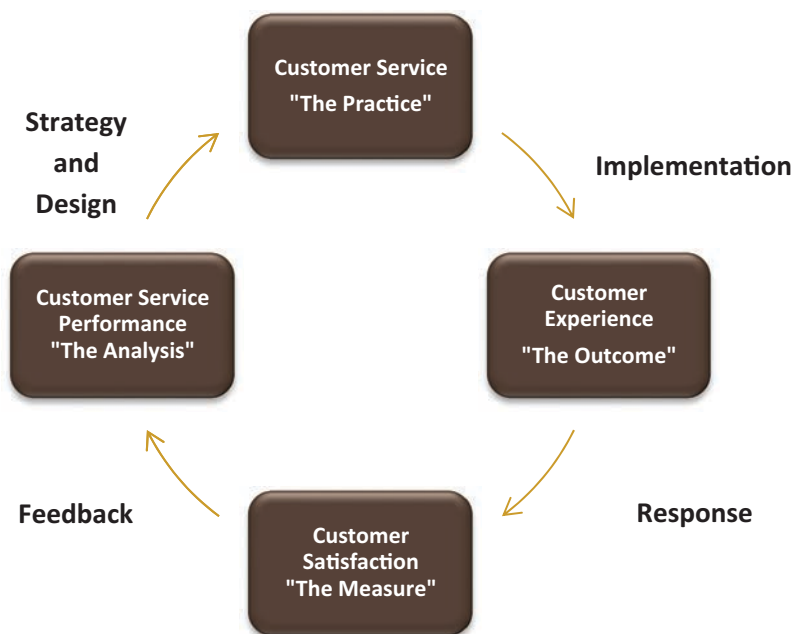
SQ-1: QUALITY ASSURANCE

Cost	Strategy Effectiveness – Priority ★	
	Commercial Airports	General Aviation Airports
\$-\$\$	◆◆	◆◆

A number of techniques are used to monitor concessions and third-party contracts. These include audits, mystery shopping programs, customer and tenant intercept surveys, web-based surveys, and customer feedback obtained through focus groups, online and hardcopy comments, phone calls to airport administration, help desk logs, and airport ambassadors. Each of these tools can be used to track performance and solicit information about customer experience and satisfaction. Both commercial airports and general aviation airports use these techniques to gauge the performance of functional areas of the airport and the demand level for services and products.

Costs vary with the type and scale of implementation of these techniques. Third-party vendors offer quality-of-service surveys, analysis, and audits. Some airport operators carry out quality assurance in-house using volunteers, Internet surveys, and customer feedback. Quality assurance is an important technique to implement a customer focus strategy. **Figure 3-4** describes the elements and process of a customer service program. Further discussion is available in *ACRP Synthesis 48: How Airports Measure Customer Service Performance*.

Figure 3-4: Elements and Process of Customer Service Improvements



Source: *ACRP Synthesis 48: How Airports Measure Customer Service Performance*, 2013

3.5.2 Element #2: Better Market Penetration

The focus of customer segmentation (Element #1) is greater knowledge about the airport’s customers: who spends money at the airport and for what products and services. Better market penetration (Element #2) implements this knowledge through a variety of techniques, such as:

- Introduction of concessions and parking products and services to better match and stimulate customer demand
- Use of mobile technology, digital displays, and social media to achieve direct communication with specific customer groups
- Provision of enhanced customer services and streamlined passenger processing to improve the customer’s experience and satisfaction

Better market penetration is a shared goal of most retail and service businesses. For every airport, season, day, and year, there are different solutions and innovative ideas. This section provides some examples of ways that airports, concessionaires, and third-party contractors are striving for better market penetration.

TECHNIQUES TO BETTER MATCH AND STIMULATE CUSTOMER DEMAND

CN-1: CONCESSION MIX

Cost	Strategy Effectiveness – Priority ★	
	Commercial Airports	General Aviation Airports
\$\$-\$\$\$\$	◆◆◆	◆

It is rare for an airport to redesign its concession program completely, as done by the Indianapolis Airport Authority. Nevertheless, concession agreements have specific terms and requirements for refresh of establishments, providing regular opportunities to target particular customer groups. Concept innovation might include experimentation with the following:

- Time-sensitive food services (e.g., slow food; grab and go; 20-minute turnaround)
- Price point diversity
- Local and regional brands added to national chains
- Food delivered to a passenger’s gate
- Seasonal offerings

Many airport operators consider the mix of concession products and services as “low-hanging fruit.” With an average capture rate in 2012 of 42% for food and beverage concessions, 7% for specialty retail, and 23% for news and gifts, there is room for better market penetration.



Concessions (with iPad ordering) at Toronto Pearson International Airport

Concept innovation for concessions is relevant to commercial airports of all sizes, but especially so to large and medium hubs. For this reason, concessions innovation is considered a high priority of the strategy. For small hub, non-hub, and general aviation airports, a focused product mix and lean management structure can produce substantial improvements.

CN-2: CONVERSION OF NON-REVENUE SPACE

Cost	Strategy Effectiveness	
	Commercial Airports	General Aviation Airports
\$-\$\$\$	◆◆	◆◆

Conversion of non-revenue space for food and beverage, retail, or services concessions can add incremental revenue. Airport operators can rent rooftop space to concessionaires for antennas or rent corner spaces and common waiting areas to retail merchandisers or food and beverage carts. Some airports use these spaces to sell seasonal or special event products.

Many commercial airports have cell phone waiting lots. These lots can include vending machines, advertising, gas stations, and/or retail and food and beverage establishments. Denver International Airport’s Final Approach, which opened in September 2013, offers restaurants, free Wi-Fi, restrooms, flight information displays, a children’s seating area with built in iPads, 250 free parking spaces (no overnight parking), and a gas station. The site operator built the facility at no cost to the airport. In its first full year of operation, total revenue back to the airport was \$1.1 million. Because of its location, both drivers picking up passengers and employees working in other parts of the airport use the Final Approach facilities.



CN-3: INCUBATOR/ASSISTANCE PROGRAMS

Cost	Strategy Effectiveness	
	Commercial Airports	General Aviation Airports
\$-\$\$	◆◆	◆

Even with an existing concession program operating, it is possible to introduce concept innovation. Two useful techniques are:

- Revenue development incubator
- Concessionaire assistance programs

A revenue development incubator is a program that supports new concepts for concessions. Airport staff nominate or solicit ideas on ways to increase concession revenue. They then select one or several ideas to implement and test.

A concession assistance program offers self-help or advisory services to concessionaires. The assistance program can operate at a specific airport, or a group of interested airports can work together (e.g., small airports or airports in a geographic area). This type of assistance is invaluable, particularly for small or medium airports that can benefit from other airport experiences and networking.

PK-1: PARKING PRODUCT MIX

Cost	Strategy Effectiveness – Priority ★	
	Commercial Airports	General Aviation Airports
\$\$-\$\$\$\$	◆◆◆	○

For commercial airports of all sizes in the United States, parking and ground transportation are the largest non-aeronautical revenue generator, representing 41% of total non-aeronautical revenues in 2013 for the 467 airports reporting.⁶ Analyzing use of an airport’s parking products is critical to incremental improvements. A parking analysis would include:

- Existing parking products – capacity, proximity to terminal, ownership (airport or others), service offered, pricing, competition
- Utilization of parking products – time of day, day of week, month, frequency of full garages/lots
- Transactions – length of stay by parking product and by revenues
- Financial performance of each product (including the cost of buses or shuttles)

Airport operators are experimenting with different parking products and services including “trunk to trunk” services, valet parking, corporate-reserved or corporate-owned parking places, short term parking options, and electrical hookups for vehicles. Structural changes to parking products, especially those close to terminals, typically require planning, design, and investment. Because of opportunities for incremental improvements to net revenue, however, making adjustments to the mix of parking products and pricing of products is a priority technique in this strategy for large and medium commercial airports.

PK-2: PARKING RESERVATION AND PAYMENT SYSTEMS

Cost	Strategy Effectiveness	
	Commercial Airports	General Aviation Airports
\$-\$\$\$	◆◆	○



Parking reservation systems enable airports to target specific customer groups and offer different types of parking products. They may feature a reserved spot in a premium parking lot, valet services, or additional services, such as newspapers, coffee, remote baggage drop-off, or access to expedited TSA security checkpoints. Online reservation systems often come with small fees to the customer for use of the system.

A few airports have parking reservation systems in place primarily for premium parking services. Reservation systems can work for other parking products as well. Many systems can convert fixed parking fees to variable fees to reflect high demand for parking, such as on the days leading up to Thanksgiving, or lower demand, such as during the shoulder months following summer travel. Weekend rates could vary from weekday rates.

Many off-airport parking entities offer their customers online reservations and payment systems. These reservation systems are comparable to advance ticket purchase systems by which the customer makes a reservation, applies available coupons, and pays in advance for parking.

⁶ FAA Form 127 Report

Airports also are installing automatic pay systems that include E-Z Pass® electronic collection systems (first implemented on toll roads), credit card readers, and automatic vehicle identification (AVI) and billing systems.

PK-3: PARKING GUIDANCE SYSTEMS

Cost	Strategy Effectiveness	
	Commercial Airports	General Aviation Airports
\$\$\$\$	◆◆◆	○

Guidance and information systems dynamically keep track of available spaces in a parking structure. They can direct customers to open parking structures and guide drivers to floor levels, rows, and individual spaces. The guidance systems make it possible to increase utilization of a parking structure approaching 100% capacity. Customers avoid the hassle of looking for a space. Reduced driving within the parking structures also reduces emissions.



Parking guidance and information systems are expensive to install, especially if they are retrofitted into existing garages. Baltimore/Washington International Thurgood Marshall Airport was the first airport on the East Coast to install an automated “Smart Park” guidance system. Philadelphia International Airport installed a system, as has Portland International Airport. The Terminal A Parking Garage at Dallas/Fort Worth International Airport has an enhanced parking guidance system that can direct drivers to available spots in the 6,600-space facility.

PK-4: PARKING LOYALTY PROGRAMS; SQ-4: LOYALTY PROGRAMS

Cost	Strategy Effectiveness	
	Commercial Airports	General Aviation Airports
\$-\$\$	◆	○

Almost all commercial airlines and many hotels collect personal information on their customers. American Airlines, United Airlines, JetBlue Airways, British Airways, and Qantas® Airways can identify their most lucrative customers and reward them with special promotions and personalized services. Hotels offer preferred accommodations, access to exclusive lounges, and upgrades to frequent guests. The technology now exists to match information about customers with publicly available demographic information. Companies are exploring better ways to serve their customers while remaining sensitive to the need for secure customer transactions and protection of personal privacy.

Airport operators also recognize the importance of engaging high value customers. Two approaches in use by some airports are frequent parker programs and reward programs that earn customers airline miles for concession, retail, hotel, and parking purchases.

The frequent parking programs require enrollment (with or without a fee) and can offer reserved parking, automated credit card payments, free parking with earned points and, often, fast access in or out of parking lots or garages. Customers can view accounts online, and some programs include online reservations. Frequent parker programs have been implemented at commercial airports of all sizes, such as Nashville International, Oakland International, Jacksonville International, T.F. Green, and Bradley International.

Dallas/Fort Worth International Airport introduced a customer reward program in February 2013 that has attracted many users. Travelers enrolled can earn airline miles or two hotel points for each dollar spent on qualifying purchases made at airport hotels, restaurants, retail outlets, and parking. A company named Thanks Again LLC administers the program. Other participants in this program include Hartsfield-Jackson Atlanta International, Baltimore/Washington Thurgood Marshall International, George Bush Intercontinental, JFK International, LaGuardia, Miami International, Newark Liberty International, Portland International, Seattle-Tacoma International, and Tulsa International.

DIGITAL TECHNOLOGY TO COMMUNICATE DIRECTLY WITH CUSTOMERS

Achievement of better market penetration involves communicating with customers through multiple channels. Rapidly, digital technology is replacing many on-airport functions. Digital technology has taken initial passenger processing off-airport. Much of it now occurs on mobile devices, on home computers, and in hotel lobbies. Today, airport operators must provide ways to accommodate passengers who include both early and late adopters of technology. Thus, the ability to communicate in a consistent manner over multiple channels is critical.

This section of techniques examines some of the ways that airlines, airport operators, tenants, and airport customers will grow to rely more on digital technology for passenger processing and communications.

IT-1: MOBILE APPLICATIONS

Cost	Strategy Effectiveness	
	Commercial Airports	General Aviation Airports
\$-\$\$	◆◆	◆

Already, most airlines have mobile applications that enable customers to make reservations, check in, download boarding passes, pay for baggage, and access other services. Both airline and airport websites contain information about specific airports, maps, weather, and parking. These websites feature advertisements that are a source of revenue for the website owner.

Other mobile applications developed by third parties are available to use for targeted advertising, brand awareness, airport way-finding (navigation), passenger identification, and advance purchase of food and beverages. For example, Google Maps is inviting airports to partner so that visitors can access the airport map directly on a mobile device, find baggage claim, or locate a particular shop or restaurant. These maps can also be inserted onto an airport’s webpage.

OTG Management, an airport concession firm, is deploying 7,000 iPads in post-security waiting areas at Minneapolis-St. Paul, Toronto Pearson, New York’s LaGuardia, Philadelphia International, Ronald Reagan Washington National, Chicago’s O’Hare, Orlando International, Boston’s Logan International, and Tucson International airports. The iPads are equipped with free Wi-Fi. An application delivers updates on flight status. Users can search the Internet; play games; or order food, magazines, or beverages that will be delivered to their seats. Just as the use of digital technology has reduced the need for many ticket counters, direct delivery of food to gates could well alter the special requirements and look of restaurants.



Specialty Chef Restaurants at Minneapolis-St. Paul International Airport

Installation of mobile devices at airports will also invite partnerships with airlines, travel agencies, online retailers, hotels, and other merchants for direct links, advertising, and brand awareness.

IT-2: FREE WI-FI TO AIRPORT PASSENGERS

Cost	Strategy Effectiveness – Priority ★	
	Commercial Airports	General Aviation Airports
\$-\$\$	◆◆◆	◆◆

The increasing use of digital technology for passenger processing, advertising, and concession transactions makes free Wi-Fi to airport passengers almost essential. Some airport operators have experimented with tiered pricing—free (but slow) Wi-Fi access available to all, and faster Wi-Fi available for a price. Airports are also leasing shared telecommunication resources and a common-use Wi-Fi backbone to airlines and other tenants who, in turn, can offer Wi-Fi to their passengers and employees.

IT-3: DIGITAL ADVERTISING

Cost	Strategy Effectiveness	
	Commercial Airports	General Aviation Airports
\$-\$\$	◆◆	◆

Digital advertising makes it possible to target specific customers and build brand awareness. Getting the right message to specific travelers involves the capability to group and identify customers.

Throughout the terminal, digital advertising can be sold on dedicated displays, video walls, televisions, flight information displays, baggage carousels, and displays at cell phone waiting lots or other activity and service areas. Airports can own the display medium and lease advertising rights, or sponsors can fund different digital platforms. Digital advertising makes it possible to change messages frequently and offers flexible pricing for time of day, exposure (location), and duration.

Because digital advertising is a revenue stream for airports and its partners, this technique is useful for airports of all sizes.

SERVICES TO IMPROVE OVERALL CUSTOMER EXPERIENCE AND SATISFACTION

Thus far, techniques to achieve better market penetration involved ways to communicate with airport customers and provide products and services that link demand with specific customer groups that spend money at the airport. There is also a body of research suggesting that:

- Happy customers spend more money [J.D. Power & Associates]
- States of relaxation consistently increase the monetary valuations of products, actually inflating these valuations by about 10% [Pham, Hung, Gorn]
- Among the most important competitive aspects of an airport’s quality of service are:
 - Speed through the airport
 - Cleanliness and ambience of the terminal, concourses, and gate areas
 - Selection of concessions/services and value of money
 - Positive gate experience
 - Exceptional customer service and courtesy of staff [ACRP Synthesis 48]

The final group of techniques for achieving better market penetration focuses on improving the customer’s airport experience and indirectly increasing net revenues to the airport sponsor.

BD-1: PASSENGER SERVICES

Cost	Strategy Effectiveness – Priority ★	
	Commercial Airports	General Aviation Airports
\$-\$\$\$\$	◆◆	◆

Passenger services include a range of amenities that affect a customer’s experience, such as fast track security, baggage wraps, in-transit hotels and lounges, clubrooms, work areas, and recharge stations. These services tend to expedite moving the passengers through the terminal to the aircraft and/or improve a passenger’s experience at the gate. These services have an indirect but beneficial effect on a passenger’s experience.

Improvements to passenger services and amenities primarily apply to large and medium hub airports.

BD-2: BUSINESS SERVICES

Cost	Strategy Effectiveness	
	Commercial Airports	General Aviation Airports
\$	◆	◆

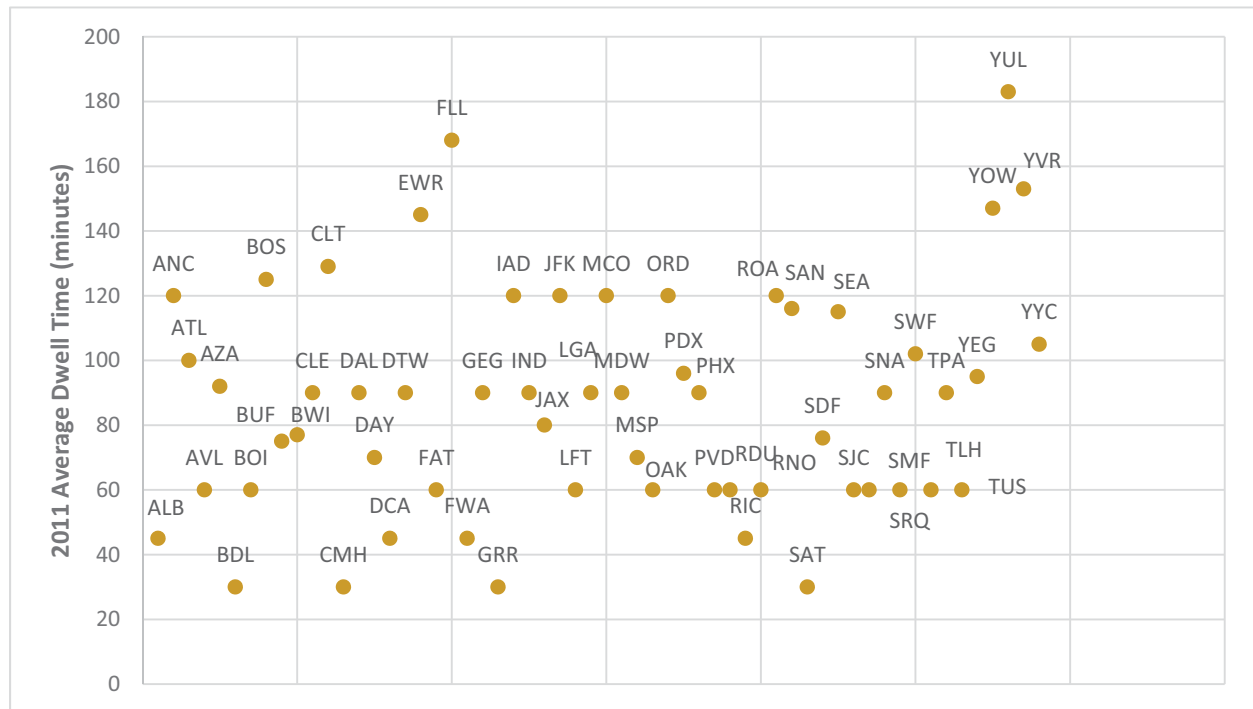
Some airports rent offices or meeting and conference rooms on the premises with various associated support services available. These facilities earn incremental revenue to the airport sponsor and primarily provide a service to business travelers.

BD-3: LEISURE SERVICES



In 2011, the average dwell time at 58 reporting U.S. and Canadian airports was 86.5 minutes [Airport Revenue News Fact Book]. However, as **Figure 3-5** shows, passengers at many airports spend more than 2 hours of dwell time, suggesting that there is considerable time for leisure activities.

Figure 3-5: Average Dwell Times at 58 U.S. and Canadian Airports, 2011



Source: Airport Revenue News Fact Book 2012

Airports in Europe, the Middle East, and Asia have taken leisure time at the airport seriously. They have developed movie theaters, skating rinks, children’s activity centers, spaces for live music performance, golf courses, gardens and terraces, spas, and athletic facilities. Medium and large airports in the United States also are experimenting with a variety of leisure services for travelers.



Left: Singapore Changi Airport, Terminal 2, Departure Restricted Area. Photo by [Terence Ong](#), June 2006.
 Right: Incheon Airport, Children’s Center, April 2012.

BD-4: OTHER SERVICES

Cost	Strategy Effectiveness	
	Commercial Airports	General Aviation Airports
\$-\$\$	◆	○

Airports are also developing non-aeronautical service enterprises in the terminal or on the airport for travelers and employees. These service enterprises include health clinics, convenience stores, gas stations, auto service centers, banks, day care providers, dry cleaners, and pet boarders. Many of these enterprises involve partnerships with third-party developers or concessionaires.

SQ-2: CUSTOMER ASSISTANCE

Cost	Strategy Effectiveness	
	Commercial Airports	General Aviation Airports
\$-\$\$	◆	◆◆

Ambassadors, help desks, and concierge services are integral parts of an airport’s customer service program. The volunteers and paid personnel who perform these services are central to the experience that a traveler has in the airport. Customer assistance is also an important channel for customers to offer feedback on their airport experience.

SQ-3: SPECIAL ASSISTANCE

Cost	Strategy Effectiveness	
	Commercial Airports	General Aviation Airports
\$-\$\$	◆	◆

Many airport customer groups require special assistance, such as persons with reduced mobility, persons who are visually or hearing impaired, travelers who speak foreign languages, wounded military

service members, and elderly persons. Sometimes airports experience extraordinary events and irregular operations such as accidents, disasters, power outages, weather delays, diverted emergency flights, and construction projects. An airport’s rapid and helpful response to the needs of these individuals or in response to extraordinary events will shape customers’ perceptions of service quality and greatly affects their airport experience.

Certain aspects of terminal operations contribute heavily to a customer’s experience at the airport. The most important are processing time, way-finding, and airport cleanliness.

TO-1: PASSENGER PROCESSING

Cost	Strategy Effectiveness – Priority ★	
	Commercial Airports	General Aviation Airports
\$-\$\$\$	◆◆◆	○

Customer satisfaction surveys suggest that the time it takes to check in, check or retrieve baggage, pass through security screening, board or deplane an aircraft, and clear U.S. Customs and Border Protection (CBP) stations are among the most important factors that contribute to an air passenger’s experience.

TO-2: WAY-FINDING

Cost	Strategy Effectiveness	
	Commercial Airports	General Aviation Airports
\$-\$\$\$	◆◆	○

For regular travelers at a particular airport, way-finding is not an issue. However, for visitors, good signage to security, concourses, gates, and restrooms is extremely important.

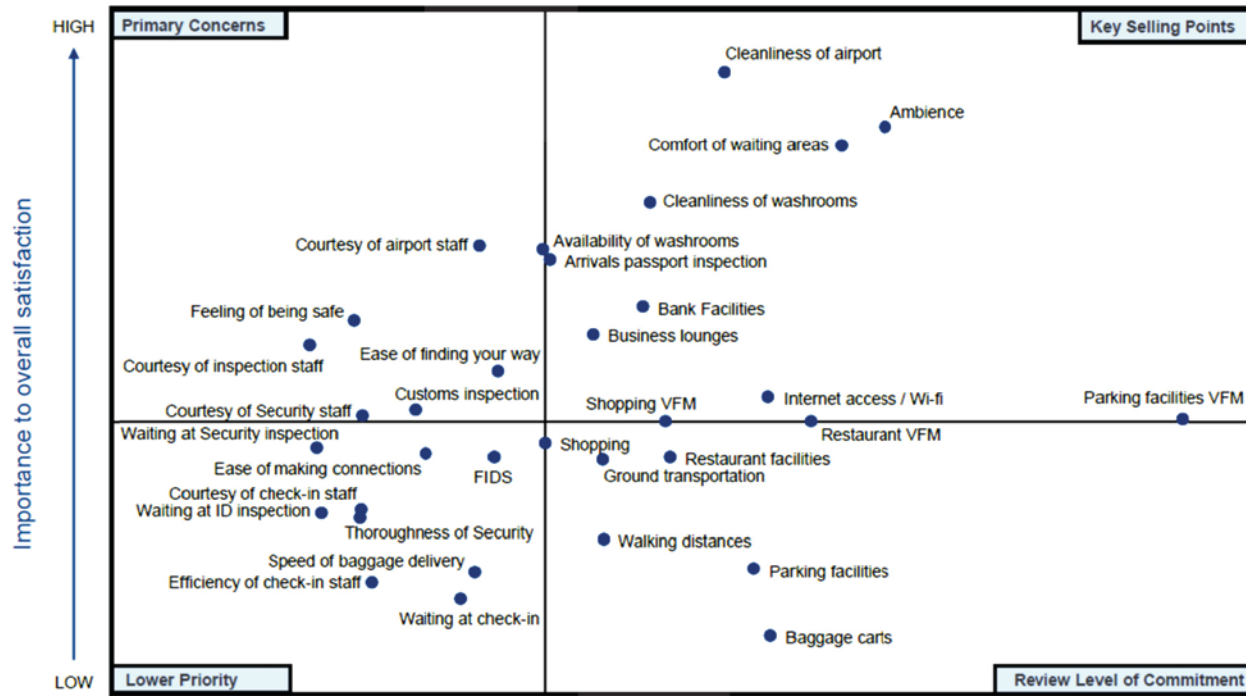
TO-3: AIRPORT CLEANLINESS

Cost	Strategy Effectiveness – Priority ★	
	Commercial Airports	General Aviation Airports
\$-\$\$	◆◆◆	◆◆

Many larger airports in the United States and abroad participate in customer satisfaction surveys. While there are differences in priorities, cleanliness of the airport and restrooms consistently rank high (**Figure 3-6**). As a factor in improving customer satisfaction, airport cleanliness is on the list of priority techniques that airport operators can employ to create a pleasing commercial environment.⁷

⁷ Some airports offer janitorial services to airport tenants (at private-sector mark-up) to ensure airport cleanliness throughout the terminal and earn incremental revenue for the airport sponsor. In the Airport Guide, this technique is described as TO-7 Janitorial in Chapter 4, Airport Entrepreneurial Activity, Part I.

Figure 3-6: Example of Customer Satisfaction Priority Analysis



Source: ACI, 2012 via *ACRP Synthesis 48*

3.5.3 Element #3: Performance Measurement

Performance measurement (Element #3) tracks customer satisfaction and improvements. Airport managers will have different views about how to track progress related directly to the particular techniques applied. A few examples are listed below by functional area; however, each airport manager is likely to craft a custom list of performance measures.⁸

- Concessions
 - Food and beverage sales per enplanement
 - Specialty retail sales per enplanement
 - News and gift sales per enplanement
 - Total concession sales per enplanement
 - Total concession airport revenues per enplanement
 - Capture rates of enplaned passengers for each concession category
- Parking
 - Parking revenue per originating passenger
 - Parking revenue per transaction
 - Parking revenue per parking product
 - Periods of maxed out capacity by parking product

⁸ For additional discussion of performance indicators, refer to *ACRP Report 19A: Resource Guide to Airport Performance Indicators*.

- Service Quality
 - Perception measures of customer satisfaction
 - Perception surveys for airport cleanliness, staff courtesy, baggage retrieval, way-finding
 - Wait times at ticket counters, security, and CBP stations
 - Percent of arriving flights delayed
 - Percent of departing flights delayed
- Social Technologies
 - Website advertising views
 - POS revenues near advertised promotions
 - Customer comments by subject area per month
 - Key word analyses of comments
 - Number of participants in idea collaborations

3.6 QUALITATIVE EVALUATION

The customer focus strategy involves an application of techniques throughout the airport enterprise. Some techniques will directly influence customer satisfaction and market penetration; others will have an indirect but contributing effect on net revenues to the airport sponsor. To summarize the techniques presented by functional area, **Table 3-4** presents a matrix of all the techniques discussed, with examples and a qualitative evaluation that describe:

- Applicability of the technique to different types of airports
- Degree of revenue impact that might be expected
- Degree of financial risk to the airport sponsor undertaking the particular technique
- Relative cost to implement
- Whether results are measurable

Table 3-4: Evaluation Matrix of Techniques to Implement Customer Focus Strategy

Code	Innovative Techniques and Improvements	Strategy Elements	Examples	Applicability	Revenue Impact	Airport Sponsor Financial Risk	Airport Cost to Implement	Results Measurable
Business Development – BD								
BD-1	Passenger Services	Target Customer Groups & Build Customer Relationships	Fast Track Security, Baggage Wrap, In-transit Hotel, Lounges, Clubrooms, Workstations, & Device Charging Stations	Medium & Large	Low/Indirect	Low	Variable	Yes
BD-2	Business Services	Generate New Revenue	Conference & Meeting Rooms	All Airports	Low	Low	Low	Yes
BD-3	Leisure Services	Build Customer Relationships & Generate New Revenue	Airport Tours, Athletic Facilities, Visitor Terraces, Spas, Movie Theaters, Golf Courses, Performances, Children’s Activity Centers, Skating Rinks	All Airports, especially International Gateways & Connecting Hubs	Low/Indirect	Low	Variable	Yes
BD-4	Other Services	Generate New Revenue	Health Clinic, Convenience Store, Gas Station, Banks, Day Care, Dry Cleaners, Auto Services, Pet Boarding	Medium & Large	Low/Moderate	Moderate	Primarily Third Parties	Yes
Concessions – CN								
CN-1	Concession Mix - Time, Price, Concept, and Brand	Target Customer Groups & Generate New Revenue	Time-Sensitive Food, Food Delivered to Gate, Seasonal Offerings, Price Points, National/Local mix	All Commercial Service Airports	Moderate/High	Low	Concession Program Refresh	Yes
CN-2	Conversion of Non-Revenue Space	Generate New Revenue	Roof top antennas, carts & kiosks, concessions in cell phone lots, terminal corners	All Commercial Service Airports	Moderate/Low	Low	Low/Moderate	Yes
CN-3	Incubator/Assistance Programs	Generate New Revenue	New concepts proposed and implemented to increase revenue, concession advisory services offered, in-airport advertising offered to concessionaires	All Commercial Service Airports	Moderate	Low	Low	Yes
CN-4	Point of Sale (POS) Data Collection	Know the Airport's Customers, Target Specific Customers, & Increase Revenues	Integrated concession or parking management, billing and customer information systems	Medium & Large	Moderate/High	Low	Moderate to High/IT Integration	Yes

Code	Innovative Techniques and Improvements	Strategy Elements	Examples	Applicability	Revenue Impact	Airport Sponsor Financial Risk	Airport Cost to Implement	Results Measurable
Information Technology – IT								
IT-1	Mobile Applications	Target Customer Groups	Brand Awareness, Airport Information, Pre-purchase F&B, Targeted Advertising	All Commercial Service Airports	Indirect	Low	Low	Yes
IT-2	Free Wi-Fi	Target Customer Groups & Build Customer Relationships	Access, commerce, services	All Airports	Indirect	Low	Low/Moderate	Yes
IT-3	Digital Advertising	Target Customer Groups & Generate Incremental Revenue	Signage/FIDS/Video Walls and Displays, Recharge Centers, Mobile Devices	Small, Medium, & Large	Moderate on Ad Revenue	Low	Low	Yes
IT-4	Social Technologies	Target Customer Groups & Build Customer Relationships	Web Page, Facebook, Twitter, Pinterest, Idea Collaboration Platforms	All Airports	Indirect	Low	Low	Yes
Parking – PK								
PK-1	Parking Product Mix	Target Customer Groups & Generate Incremental Revenue	Premium, Short Term, Economy, Trunk to Trunk, Electrical Hookups	Small, Medium, & Large	High	Low	Variable	Yes
PK-2	Parking Reservation and Payment Systems	Target Customer Groups & Generate Incremental Revenue	Online Reservations, EZ Pass Pay, Automatic Vehicle Identification (AVI)	Small, Medium, & Large	High	Moderate/Low	Moderate	Yes
PK-3	Parking Guidance Systems	Target Customer Groups & Generate Incremental Revenue	Garages	Large & Medium	High	Moderate	High	Yes
PK-4	Loyalty Programs	Target Customer Groups & Build Customer Relationships	Earned free parking or spending at the airport, discounts, reserved spaces	Medium & Large	Low/Indirect	Low	Moderate/Low	Yes
Service Quality – SQ								
SQ-1	Quality Assurance	Know the Airport's Customers & Track Customer Satisfaction	Audits, Mystery Shoppers, Intercept and Web-based Surveys, Feedback	Small, Medium, & Large	Moderate	Low	Moderate/Low	Yes
SQ-2	Customer Assistance	Build Customer Relationships	Concierge Services, Ambassadors, Help Desks	Medium & Large	Indirect	Low	Low	Yes
SQ-3	Special Assistance	Build Customer Relationships	Carts, wheel chairs, porters, translators, emergency responders	Small, Medium, & Large	Indirect	Low	Low	No

(continued on next page)

Table 3-4 (Continued).

Code	Innovative Techniques and Improvements	Strategy Elements	Examples	Applicability	Revenue Impact	Airport Sponsor Financial Risk	Airport Cost to Implement	Results Measurable
Terminal Operations – TO								
TO-1	Passenger Processing	Build Customer Relationships	Check in, Bag Check & Retrieval, Security Wait Times, Customs & Immigration, Aircraft Boarding	Small, Medium, & Large	Indirect	Low	Variable	Yes
TO-2	Way-finding	Build Customer Relationships	Gates, Concourses	Medium & Large	Indirect	Low	Low	Yes
TO-3	Airport Cleanliness	Build Customer Relationships	Terminal, Concourses, Restrooms, Concessions, and Parking Facilities	All Airports	Indirect	Low	Low	Yes

Source: KRAMER aerotek inc., 2014

3.7 WRAP-UP

The customer's experience of an airport begins upon arrival at the airport and continues across many functional areas of the airport. This chapter highlighted ways that airport operators can better serve different customer segments, continuously capture information about customers and track performance, engage in dialogue with airport users, create an environment of innovation, and deploy changes that meet customer demands and result in new net revenues to the airport sponsor.

3.8 ADDITIONAL REFERENCES

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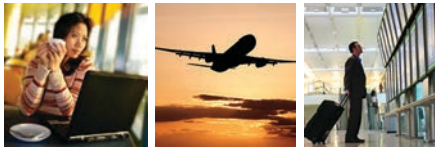
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Chapter 4

Airport Entrepreneurial Activity – Part I

Airport-Provided Services/Shared Use of Facilities, Systems, and Equipment

- 4.1 A Revenue Strategy of Ingenuity and Necessity
- 4.2 Scope of the Strategy
- 4.3 Techniques to Implement the Strategy
- 4.4 Techniques by Functional Area
- 4.5 Implementation Issues
- 4.6 Wrap-up
- 4.7 Additional References

Chapters 4 and 5 highlight entrepreneurial activities that provide opportunities for an airport sponsor to achieve additional revenue. This chapter focuses on airport-provided services to airlines, tenants, and passengers at market rates and achievement of economies of scale through shared use of services, facilities, systems, and equipment. Chapter 5 discusses airport sponsor participation in the development of real estate, natural resources, and other non-aeronautical businesses on airport property.

4.1 A REVENUE STRATEGY OF INGENUITY AND NECESSITY

In many respects, the entrepreneurial strategy addresses the realities of airport operations in the post-recession economy. Following rapid and severe capacity cuts by the major U.S. airlines in 2008-2009, many airports scrambled to address the need for additional revenues and to postpone capital projects. Necessity provoked ingenuity. Airports have a long history of adopting entrepreneurial strategies to address the unexpected exit of a principal carrier or service provider.

For example, Springfield-Branson National Airport solved a shortage of ground handling support by forming an airport-operated ground handling company that offered both above the wing and below the wing services. The airport always owned and operated the fixed base operator (FBO) and fuel farm. In 2002, however, when the airport sponsor could not secure a third party to provide ground handling for the 80 to 100 charter aircraft that arrived annually, airport

management decided to offer ground services to charters by cross-utilizing airport personnel. Thus began a logical build-out of airport-provided, above the wing and below the wing services to commercial and charter airlines. These services have contributed directly to net revenues to the airport sponsor. Ground handling services also provide Springfield-Branson with important indirect benefits in the form of retained air service and increased passengers.

Necessity for invention applies to airports of all sizes. Following US Airways' shutdown of its Pittsburgh hub, the Allegheny County Airport Authority (ACAA) adopted elements of this strategy as an integral part of operations in several functional areas of the airport. For example, to address a need to repair and maintain airport-owned passenger boarding bridges (PBBs), ACAA partnered with JBT AeroTech to maintain and refurbish PBBs on airport property at a specially modified hangar formerly owned and operated by US Airways as a maintenance hangar. Today, the scope of jet bridge refurbishment has expanded. The facility repairs PBBs from several different commercial airports east of the Mississippi River. ACAA operates and staffs the facility as a revenue producing enterprise.

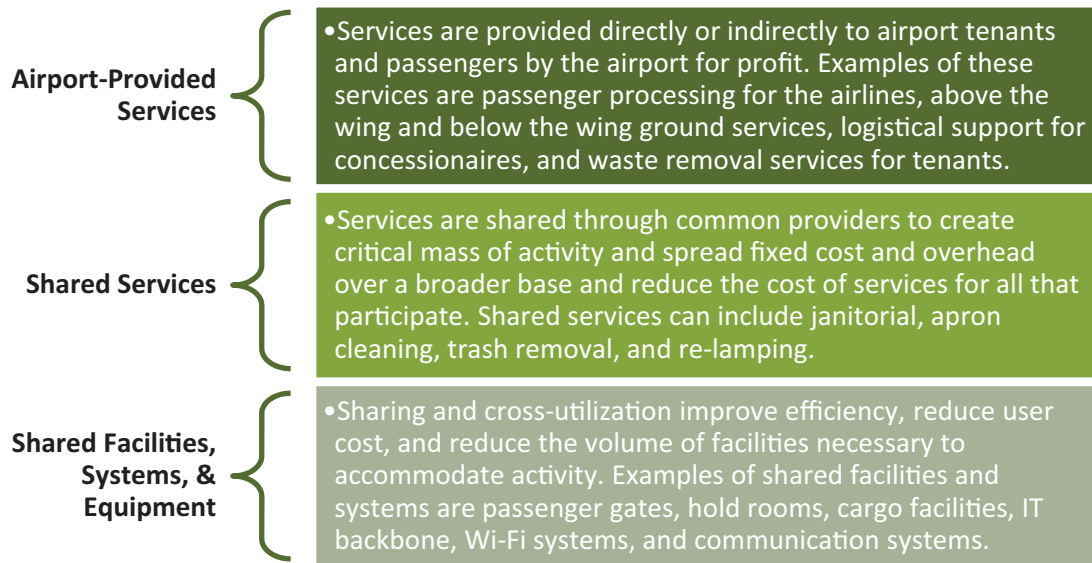
ACAA also addressed public pressure for a free cell phone lot by carving out a section of an existing (and underused) extended stay parking lot. The lot was located adjacent to a convenience store offering home-style cooking and a gas station. Because the lot is within the automated parking area, users take a parking card upon entrance, receive the first 60 minutes free, and then pay regular parking rates after the first hour. The lot also is adjacent to the airport's internal bus system, so users can leave their car and take a bus to the terminal or walk over to the convenience store. Either way, there is opportunity for concession revenue to ACAA and an automatic cap on free parking beyond 60 minutes. Because the cell phone lot is situated within the existing parking area, there was no additional cost to install card readers and lighting and the lot was already secured. Although there may be erosion of first hour parking revenues, the lot appears to have attracted otherwise non-revenue users who would have either circled the airport or parked off-airport to wait for arrivals.

4.2 SCOPE OF THE STRATEGY

This entrepreneurial strategy focuses on three elements as described in **Figure 4-1**:

- Airport-provided services
- Shared services
- Shared facilities, systems, and equipment

Figure 4-1: Elements of the Strategy



Source: KRAMER aerotek inc., 2014

The airport entrepreneurial strategies place a high value on operating efficiencies and the provision of services directly by airport staff or service contracts. The business arrangement would recover the direct expenses and the fully allocated indirect expenses plus a modest profit of 10% to 15%. When using airport staff, high quality and reliable service will make the option competitive and mutually beneficial to tenants and the airport sponsor. For smaller airports, additional services present an opportunity to cross-utilize staff. For example, terminal and airside maintenance staff can also provide aircraft and passenger processing services.

An airport sponsor also can enter into a service contract agreement with a private entity providing the services for a specified period. The private provider is paid a fee and reimbursed for expenses based on a budget approved by the airport sponsor. This approach results in the airport controlling the quality and important characteristics of the services provided.

Airports are moving toward the use of common airline terminal facilities. This evolution is driven by the airport sponsor’s desire to optimize use of existing facilities and drive down the airlines’ cost per enplaned passenger. Airports like McCarran International Airport are implementing systems whereby any airline can operate from any ticket counter, hold room, or aircraft gate. The evolution provides the airport sponsor with the opportunity to charge fees for facilities management, schedules, and administration.

Table 4-1 lists airport facilities, services, and equipment that have potential or limited potential for airport entrepreneurial activity or shared use. The objective for the airport sponsor is to achieve incremental revenue improvement, recover costs, or improve operational efficiency. As with every idea presented in this Airport Guide, implementation at a specific airport requires careful analysis and feasibility assessment.

Table 4-1: Services/Facilities with Potential for Revenue Improvement, Cost Recovery & Operational Efficiency

		Revenue Improvement, Cost Recovery, Operational Efficiency	
		Potential	Limited Potential
Airport-Provided Services			
Airport Tenants			
	Badging	◆	
	Building Services to Airlines & Concessionaires	◆	
	Logistics Services & Warehousing for Concessionaires	◆	
	Trash Removal & Recycling	◆	
	Utilities Reimbursement	◆	
Air Passengers			
	Lounges/Clubrooms	◆	
	Meeting Rooms	◆	
Ground Handling (Commercial, Charter, GA)			
	Above the Wing	◆	
	Below the Wing	◆	
	Deicing		◆
	Glycol Recovery and Recycling	◆	
	Fueling Vehicles	◆	
Shared Services			
	Baggage Delivery Services		◆
	Curbside or Remote Baggage Drop-off and Check-in	◆	
	Janitorial	◆	
	Joint Marketing and Advertising	◆	
	Maintenance on Baggage Systems/PBB		◆
	Wi-Fi		◆
	Wheelchair Services	◆	
Shared Facilities, Systems, & Equipment			
	Communications Systems and Cell Phone Towers	◆	
	Consolidated Air Cargo Facility	◆	
	Consolidated Fuel Farm		◆
	Dynamic Signage and Way-finding		◆
	Ground Services Equipment and Maintenance Facility	◆	
	Paging		◆
	Shared Gates	◆	
	Ramp Control		◆

Source: KRAMER aerotek inc., 2014

4.3 TECHNIQUES TO IMPLEMENT THE STRATEGY

Each airport-provided service or shared use opportunity described in **Table 4.1** is associated with different departments or functional areas of the airport. The relevant departments or functional areas are:

- Aircraft & Passenger Services – AS
- Business Development – BD
- Cargo – CA
- Energy Management & Alternatives – EN
- Environmental – EV
- Planning, Design, & Administration – PL
- Terminal Operations – TO

Table 4-2 reorganizes implementation techniques by functional area and indicates what types of airports might consider use of the techniques.

Table 4-2: Techniques to Implement the Strategy by Functional Area

Code	Strategy Implementation	Target Airports	Impacted Airport Area
Aircraft & Passenger Services – AS			
AS-1	Above the Wing	Small Commercial	Terminal and Gates
AS-2	Below the Wing	Small Commercial/GA	Ramp
AS-3	Deicing	Small Commercial/GA	Deicing Pads
AS-4	Glycol Recovery and Recycling	Large Commercial, Nearby Smaller Airports	Deicing Pads
AS-5	Fuel Sales and Fueling Vehicles	Small Commercial/GA	Ramp
AS-6	Consolidated Fuel Farm	Small Commercial/GA	Fuel Farm
AS-7	Ground Services Equipment and Maintenance Facility	Small Commercial/GA	Ramp/Maintenance
Business Development – BD			
BD-5	Communication Systems and Cell Phone Towers	Medium/Large Commercial	Building Roof Areas
BD-6	Joint Marketing and Advertising	Medium/Large Commercial	Concessions
Cargo – CA			
CA-1	Consolidated Air Cargo Facility	All Commercial	Cargo Area
Energy Management & Alternatives – EN			
EN-1	Utilities Reimbursement/Separately Metered Utilities	All Commercial	Airport Tenants
Environmental – EV			
EV-1	Trash Removal and Recycling	All Airports	Terminal/Aircraft Cabins/Flight Kitchens

(continued on next page)

Table 4-2 (Continued).

Code	Strategy Implementation	Target Airports	Impacted Airport Area
Planning, Design, & Administration – PL			
PL-1	Badging	Medium/Large Commercial	Terminal Area/Airfield
Terminal Operations – TO			
TO-4	Baggage Delivery Services	Medium/Large Commercial	Baggage Areas
TO-5	Building Services to Airlines and Concessionaires	All Commercial	Terminal
TO-6	Curbside or Remote Baggage Drop-off and Check-in	Medium/Large Commercial	Terminal Area/Parking
TO-7	Janitorial	All Commercial	Terminal
TO-8	Logistics Services and Warehousing for Concessionaires	Medium/Large Commercial	Terminal
TO-9	Lounges/Clubrooms	All Commercial	Terminal
TO-10	Meeting Rooms	All Airports	Terminal
TO-11	Shared Gates	All Commercial	Gate Area
TO-12	Wheelchair Services	All Commercial	Terminal

Source: KRAMER aerotek inc., 2014

4.4 TECHNIQUES BY FUNCTIONAL AREA

The following sections describe individual techniques by functional area.

4.4.1 Aircraft & Passenger Services - AS

AS-1 AND AS-2 ABOVE THE WING AND BELOW THE WING SERVICES

The provision of ground handling services is a technique primarily suited for small commercial airports. At small hub and non-hub airports, redundant equipment can be an issue. Each carrier can have its own deicer, lavatory carts, tugs, ground power units (GPUs), potable water, and so forth. An airport sponsor can offer these services directly or through a contract vendor. Some airports provide these services at or below cost as incentives to attract or retain carriers.

“Quad City International Airport (QCI) entered the fueling business after the incumbent FBO terminated services at the airport. The Airport Authority organized the business as an LLC, QCI Airport Services, to provide good customer service, offer competitive wages, and be able to hire and fire as needed. With revenue from fueling, QCI purchased ground handling equipment to service charters and further expanded when it successfully bid for Allegiant’s ground handling service.”

– Bruce Carter, Airport Director, Quad Cities

Ground handling involves two components: below the wing, which involves servicing the aircraft, and above the wing, which primarily involves passenger services.

Table 4-3 shows examples of above the wing and below the wing services.

Table 4-3: Examples of Above the Wing and Below the Wing Services

Below the Wing	Above the Wing
Aircraft marshaling (parking)	Aircraft weights and balance
Aircraft pushback	Baggage handling
Cabin grooming (cabin cleaning for overnight aircraft)	Commissary
Cabin services	Manifest printing
Chock and un-chock the aircraft	Passenger boarding
Deicing	Passenger check-in
Electrical recharging systems for ramp vehicles	Passenger loading bridge operations
Fueling	Passenger support services
Ground power, air start, and air conditioning	Passenger ticketing
Lavatory service or potable water service	Resolving customer service matters
Lavatory servicing	Resolving operations issues
LNG station for LNG ramp vehicle	Wheelchairs and pushers
Loading and unloading baggage & cargo	

Source: KRAMER aerotek inc., 2014

In Europe, many airports provide ground handling services. In the United States, until recently, most airlines took care of their own ground handling services. To reduce costs, airlines are turning to third parties to provide these services at a lower cost.

For example, United Continental Holdings announced that, in 2014, it would outsource approximately 635 jobs at 12 airport locations, including Buffalo, NY, Charlotte, NC, and Detroit, MI. The outsourced jobs covered baggage handlers, customer service agents, gate agents, and ticket agents. The airline had typically paid such workers from \$12 to \$24 per hour, whereas some vendors were starting workers at \$9 per hour. In 2013, United Continental turned to third-party vendors at six airports in the United States and three in Canada and, in so doing, reduced its own labor force by 500 jobs. American Airlines

engages Envoy (formerly American Eagle), a non-union subsidiary, to provide airport services. Envoy also provides services to 20 other airlines at 125 airports. Delta has a non-union subsidiary, Delta Global Services, which provides airport-handling work at 100 airports for Delta and approximately 10 other carriers [*The Wall Street Journal*, July 7, 2014].

Sometimes the third party is the airport sponsor. Airport sponsors engage in ground handling services to:

- Generate additional revenue
- Fill a gap in ground services
- Improve and control customer service
- Provide a lower cost operating environment for the airlines
- Use ground handling services to recruit and retain air service

Ultra-low-cost carriers, such as Allegiant Air and Spirit Airlines, rely extensively on airport sponsors to provide both above the wing and below the wing services. Some airports have historically offered these services to charters and low frequency carriers. Bangor International and Springfield-Branson National airports offer ground handling services using airport staff. QCIA offers these services through an LLC, QCIA Airport Services. This separation enables QCIA Airport Services to establish autonomy from QCIA (the airport sponsor) with respect to labor and business practices.

Another option is for the airport sponsor to contract with a third-party vendor to provide ground services. In these arrangements, the airports generally get a percentage of gross revenue from the service provider (and possible profit sharing), and the airlines get a lower cost per activity because they are spreading the contractor's fixed expense over a broader base of activity from several airlines.

The provision of ground handling services presents both advantages and disadvantages for the airport sponsor. Airports that decide to participate in the ground handling services can cross-utilize staff that already work at the airport. Employees can perform various duties, such as above the wing and below the wing services for charter aircraft and, during slow times, work on special airport maintenance projects. Accounting departments and human resource departments also can provide support for these services.

The ground handling business also comes with some risks. Analysis of the availability of a labor pool would be needed. Companies are constantly trying to reduce labor costs to maintain competitive pricing. As a result, wages paid to workers are low and there can be employee turnover. The airport sponsor must make sure that staff are trained in the particular aircraft they will handle, as well as in safety and security protocols on the ramp.

Ultimately, the success of an airport sponsor ground handling business will depend on the ability to (a) deliver consistent and high quality services; (b) respond quickly to demand for services; (c) attract and retain carrier business and staff; and (d) maintain cost controls and competitive pricing.

AS-3 DEICING

At smaller commercial airports or general aviation (GA) airports with significant winter operations, a consolidated deicing operation can make sense. Ground crews from the airlines, FBO, the airport sponsor, or a contract provider typically offer this service. If the airport also functions as the FBO, deicing services might be among the aircraft services offered. Deicing equipment may be eligible for funding from passenger facility charge (PFC) receipts at commercial airports, thereby materially reducing the cost of equipment.

AS-4 GLYCOL RECOVERY AND RECYCLING

Glycol, a main ingredient in aircraft deicing fluid (ADF), is costly to treat and dispose. A single jetliner can send thousands of gallons of glycol-contaminated storm water onto pavement and, without treatment, can damage the environment. In June 2012, EPA issued final guidelines for existing airports with 1,000 or more annual jet departures. Under the guidelines, airports must meet a numeric effluent limitation for ammonia or use non-urea-containing deicers and must monitor water quality for ADF pollutants.¹

Many airports have relied on local, publicly owned sewage treatment plants for ADF disposal. Given the high cost of water treatment fees, however, larger airports are installing recovery and recycling systems that increase the amount of glycol captured and treated. Denver International Airport and Detroit Metropolitan Wayne County Airport are among the larger airports with sophisticated glycol recycling solutions. In 2009, Denver International's glycol recycling operation saved \$1.4 million in fees for disposal in the municipal sewage treatment plant [Rhodes and Evans].

Recycling ADF is a business opportunity typically accomplished via a public-private partnership (P3), with the public partner serving as the raw product supplier and partial guarantor and the private partner serving as the recycling agent. Two variables are critical to making a glycol facility viable as a privately financed and operated enterprise: (1) the quality of the untreated glycol mixture before it is recycled, and (2) the quantity guaranteed for delivery. Most contracts require that the untreated waste stream contain at least 1% glycol, with the remainder consisting primarily of water. Quantity also is important, as the recycler must have enough raw material to make sufficient saleable glycol products. The recycling agreement typically has a "put-or-pay" clause that requires the public partner to meet a specific minimum quality and quantity of raw material in-flow or, if not, to pay the recycler a scheduled amount of money. If the airport exceeds the minimum amount of raw material, the airport pays nothing to the recycler. Likewise, if the recycler is able to make more saleable product than is necessary to break even, agreements can be structured so that the airport gets a share of the profits [Rhodes and Evans].

¹ Effluent guidelines are technology-based regulations to control industrial wastewater discharges [United States Environmental Protection Agency].

AS-5 FUEL SALES AND FUELING VEHICLES

Some smaller commercial and GA airports can provide fuel storage to airlines and FBOs. When the airport sponsor is the FBO, its own personnel and equipment fuel the aircraft. Some fueling vehicles also may be eligible for PFC funding.

AS-6 CONSOLIDATED FUEL FARM

A fuel storage system that accommodates the requirements of the airlines, airport, and general aviation could offer significant savings in comparison to maintaining multiple fuel storage facilities on the airport. The capital and operating costs of a consolidated fuel farm would be spread across all parties, resulting in a decrease in per gallon storage costs for all users. Airline consortiums are another common way to share fuel storage systems costs at medium and large hub airports. An airport-operated fuel farm has limited application, primarily to airports that function as the FBO.

AS-7 GROUND SERVICES EQUIPMENT AND MAINTENANCE FACILITY

If more than one ground handling company operates at an airport, the airport sponsor—on its own or in partnership with the ground handling companies—could construct a shared use maintenance facility for ground services equipment. At the largest airports, doing this would provide a cost-effective facility for maintenance of ground service equipment. The cost of a maintenance facility for ground service equipment would be prorated among the users based on volume of use. Consequently, this strategy makes the most sense at large airports with a large number of ground services vehicles.

4.4.2 Air Cargo - CA

CA-1 CONSOLIDATED AIR CARGO FACILITY

Airports accept air cargo through many channels. Small packages can be tendered to agents in the terminal at check-in stations, packages can be brought to airline cargo offices, and integrated carriers can receive and process packages at off-airport or on-airport properties. Small and medium hub airports, or a large airport with low activity airlines, can create a revenue generating opportunity by consolidating air cargo processing activities within a single facility that is owned and staffed by the airport or an airport service contractor.

Services at a consolidated air cargo facility can include:

- Receiving air cargo packages from the public
- Processing of air cargo (in and out)
- Delivery of manifested cargo to each flight
- Warehousing
- Customs

A consolidated air cargo processing facility and service improves the efficiency of operations, reduces requirements for airline staffing, and at smaller airports, separates air cargo from passenger areas.

A consolidated air cargo facility could reduce the airlines’ cargo facility costs and reduce excess capacity in exclusive facilities. The cost of the consolidated facility would be prorated among the users based on the volume of cargo going through the facility. The airport could derive revenues from leasing the premises and through cost mark-ups for the airport-provided services.

4.4.3 Energy Management - EN

EN-1 UTILITIES REIMBURSEMENT OR SEPARATELY METERED UTILITIES

Terminal buildings do not always include separately metered utilities for different users (airlines, concessionaires, and other tenants). An airport can retain a utilities consultant to survey the terminal building to determine if users are paying for the utilities they consume. If not, a utilities reimbursement program can be established to cover food and beverage

Indianapolis International Airport has included in its concession agreements a requirement that each concessionaire install a utility meter and reimburse the Airport Authority in full for utilities used.

concessions, merchandise concessions, airline passenger loading bridges, and baggage handling systems.

Unreimbursed utilities can amount to hundreds of thousands of dollars per year at a small hub airport. If an airport does not recover the cost of airline and concessionaire utilities consumption and there are no individual tenant meters for generating utility consumption billings, the airport sponsor can bill the airlines and concessionaires for reimbursement based on estimates.

4.4.4 Environmental - EV

EV-1 TRASH REMOVAL AND RECYCLING

“In 2010, disposal of passenger aircraft waste cost the industry an estimated \$20 to \$26 million. Valuable recyclables contained in that waste had a total market value estimated at \$18 to \$26 million” [ACRP Report 100]. Terminal areas at airports generate even more waste, some of which has real recycle value.

Seattle-Tacoma International Airport charges airline tenants customized rates for waste disposal, using data estimated based on compactor usage. Airlines and other airport tenants use key cards to open waste and recycling dumpsters on the airfield. The airport provides each airline its recycling rate, garbage fee, and savings from recycling.

This implementation of the strategy includes both shared trash removal services and an airport-managed recycling and waste system by which cabin service crews or terminal maintenance personnel take recyclables or waste materials to airport-owned or airport-operated containers.

Recycling reduces the cost of waste disposal and can generate revenue through the sale or recycling of valuable materials.

The following types of recyclable waste are prevalent in airport terminals and flight kitchens, and aboard aircraft:

- Plastic bottles
- Plastic or foam cups
- Glass bottles
- Aluminum cans
- Other metal cans
- Cardboard
- Mixed paper
- Aseptic containers
- Edible food
- Food scraps
- Electronic equipment

Growing numbers of airports and airlines are recycling. Airlines that do not have their own recycling program either use an airport recycling program or backhaul recyclable items to an airport where they can dispose of the items. Delta Airlines, Southwest Airlines, and Alaska Airlines are a few of the carriers with recycling programs. Portland International Airport sponsors a college intern program to train tenants on the airfield and in terminal areas about recycling. Akron-Canton Airport joined with the local solid-waste management district to provide recycling infrastructure and collection services at the airport for no additional charge. All airlines are encouraged to use the system.

“The Airport Materials Management Program (MMP) recycles concrete, asphalt, and soil from construction projects at **Oakland International Airport**. The goal of the MMP is to reduce emissions and congestion from trucks, reduce landfill waste, and improve the cost-effectiveness of airport construction projects. Since its inception, the MMP has recycled over 510,000 tons of demolition materials, reclaimed nearly 212,000 tons of reusable materials, reduced greenhouse gases (GHGs) by 3,500 metric tons, and removed nearly 112,000 pounds of emissions from the air.”

– Port of Oakland

Recycling programs can operate as cost recovery and offer some revenue potential depending on the amount of waste recycled and prevailing market prices for the recycled materials.

Most airport-managed waste and recycling systems involve the following key participants:

- Managers of airlines, airports, and flight kitchens
- Airline station managers and other airport tenants
- Aircraft crew and cabin service crew
- Terminal maintenance personnel
- Waste and recycling collection companies
- Airport visitors and air passengers

Airport sponsors or a single-contract vendor can operate the managed waste and recycling system. The successful airport-managed recycling programs often receive strong support from airport leadership and employees.

4.4.5 Business Development - BD

BD-5 COMMUNICATION SYSTEMS AND CELL PHONE TOWERS

Can an airport make money providing technology and communications systems, services, and infrastructure? This question is often asked by airport sponsors. Some airports have leased terminal roof

space to cell phone companies for towers. Cell phone towers are an excellent additional revenue source that makes use of an area in the terminal that might otherwise go vacant.

To date, airport sponsors recover most of the capital and operating costs of technology and communication systems as an element in the calculation of airline and tenant rents and fees.

Because certain aspects of communication systems and infrastructure are under the jurisdiction of regulatory agencies, it is questionable whether an airport has the right to “sell” the use of or access to communications and technology systems. Because of potential conflict with regulatory agencies, most airports are content with cost recovery through rents and fees.

Some airports collect revenue from pay-for-access Wi-Fi. The magnitude of revenue from Wi-Fi access has not been significant, however, and the trend is toward free Wi-Fi provided as a customer amenity and basic utility. If airports provide Wi-Fi services to tenants, cost recovery of this service could be included in a utility reimbursement package.

BD-6 JOINT MARKETING AND ADVERTISING

Mobile and digital technologies make it possible to reach a much wider audience in the terminal areas. Airport sponsors can offer concessionaires opportunities to advertise throughout the terminal using the airport’s Wi-Fi system and digital displays. The airport benefits directly from advertising revenues and indirectly from increased concession sales.

4.4.6 Planning, Design, & Administration - PL

PL-1 BADGING

As a part of U.S. Department of Homeland Security (DHS) regulations, persons employed at an airport are required to undergo background checks and be badged for access to various areas of the airport. The costs involved should be recovered as a part of providing badging services at the airport. Ideally, the airport should recover the full costs of the background checks, security testing, badge materials and equipment, badge-processing staff (including overhead and benefits), and the rental value of the badge-processing office. In addition, an airport should recover 10% to 15% of total costs for administration of the program. Depending on the size of the airport, badging costs can be significant. These costs can be recovered from airlines, concessionaires, and other tenants, and from contractors in the form of an annual badging fee for each badge issued.

4.4.7 Terminal Operations - TO

TO-4 BAGGAGE DELIVERY SERVICES

Small and medium hub airports with limited frequency carriers can offer baggage delivery services for late-arriving and mishandled baggage. The airport can provide the service to all airlines or contract for

the service. Delivery can include services to hotels and to the homes of passengers. This service can also be combined with curbside or remote baggage check-in or drop-off service (described in TO-6).

TO-5 BUILDING SERVICES TO AIRLINES AND CONCESSIONAIRES

In-terminal tenants, such as rental car companies, airlines, food and beverage concessions, and retail concessions, typically build out back offices as well as customer-friendly spaces for information, check-in, dining, and shopping. Airport leases require tenants to meet design standards and periodically refresh in-terminal spaces, particularly the front-of-the-house areas that customers experience.

An airport sponsor can use either in-house staff or contractors to offer building and renovation services to airport tenants, charging market rates for construction/remodeling services. Because of public purchasing laws, airport sponsors will have to evaluate whether this type of service can be offered competitively.

TO-6 CURBSIDE OR REMOTE BAGGAGE DROP-OFF AND CHECK-IN

Four airlines—Delta, Southwest, United, and US Airways—are enrolled in the remote baggage check-in program at **McCarran International Airport** in Las Vegas. The fee (for two bags) is \$20.

“We see it as a way to improve customer service,” says Rosemary Vassiliadis, deputy director of the county department that operates McCarran. “Hotel check-out times are usually around noon, but many flights aren’t until late in the evening. Rather than pay to leave bags with a hotel bellman or take a chance and leave them unattended in the back room at a convention hall, travelers can use our SpeedCheck Advance program to check bags at the Venetian or Luxor hotels, the Las Vegas Convention Center, or at the McCarran Rent-A-Car Center. Then they can spend a few extra hours enjoying the city instead of standing at the baggage check-in line at the airport.”

– [USA Today].

Consolidated curbside baggage drop-off and passenger check-in is an option for airport sponsors. Some airports, airlines, and third-party vendors offer baggage check-in and boarding passes for a fee at multi-modal transportation hubs, hotels, convention centers, and remote parking lots. These services cost between \$5 and \$25 and do not cover airline-imposed baggage fees. Remote check-in services must be certified by the TSA. Bags are taken to the airport and screened in the usual manner.

These shared services can be offered directly or through a third-party vendor, in which case the airport sponsor would collect a concession fee. Remote services are more feasible when there is a concentrated downtown, hotel area, or convention center.

TO-7 JANITORIAL

Terminal building maintenance includes the cleaning of public areas and airline areas. Restaurant cleanup is the responsibility of individual tenants.

Airport sponsors can use in-house staff or contractors, or participate in consortiums with the airlines to provide janitorial services for public areas and back offices for airline and car rental companies. In-house services offer the largest potential for net revenue to the airport sponsor, followed by service contracts managed by the airport, and then consortiums.

TO-8 LOGISTICS SERVICES AND WAREHOUSING FOR CONCESSIONAIRES

Getting supplies to concessionaires, especially beyond security, requires effective organization and planning. Some concessionaires have opted to warehouse supplies on the premises because of logistical challenges. Concession logistics services can improve the overall efficiency of the receipt, warehousing, and movement of goods to, though, and around terminal buildings. A logistics service paired with a warehouse away from the terminal can reduce demand for storage space within the concession area. With this technique, the airport sponsor provides logistics services and warehousing for concessionaires.

A logistics service can involve:

- Receiving and warehousing of goods and materials
- Security screening of goods and materials
- Delivery of goods and materials from the logistics center/warehouse to concessionaire locations in and around the terminal building
- Development of necessary logistics and warehousing infrastructure so that concessionaires can increase their volume without having to expand in the terminal building

In November 2013, **San Diego International Airport** opened an \$8.7 million receiving and distribution center (RDC). The project was developed through a P3 between Aviation Facilities Company, Inc. (AFCO) and the San Diego County Regional Airport Authority for the financing, design, and building of the RDC. The 17,580-square-foot facility serves as the main screening and distribution center for airport concessions. The building includes employee offices, a secure screening area, a non-secure delivery area, dry/cold/freezer storage, and operations support space. The 1.49-acre site also includes landscaping, loading docks, and employee parking.

Logistics services would be provided on a fee-for-services basis. The airport could derive profit from a mark-up on the cost of the services provided or a concession fee from a third-party contractor. Use of a third-party contractor is most common.

TO-9 LOUNGES/CLUBROOMS

In the past, airport lounges were the exclusive domain of airlines and available to the carriers’ most frequent fliers. Now, independent airline lounges have become more commonplace in Europe and are catching on in the United States. At several U.S. airports, independent lounges are open to all airport users for a fee of \$20-\$45 per visit. At airports such as Phoenix-Mesa Gateway, Dallas/Fort Worth, Hartsfield-Jackson Atlanta International, McCarran International, Baltimore/Washington Thurgood Marshall International, Cleveland Hopkins International, San Diego International, and Terminal 5 at JFK International, common-use lounges are available to anyone willing to pay a daily fee. Private groups

typically build the lounges and operate them as concessions. The airport sponsor receives ground rent and a percentage of gross revenues.

TO-10 MEETING ROOMS

Airports rent meeting and conference rooms suitable for events of various sizes. Meeting spaces also tend to support demand for airport hotels; however, as company travel budgets shrink, they are looking to save money on meetings. Airport meeting rooms provide a way to minimize hotel and resort costs for 1-day sessions.

Airports can develop meeting spaces that might be unsuitable for concessions or other airport tenants. The spaces must be competitive with off-airport locations. For example, Ronald Reagan Washington National Airport charges \$95 per hour for a 40-person conference room and a daily rate of \$500.

“Regional and district meetings with an element of training have replaced the longer getaway in some cases,” says Kristin D. Kurie, president of the Wilderman Group, a hospitality management company in Charleston, S.C. “They also hold the appeal of not spending an additional night on the road.”

– [The New York Times, May 2014]

Meeting rooms represent direct revenue for airports, with an added possibility that meeting organizers will purchase food and beverages from airport concessionaires.

TO-11 SHARED GATES

Airport-airline operating agreements are changing in several important ways. A gate consists of an aircraft parking position at the terminal building, passenger loading bridge, and passenger hold room. Recently, the management and use of gates has changed dramatically at many airports.

Historically, airlines have leased gates on the basis of exclusive use.² Today, however, except for carriers operating a connecting hub or a large number of non-stop destinations or frequencies, most carriers are moving away from exclusive use arrangements for airport terminal and gate space. New agreements tend to be shorter term and often include preferential use arrangements for gates.³ With fewer exclusive use agreements, airport sponsors are seeking ways to better use facilities and provide a consistent customer experience from the terminal entrance to the aircraft. More than ever, airport sponsors are pursuing:

- Cross-utilization of facilities
- Use of preferential arrangements that reserve the right to have other users operate from the facilities when the prime airline is not using the space
- Airport-sponsor control and assignment of gates and counters on a per use fee basis

² Exclusive use means the gate is assigned to an airline for its use and occupancy to the exclusion of all others.

³ Preferential use means a leasing airline has use priority over all other users.

Shared gates are a promising way to increase net revenue to the airport sponsor. With preferential use gates, the leasing airline receives the gate use fees paid by the non-leasing airlines as reimbursement for the rents and fees it pays for its preferential rights. Through greater utilization of preferential gates, airport sponsors get more capacity out of a fixed number of gates, defer terminal expansion requirements, and reduce the capital requirements of the airport, thus making the airport more profitable.

Today, due in part to airline consolidation, airport sponsors are retaining some gates and making them available as common use gates. Common use gates managed by the airport sponsor are available to all airlines. The airport sponsor assigns the airlines' use of a gate on a flight-by-flight basis. For common use gates, the airport sponsor retains the gate use fees and the overnight aircraft parking fees. This type of managed gate program can optimize the utilization of airport gates and reduce the number of gates required for a given level of traffic.

If managed properly (recovering maintenance, operation, and administration expenses and incorporating a profit component), gate fees collected in a managed gate program surpass the cost-recovery rents and fees charged in exclusive-use or preferential-use leases. Ultimately, a managed program for common use gates can reduce costs for airlines and generate additional revenue for the airport sponsor.

TO-12 WHEELCHAIR SERVICES

As part of their customer service programs, airports are instituting wheelchair services for passengers with mobility issues. A terminal-wide wheelchair service provides services throughout the concourses and in baggage claim areas, as well as to ground transportation. McCarran International, San Diego International, and other airports are providing these services either directly or through service contracts. Like shared gates, shared wheelchair services allow an airport sponsor to achieve cost reductions through economies of scale.

4.5 IMPLEMENTATION ISSUES

A strategy that incorporates airport entrepreneurial activity to increase airport net revenues and recover costs may be implemented using a multitude of approaches. This chapter has presented a few implementation ideas; however, airport sponsors engaged in this strategy must continually scan for opportunities, as they are always changing and often unique to a particular airport.

This strategy also incorporates many airport priorities that emerged after 2008 during the post-recession economy. Priorities that coincide with implementation of a shared-use and airport-provided service strategy include airport sponsor efforts to:

- Maximize existing facility utilization
- Avoid or defer capital costs
- Cross-utilize airport staff

- Decrease the airport’s cost of doing business
- Decrease the airline’s cost of doing business
- Increase opportunities for airlines to add or expand service
- Gain a competitive advantage over competing airports
- Deliver new revenues

Implementation of the strategy is not without challenges. This section highlights some of the issues that may arise.

4.5.1 Ability to Deliver Price-Competitive Services that are Price Competitive

For some airports, civil service and procurement requirements make it difficult to price and provide services that are competitive. For example, ground handling services require a high level of skill for many tasks, extensive training and retraining programs, quality assurance and control, the ability to respond quickly to demand, and good customer service. Some smaller airports have successfully integrated ground handling services as part of an airport-owned and operated FBO. Bangor International Airport, Springfield-Branson National Airport, and Lehigh Valley International Airport have successfully offered both above the wing and below the wing aircraft services. The QCIA Authority formed a separate LLC, QCIA Airport Services, to operate independently of the airport with regard to labor and business practices. However, not all municipalities or airport authorities are able to form separate entities for entrepreneurial activity.

Some airports are able to stay competitive by using third-party service contracts. Airport sponsors maintain control with service contracts (and often gain more revenue). However, certain functions, such as sponsor procurement policies, may apply with the service contracts.

4.5.2 Ability to Assume Risk

A number of airport-provided services involve risk (i.e., increased liability and potential financial loss, as well as negative customer and airline relations) if operational issues persist. Many airport sponsors are risk averse. Implementing the entrepreneurial strategy described in this chapter may involve changes in policy from the airport’s governance board, which could be the city council, county commission, airport board, or other authority.

Policies change over time. For example, the Clark County Department of Aviation (the Department), the owner and operator of McCarran International Airport (Las Vegas), used an entrepreneurial approach to the development of airport-owned land during the peak period of the real estate boom (see Chapter 8). Following the collapse of the market, however, the Department pulled back and resumed a much more conservative approach to real estate development. Denver International and Dallas/Fort Worth International airports are among the largest airports in terms of acreage, and both have been active participants in entrepreneurial projects to increase non-aeronautical revenue producing activity.

4.5.3 Perception of Airport Role

Although some airports have evolved into complex sets of enterprises, in some locations the public perceives an airport as a utility rather than a revenue generating entity. A perception of the airport competing with the private sector is common.

“One of our tenants had developed a self-storage facility, but didn’t want it anymore. The airport bought the lease for \$200,000, anticipating that it would tear the facility down. (It was right next to an industrial park and did not quite fit the motif.) Once we got into the business, we realized what the profits were. Self-storage mini warehouses are a great business. It does not take much labor: one full-time and two part-time employees. The storage facility stays at 90% occupancy and generates about \$150,000 per year of net profit. There was a public concern that government was competing with private sector. Therefore, the airport does not want to oversupply the market and expand the facility. The airport board also insisted that [the airport] voluntarily pay property tax and keep prices in line with competition.”

– Fredrick (Rick) Piccolo, President and CEO, Sarasota Bradenton International Airport

4.5.4 Size of Airport

The entrepreneurial strategy applies best to origin and destination markets, and to medium, small, and non-hub airports. Airports with a single carrier or a dominant carrier would benefit from those elements of the strategy that focus on airport-provided services versus shared use of facilities.

Network carriers operating at large airports often have a critical mass of operations to support many of their own services and facilities. However, some large airports are centralizing certain functions such as shipping and receiving, telephony and data services, and airport lounges. These types of shared services are operated either by airport staff or by service agreement. In some instances, airport sponsors will partner with private entities to design, build, and/or finance a project.

4.6 WRAP-UP

How airports function behind the scenes is changing dramatically. Increasing capability of software and hardware to communicate across multiple platforms has facilitated the implementation of shared use. Mobile technologies have made it possible to export to third-party devices and off-airport locations functions that were previously in the sole domain of an airport terminal. Boarding passes, baggage check-in, and parking reservations are going mobile, as are flight information and credit card transactions. These changes in technology allow constant communication with airport tenants and customers, and they make possible many of the ideas explored in this chapter.

Airport-directed provision of janitorial services; logistical support services for concessions; common-use lounges and meeting spaces; and cost recovery for utilities, badging, and ramp control are among the best ideas to increase or improve net revenue.

The most promising areas where shared use of facilities, systems, and equipment can make a difference in net revenue to the airport sponsor are terminal operations, gate management, and ground handling services.

Some airports will have a greater ability to pursue entrepreneurial opportunities than other airports. Airports sponsored by cities or counties are generally more risk averse and may be slower to embrace evolution of the airport as an enterprise of multiple businesses. Airports sponsored by authorities, commissions, or special districts have policymakers that are involved with the airport business and understand the need to pursue non-airline revenue to maintain financial independence.

Table 4-4 summarizes all the implementation techniques discussed in this chapter.

Table 4-4: Techniques to Implement the Airport Services/Shared Use Strategy

Code	Innovative Techniques and Improvements	Airport Area Impact	Applicability	Revenue or Cost Recovery Potential	Airport Sponsor Financial Risk	Airport Cost to Implement
Aircraft & Passenger Services – AS						
AS-1	Above the Wing	Terminal and Gates	Small Commercial	Low/Moderate	Low/Moderate	Low/Moderate
AS-2	Below the Wing	Ramp	Small Commercial/GA	Low/Moderate	Low/Moderate	Low/Moderate
AS-3	Deicing	Deicing Pads	Small Commercial/GA	Low/Moderate	Low/Moderate	Low/Moderate
AS-4	Glycol Recovery and Recycling	Deicing Pads	Large Commercial	Moderate	Low	Low/Moderate
AS-5	Fuel Sales and Fueling Vehicles	Ramp	Small Commercial/GA	Low/Moderate	Low/Moderate	Low/Moderate
AS-6	Consolidated Fuel Farm	Fuel Farm	Small Commercial/GA	Low/Moderate	Low/Moderate	Low/Moderate
AS-7	Ground Services Equipment and Maintenance Facility	Ramp/Maintenance	Small Commercial/GA	Low/Moderate	Low/Moderate	Low/Moderate
Business Development – BD						
BD-5	Communication Systems and Cell Phone Towers	Building Roof Areas	Medium/Large Commercial	Low	Low	Low
BD-6	Joint Marketing and Advertising	Concessions	Medium/Large Commercial	Low/Indirect	Low	Low
Cargo – CA						
CA-1	Consolidated Air Cargo Facility	Cargo Area	All Commercial	Low/Moderate	Moderate	Moderate/High
Energy Management – EN						
EN-1	Utilities Reimbursement/Separately Metered Utilities	Airport Tenants	All Commercial	Cost Recovery	Low	Low/Moderate
Environmental – EV						
EV-1	Trash Removal and Recycling	Terminal/Aircraft Cabins/Flight Kitchens	All Airports	Cost Recovery/Low Revenue	Low	Low/Moderate

(continued on next page)

Table 4-4 (Continued).

Code	Innovative Techniques and Improvements	Airport Area Impact	Applicability	Revenue or Cost Recovery Potential	Airport Sponsor Financial Risk	Airport Cost to Implement
Planning, Design, & Administration – PL						
PL-1	Badging	Terminal Area/Airfield	Medium/Large Commercial	Cost Recovery	Low	Low
Terminal Operations – TO						
TO-4	Baggage Delivery Services	Baggage Area	Medium/Large Commercial	Low	Low	Low
TO-5	Building Services to Airlines and Concessionaires	Terminal	All Commercial	Low/Moderate	Low	Low
TO-6	Curbside or Remote Baggage Drop-off and Check-in	Terminal Area/Parking	Medium/Large Commercial	Low	Low	Low
TO-7	Janitorial	Terminal	All Commercial	Low/Moderate	Low	Low
TO-8	Logistics Services and Warehousing	Terminal Concessions	Medium/Large Commercial	Low/Moderate	Low	Low/Moderate
TO-9	Lounges/Clubrooms	Terminal	All Commercial	Low/Moderate	Low/Moderate	Low/Moderate
TO-10	Meeting Rooms	Terminal	All Airports	Low/Moderate	Low	Low/Moderate
TO-11	Shared Gates	Gate Area	All Commercial	Moderate/High	Moderate/High	Moderate/High
TO-12	Wheelchair Services	Terminal	All Commercial	Low	Low	Low

Source: KRAMER aerotek inc., 2014

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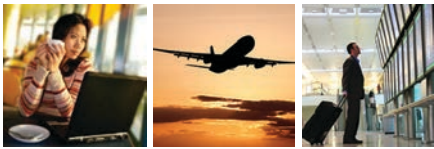
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Chapter 5

Airport Entrepreneurial Activity – Part II

Revenue Participation in Real Estate and Natural Resource Development

- 5.1 Introduction
- 5.2 Revenue Participation in Real Estate Development
- 5.3 Revenue Participation in Mineral Estate Development
- 5.4 Wrap-up
- 5.5 Additional References

Chapter 4 described a revenue development strategy that involves airport-provided services and shared use of services, facilities, and systems. Today, development of non-aeronautical facilities, such as a tenant logistics and warehouse facility, is likely to involve an airport sponsor and other business partners. The question remains, what is the best arrangement from the sponsor’s perspective to maximize revenues and minimize risk? This chapter discusses ways airport sponsors can participate in real estate and natural resources development. The techniques presented in this chapter are applicable to many non-aeronautical development projects.

5.1 INTRODUCTION

For airports with developable real estate, several methods can be used to (1) capitalize on their unique position as transportation centers and (2) maximize non-aeronautical revenue through real estate or mineral estate development. Collecting ground rent is the most basic and traditional approach to airport real estate development. However, innovative airport directors and business managers have structured other transactions to create new revenue sources, share profits, and further stimulate economic development opportunities regionally.

Chapter 8 of this Airport Guide presents two case studies of airports with markedly different circumstances that have actively participated in real estate development. These two airports are Pittsburgh International and McCarran International (Las Vegas) airports.

Pittsburgh provides an example of airport officials, faced with a stagnant real estate market, capitalizing on their airport’s presence and jumpstarting development activities. By utilizing creative financing techniques, such as formation of a tax increment finance (TIF) district, Pittsburgh International’s Allegheny County Airport Authority (ACAA) convinced a well-established local developer to construct a

speculative (spec) building on ACAA property. ACAA assumed some of the risk by converting a portion of the spec building’s ground rent to participation in future building rents from subtenants. The spec building leased quickly, reflecting demand for office and industrial space in the area. Construction of additional buildings followed. Active development demands ensued, leading to multiple development projects, some of which continued to be built on speculation. The Pittsburgh International Airport case study reflects how the use of creative structures and a willingness to accept some risk can stimulate new development activity and, thereby, create new revenue sources for an airport.

McCarran International Airport initiated retail and commercial development projects at a time when the real estate market was robust. The airport’s sponsor, the Clark County Department of Aviation (Aviation Department), had acquired 5,226 acres of land from the Bureau of Land Management (BLM), pursuant to the Southern Nevada Public Land Management Act of 1998. Much of the land was located within the airport’s noise abatement zone. The Aviation Department was able to sell, lease, or transfer land for fair market value and place deed restrictions on its use. Acquisition of the land presented an opportunity for the Aviation Department to develop innovative projects. Creative participation structures allowed the airport sponsor to earn revenues in excess of what might have been realized from ground rents. The approach required a risk tolerance not typically associated with airports owned by a municipality or county, but the initial phases of the program produced new and significant sources of commercial revenue for the airport sponsor.

This chapter of the Airport Guide presents different ways that airport sponsors can partner with public and private companies to participate in real estate and natural resource development. **Table 5-1** describes five ways that airport sponsors can participate in real estate or mineral estate projects.

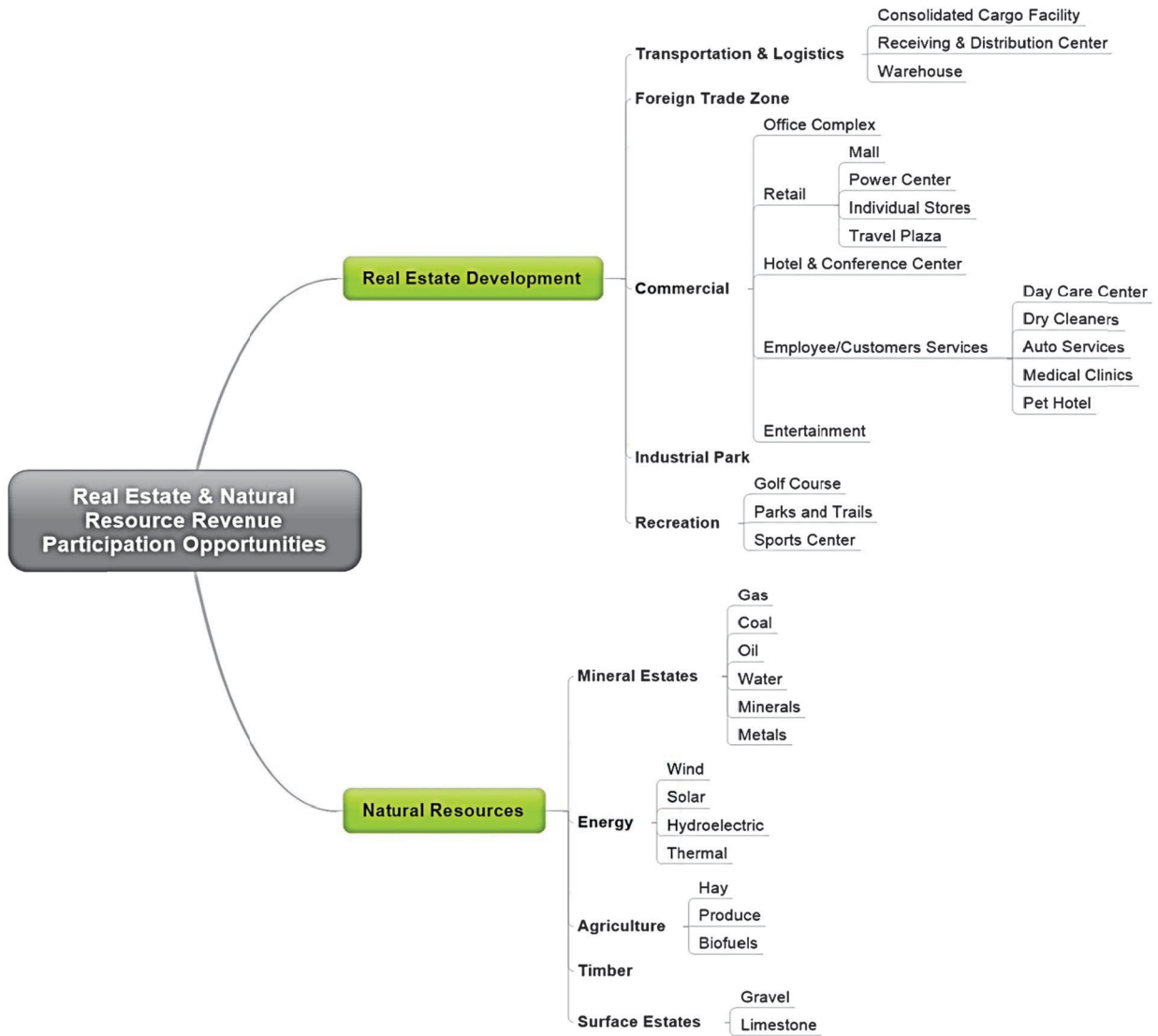
Table 5-1: Revenue Participation Approaches to Real Estate and Mineral Estate Development

Code	Types of Revenue Participation	Description
Finance & Property Management – FN		
FN-1	Participating Leases and Equity Participation	Sponsor swaps a portion of the ground rent in exchange for a share of future revenue streams.
FN-2	Direct Ownership	Sponsor acts as developer: plans, finances, constructs, and operates facilities. Profit or loss goes directly back to sponsor.
FN-3	Public-Private Partnerships (P3s)	Sponsor grants a private entity the right to design, build, maintain, operate, or finance buildings or infrastructure. Many options exist regarding division of responsibilities for construction, financing, management, and payment to the sponsor who maintains ownership of the particular asset.
FN-4	Joint Development	Similar to partnerships in that project participants may both help with the costs of development and share in the revenues.
FN-5	Mineral Estate Participating Leases	A potentially significant source of revenue that can come from upfront payment for exploration activities, production royalties, and land rent for surface activity.

Source: KRAMER aerotek inc., 2014

These approaches apply to a wide variety of property development activities. **Figure 5-1** presents examples of facilities and mineral development for which an airport sponsor may consider project participation beyond a traditional ground lease. Additional discussion about non-aeronautical activity and facilities at airports also is available in additional ACRP publications, conference proceedings, and industry publications, several of which are included as references at the end of this chapter.

Figure 5-1: Real Estate and Natural Resources with Potential for Airport Revenue Participation

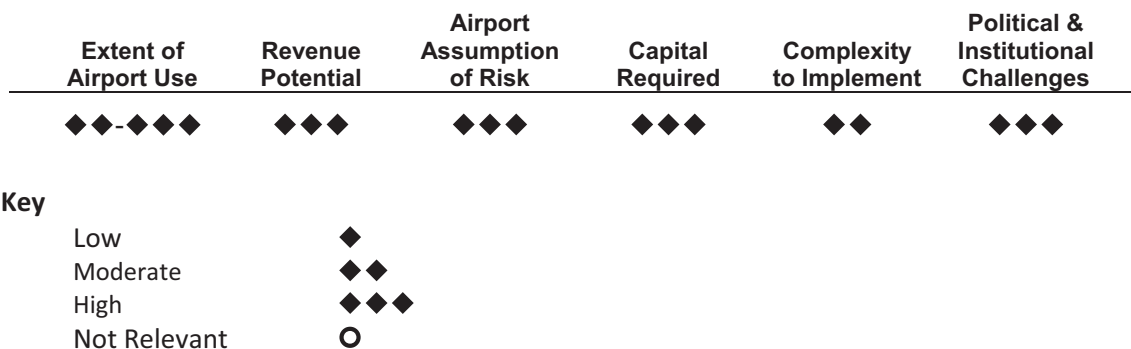


Source: KRAMER aerotek inc., 2014

5.2 REVENUE PARTICIPATION IN REAL ESTATE DEVELOPMENT

This section describes and evaluates different ways that an airport sponsor can participate in non-aeronautical real estate development.

FN-2: DIRECT OWNERSHIP



Overview

Depending on the circumstances, direct ownership is a valid option for consideration, whether in the context of real estate development, concessions, parking, mineral extraction, or other capitalization of an airport’s assets. Direct ownership is a more risk-inherent approach, no matter which airport assets are being considered for further development.

Focusing on the development of land for commercial real estate provides a good illustration of the considerations that must be taken with the ownership option. Direct ownership involves the airport sponsor assuming the role of developer and, therefore, the obligations and risks inherent in that role. The airport sponsor owns the entire project and receives all the profits. Should the project fail to meet projections, the airport sponsor assumes the losses of the failed project, as opposed to being a ground rent recipient. Given that most airports are not tax-paying enterprises, such losses do not provide a tax incentive to them, as they might to a tax-paying private developer.

The second significant risk is the financing. Should the project fail to generate sufficient cash flow to amortize debt, the airport sponsor is responsible for all shortfalls. Additionally, there is construction risk. Depending on how the construction contracts are drafted, the airport sponsor may be responsible for overruns on construction costs.

The reward for assumption of all these risks is the receipt of 100% of the profits of successful developments. Accordingly, solid financial forecasts are crucial to any analysis of the viability of a project to determine whether such profits are likely to be sufficient to make the risk worthwhile.

Extent of Airport Use

Direct ownership of any airport asset can be used by all airports to develop new sources of revenue. For example, airports with retail components, excess real estate, or natural resources, to mention a few,

have the option to operate businesses on their own or to contract with third parties to operate businesses based on these assets. Most airports contract out such operations, but a few airports have begun operating these assets directly.

Numerous examples exist of airports taking on direct ownership of various businesses outside of typical airport functions. In 2010, Denver International Airport purchased 27 oil and natural gas wells on its property, which have been estimated at generating \$3.5 million per year in revenue. Pittsburgh International Airport owns and operates a jet bridge refurbishing business. Sarasota-Bradenton International Airport operates a self-storage facility.

Implementation

The implementation of ownership for any airport asset or operating component is similar to that of an equity participation proposal.¹ Because ownership risk in a project is much higher than the risk associated with a ground lease, however, a detailed risk-reward analysis should be developed and discussed with the airport's governing body so that the sponsor can make an informed decision whether to proceed.

Significant staff time will be required to manage properties or businesses directly owned by the airport sponsor. Often, hiring new employees who have experience in the type of business they will be operating will be required. If the business already exists at the time the airport takes over, it is reasonable to offer positions to the current employees.

Significant additional resources will likely be required, whether it is simply building management or operational control. The airport should develop a business plan, as any for-profit enterprise would, to achieve cost efficiencies like utilization of airport staff that may have excess capacity.

Political, Governance, and Legal Issues

The most significant challenge of direct ownership will be countering resistance (including possible political pressure) based on the private sector's opinion that governmental entities should not compete with private-sector entities. Nonetheless, the trend is growing for airports to undertake services and developments previously awarded to private operators or developers. If an airport can perform functions more economically and effectively than a private-sector entity, then the airport should not be precluded from engaging in such activities. The added competition helps ensure that the private sector operates in a competitive and responsive manner to receive development and operating rights that are not awarded simply because of political pressure.

Additional issues with direct ownership and operation of businesses may arise depending on the location and type of enterprise being contemplated by the airport. Such issues may require additional research. For example, airports considering using this technique are advised to ascertain the following:

- Whether state laws present any statutory impediments

¹ In this context, equity participation is when the airport invests in a real estate deal and in return acquires a percentage of ownership (equity) in the development project.

- Whether federal funding is available for airport-run operations, if such funding is not available to the private sector
- Whether the airport sponsor’s operating businesses would lose tax-exempt status

FN-1: PARTICIPATING LEASES AND EQUITY PARTICIPATION

Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
◆-◆◆	◆◆◆	◆◆◆	◆	◆	◆

Overview

Real estate development by airports typically has followed a traditional model when leasing land for commercial development. This option involves a ground lease for a set-limit term and a ground rent calculated using the real estate’s appraised value. Although this approach offers the airport a steady and predictable rent stream, any opportunity to share the more lucrative building rent is left exclusively for the developer.

When an airport sponsor is taking no risk in a development project, the traditional ground lease approach is appropriate. However, entrepreneurial airport sponsors that are willing to assume some development risk have the opportunity to enhance cash flow from development projects by contributing the land for a ground rent and retaining an equity stake in the developed property. Contributing an asset (such as land) in exchange for equity is referred to as *equity participation*.

Alternatively, an airport sponsor could exchange a portion of the ground rent for a share of future building rents received. Reduction or elimination of ground rent in exchange for a share of building rent is executed through a *participating lease*. This arrangement may take the form of a pre-negotiated flat rate for building rent (e.g., \$4.00 per square foot) or a share of the project built into the lease rate (e.g., 50% of rent in excess of \$10.00 per square foot).

“The Sarasota Manatee Airport Authority negotiated with a developer for a mixed-use development. The parcel was divided into pieces, with incentives for a full build-out of the land. With the first parcel, the developer got a standard 30-year lease. With each additional piece, the entire developed parcel would add incremental increases in years on the lease. A hotel was built first, and its presence raised the value of other land around the parcel. The Authority initiated a pilot program that included ground rent from the land and a percentage of gross revenue on any food sales. The revenue participation program has been very successful.”

— Fredrick (Rick) Piccolo, President and CEO, Sarasota-Bradenton International Airport

Extent of Airport Use

Given that both participatory leases and equity participation are primarily utilized for real estate transactions, the use of this technique is limited to those airports that have developable property. Airports whose entire land mass is occupied by aviation operations have no room for further development. On the other end of the spectrum, large hub airports and small general aviation airports

may have acreage available for further development. Colorado’s Centennial Airport, as well as Dallas/Fort Worth International, Denver International, Edmonton International, El Paso International, Pittsburgh International, Rickenbacker International, and Salina Municipal airports, are excellent examples of airports with extensive land acreage available for development.

Until now, the prevalence of these arrangements also has been limited by most airports’ non-active and risk-averse approach to real estate development. Airports that engage in participatory leases include McCarran International, Pittsburgh International, and Sarasota-Bradenton International.

Implementation

Implementing the restructuring of an airport’s lease negotiations and, most crucially, involving contributions of land, first requires “buy-in” or approval by the airport’s governing body. Thereafter, it becomes a matter of negotiation with the airport business office and legal counsel charged with negotiating business transactions. Those individuals will be required to develop forecasted financial statements to indicate the potential and most likely investment return over a 5-10 year period. To measure the economic impact on the airport, the analysis must compare fixed ground rent to a sharing arrangement.

Political, Governance, or Legal Issues

One additional benefit of a revised leasing strategy is that there are few impediments to its implementation. The airport’s governing body needs to approve the transaction(s), but few other approvals are required. FAA may provide input on lease terms to ensure that the airport is receiving fair market value for its contributed land or participation in the sublease revenue stream and to confirm that other grant assurances will not be violated. As long as all of the revenues derived from these arrangements remain with the airport, there should be no violations of bond ordinances or any triggering of a revenue diversion issue.

It is incumbent upon the airport to partner with the right developer. The developer needs to have sufficient liquidity and net worth to ensure completion of a project. From the airport’s perspective, this is not qualitatively different from simply ground leasing the property to a developer; however, the level of risk is slightly higher for a participatory lease, and the airport should be even more diligent in its investigation of the developer.

One cautionary note is that most experienced real estate developers will form special purpose entities (SPEs) to engage in a project. Doing this is an attempt to limit the developer’s liability with respect to their equity in the project. The airport should require minimum capitalization of the SPE at an acceptable level and appropriate bonding to ensure completion of any project. Indemnifications from an undercapitalized SPE are not worth anything more than what the SPE owns, so a guarantee from either a financially stable parent company or another form of security should be obtained.

Political considerations may include pressure placed on the airport by highly placed elected officials or others to select a particular partner.

FN-3: PUBLIC-PRIVATE PARTNERSHIPS (P3s)

Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
◆-◆◆	◆◆◆	◆◆	◆◆	◆◆◆	◆◆◆

Overview

Public-private partnerships (P3s) take many forms. A common example involves a private operator, typically supported financially by an investment bank or pension fund, bidding for control of certain assets (e.g., parking facilities) of a public enterprise. The bidder calculates a net present value for the assets to be acquired and enters into a long-term lease with the public enterprise (e.g., the airport sponsor). The lease term must be sufficiently long to allow the bidder to amortize the upfront payment in full and enjoy a reasonable rate of return. Due to the reliability of the cash flow and the more favorable rates of return, P3s have become popular with pension and insurance funds.

Extent of Use

Although FAA has an established pilot program for airport privatization, the concept of total airport privatization as a new revenue and operation model is not expected to take hold in the United States in the near future.² Privatization is the more established business model for many overseas airports. Privatization of components of the airport is an option available to any airport that has a source of non-aviation recurring revenue.

The lease of assets may entail a lump-sum payment or some form of revenue sharing throughout the term. Subject to the negotiated lease terms, operational control is usually ceded to the bidder or its designee. P3s may also take the form of a joint venture, partial privatization or both.

Implementation

Implementing any level of privatization is much more involved than the other techniques described previously in this Airport Guide. The process may entail the retention of an investment banker to assist in valuing assets, analyzing proposals, making recommendations to enhance marketability and identifying the market of potential partners. The process varies depending on the assets proposed for a P3 transaction.

Once that process has been completed and a decision to move forward has been made, an extensive request for proposal (RFP) process is undertaken to identify the best partnering option and to negotiate a deal.

Depending on the airline operating agreement in place for a particular airport, airline approval may be required. In the event that assets acquired with federal funds are involved, FAA approval may also be

² Currently, two airports participate in the FAA privatization program: Airglades Airport (2IS) in Clewiston, Florida, and Luis Munoz Marin International Airport (SJU) in Puerto Rico. Stewart International Airport participated in the program from March 2000 to October 2007, but is now operated by the Port of New York and New Jersey. Seven additional airports applied to participate in the program, but subsequently withdrew applications.

required. Finally, and arguably most significantly, bondholder approval will need to be obtained for any assets covered by outstanding bonds. Each of the foregoing interested groups will likely also seek input into how proceeds from a P3 transaction will be utilized by the airport.

Political, Governance, and Legal Issues

Depending on the airport’s governing body, any level of privatization may require public support. Privatizations, whether partial (e.g., an operating component of the airport) or total, generate strong public sentiment if the privatization extends to businesses that interact with the public. Parking again offers a good example. Although privatization may bring the implementation of new technologies and efficiencies, in many instances there may also be impacts on pricing models—which in turn generates strong public reaction.

In the public’s view, airports belong to the taxpayers, whether or not they have been funded entirely with bonds and Department of Transportation funds. The continued belief that taxpayer dollars fund airports provides the public with a platform from which to claim a say in privatization decisions. This places political pressure on the elected officials—who often are responsible for appointment of airport management or oversight boards—to react accordingly.

As noted above, other stakeholders (bondholders, airlines, FAA) have an interest in any privatization proposals. If the funds raised from any privatization proposal do not go to the airport sponsor, then the airport has the option to not consider the proposal.

FN-4: JOINT DEVELOPMENT

Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
◆-◆◆	◆◆◆	◆◆	◆◆	◆◆	◆◆

Overview

Joint development projects share many attributes with participating projects, including partial privatizations. Joint ventures are similar to partnerships formed for a single purpose, albeit without the formal legal structure inherent in a partnership. In a typical joint venture, the partners make their respective contributions to the venture based on their expertise or ability to provide property or capital.

In the context of an airport, the airport controls unique assets that may be contributed to a venture, whereas the co-venturer brings capital and expertise to capitalize on a revenue opportunity. An example is a contribution of land by an airport to be developed by the co-venturer, who provides all of the expertise of a real estate developer to create a joint development, with revenues shared based on a pre-negotiated split.

An example of a joint venture not based on real estate is a master concession arrangement, such as the operation of an airport’s retail facilities or air mall. Once again, the airport controls and contributes the retail-operating component of the airport to an experienced operator, who brings leasing expertise,

capital improvements, and operational enhancements for a percentage of the gross revenues generated.

Extent of Airport Use

Joint ventures offer a business model that is quite common in the private sector. There is no reason why this model would not provide a reasonable means of increasing revenues through shared participation at an airport.

Political, Governance, and Legal Issues

Some characteristics of joint developments overlap with characteristics of other opportunities described thus far in this chapter. Accordingly, they involve similar challenges. However, the joint development concept provides enough distinguishing aspects that the challenges discussed in relation to initiatives such as direct ownership should be easier to address. Specifically, because the private sector is a participant in joint developments, claims of unfair competition are not significant. Furthermore, since the initiative does not involve privatization in the strictest sense, the airport maintains more control.

5.3 REVENUE PARTICIPATION IN MINERAL ESTATE DEVELOPMENT

Overview

Non-aeronautical revenue generation is highly dependent on special situations.

Many of the nation’s busiest airports have little or no land unoccupied by terminals, consolidated rental facilities, parking lots, and other dedicated airport uses. However, some airports have significant surplus property that is not dedicated to airport operations and, therefore, can be used for real estate development and other non-aviation revenue generating activities. Airports that sit on such landmasses also may have the opportunity to develop mineral estates and other natural resources that, in many instances, have proved to be a significant revenue source. Such resources include minerals such as oil, gas, and coal, but could also include water, timber, and similar natural resources.

Denver International Airport (DIA) has oil and gas development and active agriculture on the airport. It also owns subsurface water rights. DIA owns the mineral rights on all of its 34,000 acres, but leased approximately 27,000 acres to Petro-Canada Resources (PCR) for oil and gas exploration. In 2010, PCR planned to divest its U.S. upstream oil and gas assets. DIA exercised its first right of refusal to buy back PCR assets on the airport property. As a result, the airport has more than tripled its original investment in the mineral rights re-purchase.

DIA also has water rights. The airport does not own surface water, but owns subsurface water (approximately 26,000 acre-feet). The airport has no current plans to monetize its water rights.

DIA also leases land for farming; however, agriculture is used primarily for cost avoidance. Currently 25,000 acres are farmed, mostly by farmers on the land acquired prior to the airport’s opening in 1995. The airport collects several hundred thousand dollars per year in cash rent and restricts what can be planted on airport land. This conforms to the airport’s wildlife mitigation plan. If the airport had to maintain the land, it would cost \$6 or \$7 million to remove noxious weeds and wildlife attractants.

– John Ackerman, Chief Commercial Officer, Denver International Airport

FAA has determined that revenue derived from the sale of an airport’s natural resources constitutes “airport revenue.”³ Therefore, it is subject to the revenue diversion rules requiring that such revenue be utilized only at the airport [see Grant Assurance 25 as to permitted use of Airport Revenues]. Although a sponsor municipality may claim ownership of the airport’s natural resources, that claim has limited relevance in that the revenues from the sale of such resources must remain with the airport for airport uses.

The method for generating revenue from these resources varies depending on the type of resource that the airport sponsor wishes to exploit. For example, coal and timber are usually sold based on the highest and best bid. Because of the expertise that may be required to extract and market such resources, however, the airport may limit the number of bidders by first undertaking a request for qualifications (RFQ). The RFQ allows the airport to prequalify companies that may be eligible to bid for the applicable resource.

For example, the extraction of coal requires that the extracting company have: (i) experience in strip and deep mining; (ii) sufficient financial net worth to ensure that the property can be restored to its pre-extraction condition; (iii) adequate insurance to cover claims that may be made in connection with injuries arising during the process; and, to the extent that royalties may be involved, (iv) sufficient market presence to ensure the maximum price for the sale of coal to the end users. These agreements are typically for a term sufficient to extract the coal deposits, but should be terminable by the airport sponsor in the event of nonproduction or if the airport needs the property for other purposes, especially aeronautical purposes.

FN-5: MINERAL ESTATE PARTICIPATORY LEASES

Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
◆-◆◆	◆◆◆◆	◆◆	◆	◆◆◆◆	◆◆◆◆

Bonus Payments, Royalties, and Surface Rights

A royalty-paying oil and gas lease is typically the governing document for oil and gas exploration on airport property. With the advent of horizontal drilling⁴ and the discovery of new major shale deposits, natural gas exploration has presented a major revenue opportunity for airports that have shale deposits and the ability to access them.

The revenue stream from oil or gas exploration activities is two-fold in that the exploration company pays a significant upfront bonus payment (in the case of Dallas/Fort Worth International Airport, \$10,000 per acre) and then a royalty on continuing production. Gas, like coal, is very market driven. If

³ Per 64 Fed. Reg. 7696, at 7716, airport revenue includes revenue received “(iii) For the sale of (or sale or lease of rights in) sponsor-owned mineral, natural, or agricultural products or water to be taken from the airport.”

⁴ The FAA requires clearance if horizontal drilling occurs under airfields, terminals, or other aeronautical assets. In a horizontal drilling process, a well is turned horizontally at depth. This technique is normally used to extract energy from a layer of shale rock.

gas prices fall below a certain dollar amount, companies may find it more economically viable to cap a well and cease production for the period of time that the market is depressed. In order to ensure that the landowner—in this case the airport—is not harmed by such capping activity, it is necessary to include a continuing production clause requiring the driller to continue drilling for as long as a well is producing in certain paying quantities. The remedy for ceasing production is a termination of the lease, which leaves the airport with the bonus payment originally paid for the right to receive the drilling contract and the airport is free to enter into a similar arrangement with a new driller.

The typical lease term for an oil and gas lease is five (5) years with a continuation provision that allows the driller to maintain its leasehold interest provided it continues to drill. It is also important for the airport to ensure that drilling activity will begin by a predetermined date, taking into consideration the environmental approval process, land preparation, and other activities that need to be undertaken prior to sinking the first well. Two years should be more than sufficient time between the lease award and commencement of drilling.

Grant Assurance 24 requires the airport to obtain fair market value for all of its leased assets.⁵ Therefore, it is imperative that the airport calculate the surface rent for the land used for well pads or pipelines.

The airport earns additional revenue from land rent charged to the driller to ensure recovery of surfaces granted to the driller to access sites, lay out well pads, and install pipeline. Some of these revenue generating activities may not be available in gas leases with smaller acreage (e.g., a couple of hundred acres). For airports that have larger land masses, however (such as Dallas/Fort Worth International, Denver International, and Pittsburgh International), the lease becomes more valuable and the airports have a greater bargaining position when negotiating terms.

The royalty revenue provides the airport with a continuous revenue stream for as long as gas is being produced and marketed. Careful deal structuring is required to ensure that the royalties are not net of costs associated with production, permitting, transporting, processing, storage, marketing, taxes, or other costs.

Moreover, it must be remembered that first and foremost, the airport is dedicated to airport operations. Therefore, any lease or agreement for extraction of mineral resources should include language that subjects all such activity not only to applicable laws and environmental regulations, but to airport regulations as well. This may affect such items as well spacing, controlled access by drilling companies' personnel, and the airport's right to suspend operations, among other things.

Performance Security

Significant performance security in the form of a surety bond, letter of credit, or similar security should be obtained to ensure that, at the end of the lease term or well abandonment, the driller removes all equipment and undertakes the proper abandonment process as may be required by the applicable

⁵ Grant Assurance 24 states that a sponsor will maintain a fee and rental structure for facilities and services, which will make the airport as self-sustaining as possible.

state’s regulatory agency. Additionally, adequate insurance and security is necessary to secure any indemnification to which the airport may be entitled for damages arising out of fires, accidents, pollution, or other causes that might be brought about by a company’s operations on airport property.

Ownership of Subsurface Mineral Estates

Issues regarding ownership of mineral estates go beyond the potential claims by sponsoring municipalities. Title to mineral estates may not always follow title to property surface rights. Until fairly recently, it was not unusual for deeds transferring property to reserve the rights to mineral estates. To make matters more complicated, such reservations of rights vary significantly from deed to deed and from jurisdiction to jurisdiction. Such reservations may include gas title for a period of 5 years or for as long as the property wells are actively producing.

Ownership of the airport surface rights alone is not definitive as to the ownership of the mineral rights, even with sustained airport operations for a significant historical period. In order for the airport to exploit the minerals on its property, it may be necessary to engage in *mineral estate condemnation*.⁶ Whether it is operated by an authority or by the municipality in which it is located, the airport has condemnation power to be able to transfer and then secure title to the mineral estates. However, once condemned, the condemning power must pay “equitable just compensation,” which is usually based on the valuation of the mineral estates condemned. In some instances, mineral estates may have no value if they cannot be practically or commercially obtained and utilized. A significant example of this is shale gas, which had no value prior to commercialization of current hydraulic fracturing (fracking) activities. However, over the past 20 years, technological advances in the industry have created significant value in those same mineral estates.

Title to mineral estates must be clearly established for the airport landowner to be able to sell or lease those assets. Exploration companies want to ensure that they have the absolute rights to the minerals for which they are paying significant dollars. The typical gas lease includes a holdback or escrow of amounts necessary to cover questions as to title. Establishing clear ownership of title is laborious and can require searches back to the first deed on the property, in some cases as early as the early 1800s.

Protection for Airport Financial and Aeronautical Interests

Mineral estates may be appraised. Appraisal companies that specialize in specific resources (i.e., water, timber, oil, gas, coal) are able to give airports a reasonable expected valuation of the mineral estates.

For any on-going mineral estates royalty revenue, the contracts granting rights to third parties should include audit rights allowing the airport to confirm that it is receiving all of the royalty revenue to which it is entitled. Typical penalties for understatement of royalties would include recovery of the cost of any audit plus a penalty of 5% of the understatement.

When structuring agreements with continuing site ingress and egress by a mineral estate purchaser or lessee (whether for drilling, excavation, harvesting, surface operations, or other activity), activity should

⁶ The transfer of property title under the power of eminent domain.

be limited to designated portions of the airport that are not planned for development pursuant to the airport's master plan.

FAA Regulations (FARs) specify that "Part 77" surfaces must be protected, and any lessee's operations should be restricted to prevent interference with the airport's use of the airport, whether for its aeronautical or commercial development activity.⁷ Unrestricted access of personnel also is problematic, and controls need to be in place to ensure no violations of security procedures or FAA or TSA rules and airport regulations. Furthermore, the airport should maintain the right to relocate operations to ensure that the airport maintains flexibility in its continued development plans.

Because of the risks associated with mineral estate exploration and exploitation on airport land, it is also important for the airport to consider the types of indemnification and insurance requirements to be imposed upon drilling firms. Based on each airport's particular circumstances, the airport should determine what types of coverage and limits it would impose, as well as its willingness to allow for self-insured limits depending on the financial strength and creditworthiness of the contracting party.

5.4 WRAP-UP

Flexibility in various real estate and mineral estate development techniques will provide airports new opportunities to enjoy a greater share of revenues. Each such technique is weakened by various degrees of risk; therefore, it is imperative that airport management analyze the risks of each technique to determine whether the risk is at an acceptable or unacceptable level and respond accordingly. Such analysis should include development of an understanding as to how such risks may be mitigated or minimized.

There may be legal or political implications or challenges to each technique discussed herein, which would have an impact on an ultimate determination.

Although issues invariably arise with any attempt to find ways to maximize non-aeronautical revenue, most of those issues can be addressed. Airports need to focus on developing such revenues as funding continues to shift away from strict reliance on governmental grants and airline fees. Nearly all federal funding is increasingly the subject of scrutiny as political tides move to curb spending. Likewise, pressure on airline profitability (such as rising fuel costs) means that even small budget items, like enplanement costs, will need to be managed. Development of airport resources and land will help to ensure the airport remains competitive and is able to afford continued growth and enhancements. To the extent that quasi-public entities, such as airport authorities, provide more flexibility in undertaking such initiatives, it is advantageous for local municipalities to explore whether their municipally operated airport would be better served by implementing such techniques. **Table 5-2** summarizes the revenue participation approaches presented in this chapter.

⁷ FAR Part 77 establishes standards for determining obstructions off runways in navigable airspace.

Table 5-2: Approaches to Revenue Participation

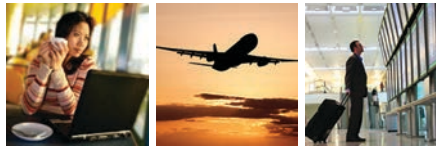
Code	Approaches to Revenue Participation	Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
Finance and Property Management – FN							
FN-1	Participatory Leases and Equity Participation	◆-◆◆	◆◆◆	◆◆◆	◆	◆	◆
FN-2	Direct Ownership	◆◆-◆◆◆	◆◆◆	◆◆◆	◆◆◆	◆◆	◆◆◆
FN-3	Public-Private Partnerships	◆-◆◆	◆◆◆	◆◆	◆◆	◆◆◆	◆◆◆
FN-4	Joint Development	◆-◆◆	◆◆◆	◆◆	◆◆	◆◆	◆◆
FN-5	Mineral Estate Participatory Leases	◆-◆◆	◆◆◆	◆◆	◆	◆◆◆	◆◆◆

Source: KRAMER aerotek inc., 2014

5.5 ADDITIONAL REFERENCES

KRAMER aerotek inc., *ACRP Synthesis 19: Airport Revenue Diversification*, Transportation Research Board of the National Academies, Washington, DC, 2010

LeighFisher, Kaplan Kirsch & Rockwell LLP, and LeighFisher/Eno Transportation Foundation, *ACRP Report 66: Considering and Evaluating Airport Privatization*, Transportation Research Board of the National Academies, Washington, DC, 2011



Chapter 6

Value Capture and Other Innovative Financing

Capture Value from Off-Airport Businesses that Depend on Airport Activity

- 6.1 Massachusetts' Value Capture Experience
- 6.2 Historical Context for Value Capture
- 6.3 Scope of Value Capture Strategy
- 6.4 Value Capture Techniques
- 6.5 Value Capture and Airport Cities
- 6.6 Marine Port Districts and Foreign Trade Zones
- 6.7 Other Sources of Public Financing
- 6.8 Key Points and Conclusions
- 6.9 Wrap-up
- 6.10 Additional References

Transportation systems, and airports in particular, are essential to the conduct of business, productivity, and quality of life. User fees and taxation are the primary revenue sources that fund transportation, supplemented with loans, bonds, and public-private partnerships. Given growing concerns that these sources will become inadequate, value capture is an alternate approach to transportation finance. Value capture identifies the user and non-user beneficiaries of a particular transportation investment and then imposes taxes and user fees on those beneficiaries to recover some of the investment cost.

This chapter of the Airport Guide explores the history of value capture and its use in different modes of transportation. Airports create value for property owners located close to an airport, yet not many airport sponsors have implemented value capture techniques. 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.

6.1 MASSACHUSETTS' VALUE CAPTURE EXPERIENCE

In the early 1990s, the Commonwealth of Massachusetts began to investigate the feasibility of building new convention facilities in several areas of the state, including creating a large new facility in Boston. Proponents of a downtown Boston location, including the city administration, acknowledged that a new facility would not generate enough revenue to cover construction and operating costs. They maintained, however, that the additional tax revenue created by businesses dependent on convention center activity and the jobs created would provide an economic benefit to the region and state, far in excess of the costs of the project. Furthermore, supporters contended the convention center would stimulate private investment and development within the vicinity of the facility. The city and state decided to pursue financing through capturing some of this value generated at off-site businesses that benefited from the convention center.

The Boston Convention and Exhibition Center (BCEC) provides an instructive example of how revenue generation through off-site value capture can help to finance a capital improvement project. A number of public entities participated in the financing of the project. The city of Boston financed the land acquisition, some of the site cleanup, and the preparation costs of the project with short-term notes and long-term special obligation bonds. The Commonwealth of Massachusetts issued special obligation bonds to finance construction of the facility. An occupancy tax for new hotels in Boston and existing hotels near the convention center, sales taxes from businesses within the convention center finance district, vehicle rental fees, a fee on tours in the city of Boston, and the sale of hackney licenses provided a dedicated revenue stream for repayment of the bonds. These revenue sources—which represent value capture derived from off-site economic activity generated from the new convention center—were specifically dedicated to note and bond repayment because incremental increases in each could be tied directly or indirectly to the success of the convention center. Use of this technique raised enough revenue to retire a portion of the bonds early and provided additional revenues for convention center operations, additional capital investments, and contributions to state and city general funds.

The BCEC example is relevant to airports. Airports create demand for similar types of off-site services, generating economic development off-airport through supplier relationships, visitor spending, and business location benefits. The geographic area of influence of an airport for generating regional economic development, and the types of industries that benefit from proximity to an airport, are greater than that of a convention center. For example, in metropolitan Washington, DC, the Dulles Corridor in northern Virginia is home to an estimated 575,000 jobs.¹ Hartsfield-Jackson Atlanta International Airport supports 317,000 jobs at firms that supply on-airport businesses, businesses that benefit from visitor spending, and production jobs that rely on air cargo.² Thus, the off-site value capture strategies used to finance the BCEC offer a high potential source of revenues for financing new airports or airport improvements.

¹ NAI KLN, <http://dullestechnologycorridor.com/>

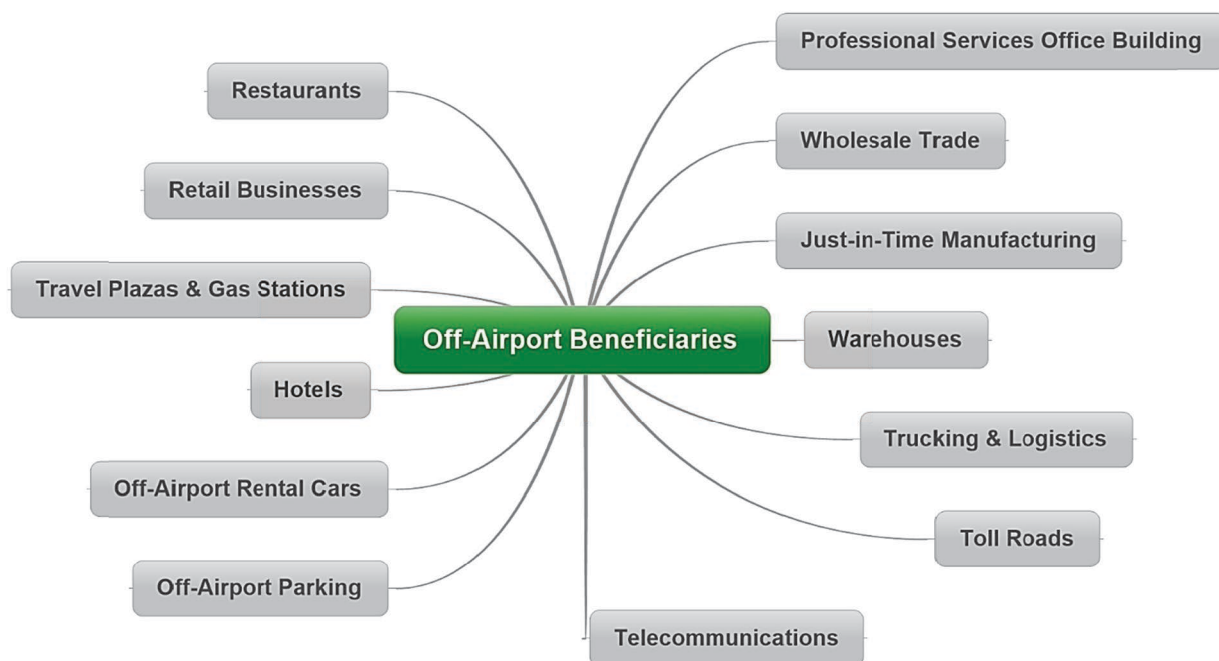
² Landau, S. R., "Airports, Airport Cities, Airport Corridors, Aerotropolises, & Economic Development," PowerPoint presented at, Transportation Research Board Annual Conference, Washington, DC, January 24, 2012

This chapter examines the application of value capture strategies and alternative public financing options that could be available for use by airports.

6.2 HISTORICAL CONTEXT FOR VALUE CAPTURE

Scores of economic impact studies recognize that airports are economic engines for a region, although most of the economic impact occurs on land and with businesses not located on airport property. Such off-airport impacts are due primarily to visitor spending that is reported and to regional economic multiplier effects. In recognition of this relationship, airport sponsors are now exploring options for capturing some of the off-airport value they generate. **Figure 6-1** provides examples of off-airport activities that are direct beneficiaries of airport activity.

Figure 6-1: Examples of Off-Airport Aviation-Dependent Businesses



Source: KRAMER aerotek inc., 2014

Value capture has a long history of application in the United States for transit development and, to a lesser extent, for highways.³ In these instances, policymakers, developers, landowners, businesses, and voters have recognized that improving access and mobility through development of transit and highway projects increases the value of surrounding properties, and sometimes properties throughout the region. Conventional funding for transportation commonly comes from taxpayers using general fund appropriations, earmarked property taxes, or special-purpose sales taxes. However, the increased value

³ Transit stations are one of the best-known applications of value capture. Following construction of a transit station, before and after changes in neighboring property values can be measured.

in land that comes from improved access benefits primarily private landowners and developers. If there are incremental increases in sales taxes, income taxes, and property taxes because of a project, these revenues typically flow back to municipal, county, and regional general funds to fund government operations, services, and a variety of public projects.

Although value capture techniques are not widely used by airports for development, airport sponsors do engage in value capture activity through airport access fees levied on shuttle buses, taxis, limousines, and couriers. In addition, off-airport parking and rental car establishments pay a privilege fee that may amount to as much as 10% of gross revenues. Airport sponsors charge these fees for the right to access the airport and the airport's customer base, and for recovery of costs associated with airport roadways, traffic control, and terminal curbside management. However, other establishments near the airport depend on and benefit from proximity to an airport but do not typically contribute monetarily to the airport. Logistics distributions centers are good examples.

Improved transit connections to an airport can decrease roadway congestion, reduce the need for parking (a revenue loss), and increase accessibility for travelers. Revenues generated by the value capture for transit connection projects typically finance the transit systems themselves. Airports do not share in value capture receipts for such projects, even though the transit connection to the airport can deliver increased ridership and higher land values along the way.

Multiple projects are in place or in the planning stages to create transit connections to airports. For example, value capture techniques support transit development that connects light rail in Portland, Oregon, to Portland International Airport. The Dulles Corridor Metrorail Project will extend the Washington Metro transit system 23 miles and will include a station at Dulles International Airport. The East Rail Line in Denver will connect Union Station to Denver International Airport.

6.3 SCOPE OF VALUE CAPTURE STRATEGY

Value capture can benefit an airport in many ways, such as through special assessment districts, fees, and property taxes. Value capture involves many groups to implement a particular technique. Participants typically include the airport sponsor, property owners, developers, airport-related businesses, passengers, taxing authorities, and regulatory authorities.

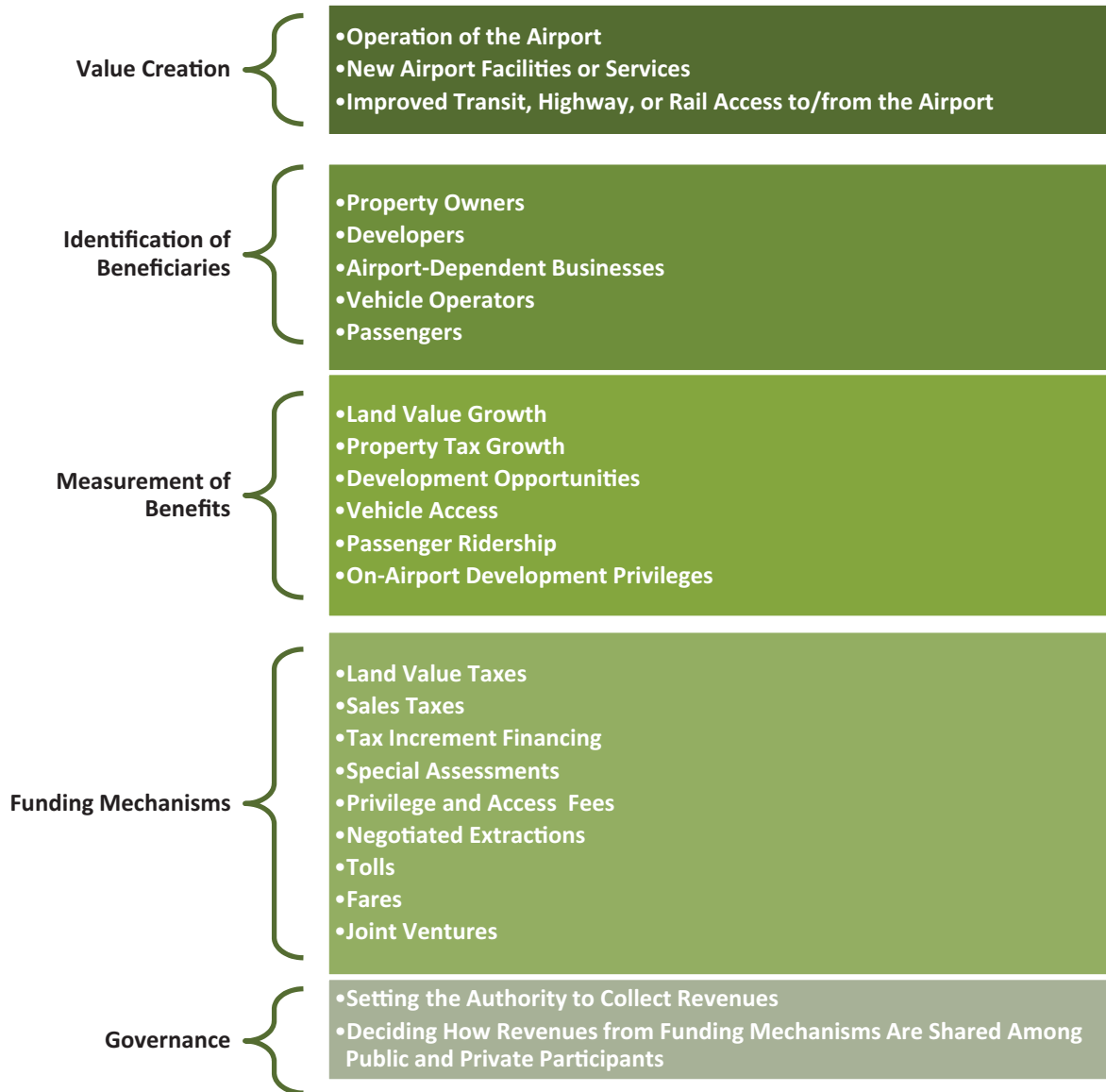
Figure 6-2 summarizes the important elements of a value capture strategy. To implement a value capture strategy, proponents must:

- Demonstrate that the airport is creating measurable value for a business or activity that the airport sponsor does not own, directly manage, or finance.
- Identify the beneficiaries of the value creation, such as landowners, developers or businesses.
- Implement a means of benefits measurement that establishes the direct connection and scale of incremental revenues generated in terms of dollars. An example of incremental growth is increased retail activity and higher property values around a new light rail or subway station. This translates into additional property tax receipts, income taxes from new job creation, and

retail sales taxes from new commercial establishments. The before and after difference is the measurable incremental change.

- Implement a legislative/legal/regulatory funding mechanism to capture value on behalf of project participants.
- Agree on a distribution formula for distributing fees, taxes, and project revenues among public and private parties participating in a project.

Figure 6-2: Elements of a Value Capture Strategy



Source: Adapted by KRAMER aerotek inc. in 2014 from University of Minnesota Center for Transportation Studies, Value Capture for Transportation Finance, 2009

6.4 VALUE CAPTURE TECHNIQUES

Because value capture has its origin in transit projects, evaluation of techniques includes both existing practices by airport sponsors and evaluation of practices used to finance transit projects. This section introduces eleven value capture techniques.

6.4.1. Types of Value Capture Funding Mechanisms

The five main ways that airports can implement a value capture strategy are:

- Access and privilege fees
- Fixed assessments
- Loan/fee hybrids
- Land development
- Taxes or special allocation of tax receipts

Table 6-1 describes each of these approaches and provides examples.

Table 6-1: Types of Value Capture Funding Mechanisms

Classification	Definition	Techniques
Access and Privilege Fees	A fee is levied on off-airport businesses that access the airport to pick-up or drop-off customers.	Can be a percent of gross revenues or a charge per day, per trip, or per transaction
Fixed Assessments	A fixed sum is charged to the beneficiaries of a public investment.	Business Improvement District, Buy-in Charges/Connection Fees, Payment in Lieu of Taxes, Transportation Utility Fee
Loan/Fee Hybrid	Landowners who directly benefit from a public investment pay a fee over time to retire the bonds used to pay for the investment.	Special Assessment District or Betterment District
Land Development	Land owned by an airport is leased or sold to a developer, with the revenues accruing to the airport and other partners in the project.	Joint Development, Sale/Lease of Development Sites, Tax Sharing Agreements, Transfer of Development Rights
Taxes or Special Allocation of Tax Receipts	A financial charge or levy is imposed on a group (e.g., property owners, employees, employers, consumers, hotel occupants) by a public authority (e.g., municipality, county, special taxing district, state), sometimes assessed by transaction and sometimes at regular time intervals. Because most airports do not have taxing authority, special taxes would emanate from the state, county, or city/township with jurisdiction.	Greenfield Development Tax, Land Value Tax, Local Income or Payroll Tax, Sales Tax, Tax Increment Financing (TIF)

Source: Economic Development Research Group, Inc., 2014

Each of these techniques has the potential for generating revenue for airport sponsors, but varies in the degree of financial risk and difficulty/complexity to implement. **Table 6-2** describes each technique according to the following attributes:

- **Contributors** – the main beneficiaries of a project (ultimately, the groups asked to contribute resources because of the improvement)
- **Coordinators** – groups involved with administering the value capture mechanism
- **Timing** – when the technique is implemented (before or after the improvement is completed)
- **Impacted Area** – the geographic area subject to the value capture mechanism
- **Benefit Basis** – how the value creation is measured and assessed
- **Use of Revenue** – Whether revenues collected are dedicated to a specific project or are discretionary; also, if revenues finance initial capital costs and/or on-going operations and maintenance (O&M)

Table 6-2: Techniques to Implement Value Capture Strategy

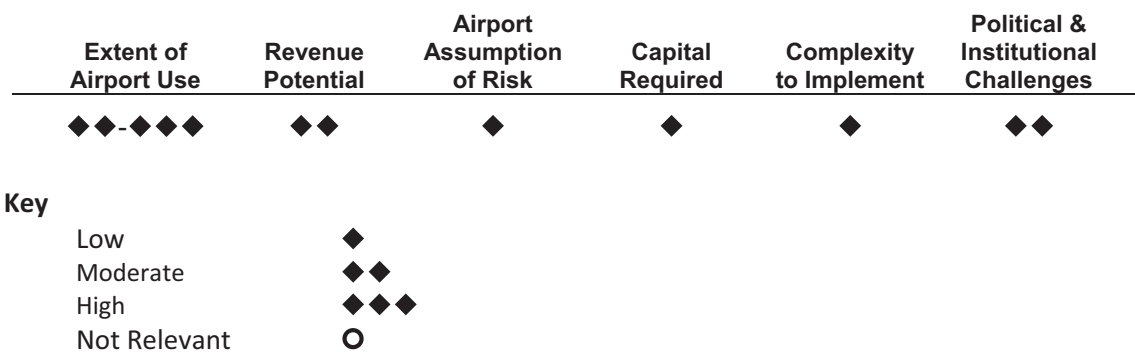
Code	Value Capture Techniques	Contributor					Coordinator					Timing		Impacted Area			Benefit Basis			Use of Revenue	
		Property Owners	Developers	Vehicle Operators	Residents/Employees	Visitors/Passengers	Airport	Taxing Authority	Negotiation	Partnership	Management / Oversight	Before Development/Activity	After Development/Activity	On-Airport	Specific Off-Airport Area	Entire Jurisdiction	New Development	Old Development	Level of Activity/Use	Initial Capital Costs	On-Going O&M
Finance and Property Management – FN																					
FN-4	Joint Development	◆	◆				◆			◆	◆	◆	◆	◆		◆	◆		◆	◆	
FN-6	Airport Access Fees and Privilege Fees			◆		◆	◆				◆	◆	◆					◆		◆	
FN-7	Tax Increment Financing (TIF) District	◆					◆	◆		◆	◆			◆		◆	◆		◆		
FN-8	Local Income and Payroll Tax				◆		◆				◆	◆		◆	◆	◆			◆	◆	
FN-9	Sales Tax/Occupancy Tax				◆	◆	◆				◆	◆			◆			◆	◆	◆	
FN-10	Transfer of Development Rights (TDRs)	◆	◆				◆		◆		◆		◆	◆		◆			◆		
FN-11	Connection Fees	◆					◆		◆				◆	◆		◆				◆	
FN-12	Business Improvement Districts (BIDs)	◆						◆		◆	◆		◆	◆		◆	◆			◆	
FN-13	Special Assessment/Betterment Districts	◆						◆		◆	◆			◆		◆	◆		◆	◆	
FN-14	Land Value Tax	◆						◆			◆	◆			◆	◆	◆		◆	◆	
FN-15	Transportation Utility Fees (TUFs)	◆						◆			◆	◆		◆	◆	◆	◆		◆	◆	

Sources: Adapted by KRAMER aerotek inc. in 2014 from University of Minnesota, Center for Transportation Studies, Value Capture for Transportation Finance, 2009

6.4.2. Value Capture Techniques with Potential for Airport Application

Various techniques are available to convert value creation into value capture. Some of these techniques are directly applicable to airports; others are more difficult to apply. This section describes techniques that have either already been used by airport sponsors or demonstrate potential for use. Section 6.4.3 describes capture techniques with somewhat lower potential for use by airport sponsors.

FN-6: AIRPORT ACCESS FEES AND PRIVILEGE FEES



Most airports levy airport access fees and some privilege fees on off-airport users. The fees are charged to help pay for the construction and maintenance of roads, which these businesses use, as well as to pay for other airport costs. The justification for the latter “is based on the premise that the existence of the airport is responsible for much or all of the revenues generated by the off-airport business.”⁴ In this way, these fees fall into the category of value capture techniques.

Airport access fees can have two different structures. 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. For example, in 2010, Los Angeles World Airports (LAWA), which operates Los Angeles International Airport (LAX), charged fees amounting to \$4.00 per trip for limousines, \$1.47 per circuit for shuttle buses, \$0.50 per trip for taxis, \$1.87 per circuit for off-airport rental car and parking shuttle buses, and \$1.87 per circuit for hotel courtesy vehicles.⁵ McCarron International Airport (Las Vegas) charged \$1.80 per trip for taxis and other vehicles carrying 1-8 people, \$3.00 per trip for 9 to 15 passenger vehicles, \$4.50 for vehicles carrying 16-30 passengers, and \$15 per trip for vehicles carrying 31 or more passengers.⁶ In Australia, some airports are charging premium fees to businesses for the right to curbside drop-off and pick-up at prime terminal locations. A government study that found the fees to be legitimate stated that “The prime location of these stops provides the company with a ‘readily identifiable, strong branded and

⁴ Sims, R. L., *Airport Law 101*, City of Dallas, no date, Retrieved September 13, 2011 from: http://www.texascityattorneys.org/2009speaker_papers/Airport%20101%20061009%20%20Final.pdf
⁵ “LAX Airport Proposes Increase in Ground Transportation Access Fees,” *Transportation Reviews*, September 14, 2010, retrieved September 13, 2011, from: <http://transportationreviews.com/news/2010/09/lax-airport-proposes-increase-in-ground-transportation-access-fees/>
⁶ Spillman, B., “Airport Parking Fees to Increase,” *ReviewJournal.com*, August 1, 2008, retrieved September 12, 2011, from: www.lvrg.com/business.26171894.html

uncluttered’ position at the terminal.”⁷ The government’s finding, together with the willingness of some providers to pay a premium for curbside service, demonstrates that these businesses derive value from such locations.

Airport sponsors are moving toward charging companies a percentage of gross revenues for airport access. Denver International Airport (DIA) changed from a per trip fee to a flat charge of 8% of gross revenues for off-airport parking companies, plus an additional fee if vans spend more than 15 minutes circulating on-airport. Some airport sponsors, including Dallas/Fort Worth International (DFW), Orlando International (MCO), Dulles International (IAD), and Indianapolis International (IND) charge a fee as high as 10% of gross revenues.⁸ In 2004, charging a 6% fee (which has since increased to 10%), MCO generated over \$13.8 million in parking privilege fees.⁹ George Bush Intercontinental Airport Houston also charges a percent of gross revenues, as well as an annual per vehicle charge.¹⁰

In some cases, such as in Las Vegas, fees were increased in 2008 at the request of the airlines, which believed they carried an unfair burden for the maintenance of the airport, and which were seeing cost increases as a result of higher fuel costs, thus reducing competitiveness.¹¹ At DFW, parking privilege fees were promoted to offset airport expenses and reduce landing fees.¹²

Access and privilege fees most often require local ordinances or state legislation. Airport access fees have been litigated in court, with companies claiming that the fee violates the commerce clause of the U.S. Constitution. In almost every case, the courts ruled in favor of the airport sponsor and determined that the fees do not constitute a tax.

⁷ Lucas, C., “Airport Parking Fees not a Ripoff,” *theage.com*, August 23, 2011, retrieved September 12, 2011, from: <http://www.theage.com.au/travel/travel-news/airport-parking-fees-not-a-ripoff-20110822-1i6qg.html>

⁸ Leib, J., “DIA hikes fees for off-airport parking vendors,” *The Denver Post*, January 19, 2011, retrieved September 12, 2011, from: www.denverpost.com/news/ci_17132310?source=rss

⁹ Dallas City Council, Transportation and Environmental Committee, “Dallas/Fort Worth International Airport – Airport Parking Privilege Fees,” PowerPoint presentation, October 9, 2006, p. 7, retrieved September 12, 2011 from: http://www.dallascityhall.com/committee_briefings/briefings1006/20061009_TEC_Parking_Fees.pdf

¹⁰ Dallas City Council, p. 6

¹¹ Spillman

¹² Dallas City Council, p. 8

FN-7: TAX INCREMENT FINANCING (TIF) DISTRICT

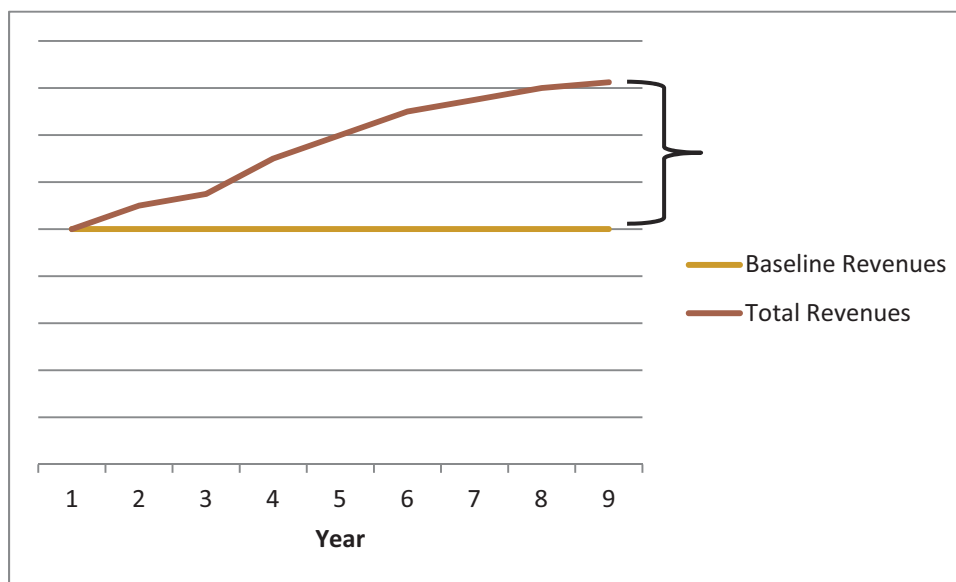
Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
◆	◆◆◆	◆◆◆	◆◆	◆◆◆	◆◆◆

Many transit projects in the United States use tax increment financing (TIF). For example, a TIF district will help to finance an estimated 33% of the \$4.2 million cost of the new San Francisco Transbay Transit (Intermodal) Center building. In Portland, Oregon, a TIF was used to finance \$41 million of the total \$103 million cost for a 0.8 mile streetcar system. In Dallas, Texas, TIFs are routinely used to finance a variety of projects along the light rail system, including water, sewer, and parking at seven transit-oriented development sites. Airport sponsors have used TIFS on a limited basis.

How a TIF Works

Within a designated geographic impact area (often referred to as 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 increase in value are set aside to pay the debt service on the bonds, as illustrated by **Figure 6-3**. The baseline revenues are those collected prior to designation of the TIF district. The total revenues are both the baseline dollars held constant and the annual total tax revenues. The gap between the baseline and total revenues is the incremental revenue stream that is dedicated to financing the new project.

Figure 6-3: Illustration of Tax Increment Gap



Source: Economic Development Research Group, Inc., 2011

The amount of revenue generated by TIF will depend on several factors, including the size of the TIF district, the type of improvements made in that district, and general market conditions. Risk varies by requirements of the enabling legislation. For example, legislation may require the agency benefiting from a TIF project to assume responsibility for bond payments if TIF revenues are insufficient to cover debt service.

Extent of Airport Applicability

TIFs have been used to finance development of vacant airport land. For example, the Allegheny Airport Authority (the Authority) used a TIF to cover the gaps in funding industrial development on property owned by Pittsburgh International Airport (PIT).

The Authority reached out to a well-known industrial developer and proposed that the Authority would be willing to enter into a risk-sharing arrangement with respect to development of the first building in a new warehouse industrial park, now known as the Clinton Commerce Park. The developer was required to proceed with a “spec” building; that is, a building that is not pre-leased but rather built based on the speculation that tenants will be attracted to the building at a future date. Additionally, to ensure the necessary financing for the infrastructure work that needed to be undertaken, the developer agreed to fund a TIF loan, secured by a guarantee from the commonwealth of Pennsylvania. This loan filled a gap in the funds needed to complete the grading, roadway construction, and utility installation for the park.

The structure of the TIF involved the creation of a TIF district to include the 150 acres comprising the proposed industrial park. The taxing bodies, including the local township, school district, and the county, agreed to contribute 75% of the real estate revenues generated by the development in excess of the tax base on the date that the TIF district was created.

Based on that commitment, the County Redevelopment Authority issued its TIF Notes, which were, in turn, payable from the positive tax increments realized from the TIF district. The Authority arranged with the developer to purchase all of the issued TIF Notes.

Because of the creation of the TIF district, the expected private investment originally projected at \$60 million dollars proved conservative. Clinton Commerce Park has produced many direct and indirect benefits to the local communities, the airport market area, and southwestern Pennsylvania.

Implementation

TIFs require state enabling legislation. Many, but not all, states have adopted TIF legislation. The legislation varies from state to state in terms of how the tool can be used, which agencies can use it, and what types of projects can be financed.

Political, Governance, and Legal Issues

The lead agency for administering a TIF district is usually a city or other established taxing authority. In the San Francisco case, the Transbay Joint Powers Authority was formed with representation from the city of San Francisco, Alameda Contra Costa Transit District, and other transportation agencies. In Dallas, the city and DART co-operate the district.

Advantages of TIFs

TIFs allow municipal control but do not usually count against a municipality’s debt limit (because there is a dedicated repayment stream) and typically are not viewed by the public as a tax increase. In addition, a direct relationship exists between who pays for and who benefits from the infrastructure investment.

Disadvantages of TIFs

Actual TIF revenues may not cover debt service on the bonds. This may occur if the anticipated level of development does not occur or is delayed. In other cases, public or non-profit entities have acquired land within a TIF district, removing the property from the tax rolls, and thus reducing TIF revenue. Unforeseen project costs can also impede the success of a TIF district. In many states, establishment of a TIF requires that the district be designated as blighted, limiting its usefulness in areas that do not suffer from blight.

Although the most common form of TIF is based on property tax revenues, state/local income taxes and sales taxes also may be used to create the revenue stream.

FN-8: LOCAL INCOME AND PAYROLL TAX

Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
◆	◆-◆◆	◆	○	◆	◆◆◆◆

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. The Oregon Department of Revenue administers a payroll tax program to help finance the Tri-Met District in Portland and the Lane Transit District in Eugene. Between 1966 and 1998, New York City levied a tax on income and used the revenue to fund municipal services. In 2008, the New York State legislature began to explore the possibility of a mobility tax to be imposed on the payroll of employers within the Metropolitan Transit Authority’s jurisdiction in order to help fund the transit agency.

Advantages of Local Income Taxes or Payroll Taxes

Local income or payroll taxes can provide a steady and increasing source of income over time. The tax attempts to target specifically those who benefit from the service provided.

Disadvantages of Local Income Taxes or Payroll Taxes

In the case of an airport, not all individuals or entities that pay these taxes may benefit from or use the airport equally, and there is no precedent to date for use of local income taxes or payroll taxes to finance airport improvements.

FN-9: SALES TAX/OCCUPANCY TAX

Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
◆-◆	◆◆	◆	○	◆	◆◆

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. Transit agencies have used special sales tax levies in several jurisdictions, including the area around San Francisco, California; in Charlotte, North Carolina; and in metropolitan Boston, Massachusetts. Sales taxes helped finance the extension of San Francisco’s Bay Area Rapid Transit (BART) heavy rail system to the airport, including construction of the line itself, stations, parking, and roadway improvements. Sales taxes also helped finance construction of the Lynx Blue Line light rail system in Charlotte. In these cases, the sales tax dedicated to paying for the transit investment are set to expire once the project is completely paid. In Massachusetts, a special sales tax funded part of the operating budget of the Massachusetts Bay Transportation Authority (MBTA). Pennsylvania passed a tax on gaming in the state, and a portion of the proceeds was directed to airports for economic development purposes, primarily real estate development.

A variation of this approach for airports could be a statewide or countywide hotel occupancy tax, either (a) dedicated to pay for specific infrastructure improvements, or (b) used to finance an infrastructure fund. Implementation would likely require a legislative change at the state level. Some communities have also approved dedication of some portion of the occupancy tax for air service development. For example, the city of Telluride, Colorado, dedicates proceeds from a 2% restaurant tax and 50% of the 4% lodging tax for airline guarantees to serve the area.

Advantages of Sales Taxes

Because voters must approve the tax (directly through a referendum or indirectly through elected officials), there is generally majority support among those paying the tax that it is a valuable and reasonable way to pay for the infrastructure investment or service. In addition, because sales taxes can generate a significant amount of revenue, they can help finance major infrastructure investments.

Disadvantages of Sales Taxes

A sales tax or occupancy tax for airport projects may require state enabling legislation. Revenues from both a sales tax and an occupancy tax will fluctuate based on general economic conditions. This has been the case in Massachusetts, where the sales tax revenues have declined dramatically, leaving the MBTA with an operating revenue shortfall and forcing the agency to ask the state legislature for additional funding. With an occupancy tax, only some of those who benefit from the project would be helping to pay for the project through the taxes. In addition, an occupancy tax typically will generate less income than a general sales tax, as it targets hotel customers only. Finally, there will always be some opposition to the imposition of any new tax.

FN-4: JOINT DEVELOPMENT

Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
◆-◆◆	◆◆◆◆	◆◆	◆◆	◆◆	◆◆

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 the development and share in the revenues generated by the development. The revenue from a joint development project can fund the capital costs of transportation improvements or new facilities and/or can help to pay for operations and maintenance. Joint development is considered a value capture technique because transportation improvements raise the value to adjacent property and offer mutual benefits to public entities and private property owners. Through the sale or lease of property or development rights or through special extractions, public agencies can share the cost of a large-scale transportation investment with private partners.¹³

Joint development is widely used by transit agencies in Atlanta; Washington, DC; Portland; San Francisco; Boston; and Dallas. Highway agencies and airports increasingly use joint development as a preferred approach to finance capital projects and to manage operations and maintenance of transportation facilities.

Joint development projects can be structured either to create a revenue stream for a transportation agency or as a mechanism for cost and revenue sharing with a private-sector partner. For example, in some transit joint development projects, a developer agrees to share some percentage of the rental or sales income with the transit agency, creating an on-going income stream for the transit agency. In other cases, transit agencies have agreed to share the cost of heating, ventilation, and air conditioning (HVAC) systems and other infrastructure as a component of a joint development deal. The amount of revenue generated by joint development will depend on the number and size of joint development projects undertaken, as well as market conditions within the municipality where the project is located. Annual joint development revenue for the Washington Metropolitan Area Transit Authority (WMATA), which has more than 50 joint development projects, exceeds \$6 million, representing a small fraction of the agency’s annual operating budget.

Extent of Airport Applicability

There are many on-airport joint developments. Off-airport joint development might occur if an airport owned off-airport land in proximity to the airport. An airport sponsor might choose to locate a training facility or other airport-related use on the site, and to partner with a private developer to build additional space at the site and share rental income. Rail access projects to airports also are candidates for a joint development structure.

¹³ Special extractions often refer to arrangements that involve fees paid to a landowner who has “mineral rights” in exchange for the right to extract minerals (e.g., coal, oil, or gas) from the land. Mineral rights are discussed in more detail in Chapter 5 of this Airport Guide.

Implementation

Joint development is a form of public-private partnership (P3). An estimated 23 states have enabling legislation that permits P3 relationships.¹⁴ The terms of P3 projects are highly individualized with regard to scope, financial contributions, and revenue sharing.

Advantages of Joint Development

Joint development projects provide mutual benefits to both the private-sector and public-sector participants. A joint development project may not only provide a direct revenue stream for an airport, it may also increase the customer base of the airport. The technique can be used either to generate revenue or as a mechanism for cost sharing.

Disadvantages of Joint Development

Joint development projects are complicated and require that the transportation agency involved in the transaction have a knowledgeable real estate development staff and outside counsel. Regulatory barriers also may impede joint development as a value capture technique on certain types of federally funded projects.

FN-10: TRANSFER OF DEVELOPMENT RIGHTS (TDRs)

Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
◆	◆◆◆	◆◆	◆	◆◆◆	◆◆◆

The ownership of land involves a variety of separable rights. Among the most common rights are those that pertain to mineral estates, surface and ground water, and development. Through zoning ordinances and regulations, governments can constrain a property owner’s use of these rights, and consequently can influence the value of a particular property. The implementation of land use controls separates development rights from land ownership.

The transfer of development rights (TDR) provides a mechanism for landowners to retain existing rights to use their land, but if development is restricted, the development rights can be sold to a TDR bank¹⁵ or to a developer and transferred to another site within a given jurisdiction.

A TDR program has four main components:

- A development-restricted area (the sending area)
- A designated development growth zone (the receiving area)
- A pool of development rights that is legally severable from the land
- A procedure for transferring development rights from one property to another¹⁶

¹⁴ Lari, et al., Value Capture for Transportation Finance: Technical Research Report, Center for Transportation Studies, University of Minnesota, June 2009

¹⁵ TDR banking occurs when development rights purchased from a sending site are not used right away on a receiving site. A TDR bank is a formal, government-recognized public-private entity that tracks and administers these transactions.

A TDR can be used to pay for a specific infrastructure investment or for maintenance and operating costs. Municipalities may also choose to deposit TDR proceeds into the general fund. TDR has been widely used in New York City to shift development density within a given city block. The city has now approved the use of TDRs for the multi-block Hudson Yards development project. In this case, the development rights were established in the east yards, where a park has been sited, thus reducing the amount of space that will be used for building in that area. TDRs have been sold to developers of other sites within the Hudson Yards planning area, and the proceeds are being used to help pay debt service on bonds used to pay for the subway extension to the site, as well as other infrastructure investments.

Extent of Airport Applicability

Airports holding large acreage of land or off-airport parcels may be candidates for this technique. On-airport building height restrictions limit the density of development at an airport. Potentially, a municipality or an airport authority working with a municipality could establish a TDR program by which the underlying development potential of non-aeronautical airport land is sold to a developer for use in higher density development elsewhere in the municipality. Proceeds from the sale of a TDR may be dedicated to an airport infrastructure fund or used to pay for other airport-related costs.

TDR could generate substantial revenues, depending on the volume of development rights that exist at the airport. The revenues also will vary based on the real estate market in individual communities.

Implementation

More than 20 states have enacted legislation or amended statutes to allow the use of TDRs. For example, both New Jersey and New York enacted enabling legislation that establishes TDR procedures and a Development Rights Bank that can acquire and retain development rights and hold them until demand develops for their use.

Advantages of TDR

TDR provides a mechanism for extracting value from land that is restricted for development, such as land at an airport. TDR revenue generated from the sale of non-aeronautical airport development rights would be directly tied to the airport, leading to broader public support for using the funds for airport activity. TDR also can generate revenue for a municipality in excess of the value of the TDR itself, because the sites that are built at a higher density as a result of the TDR will likely generate greater property tax revenues than they otherwise would.

Disadvantages of TDR

TDR programs can be complicated to set up. They require a defined sending area (the area from which the development rights will be separated from the land itself) and a defined receiving area (the area to which the development rights will be sent and exercised). There may be resistance to increased development densities in the receiving area. TDR programs function best if the receiving area is located in a strong development market.

¹⁶ Platt, R. H., *Land Use and Society: Geography, Law, and Public Policy*, Island Press: Washington DC, 1996

FN-11: CONNECTION FEES

Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
◆	◆	◆	○	◆	◆

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. For example, in Atlanta, in Washington, DC, and in Seattle, transit agencies negotiated connection fees with property owners interested in direct connections to transit stations. Municipalities commonly use connection fees to hook up private properties to municipal services such as sewer and water lines. Gas and cable companies also levy connection fees to connect users to supporting infrastructure.

Extent of Airport Applicability

Airport sponsors can charge connection fees for access to airport-provided utilities or Internet backbones. Furthermore, if security and “through-the-fence” 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.

Revenue collected through connection fees can pay for general operating and maintenance costs. Connection fees are either a one-time payment or an annual payment. The amount of revenue generated will depend on the number of connection fees that an airport can negotiate, and the value of the connection to the property owner. A one-time connection fee for a single user will generate a larger one-time payment, while annual connection fees will provide an on-going revenue stream.

Implementation

Implementing connection fees will require approval by airport governing bodies and the appropriate airport security departments. Through-the-fence connections must meet FAA requirements. The lead agency would be the airport authority or municipality. Partners include the property owner wishing to connect to the facility.

Advantages of Connecting Fees

An airport sponsor has complete control over how connection fees are structured, and because sponsors negotiate fees on a case-by-case basis, this technique allows flexibility in implementation.

Disadvantages of Connecting Fees

Direct connections from off-site properties may require additional security procedures and expense. In addition, the amount of revenue generated by buy-in charges and connection fees is small; also, there may be limited opportunities for connection fees, depending on the surrounding land uses.

6.4.3. Value Capture Techniques with Lower Potential for Use by Airport Sponsors

The value capture techniques included in this section provide less net revenue potential for airports than those described in Section 6.4.2. In general, the complexities of organizing and implementing

these techniques appear to outweigh the gains that airport sponsors could realize. They have been included in this Airport Guide because, depending on the local situation, adapting one or more of these techniques may be a viable strategy. For example, one technique listed below is to organize a special assessment/betterment district. If a community near an airport has a successful history with using this type of district, a wide degree of public acceptance may already exist, along with a clear local legislative, legal, and governance structure that could be modified for the airport requirements, thus minimizing the time and expense of implementation.

FN-12: BUSINESS IMPROVEMENT DISTRICTS (BIDs)

Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
◆	◆	◆	○	◆◆	◆◆

A business improvement district (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 downtowns and commercial districts. Within the districts, property owners assess a fee on their properties to fund streetscape improvements, marketing, street cleaning, or other small infrastructure investments. BIDs generate modest revenues that typically pay for inexpensive programs or investments. In San Diego, for example, property owners pay between \$40 and \$500 annually for these services (with some anchor properties paying up to \$5,000). Revenues will vary based on the number of properties within the BID and on the annual fee assessed.

Extent of Airport Applicability

A BID may support access to and from the airport. On the airport itself, a BID could pay for Internet access and phone lines for tenants or shared cargo facilities. A BID could be established in a business or industrial park outside of, but in proximity to, an airport to fund an improvement, such as a new entrance to the airport from the park or a shuttle service to the airport. Funds could also be used to provide off-site flight information display systems (FIDS) or similar systems.

Typically, BIDs are administered by a business association set up within the district. In some instances, the work financed by the BID is managed by a municipality or, if it is an on-airport BID, it is managed by the airport sponsor.

Implementation

BIDs require state enabling legislation. Legislation may allow establishment of districts by geography, affecting all businesses or landowners within the district, or by use within the district. BID assessments can be based on a number of factors, such as square footage of a building, linear square footage along a

road, occupancy, revenues, impacts, and so forth. For example, in West Hollywood, California, a BID fee is assessed on hotel occupants within the district.¹⁷

Political, Governance, and Legal Issues

BIDs rely on businesses or property owners deciding to assess a fee on themselves or their customers. At least 51% of the affected parties must vote for the imposition of the fee. In some instances, only those businesses that vote for the fee have to pay into the program, so benefits can accrue to businesses or property owners who do not pay for the improvements.

BIDs generate only modest revenues. However, buy-in by the property owners or businesses creates good will for projects. The businesses and property owners can decide what is financed with the revenues generated. In some cases, BIDs are short term, for the period needed to make and pay for specific improvements agreed upon by the property owners/businesses within the district. Fees collected through BIDs can serve as a match for larger grants.

Extent of Airport Applicability

This tactic is suitable if there is a business district close to an airport, with a preponderance of airport-related businesses (hotels, restaurants, warehousing, rental cars, etc.).

Advantages of BIDs

BIDs are used throughout the United States, so many consultants and other individuals have experience with how to organize and administer them. BID assessments are voluntary fees; if implemented, a BID indicates good will between a business district and an airport sponsor, and may strengthen relationships between the airport sponsor and neighboring businesses.

Disadvantages of BIDs

Revenue potential with BIDs is modest. Allocation and administration of BID funds may be contentious and/or subject to competing priorities. Organizing a BID requires a majority support and, thus, requires considerable outreach to recruit support.

FN-13: SPECIAL ASSESSMENT/BETTERMENT DISTRICTS

Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
◆	◆◆	◆	○	◆◆◆	◆◆◆

A “special assessment district” or “betterment 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. The local jurisdiction designates the special

¹⁷ In 1989, the West Hollywood City Council approved its first BID with the establishment of the West Hollywood Business Improvement Area and the Hotel Marketing Benefit Zone. In 2013, the new West Hollywood Tourism Improvement District was created, replacing the previous Hotel Marketing Benefit Zone and increasing the hotel assessment from 1.5% to 3%. Visit West Hollywood manages the work program of the Tourism Improvement District.

assessment district and requires property owners to pay either a one-time fee or annual assessment to cover the cost of the improvement. Special assessment/betterment districts differ from BIDs in that the assessments are not voluntary, and they become part of a property owner's tax bill.

Special assessment/betterment districts often are established when a public investment benefits properties in more than one taxing jurisdiction. These types of districts require state enabling legislation. Prerequisites for establishment of a district vary by state. Special assessments are most typically used for sewer and water improvements, highway improvements, and transit improvements. Special assessments have financed transit-related improvements in Los Angeles, Miami, Tampa, Washington, DC, Atlanta, Cleveland, Columbus, Minneapolis, Portland, and several other cities. They are widely used throughout the United States to finance roadway infrastructure projects. For example, a special assessment district was established to help fund the construction of the E-470 highway in the Denver region.

Extent of Airport Applicability

Typically, special assessment/betterment districts are established to finance sewer and water line extensions; transit investments, including new stations and new lines; roadway investments, including new roadways and improvements to existing roadways.

A special assessment could be imposed on properties within an industrial area that benefit from the expansion of cargo facilities at an airport or other access to the airfield. Similarly, a special assessment could help fund an airport improvement, such as a runway extension in a region with an industrial base that relies heavily on just-in-time deliveries by air. The amount of the assessment can be set up to pay for any portion of an investment, up to the total cost.

Political, Governance, and Legal Issues

Special assessment/betterment districts fall under the aegis of existing property taxing authorities or newly established taxing authorities if the affected properties are located in more than one local jurisdiction.

Advantages of Special Assessment/Betterment Districts

Special assessments/betterments can be structured to ensure repayment of the entire cost of the public investment. Only those who benefit from the investment are subject to the assessment. In many states, the imposition of an assessment does not require voter approval.

Disadvantages of Special Assessment/Betterment Districts

Property owners view special assessments as another tax, and owners may resist the imposition of a fee over which they have no input. Furthermore, how the fee is imposed will have different impacts on different types of property owners. For example, if a fee for the expansion of a water line is assessed based on usage, some property owners will pay more than others will. Similarly, if the fee is assessed based on property value, different owners may shoulder a larger or smaller proportion of the assessment. The imposition of the fee also may make a property less competitively priced than other properties.

FN-14: LAND VALUE TAX

Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
◆	◆◆	◆	○	◆◆	◆◆◆

Land value taxes separate the value of the land itself from the value of any development (anything that may be built on the land). Land value taxes may be used as a value capture technique by separating the rate of property tax paid on the land itself from the rate of property tax paid on the buildings. The presumption is that land increases in value when facilities (including public transportation facilities) are added or improved. 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.

Extent of Airport Applicability

A land value tax that supports the differential in land value between undeveloped and developed properties represents a potential source of revenue that can be used to finance additional infrastructure investments, as well as maintenance and operation of existing transportation facilities. This tax is most applicable in locations where the taxing authority also owns and operates the airport. In this instance, revenues from a land value tax could help to finance capital, operating, or maintenance costs in areas around the airport. Land value taxes can produce an on-going, stable source of revenue that would vary based on (1) the amount of undeveloped land that benefits from transportation access improvements, (2) the tax rate applied to such land, and (3) how the taxing authority chooses to allocate revenues among various municipal departments.

Implementation

A land value tax requires state enabling legislation. Few states have such legislation in place. In some states, imposition of the tax may require voter approval. Because property taxes are assessed at the local level, each local jurisdiction would need to adopt a split tax rate for buildings and land. Further, the taxing authority would have to develop a clear method for calculating how much value the transportation infrastructure (e.g., an airport) adds to individual parcels of land.

Political, Governance, and Legal Issues

Some cities in Pennsylvania use a land value tax. This technique is more commonly used in Canada, Australia, and New Zealand.

Advantages of a Land Value Tax

Local residents with developed property may view a land value tax as positive because it broadens the tax burden to include undeveloped land, thus reducing the tax burden on land used primarily for residential purposes. The tax also provides an on-going revenue stream and can encourage development of land in close proximity to transportation infrastructure.

Disadvantages of a Land Value Tax

Use of a split tax strategy like a land value tax could decrease the competitive position of property in communities that adopt it relative to communities that do not adopt it. The taxing authority may find it difficult to assess the relative benefit of the airport to individual parcels of land. The availability of revenues for an airport may fluctuate as the local government faces competing demands for use of these revenues.

FN-15: TRANSPORTATION UTILITY FEES (TUFs)

Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
◆	◆◆	◆	○	◆◆◆	◆◆

Most local jurisdictions depend on property taxes as their principal source of revenue. However, the value of property does not always fully reflect the burden a particular property places on the transportation system. Accordingly, the value capture technique of transportation utility fees (TUFs) has gained acceptance over the last several decades. States impose TUFs on individual land uses (e.g., residential, office, retail) based on the amount of traffic that a particular property generates on a transportation facility and the costs of construction and maintenance of the facility. Revenues from TUFs primarily fund the maintenance of a facility.

The rationale for a TUF equates public transportation with other utilities, such as water, sewer, or electricity. However, not all states permit the use of TUFs. These fees exist in Colorado, Oregon, and Texas, but courts in Florida, Idaho, Wisconsin, and Washington State have deemed TUFs invalid.

TUFs are not strictly a value capture technique in that the level of fee charged under a TUF must reflect the cost of providing transportation services, whereas revenues from value capture are derived from the value a property owner derives from access or proximity to the service [Lari]. For TUFs, actual fees vary by specific application. A fee formula can include such factors as the trip generation of the use (usually based on national trip-generation rates), the square footage of a building, the linear footage of a building along a transportation corridor, a flat fee per unit, or a flat fee per parking space.

A TUF can provide an on-going revenue source that can increase as development intensifies. The magnitude of the revenue will vary based on the size of the fee and number of properties to which it is applied.

Extent of Airport Applicability

Use of TUFs by airport sponsors is largely untested. Establishing a direct relationship between an airport and proximate uses and then identifying an equitable fee structure may prove difficult. Specific land uses, such as hotels and car rental agencies, are potential targets; however, these businesses are more typically assessed access fees or privilege fees if they are shuttling passenger to or from the airport. This fee may also be applicable toward warehouses specifically used to store goods that will be enplaned, or to store goods that have been unloaded from aircraft.

Implementation

State enabling legislation is required to implement TUFs. Local taxing authorities administer the fees. For airports not owned and operated by a municipality or county, a revenue sharing agreement may be necessary to establish a TUF. TUFs have been widely challenged, and any jurisdiction pursuing TUFs should be prepared to defend the nexus between those who are charged the fee (such as businesses or residents) and the use of the revenues generated by the fee (such as funding of airport operations, maintenance, or infrastructure investments.)

Advantages of TUFs

TUFs relieve the tax burden on residential properties and may thus receive strong support from residents. Further, there is a direct connection between those who benefit from transportation facility or service and those who pay for it.

Disadvantages of TUFs

Given that this is a fee and not a tax, use of revenues collected from a TUF must be clear in the enabling legislation and/or ordinance. Direct costs to businesses would increase and may reduce the competitive position of areas where TUFs are imposed. The administrative workload of the taxing authority is increased, and training may be required to help staff learn how to apply the fee to individual users.

6.5 VALUE CAPTURE AND AIRPORT CITIES

Many airports in the United States, Europe, and Asia are implementing development programs associated with the concept of an “airport city.” Terms like *aerotropolis*, *airport city*, and *airport corridor* refer to airport-dependent economic development that occurs both on and off airports and is formed because of airport activity.¹⁸ The terms are used somewhat interchangeably, although Peneda classifies airport cities as including an airport and proximate land outside the fence; an aerotropolis as a more expansive, aviation-related “urban economic region”; and an airport corridor as development along a direct surface transportation connection from the airport. **Figure 6-4** sketches the spatial differences between an airport city, airport corridor, and aerotropolis as put forward by Peneda.¹⁹ For purposes of this Airport Guide, airport cities include all of these patterns of development. In addition to airport cities, value capture techniques can occur in the context of foreign trade zones (FTZs) and marine port districts. Each of these concepts is described further in this chapter.

BD-7: AIRPORT CITIES

Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
◆	◆◆	◆-◆◆◆	◆-◆◆◆	◆-◆◆◆	◆-◆◆◆

¹⁸ For an in-depth discussion of these terms, see Peneda, M., V. Reis and M. Marcario, “Critical Factors for Development of Airport Cities,” *Transportation Research Record, Journal of the Transportation Research Board*, No. 2214, Transportation Research Board of the National Academies, 2011, pp. 1-9.

¹⁹ Peneda, Reis and Marcario, 2011, pp. 1-9

An airport city begins on the airport and includes third-party passenger, cargo, and general aviation services that generate rent to airport sponsors. Off-airport, the airport city includes businesses that rely on or support:

- Frequent, speedy access to air freight
- Passenger air service (for client meetings, visitors from corporate headquarters/branch offices, and supplier/vendor representatives)
- Other services that provide goods and services to passengers (e.g., hotels, restaurants, and entertainment), businesses on-airport, and other businesses in the airport city

In locating near the airport and near one another, these businesses take advantage of the core benefits of agglomeration: economies of scale and network effects. In a particularly dynamic economy, an airport may attract a wide range of land uses, including just-in-time manufacturing, warehouses, and trucking, commercial centers, and even retail establishments. Additional businesses will be attracted because they wish to sell or buy products and services to the airport-dependent firms.²⁰ These integrated land uses reflect those of a complete city—earning the label aerotropolis or airport city.

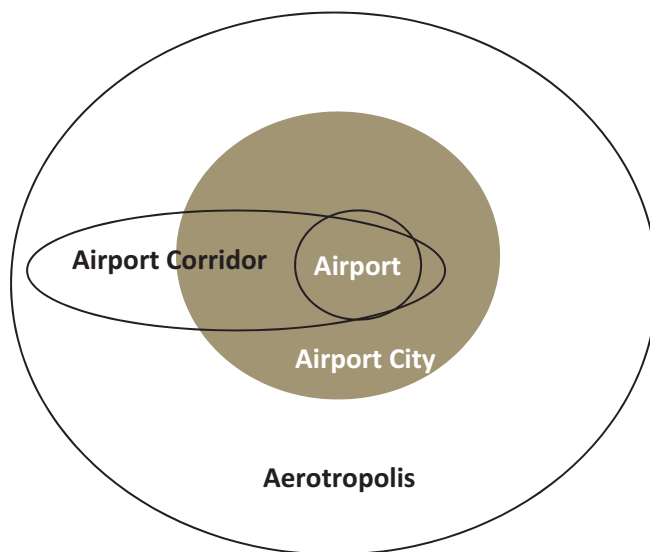
For an airport city to stimulate agglomeration, the airport sponsor must support the effort and the local or regional government must control the planning and development of the land around the airport. Other factors critical to the success of an airport city include extensive multi-modal connectivity to/from airports and areas in the vicinity of the airport with economic development potential that can translate into an airport-dependent activity.

To date, no mature airport cities in the United States have been successfully developed from state or local initiatives.²¹ Rather, these agglomerations have emerged ad hoc from vibrant airport corridors connected to airports. A prominent example is Dulles International Airport and the Dulles Toll Road. Other examples include airport agglomerations at Dallas/Fort Worth (which began with a FTZ) and Chicago O’Hare Airport. Denver International Airport is planning an airport city development on airport property it owns.

²⁰ Assume that two firms (a warehouse and a small corporate headquarters) are attracted to an airport as a *transportation asset*. They may develop or expand warehousing and office space to specifically take advantage of the airport (for freight shipment and passenger travel, respectively). Other companies may subsequently be attracted to the site in order to be near the first two companies (for example, a trucking company or a sandwich shop). These secondary firms are not directly related to the airport itself, but would not be there if not for the presence of the airport.

²¹ Peneda, Reis and Marcario, 2011, pp. 1–9

Figure 6-4: Spatial Layout of Airport City Development Concepts



Source: Adapted from Peneda, M., V. Reis and M. Marcari, “Critical Factors for Development of Airport Cities,” *Transportation Research Record: Journal of the Transportation Research Board*, No. 2214, Transportation Research Board of the National Academies, 2011.

A well-known example of an airport city is Schiphol Airport in Amsterdam. The amount of underutilized or vacant space near the airport is limited. The national government and regional and local governments collaborated to apply planning and land use regulations and to limit development to airport-dependent and airport-related uses, such as maintenance facilities, hotels, offices, or warehouses. The aim of the development policies was to leverage Schiphol’s market position and enhance economic development (Warffemius et. al.). Today, the airport and its surrounding property have become a major European cargo and industrial center.

A formal airport city concept is slow in gaining traction in the United States. For example, an “aerotropolis” bill targeted for Lambert-St. Louis International Airport failed in the Missouri General Assembly in 2012. In Detroit, state and city authorities collaborated to launch an airport city anchored by the Detroit Metro and Willow Run airports. In February 2011, the state of Michigan designated the Detroit Region Aerotropolis Development Corporation (ADC) a certified Next Michigan Development Corporation to attract businesses engaging in multi-modal commerce. In 2013, however, the ADC renamed itself VantagePort as part of a rebranding marketing effort, and there is speculation whether the new branding also signifies the end to the aerotropolis and a turn toward a logistics center.²² A designated airport city is a potential framework to adopt value capture techniques and share revenues between the airport and local jurisdictions. Airport sponsors could share in development fees, property taxes, sales taxes, and income taxes stemming from business activity in the airport city. The specific mix

²²<http://www.crainsdetroit.com/article/20130718/NEWS/130719796/aerotropolis-rebrands-as-vantageport-as-part-of-25-year-build-out-plan> and <http://detroit.cbslocal.com/2013/07/18/aerotropolis-effort-rebrands-as-vantageport-hires-ceo/>

of value capture techniques and revenue sharing would be defined in the enabling regulation and legislation for the airport city, and would be transparent to businesses coming into the airport city.

Designation of airport cities will require extensive and coordinated land use planning, zoning, enforcement, and clear definitions of airport-related businesses. If the airport and local jurisdictions offer attractive development incentives, it would not be surprising to see political pressure to expand the definition of an airport-related business. Experience with establishment of marine port districts and FTZs indicates that actively developing areas can experience pressure from many different groups that wish to purchase or lease property.

6.6 MARINE PORT DISTRICTS AND FOREIGN TRADE ZONES

In the United States, marine port districts are models for the airport city concept, and FTZs represent a limited step toward implementation. Neither application represents a comprehensive urban environment, but the two models represent concepts of an airport logistics corridor or adjacent airport city, as opposed to a comprehensive aerotropolis environment. These alternate concepts are discussed in Section 6.5 and illustrated by **Figure 6-4**. Moreover, the tenuous steps toward implementation of designated airport cities in the United States, as exemplified by the Detroit and St. Louis experiences, call for flexibility in defining and designating a range of airport city concepts.

Ample examples exist of master plans for ports that restrict nearby uses to marine-related uses, much as a governing authority might restrict land to aviation-related uses for a planned airport city. Typically, marine-related land uses include cargo facilities and services, logistics, maritime manufacturing, and support services for the port.

Airport-related FTZs can be viewed as nascent airport cities in that off-airport land is set aside for logistics, warehouses, and manufacturing companies that would seek a location near access to international air cargo services. **Table 6-3** lists 30 airports that have FTZ status or operate an FTZ on behalf of a grantee. Airport sponsors and other entities, such as cities, counties, and port commissions, operate the FTZs. Some FTZs designate special aviation land uses.

Table 6-3: Sample Airports/Airport Operators Affiliated with FTZs

FTZ Number	Airport/Airport Operator	State	FTZ Number	Airport/Airport Operator	State
39	Dallas/Fort Worth International Airport Board	TX	157	Natrona County International Airport	WY
42	Greater Orlando Aviation Authority	FL	158	Jackson Municipal Airport Authority	MS
73	Maryland Aviation Administration	MD	165	Midland International Airport	TX
82	Mobile Airport Authority	AL	175	Cedar Rapids Airport Commission	IA
83	Authority/Huntsville FTZ Corporation	AL	176	Greater Rockford Airport Authority	IL
88	Great Falls International Airport Authority	MT	203	Moses Lake, Grant County Airport	WA
94	Laredo International Airport	TX	204	Tri-Cities Airport Commission	TN
103	Grand Forks Regional Airport Authority	ND	207	Capital Region Airport Commission	VA
104	Savannah Airport Commission	GA	215	Sebring Airport Authority	FL

(continued on next page)

Table 6-3 (Continued).

FTZ Number	Airport/Airport Operator	State	FTZ Number	Airport/Airport Operator	State
106	Dept. of Airports of the city of Oklahoma	OK	217	Ocala Regional Airport	FL
110	City of Albuquerque Aviation Department	NM	224	Spokane Airport Board	WA
111	JFK International Airport	NY	237	Santa Maria Public Airport District	CA
125	St. Joseph County Airport Authority	IN	250	Sanford Airport Authority	FL
127	Operator: Richland-Lexington Airport	SC	275	Capital Region Airport Authority	MI
137	Washington Dulles FTZ	VA	276	County of Kern Department of Airports	CA

Source: 71st Annual Report of the Foreign-Trade Zones Board to the Congress of the United States, November 2010

BD-8: FOREIGN TRADE ZONES (FTZs)

Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
◆-◆◆	◆-◆◆	◆	○-◆◆	◆	◆

Airports that are also U.S. Customs ports of entry are able to use FTZs to increase cargo activity.²³ By taking advantage of the FTZ, companies are able to defer, reduce, or eliminate U.S. Customs duties on products admitted to the zone.

The actual zones can be on-airport or off-airport, in designated parcels/buildings, and usually includes industrial parks near the airport. Zone sites must be within or adjacent to a U.S. Customs and Border Protection (CBP) port of entry, which may include, but are not limited to, airports. Facilities associated with the FTZ remain within the jurisdiction of local, state, or federal governments or agencies.

FTZs are found in all 50 U.S. states, and have two designations:

- **General-purpose zones** – usually located at ports or industrial parks and open to multiple zone users. The most common activity uses for general-purpose zones are warehouse and distribution activities, although these zones also can accommodate manufacturing.
- **Special-purpose zones (subzones)** – usually at manufacturing plants. A subzone of a general-purpose zone can be approved if the company is unable to relocate existing facilities into a general-purpose zone site.

On a national level, the largest industrial users of FTZs are petroleum refiners.²⁴ Significant zone manufacturing also occurs in the automotive, electronic, and pharmaceutical product areas. Currently, about 250 general-purpose zones and more than 450 subzones are approved, with 70 applications

²³ FTZs are designated sites licensed by the Foreign-Trade Zones Board of the U.S. Department of Commerce.

²⁴ See <http://enforcement.trade.gov/ftzpage/annualreport/ar-2012.pdf> (published in August 2013)

pending. FTZs handle over \$500 billion of goods and employ 350,000 people. These aggregate numbers reflect FTZs located by marine ports and land borders, as well as at airports.²⁵

El Paso International Airport

The FTZ Board approved FTZ # 68 in 1981. The original grantee was El Paso International Airport, which acted to establish, maintain, and operate a 60-acre site within its Butterfield Trail Industrial Park. In late 1982, the airport transferred the grant to the City of El Paso, Texas, with the airport acting as operator. FTZ #68 is now heralded as an integral part of the city’s regional and international investment strategy, linking the airport and industrial park with the Global Reach Science & Technology Park, the Union Pacific and Burlington Northern railroads, and Interstate Highways I-10 and I-25.²⁶

Today, the El Paso FTZ is the fifth-largest general-purpose zone in the nation based on dollar volume (reaching \$10.2 billion in 2013), and the largest FTZ on the U.S./Mexico border. This FTZ leverages its border location to take advantage of trade stimulated by NAFTA, possesses ample land that is developed as business parks, and benefits from intermodal connections to domestic and international markets. The zone consists of 21 sites containing 3,443 acres spread out through the east, central, northeast, and lower valley areas of the city and outside the city limits but within El Paso County. On average, more than 70 firms use the FTZ, handling more than 200 different items from more than 80 countries. The FTZ regions offer one-stop shopping for international trade with on-site U.S. Customs personnel to assist FTZ users and the import/export community. **Figure 6-5** shows that the FTZ consists of both on-airport and off-airport facilities.

Dallas/Fort Worth International FTZ #39

Dallas/Fort Worth International Airport (DFW) has an airport use plan that will add a comprehensive airport city environment to its FTZ as it develops airport property located in the cities of Irving, Euless, Grapevine, and Coppell.²⁷ The plan is based on estimates of market demand for office, retail, and industrial space, and supports the growth of the airport’s core business as a global air transportation facility. Plans include multi-use development of approximately 6,600 acres.²⁸

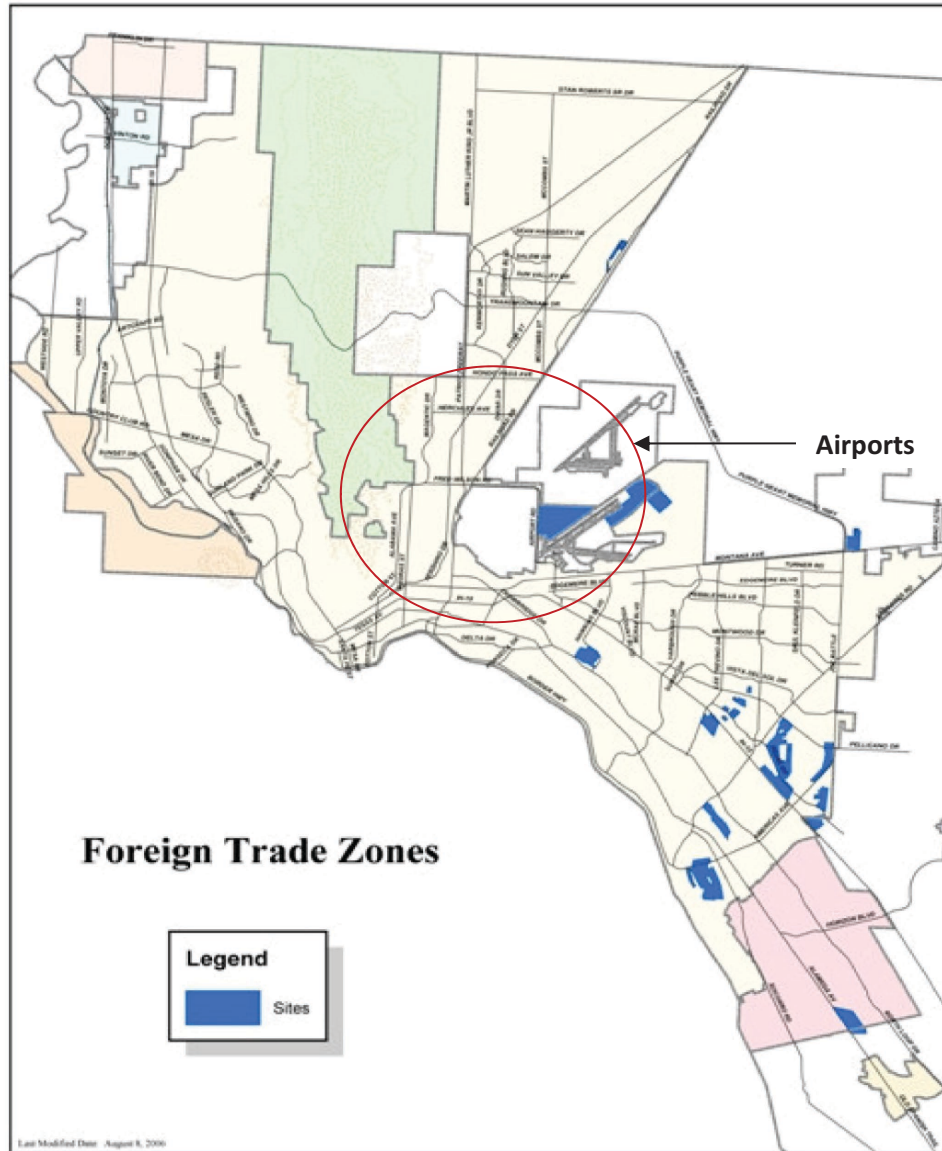
²⁵ <http://ia.ita.doc.gov/ftzpage/info/summary.html>

²⁶ http://home.elpasotexas.gov/ftz/_documents/Promotional%20Brochure.pdf

²⁷ <http://www.dfairport.com/vfr2030/land/index.php>

²⁸ http://www.dallascityhall.com/council_briefings/briefings0811/DFW-LandUse_080311.pdf

Figure 6-5: El Paso International Airport FTZs



Source: Annual report to the U.S. Foreign-Trade Zones Board, October 1, 2009–September 30, 2010, El Paso International Airport

BD-9: MARINE PORT DISTRICTS

Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
◆-◆◆	◆-◆◆	◆	○-◆◆	◆-◆◆	◆-◆◆◆

Water ports and working waterfronts provide examples of municipalities and states adopting regulatory measures to support and encourage uses specific to a particular transportation facility or feature.

Several U.S. cities have adopted marine industrial zoning that designates land near fishing harbors and deep-water ports for marine-related industrial uses only. This zoning is a way to preserve important economic sectors that create industrial and logistics jobs.

In 2004, the city of Baltimore, Maryland, passed an ordinance adopting a Marine Industrial Zone Overlay District (MIZOD) for land along the Baltimore Harbor that provides deep-water access. Such land is scarce throughout the United States and is critical to future expansion of the port and to job creation. The ordinance, which was set to expire in 2014, permits heavy industrial uses and other uses that require both deep water (18 feet) and railroad or highway access. It prohibits planned unit developments, taverns, live entertainment, most hotels and commercial uses, and residential uses.²⁹ Baltimore's port currently is home to 47 marine terminals, seven of which are owned by the state. It "represents 16,500 direct jobs; 33,700 indirect jobs; \$3.6 billion in annual personal wages and salaries; \$1.9 billion in annual business revenues; and \$388 million in state, county, and municipal taxes."³⁰ Furthermore, "nationwide, it is recognized as the leader in handling imported forest products, construction equipment, gypsum, iron ore, coal, and sugar. It is the second-largest port in the country for handling exports of vehicles and heavy equipment."³¹

In 2009, developers launched a concerted effort to buy up land within the MIZOD for future development of hotels, condominiums, and related uses in anticipation of the expiration of the ordinance in 2014. In May 2009, however, the mayor of Baltimore signed an extension of the ordinance, keeping it in effect through 2024. Port-related businesses believe this extension will help them secure bank loans, with the assurance that the port will remain competitive at least through 2024. For example, one business spent \$20 million for a deep draft pier. The bankers financing the project wanted assurances that the land around the pier would stay industrial.³² The Maryland Port Administration's executive director has noted the importance of the ordinance for retaining Baltimore's position as an excellent port. Supporters also believe that the ordinance positions the port to take advantage of the anticipated 2014 widening of the Panama Canal, which will allow larger ships from the Far East to access ports on the East Coast of the United States.³³ These economic opportunities would be lost if land with deep-water access was developed for non-marine uses. The extension does allow individual property owners to petition to have their property removed from the MIZOD. The petition process will allow flexibility in reviewing how prohibited uses might fit into the future of the port as a working waterfront.

²⁹ Broadwater, K., "The Importance of MIZOD in a Competitive and Growing Port of Baltimore," PowerPoint presentation at the Maryland Freight Summit, September 14, 2009, retrieved September 21, 2011, from: <http://www.mdot.maryland.gov/OFM/2009FreighSummitpresentations/MIZODandImpactonthePort.pdf>

³⁰ Redding, J., "City must Protect Port: Developers' Moves to Grab Up Waterfront Property Imperil Powerful Economic Engine," *The Baltimore Sun*, March 8, 2009, p. 1, retrieved September 21, 2011, from: http://articles.baltimoresun.com/2009-03-08/news/0903060106_1_port-represents-maryland-port-port-administration

³¹ Redding, J., 2009

³² Schuh, M., "Development Crowds Out Some Baltimore Industries," reporting for WJZTV, no date, retrieved September 21, 2011, from <http://mpa.maryland.gov/media/client/News-Publications/2009/051209press.pdf>

³³ Schuh, M., "Mayor Dixon Signs Bill Protecting Port of Baltimore's Maritime Zoning Until 2024," *Baltimore Business Journal*, May 12, 2009, retrieved September 21, 2011 from: www.bizjournal.com/baltimore/stories/2009/05/11/daily21.html

The city of Gloucester, Massachusetts, has had marine industrial zoning in place since 1969 to protect its working waterfront. In 1978, the Massachusetts Coastal Zone Management Program enhanced protection of the working waterfront by naming the area a Designated Port Area. Municipal and state regulations in Gloucester were adopted to protect the fishing industry, the backbone of the city's economy. Both regulations give priority to water-dependent industrial uses and prohibit residential and most recreational boating uses.³⁴ As in Baltimore, the regulations are seen as important to securing financing for investment in new marine industrial infrastructure and buildings because they ensure that the properties will remain tied to viable marine uses. At issue is that marine-related uses, such as fish processing, are noisy, smelly, and occur at off-peak hours. Incompatible uses, such as hotels and residences, will create friction with the marine uses.

In 2006, the Gloucester zoning was amended to split the waterfront district into three distinct zones, recognizing differences in the configuration of parcels within the districts, and their proximity to water access. The districts all still favor marine-related uses. In recent years, however, changes in fishing regulations have limited the amount of fish a vessel can catch, thus hindering the viability of the fishing industry. As demand for waterfront residential development has increased, there has been substantial pressure on the city to revise the zoning to allow additional uses along the waterfront. The response of the marine industry has been strong, advocating retention of the strict land use regulations that support the industry.³⁵ The city government has been trying to reach a compromise with landowners and the marine industries in an effort to redevelop a long-vacant food-processing facility into a hotel. Gloucester has suffered economically in recent years, and many individuals, including the mayor, believe development of a waterfront hotel will support and encourage tourism, another important industry in Gloucester.

The idea of zoning to retain land for marine-related development differs from zoning to support airport-related uses for value capture. Marine ports are discussed in the context of airport value capture because they offer a public policy model of setting aside land for the purpose of supporting transportation facilities and leveraging economic development and public revenues due to the presence of the ports. Nonetheless, there are significant differences. Marine ports are primarily cargo facilities, with limited passenger services (which mostly relate to recreational cruise ships, along with some ferry operations that account for limited business travel). Airports, on the other hand, support cargo operations as well as national and global business travel. Accordingly, land use regulation in the context of airport-related industries is better exemplified by the Schiphol experience, where allowable development is limited to airport-dependent and related uses. In Schiphol, for example, hotels and other commercial (non-industrial) development are encouraged if there is an airport nexus. Establishing the airport nexus is the first step in justifying the case for value capture.

³⁴ Wiggan, J., *Preserving and Promoting a Working Harbor: The Experience of Gloucester, Massachusetts*, paper for the Urban Harbor Institute, University of Massachusetts, Boston, no date, retrieved September 21, 2011, from: http://www.uhi.umb.edu/pdf_files/Norfolk_May_07.pdf

³⁵ Gaines, R., "Property Owners: Regs 'Strangle' Harbor Development," *The Gloucester Times*, July 27, 2007, retrieved September 21, 2011, from: <http://www.gloucestertimes.com/local/x645280642/Property-owners-regs-strangle-harbor-development>

6.7 OTHER SOURCES OF PUBLIC FINANCING

Value capture techniques provide alternate ways to raise capital for improvements and pay for regular operations and maintenance. Because of high capital requirements for transportation improvements, capital projects increasingly depend on a combination of public and private finance. Two additional sources of public financing in use by airports are infrastructure banks and assistance through the Transportation Infrastructure Finance and Innovation Act (TIFIA).³⁶ Historically, infrastructure banks and credit assistance under TIFIA primarily helped to finance highway, transit, and rail projects. Because airport sponsors are beginning to tap these sources of state and federal funds, however, they deserve a mention in this Airport Guide.

FN-16: INFRASTRUCTURE BANK

An infrastructure bank is a revolving fund that can offer direct loans at low interest rates as well as loan guarantees and lines of credit. States establish and operate infrastructure banks; however, Congress has introduced several versions of legislation to fund a national infrastructure bank. Currently, 33 states have passed enabling legislation, but in 10 of these states the infrastructure banks are unfunded. **Table 6-4** lists the active and inactive infrastructure banks.

Table 6-4: Active and Inactive Infrastructure Banks

Active Infrastructure Banks			Inactive Infrastructure Banks
Alaska	North Dakota	Washington	Arizona
Colorado	Ohio	Wisconsin	Arkansas
Florida	Oregon	Wyoming	California
Maine	Pennsylvania		Delaware
Michigan	South Carolina		Indiana
Minnesota	South Dakota		Iowa
Missouri	Texas		New York
Nebraska	Utah		Oklahoma
New Mexico	Vermont		Rhode Island
North Carolina	Virginia		Tennessee

Source: CPCS, *Alternative Funding and Financing Mechanisms for Passenger and Freight Rail Projects*, 2014

State infrastructure banks can provide support for both public and private transportation projects. Some banks capitalize loans strictly with state funds; others capitalize with a combination of state and federal funds.

Because a national infrastructure bank does not yet exist, individual airport operators seeking this type of funding must consult their own state programs for eligibility. However, there are many examples of the use of this type of funding for aviation facilities. The Aviation Element of the Colorado State Infrastructure Bank (SIB) has financed 12 projects at relatively low interest rates that span airport capital

³⁶ Transportation Infrastructure Finance and Innovation Act (TIFIA), information available at: <http://www.fhwa.dot.gov/ipd/tifia/>

improvements, air traffic control towers, snow removal equipment, pavement reconstruction, and land acquisition.

FN-17: TIFIA

The federal Transportation Infrastructure Finance and Innovation Act (TIFIA) provides flexible credit assistance to highway, transit, rail, seaport, and intermodal freight projects through direct loans, loan guarantees, and standby lines of credit. By statute, credit assistance under TIFIA can make up no more than 33% of total project costs. The TIFIA program targets large projects, generally in excess of \$50 million by statute. For Intelligent Transportation System (ITS) projects,³⁷ the minimum project cost is \$15 million. The program offers three types of financial assistance featuring maturities up to 35 years after substantial completion of the project. *Secured loans* are direct federal loans providing long-term financing of capital costs with flexible repayment terms. *Loan guarantees* provide full-faith-and-credit guarantees by the federal government of a portion of project loans made by institutional investors. Standby *lines of credit* represent secondary sources of financing in the form of contingent federal loans that can supplement project revenues during the first 10 years of project operations. Eligible projects can include 100% public financing or private co-investment.

Demand for TIFIA financing has increased as other sources of transportation funding has declined. Also, TIFIA is one of a few federal programs that encourage the use of innovative financing, joint development, and public-private partnerships (P3s) to reduce costs, accelerate project delivery, lessen public-sector exposure, and contribute private capital to projects.

Several airports, P3s, and transit agencies have used TIFIA financing to improve ground transportation at or to airports. For example

- T.F. Green Airport in Providence, Rhode Island, was one of the earliest airport participants in the program. The Rhode Island Airport Corporation (RIAC) was the project sponsor for construction of Interlink, an intermodal project connecting air, rail, bus, automobiles, and car rentals at the airport.
- Denver’s Regional Transportation District (RTD) received a \$280 million TIFIA loan to help fund the Eagle P3 commuter rail project that will operate from Union Station east 23 miles to Denver International Airport.
- The Florida Department of Transportation (DOT) and Miami-Dade County Aviation Department used TIFIA funds as part of the financial package to build the Miami Intermodal Center, which includes transit, Amtrak, intercity bus services, a rental car center (RCC) and an automated people mover system to connect the RCC and the intermodal station with the airport.
- More recently, TIFIA loans went to Chicago O’Hare International Airport to help fund a consolidated Joint Use Facility Project that included relocation and consolidation of rental car operations and public parking. TIFIA also will help fund connection of the new facility into the airport transit system.

³⁷ According to U.S. DOT, Intelligent Transportation Systems (ITS) is the application of advanced information and communications technology to enhance safety and mobility while reducing the environmental impact of transportation.

Table 6-5 summarizes the funding sources for the project to illustrate the magnitude and complexity of the Chicago O’Hare financial package.

Table 6-5: Financing Mechanisms Used for the Chicago O’Hare Consolidated Joint Use Facility Project

Funding Source	Amount
General Airport Revenue Bonds	\$95.6 million
Customer Facility Charge (CFC) Senior Lien Revenue Bonds	\$250.5 million
Airport Development Funds	\$62.4 million
CFC PAYGO	\$141.7 million
Passenger Facility Charge (PFC) Revenues	\$37.7 million
TIFIA Loan	\$288.1 million

Source: http://www.fhwa.dot.gov/ipd/project_profiles/il_ohare.htm

6.8 KEY POINTS AND CONCLUSIONS

Given the high cost of airport improvements, multiple sources of funding will continue to finance projects and on-going operations. These include grants and loans, taxes and fees. Value capture, infrastructure banks, and TIFIA offer alternative sources of funding and finance; for airports, however, these techniques are relatively underused. Going forward, they may gain traction. Regions that support international airports have a competitive advantage for attracting firms doing business throughout the world. This nexus between the access benefits created by the airport and land development near the airport provides a strong case for adopting value capture techniques.

Development parcels in close proximity to an airport are desirable for a wide range of uses. A quick look at most commercial service airports shows clusters of hotels, restaurants, gas stations, parking, and rental car companies near the airports. Because of late evening arrivals or early morning departures, air passengers seek these accommodations, and therefore provide a customer base for the other associated services. Industrial and office parks have also sprouted up near airports across the country. Just-in-time delivery requirements, increased global trade, and the uncertainty associated with highway congestion make locations near airfreight facilities and passenger terminals highly desirable.

With the exception of access and privilege fees, value capture techniques represent uncharted territory for airports. There is, however, considerable precedent to use value capture as a mechanism to partially fund transit and roadway projects. For example, value capture techniques were used to finance parts of transit-related improvements in Los Angeles; Miami; Tampa; Washington, DC; Atlanta; Cleveland; Columbus; and Minneapolis.

The measurement of impacts associated with road and transit projects has a deep history, with precedents that public transportation agencies can use to quantify the incremental value that accrues with new improvements or facilities. Similarly, airport economic impact studies establish a foundation to assess how airports add value to surrounding property. Despite many barriers to implementation, the airport city concept offers another way that airport sponsors are defining the region around an airport as an area of influence and impact. Value capture techniques for airports offer potential revenue sharing opportunities that may gain future acceptance in jurisdictions where strong land use controls

near an airport and development plans can effectively target and recruit aviation-related industries and businesses.

6.9 WRAP-UP

The value capture strategy is particularly relevant in a funding environment for large capital projects that involves public and private investment from multiple sources. This chapter has identified a variety of ways that either the user or beneficiary of a transportation improvement can participate in the costs to build or maintain the facility. **Table 6-6** provides a summary of the techniques presented in the chapter.

Table 6-6: Summary of Value Capture and Other Public-Sector Financing Techniques

Code	Value Capture Techniques	Extent of Airport Use	Revenue Potential	Airport Assumption of Risk	Capital Required	Complexity to Implement	Political & Institutional Challenges
Finance and Property Management – FN							
FN-4	Joint Development	◆-◆◆	◆◆◆	◆◆	◆◆	◆◆	◆◆
FN-6	Airport Access Fees and Privilege Fees	◆◆-◆◆◆	◆◆	◆	◆	◆	◆◆
FN-7	Tax Increment Financing (TIF) District	◆	◆◆◆	◆◆◆	◆◆	◆◆◆	◆◆◆
FN-8	Local Income and Payroll Tax	◆	◆-◆◆	◆	○	◆	◆◆◆
FN-9	Sales Tax/Occupancy Tax	◆-◆◆	◆◆	◆	○	◆	◆◆
FN-10	Transfer of Development Rights (TDRs)	◆	◆◆◆	◆◆	◆	◆◆◆	◆◆◆
FN-11	Connection Fees	◆	◆	◆	○	◆	◆
FN-12	Business Improvement Districts (BIDs)	◆	◆	◆	○	◆◆	◆◆
FN-13	Special Assessment/Betterment Districts	◆	◆◆	◆	○	◆◆◆	◆◆◆
FN-14	Land Value Tax	◆	◆◆	◆	○	◆◆	◆◆◆
FN-15	Transportation Utility Fees (TUFs)	◆	◆◆	◆	○	◆◆◆	◆◆
FN-16	Infrastructure Bank	◆-◆◆	◆◆	◆	◆-◆◆	◆	◆
FN-17	TIFIA	◆-◆◆	◆◆	◆	◆-◆◆	◆◆	◆
Business Development – BD							
BD-7	Airport Cities	◆	◆◆	◆-◆◆◆	◆-◆◆◆	◆-◆◆◆	◆-◆◆◆
BD-8	Foreign Trade Zones (FTZs)	◆-◆◆	◆-◆◆	◆	◆-◆◆	◆	◆
BD-9	Marine Port Districts	○	◆	◆	○-◆◆	◆-◆◆	◆-◆◆◆

Key

- Low
- Moderate
- High
- Not Relevant

6.10 ADDITIONAL REFERENCES

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Chapter 7

Improvements to Existing Airport Businesses

Doing Things Better

- 7.1 Parking, Rental Cars, and Concessions Are Key Revenue Generators
- 7.2 Major Elements of the Strategy
- 7.3 Application of the Strategy to Airport Parking
- 7.4 Application of the Strategy to Rental Cars
- 7.5 Application of the Strategy to In-Terminal Concessions
- 7.6 Wrap-up
- 7.7 Additional References

Improvements to the planning, design, and management of existing passenger concessions, public parking, and in-terminal services at an airport can and will result in net revenue gains to the airport sponsor. This chapter focuses on how airports can manage existing passenger concessions and services to achieve new revenue. This strategy is most relevant for commercial service airports where passenger-dependent activities are a significant contributor to operating revenues.

7.1 PARKING, RENTAL CARS, AND CONCESSIONS ARE KEY REVENUE GENERATORS

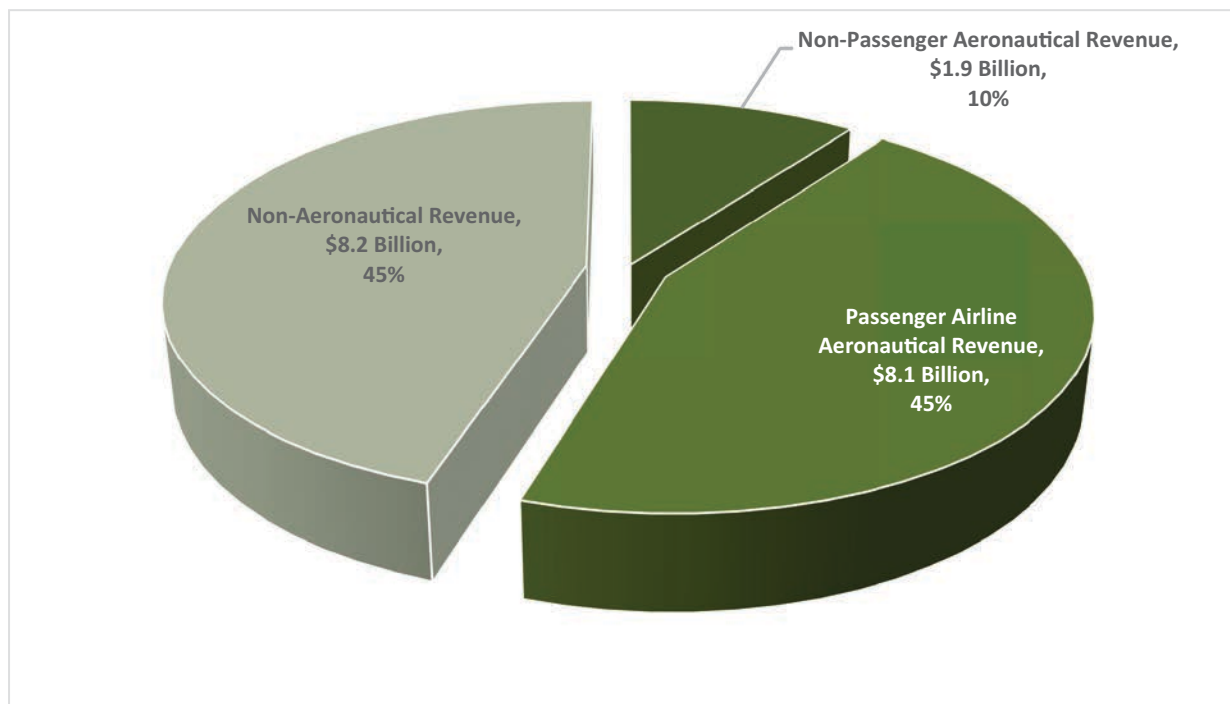
Non-aeronautical revenue¹ from concessions, public parking, rental cars, and ground leases represents an important share of airport operating revenue. In 2013, U.S. commercial airports generated \$18.1 billion in operating revenues; 45% of this operating revenue (\$8.2 billion) was non-aeronautical revenue. For many airports, these business segments are important growth areas. **Figure 7-1** shows operating revenues from 467 commercial service airports.² In past years, aeronautical passenger airline revenue typically surpassed non-aeronautical revenue.³ In 2011, however, non-aeronautical revenues were larger, and this trend has persisted through the current reporting year 2013.

¹ Income to the airport sponsor not derived from aeronautical uses. Non-aeronautical revenues include income from land rentals and non-terminal improved facilities; food, beverage, and retail concessions; rental cars; parking; hotels; ground transportation; and utilities sale/resale.

² FAA Report 127, Operating and Financial Summary

³ Income to the airport that comes from aeronautical uses by airlines, aircraft owners, and FBOs. Aeronautical use is any activity that involves, makes possible, is required for the safety of, or is otherwise directly related to the operation of aircraft. Aeronautical use includes services provided by air carriers related directly and substantial to the movement of passengers, baggage, mail, and cargo on the airport. Individuals and businesses, when engaged in the operation of aircraft or flight support, are aeronautical users.

Figure 7-1: Commercial Airport Operating Revenues, 2013

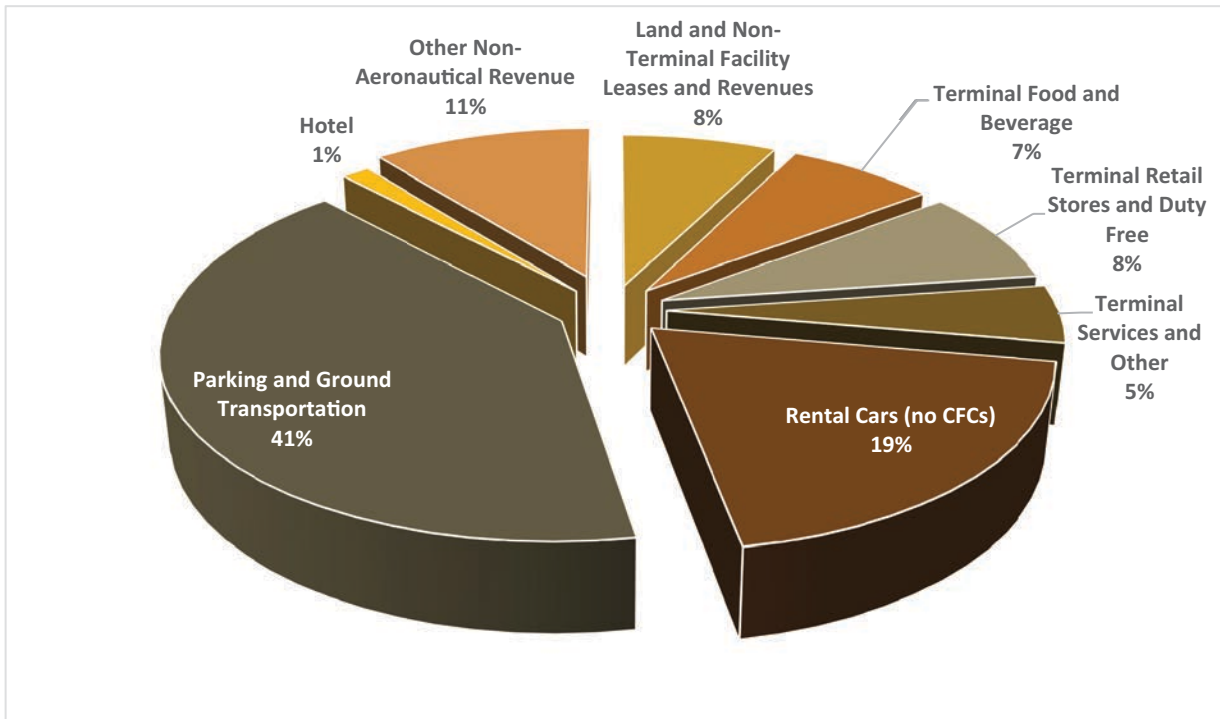


Source: FAA, Form 127, Operating and Financial Summary, 2013

Figure 7-2 examines more closely the sources of non-aeronautical revenue for reporting airports. For large and medium hub airports, passenger-dependent activities, such as public parking and rental cars, are the largest contributors. The situation is somewhat different for small and non-hub commercial airports, where ground leases and other non-aeronautical activity are proportionately more significant contributors.

Because parking, rental cars, and other concessions represent important and growing revenue producers, it is logical that the sponsors would use innovative strategies to improve these existing airport businesses and gain greater net revenues in return.

Figure 7-2: Commercial Airports Non-Aeronautical Revenue Sources, 2013



Source: FAA, Form 127, Operating and Financial Summary, 2013

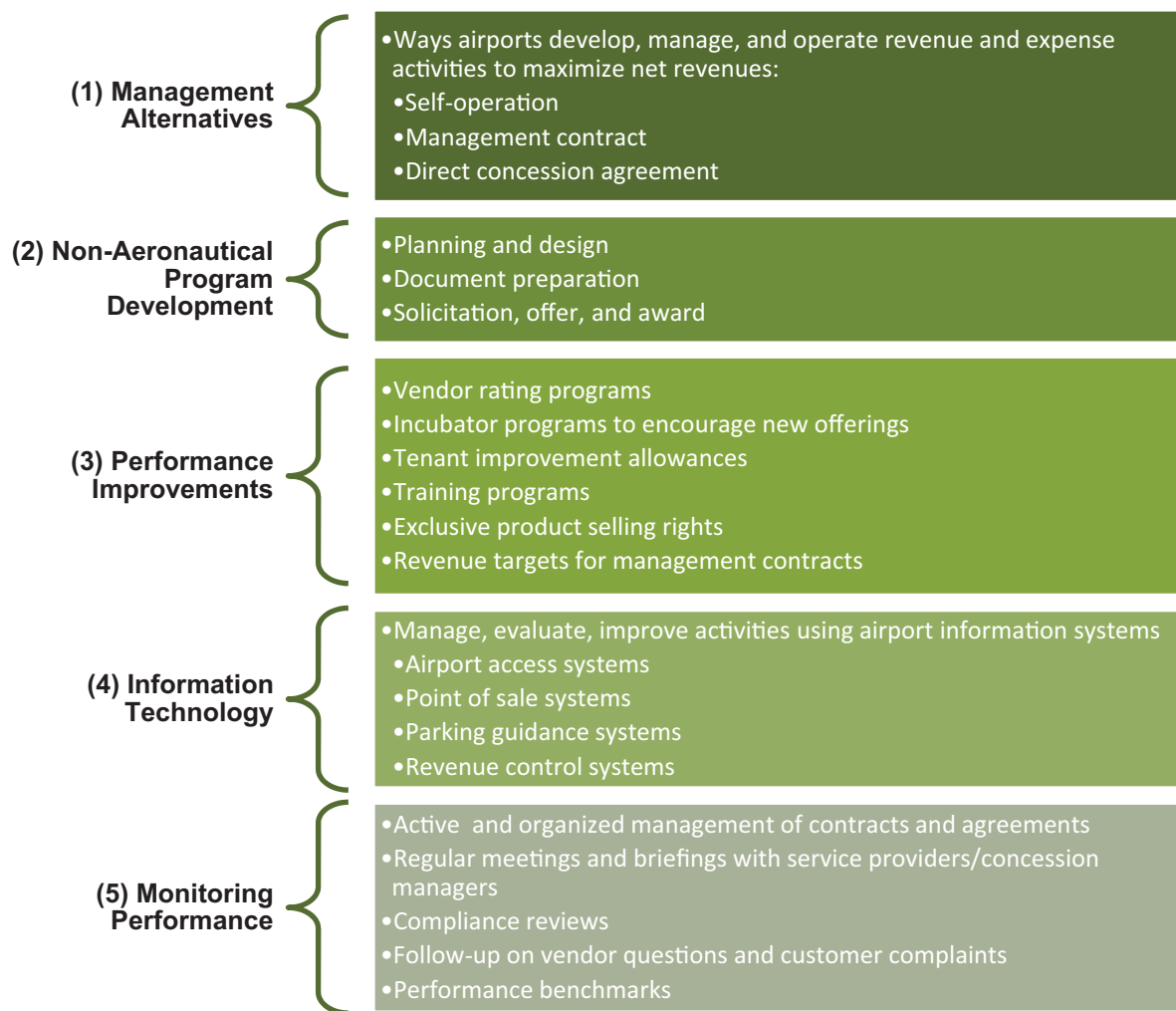
7.2 MAJOR ELEMENTS OF THE STRATEGY

A strategy of improvements to existing airport businesses places a high value on airport strategic and business planning, the importance of setting specific goals and objectives, and airport engagement in either self-operation or active management of third-party contracts that result in increased net revenues to the airport.

As shown in **Figure 7-3**, the strategy involves five key elements:

- Management alternatives for airport businesses
- Non-aeronautical program development
- Programs to improve concessionaire or service contractor performance
- Information technology that supports revenue development
- Monitoring performance

Figure 7-3: Elements of the Strategy



Source: KRAMER aerotek inc., 2014

Improvements to existing airport activities and operations could involve many different departments or functional areas such as concessions (CN); ground transportation (GT); information technology (IT); legal and contracts (LC); properties and business development (PD); parking (PK); planning, design, and administration (PL); service quality (SQ); and terminal operations (TO).

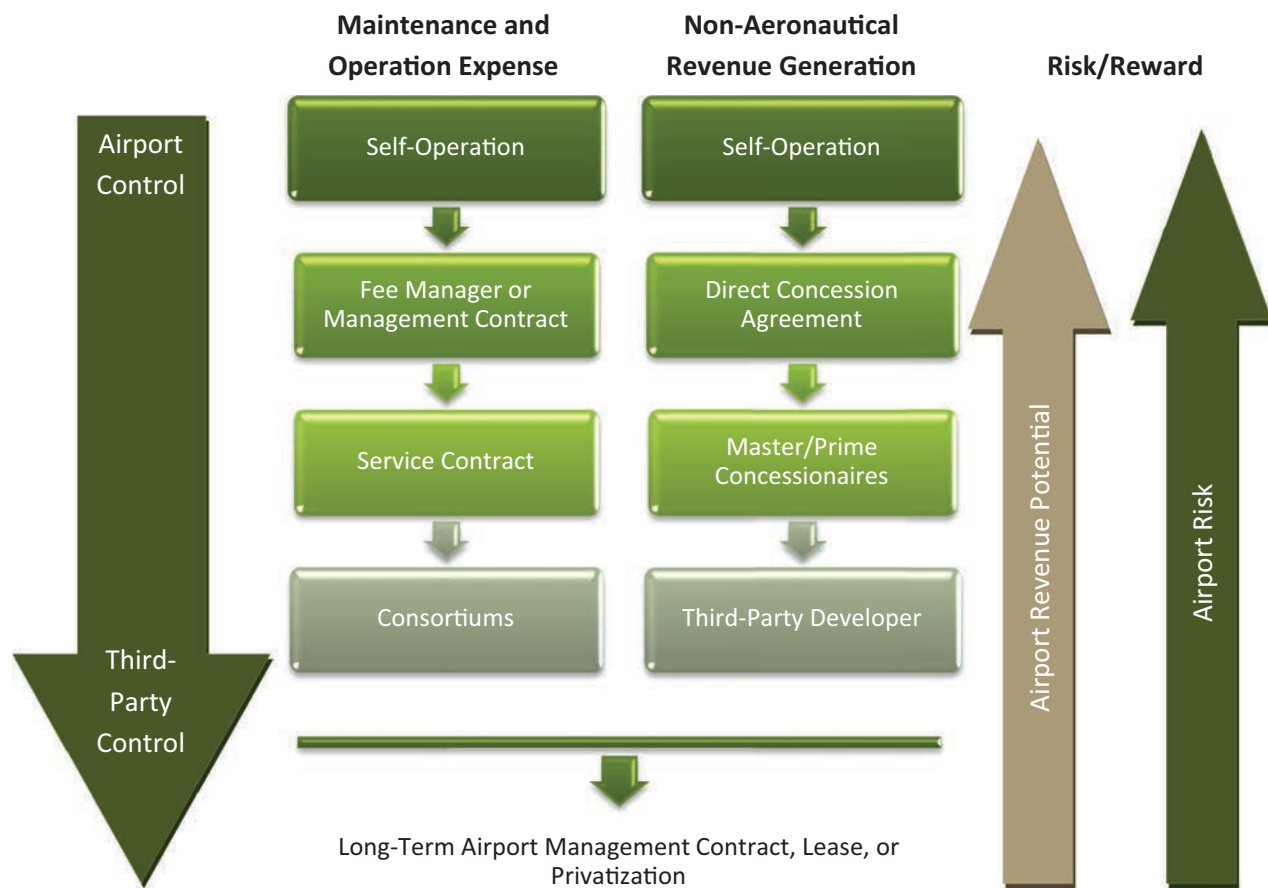
Like the other strategies in this Airport Guide, implementing improvements to existing businesses requires a custom approach because each commercial airport serves unique markets, has different governance and ownership structures, and has different business approaches.⁴ This chapter briefly describes each strategy element. The chapter also presents implementation techniques from the perspective of airport parking, rental cars, and concessions.

⁴ The governance structure determines how an airport is managed, operated, and developed. Most airports are owned and governed by cities, regional airport authorities, or counties. Some airports are governed by multiple jurisdictions, states, or unified port authorities. There are also privately owned airports (mostly general aviation airports) [ACRP LRD 7].

7.2.1 Element #1: Management Alternatives

Airports employ a variety of structures to develop, manage, and operate activities on the airport. **Figure 7-4** shows the management options that range from extensive airport staff engagement to limited or no involvement. The figure also makes a distinction between how an airport might manage maintenance and operation expenses versus non-aeronautical revenue generation. The usual goal of direct involvement in maintenance and operations is cost avoidance. The goal of direct management of non-aeronautical businesses is increased revenues to the airport sponsor.

Figure 7-4: Airport Management Options



Source: KRAMER aerotek inc., 2014

This Airport Guide focuses on cost avoidance and revenue generation techniques that give the airport operator greater control over assets and airport activity. These techniques include the management options listed in **Figure 7-4**: airport self-operation; management contracts in which the airport retains control of products and services; and direct service contracts or concession agreements. Other management options, such as consortiums, privatization, master concessionaires, and third-party developers, are described in **Appendix B** and are discussed in other ACRP reports listed in the reference section at the end of the chapter.

SELF-OPERATION OF REVENUE AND EXPENSE ACTIVITIES

With self-operation, airport staff will develop, manage, and operate a particular airport function. Self-operation at small and non-hub airports is a more common business practice, as opportunities exist for cross-utilization of both equipment and staff. At larger airports, an airport sponsor may self-operate a variety of maintenance and operation functions, such as terminal cleaning and repairs, electronic systems, mechanical systems, and snow removal. Small hub and non-hub airports self-operate parking and terminal area operations and maintenance. Self-operation of other non-aeronautical revenue activities is less prevalent.

Self-operation can result in considerable cost savings and increased net revenues to an airport if labor rates are competitive and the airport operator has sufficient staff to handle a particular activity. At some airports, public wage scales and the ability to hire and fire based on performance make the hiring of a fee manager or direct service contractors a lower cost option.

FEE MANAGER OR MANAGEMENT CONTRACT FOR OPERATIONS AND MAINTENANCE

Airport sponsors often retain a contractor to provide expertise and labor to oversee a specific maintenance or operations activity or suite of activities. The fee manager or contractor manages the activity using airport equipment and facilities. In this arrangement, the airport sponsor hires the expertise, but retains control over major decision making and pricing and holds the risk associated with the activity. The manager typically is paid a negotiated fee for services rendered.

DIRECT SERVICE CONTRACTS AND CONCESSION AGREEMENTS

Many airports subcontract a variety of operations and maintenance services, including those for concessions. The management agreement contractually shifts a degree of the risk away from the airport enterprise to the management company. This method also lowers the airport’s level of direct control over daily operations. Airport revenues from service contracts or concession agreements are highly variable depending on the responsibilities given to the third party and the method used to calculate fees, operating expenses, and revenues. For example, some parking management agreements allow the airport sponsor to retain all revenues less expenses, but without income guarantees from the management company. Typically, a concession agreement provides the airport sponsor a minimum annual guarantee (MAG) plus a revenue sharing agreement above a set threshold of net or gross revenue from the management company.

Table 7-1 lists airport functions that are handled through service contracts or concession agreements. The services are grouped according to those that are revenue generating activities and those that are maintenance and operation expense activities.

Table 7-1: Examples of Service Contracts and Management Agreements

	Types of Services	Examples of Service Contracts	Typical Hub Size Application
Non-Aeronautical Revenue Generation	Concessions	Food and Beverage, Retail, Advertising, Passenger Services	All
	Fuel	Storage, Distribution, Aircraft Hydrant Fueling	Small/Non-Hubs
	Ground Transportation	Shuttle and Bus Operations (Public/Employees), Automatic Vehicle Identification and Billing	Large/Medium
	Passenger Processing	Passenger Loading Bridges	Large/Medium/Small
	Parking	Garage and Lot Management, Credit Card and Other Payment Services, Guidance Systems	Large/Medium/Small
Maintenance and Operating Expense	Airfield/Landside Services	Snow Removal, Mowing, Deicing and Anti-Icing Material Storage and Dispensing Equipment	All
	Conveyance Systems	Elevators, Escalators, Moving Walkways, Carts, Wheelchairs	Large/Medium/Small
	Electronic Systems	Internet/Wi-Fi, Fiber Optic Backbone, Website, Digital Signage, CCTV (closed circuit TV), Telephone, Fire Alarm, Security Access System, Public Address, Building Management System, Local Area Networks, Airport Operations Database, Resource Management Systems	All
	Maintenance	Terminal Facilities, Cleaning Terminal Public Areas, Building Electrical, Mechanical, Plumbing Systems, Carpentry and Repairs	All
	Mechanical Systems	Heating, Ventilation and Air Conditioning	All
	Baggage Equipment	Baggage Handling and Inspection Systems	All
	Safety and Security	Law Enforcement, ARFF	Small/Non-Hubs
	Utilities	Water, Electricity, Natural Gas	All

Source: Compiled by KRAMER aerotek inc., 2014

WRAP-UP OF MANAGEMENT ALTERNATIVES

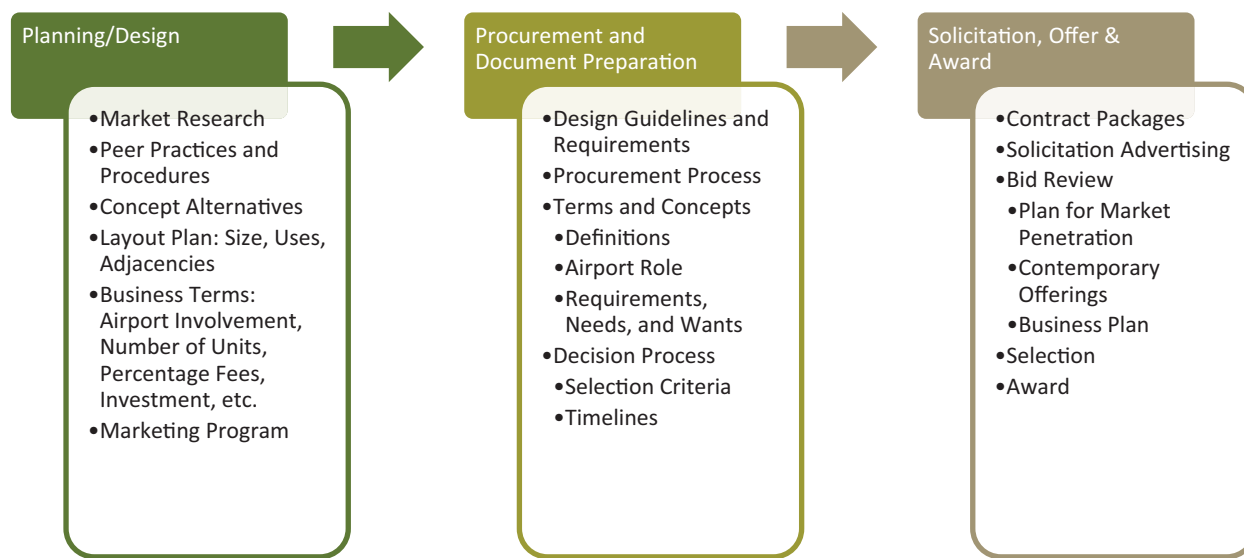
Selection of a management option for maintenance and operation expenses or for revenue generation activities is one of the most important elements of this strategy. It is common for airports to use a combination of service contracts, management contracts and concession agreements to operate parking facilities, ground transportation, food and beverage, retail, passenger services and advertising concessions.

The next element of this strategy focuses on best practices for planning, procurement documents, and solicitations of revenue generation programs. This element and the remaining elements are described in more detail as they relate to parking, rental cars, and concessions.

7.2.2 Element #2: Non-Aeronautical Program Development

The decision about management structure will dictate how an airport sponsor will go about: (a) planning and design, (b) procurement and document preparation, and (c) solicitations for its various non-aeronautical programs. **Figure 7-5** describes the principal components of non-aeronautical program development, whereby careful planning and design translate into procurement documents and, ultimately, solicitations.

Figure 7-5: Program Planning, Procurement and Solicitations



Source: Michael G. Moroney & Associates, Inc., 2014

7.2.3 Element #3: Performance Improvement

The third element of this strategy involves airport initiatives to promote innovation in the concession program and improve concession operations, financial performance, and customer service. Element #3 includes:

- Vendor rating programs that can result in fast-track contract renewals or bonus points for the highest rated service providers or concessionaires
- Programs to incubate businesses at airports and to encourage development of new offerings
- Tenant improvement allowances
- Training programs to improve customer service in the terminal area
- Exclusive product selling rights for branded products (e.g., soft drinks, beer or wine, online shopping)
- Revenue targets for management contracts (such as parking)

Performance improvement is an airport initiative that typically entails review of concession policies and development of criteria and metrics to measure concessionaire performance and to promote innovation. *ACRP Synthesis 48: How Airports Measure Customer Service Performance* summarizes techniques airports currently use to measure customer service in the terminal area. A few airports offer

performance reward programs to their concessionaires. Denver International Airport’s Premium Value Concessions Program (PVC) is a 36-month initiative set up to reward top performers in different concession categories with the opportunity to renew contracts through direct negotiations with the airport without going through a competitive bidding process.⁵ Dallas/Fort Worth International Airport offers incumbent vendors a Concessionaire Bonus Points System that gives additional bonus points for excellent sales and customer service performance. Concessionaires can use the points when submitting a renewal bid for the concession program through the request for proposal (RFP) process.⁶

7.2.4 Element #4: Information Technology that Supports Revenue Development

Airport information systems are available today in suites or modules to help manage, evaluate, and improve various activities at an airport. For example, airport access systems can monitor vehicle entry and exit points, parking transactions, parking duration, and revenues by parking facility. Parking guidance systems are designed to increase utilization of a parking garage and to assist customers in finding available parking spots. These vehicle/revenue control systems also generate information that can help airport sponsors to collect entry and dwell time fees, and to customize parking products to better match customer demand.

7.2.5 Element #5: Monitoring Performance

Even when there is a contractor, developer, or concessionaire in place, airport staff must continue to actively manage their programs to get the most out of them. Although a contract or management agreement implies delegation of responsibilities, airports that actively partner with their vendors are able to grow the offerings and revenues more effectively.

The monitoring of the performance of parking, concession programs, or rental cars has specific elements to each particular program. Several general principles apply here as well:

- Airport staff responsible for a particular program must understand in detail the terms and conditions of the agreement(s) being monitored. In addition, it is important to prioritize the greatest risks and identify what aspects of a particular agreement will be tracked.

For each agreement, maintenance of a comprehensive and well-organized file that includes the agreement, construction related documents, insurance certificates, guarantee instruments, operating permits, general correspondence, and memoranda is important. Monitoring and maintenance of complete records both are important so that small issues can be resolved quickly before they become big problems [Adapted from *ACRP Report 54*].

⁵ Denver International Airport Concession Management Performance Audit, February 2014, Office of the Auditor, City and County of Denver

⁶ Dallas/Fort Worth International Airport: Incumbent Concessionaire Bonus Points for the Terminal Renovation and Improvement Program Request for Proposal Process, available at: https://www.dfwairport.com/cs/groups/public/documents/webasset/p1_029241.pdf

Performance monitoring generally will involve:

- Regular meetings and briefings with service providers and concessionaire managers to check in and to discuss airport trends and upcoming events that may affect business
- Compliance reviews for customer service, street pricing, quality control, health and safety
- Follow-up on vendor questions and customer complaints
- Review of performance benchmarks [Adapted from *ACRP Report 54*]

ACRP Report 19A: Resource Manual to Airport Performance Indicators provides a number of benchmarks that can be used to track individual contractors and functional areas, as well. Detailed discussions of how this strategy and its elements can be applied to parking, concessions, and rental cars are presented in the next sections of this chapter.

7.3 APPLICATION OF THE STRATEGY TO AIRPORT PARKING

Given that airports already have passenger-dependent, non-aeronautical revenue programs, what innovations can be put in place that will improve net revenues to the airport? Because public parking, passenger concessions, and rental cars represent a significant share of existing airport revenues, improvements to planning, process, and management of these activities can return large benefits to the airport sponsor. This section highlights some of the best and current ideas on improving the planning, process, and management of these programs, beginning with airport parking.

7.3.1 Parking – the Largest Non-Aeronautical Revenue Generator

Public parking generates the most operating revenue of all non-aeronautical revenue sources for large, medium, small, and non-hub airports (**Table 7-2**). Depending on the airport, rental cars and in-terminal concessions occupy a second or third position in revenue generation. Not only is parking the largest non-aeronautical revenue generator, it also is a function most often handled either by airport staff, through a direct management contract, or using a combination of both approaches.

Table 7-2: Contribution of Parking and Ground Transportation to Operating Revenues, 2013

Airport Hub Type	Airports Reporting	Parking & Ground Transportation	Total Operating Revenues	Share of Total Operating Revenues
Large	29	\$2,063,037,335	\$12,594,081,124	16%
Medium	35	\$783,238,481	\$3,205,785,744	24%
Small	74	\$385,660,229	\$1,495,248,144	26%
Non-hub	329	\$102,650,641	\$806,427,864	13%
All Airports Reporting	467	\$3,334,586,686	\$18,101,542,876	18%

Source: FAA, Form 127, Operating and Financial Summary, 2013

As a suite of products, parking benefits from direct management and understanding of parking utilization, product mix, pricing, and competition from off-airport parking establishments. New technologies have improved the ability to analyze parking products and their use, reduce staffing requirements and elevate the level of customer service. The techniques discussed in this chapter

highlight ways to manage parking, improve product mix, and deliver higher net revenues to the airport sponsor.

7.3.2 Parking Management Alternatives

Airports typically maintain a high degree of control over public and employee parking. The four most commonly used management techniques are: self-operation, management contract, concession agreement, or a combined approach.

PARKING MANAGEMENT TECHNIQUES

PK-5: SELF-OPERATION

This operational method provides the airport sponsor with the highest level of control and oversight of daily operations. Self-operation requires the largest number of airport staff positions and puts the airport on the front line for proper revenue collection and controls, customer service levels, facility operations, and maintenance. For municipalities where the costs of public-sector employee recruitment, training, retention, and benefits may be higher than those for equivalent private-sector employees, total self-operation may not be the lowest cost option.

PK-6: MANAGEMENT CONTRACT

A management contract allows an airport sponsor to take advantage of the professional services of a specialized company and reduce the number of airport staff dedicated to parking. These companies frequently have experience operating airport facilities nationwide and operating other publicly or privately owned parking facilities. This experience, combined with the contractor's "private employer" status (i.e., potentially lower salary/benefit costs than parking staff employed by the airport or other public agency), often translates to lower costs and, thus, higher net revenues for the airport. With this management method, airports can reserve the rights to adjust parking rates, establish customer service standards, and approve the manager's operating budget for the parking facilities. The management company is reimbursed for authorized expenses and is paid a management fee. The airport sponsor retains all revenues less these expenses, but receives no income guarantee from the management company.

PK-7: CONCESSION AGREEMENT

Similar to a management contract, a concession agreement allows an airport sponsor to maximize the experience and financial strength of a professional parking concessionaire and minimize the airport staff's level of direct control of daily operations. A parking concessionaire typically assumes responsibility for all day-to-day operations, facility maintenance, and parking fee collections. The concessionaire receives a percentage of gross revenues and is required to pay the airport sponsor a MAG amount.⁷ The MAG protects the airport sponsor in the event of a downturn in parking revenues, but rewards the concessionaire when revenues are higher than the MAG amount. A concession contract

⁷ A MAG is the minimum annual guaranteed payment submitted in a concessionaire's bid for each agreement year during the term of the concession agreement. Today, most airport sponsors ask concessionaires to bid a MAG. In some situations, the sponsor sets the MAG.

minimizes the airport sponsor’s risk exposure and requires the lowest number of airport staff positions and level of parking expertise.

PK-8: COMBINED APPROACH

Some airports may adopt a combined approach in which the airport, a management company, and/or a concessionaire will manage different parking products. For example, at Dallas/Fort Worth International Airport (DFW), public parking facilities are self-operated except for a lot that offers trunk-to-trunk service operated by a management company. DFW also operates employee parking via a management contract and valet parking via a concession agreement [ACRP Report 24].

Adoption of innovative technologies like parking guidance systems may also be phased in to a management contract after they have been fully installed and tested, and are operational.

COMPARISON OF PARKING MANAGEMENT TECHNIQUES

Table 7-3 provides examples of airports that predominantly use a particular management approach.

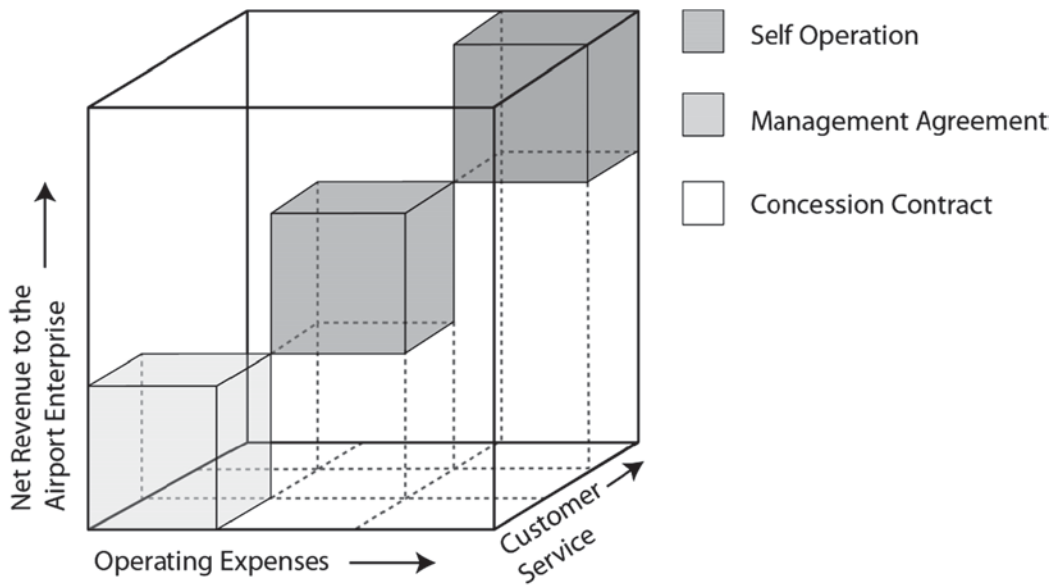
Table 7- 3: Examples of Airports Using Various Parking Management Structures

Self-Operated	Management Contract	Concession Agreement
Dallas/Fort Worth International Airport	Bob Hope Airport (Burbank, California)	Baltimore-Washington Thurgood Marshall International Airport
Gerald R. Ford International Airport (Grand Rapids, Michigan)	Denver International Airport	Cleveland Hopkins International Airport
Norfolk International Airport	John Wayne Airport (Orange County, California)	Dayton International Airport
Seattle-Tacoma International Airport	Los Angeles International Airport	Erie International Airport
	Nashville International Airport	Honolulu International Airport
	Orlando International Airport	George Bush Intercontinental Airport (Houston, Texas)
	Pittsburgh International Airport	Norman Y. Mineta San Jose International Airport
	Salt Lake City International Airport	
	San Francisco International Airport	
	Tulsa International Airport	

Sources: ACRP Report 24 and ACRP Project 01-14, 2011

Figure 7-6 shows how the different management structures can affect: (a) airport operating expenses; (b) net revenues to the airport; and (c) customer service. Selection of management structure ultimately will be based on the airport’s staffing resources, in-house expertise, and the best solution for net revenue growth potential. As the figure shows, the particular management structure an airport selects will affect its revenue, expenses, net parking revenue, and level of service offered to customers.

Figure 7-6: Tradeoffs for Different Management Structures



Source: Jacobs Consultancy, *ACRP Report 24*, Figure H.1, 2009

Increasingly, off-airport competition at many airports is motivating airport sponsors to diversify and differentiate their parking products and services. A parking management structure that allows airports to set rates and modify offerings in a timely manner can result in greater net parking revenues to the airport sponsor.

7.3.3 Parking Analytics, Product Development, and Technology

Airport operators are refining their parking offerings as a productive way to enhance and develop revenues. Access and revenue control systems⁸ have advanced to the point that many airports have the capability to analyze utilization and capacity of each parking product, customer segments, and the impacts of pricing changes on each product. This section focuses on how airports can evaluate their existing parking program, refine the product mix, and monitor performance.

To optimize parking revenue, airport sponsors must provide value by offering effective parking products, services, and other features that the customer finds desirable. Almost all commercial airports in the United States offer a product mix that includes hourly/short duration, daily parking, and economy/long-term parking. The most expensive parking is closest to the terminal, and it is often garage parking. Proximity, price, convenience, and service drive use of other parking products. When garage and close-in parking options by terminals frequently fill, customers may opt for off-airport, trunk-to-trunk parking solutions.⁹ If the customers have a positive experience,⁹ the airport may permanently lose this customer.

⁸ Many airports or their contractors use access and revenue control systems to operate their parking facilities. These systems come in modules that include vehicle access, parking entry, payment, accounting, and reporting functions.

⁹ Trunk-to-trunk service is a parking service that picks up customers at the car, delivers them to the terminal, and (at the end of the trip) brings the customers back to the car.

PARKING ANALYTIC AND PRODUCT DEVELOPMENT TECHNIQUES

Parking access and revenue control systems make it possible for airports to take a close look at demand and utilization of specific parking products. Usually the parking development team includes staff and/or outside professionals. The techniques discussed in this section are important components of the process to redevelop or enhance a parking program.

PK 9: PARKING ANALYTICS AND ALTERNATIVES

This technique involves extensive diagnostics of an airport’s parking products, their use by customers, and their revenue streams. The findings lead to consideration of alternative approaches and possible reconfiguration of parking to meet customer demand, maximize parking revenues, and utilize existing capacity. The different components of the technique can be highlighted in an outline:

Diagnostics

- Parking products on and off the airport
 - Parking options (spaces, location, pricing, levels of service)
 - Competition from non-airport parking facilities (off-airport, hotels, etc.)
- Capacity and utilization by parking product, time of day, day of week, and month
 - Spaces by parking facility
 - Transaction analysis for each facility
 - Capacity lot closures (when, how often, trends)
- Demand
 - Originating passengers compared with parking transactions
 - Alternative ground access options (bus, rail, shuttle, taxi) and use
 - Customer segments, utilization, trends
- Customer research
 - Complaint history
 - Intercept surveys, online surveys, focus groups
- Financial performance
 - Revenue trends by facility, transaction, and space
 - Operating and capital costs
 - Net margins by facility
- Airport peer comparisons
 - Determine comparable airports by size, situation, known innovation
 - Compare products and pricing
 - Conduct interviews
 - Trends at the airport
 - Experience with new parking products, technology, and ways to control the cost of shuttling passengers from remote lots
 - Value-added and complementary customer services to compete with off-airport offerings (if this is an issue)
 - How the airport manages hourly/daily rates, pricing differentiation and rate increases

- Transportation fees for off-airport vendors
- Strategies to manage capacity and develop parking revenues
- Strength and weakness assessment/conclusions

Development of Alternatives

Diagnostics are essential to establish a baseline assessment of current conditions and to identify (a) where existing parking products are/are not meeting customer demand; (b) trends in utilization of parking products; and (c) history of pricing and whether parking rates are sufficiently covering costs. The diagnostics will inform a set of alternatives to address basic parking program objectives. Such alternatives might include:

- Retain customers by providing access, value, and convenience through a mix of parking offerings that matches demand.
- Improve operational efficiency.
- Recover costs for both public and employee parking.
- Grow net revenues.

Implementation

The management structure and airport sponsor will dictate how to implement changes in the parking program. Rate increases typically require sponsor approval. To streamline rate adjustments, some airport sponsors will set rates with an annual (and automatic) escalation tied to an index (such as the consumer price index [CPI]). Airports can work with their management companies to improve efficiency and introduce new product offerings.

TRACKING PARKING PROGRAM PERFORMANCE

PK-10: PERFORMANCE MONITORING

Regardless of the management approach to parking, best practice is to continuously monitor the parking program. A measure of a successful parking operation is the amount of net revenue available after an airport sponsor has paid parking operations and maintenance expenses, fully allocated indirect costs, airport overhead, and parking facility debt service. It is also crucial for airport staff to know whether customers are selecting airport parking over off-airport alternatives, and what they think about the quality of the parking options at the airport.

Figure 7-7 describes four quadrants of performance monitoring.

Figure 7-7: Parking Program Performance



Source: Adapted from *ACRP Report 19A: Resource Guide to Airport Performance Indicators*, 2010

ACRP Report 19A suggests a number of measures that airport sponsors can use to track the performance of their parking program. These include:

- Parking revenues per originating passenger
- Average annual gross revenues per parking transaction
- Number of on- and off-airport spaces per type of parking product
- Number of parking transactions per month per parking product
- Number of parking spaces utilized by parking product during daily peak, as a percentage of total number of parking spaces

In addition, monitoring customer complaints and feedback and intercepting surveys of parking customers are both effective ways to stay in touch with customers. Price comparisons with peer airports for hourly, daily, and long-term rates are also useful, especially where there are multiple airports in a region.

TECHNOLOGIES THAT SUPPORT PARKING REVENUE DEVELOPMENT

PK-11: TECHNOLOGIES THAT SUPPORT PARKING REVENUE DEVELOPMENT

Several technological solutions have improved customer service, parking facility use, and revenue development. Some of the most promising innovations available today are:

- Advances in **access control systems** include options to speed up customer transactions and reduce the number of cashiers needed at parking facilities. These systems include:
 - Pay-on-foot (POF)

- Credit card in/out
 - Automatic vehicle identification (AVI) and radio frequency identification devices (RFIDs)¹⁰
 - Pay by cell phone applications
 - License plate recognition
- **Parking space availability and guidance systems** can provide space availability by facility, level, aisle, or space.¹¹ Typically, sensor technology is embedded in the pavement. Systems can be installed when a garage is built. A more expensive solution is to retrofit an existing garage with a guidance system.
 - **Customer information systems** on the Internet, on mobile phones, and on digital signage at the airport identify parking availability. Emerging technologies integrate parking information at airports into global positioning system (GPS) systems, including in-car systems and GPS-enabled cell phones.
 - **Transportation or privilege fees** enable airports to recover the cost of roadway, traffic control, and terminal curbside costs from off-airport parking operators. AVI systems have enabled the collection of access fees. In addition to or in place of access fees, some airport sponsors charge off-airport parking operators up to 10% of gross revenues.
 - **Improved signage** can help parking customers find available parking products when they enter the airport. Effective signage within parking facilities can reduce the number of lost vehicles when passengers return from trips.
 - Airports are offering a variety of **complementary services** to attract customers to a higher priced parking product. Advanced reservations and menu-driven payment options make it possible to guarantee a parking space or choose desired services, such as a car wash, oil change, or electric car charger. Airports are also experimenting with premium parking products that will offer boarding passes and baggage tags at the parking facility or give priority security clearance to passengers who park in a particular lot or garage.

7.3.4 Parking Wrap-up

Given that parking is the largest non-aeronautical source of revenue at most commercial airports, active management of and improvements to parking products can return significant improvements to net revenues. Digital technologies are available to improve inventory control, monitor performance, and communicate with the customer base.

Two ACRP reports offer detailed discussions of parking: *ACRP Report 24: Guidebook for Evaluating Airport Parking Strategies and Supporting Technologies* and *ACRP Report 34: Handbook to Assess the Impacts of Constrained Parking at Airports*.

¹⁰ AVI identifies a vehicle as it passes through the range of the system's microwave or RFID devices. The system requires vehicles to have a transponder or tags that are registered with the AVI system.

¹¹ Parking space availability and guidance systems are inventory and control systems that communicate with parking customers either before arriving at the airport or while they are in the parking facility.

7.4 APPLICATION OF THE STRATEGY TO RENTAL CARS

On average, rental cars return 8% of total operating revenues (aeronautical and non-aeronautical), as shown in **Table 7-4**. For medium, small, and non-hub airports, the relative contribution of rental cars to total operating revenues is even more significant, in the 11% to 14% range.

Table 7-4: Contribution of Rental Car Concessions to Airport Operating Revenues, 2013

Airport Hub Type	Airports Reporting	Rental Cars*	Total Operating Revenues	Share of Total Operating Revenues
Large	29	\$915,378,283	\$12,594,081,124	7%
Medium	35	\$373,076,651	\$3,205,785,744	12%
Small	74	\$206,885,647	\$1,495,248,144	14%
Non-hub	329	\$85,798,399	\$806,427,864	11%
All Airports Reporting	467	\$1,581,138,980	\$18,101,542,876	8%

*Rental car revenue excludes customer facility charges (CFCs).

Source: FAA, Form 127, Operating and Financial Summary, 2013

Because of the importance of rental cars to airport revenues, improvements to the bidding process, contract language, and enforcement of agreements can result in additional net revenue to an airport sponsor. Furthermore, development of consolidated rental car facilities (CONRAC) or quick turnaround facilities (QTA) can present a revenue opportunity for airport sponsors to provide common area maintenance, security, and administration of shared facilities at market rates.

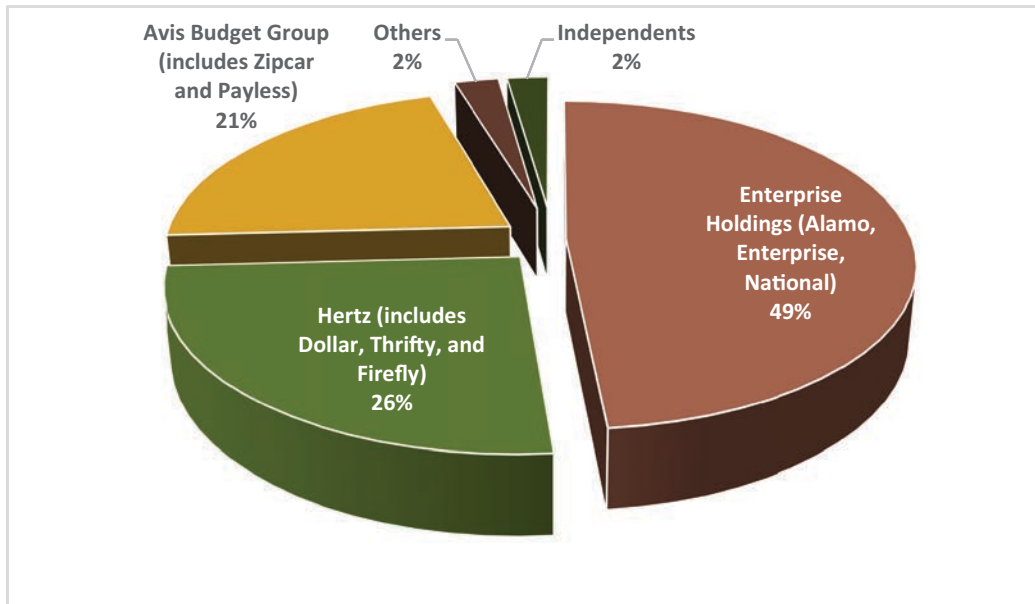
This section of the chapter discusses how consolidation in the industry has shaped rental car offerings at airports and presents techniques to improve rental car revenue to the airport sponsor when concession contracts renew.

7.4.1 Impact of Industry Consolidation

INDUSTRY TRENDS

Significant consolidation has occurred among rental car companies, which has affected the ways that airports manage on-airport rental car companies. **Figure 7-8** shows the current market shares of the major rental car companies. In 2013, Enterprise Holdings accounted for 49% of U.S. rental car operating revenues. Hertz and Avis Budget Group accounted for another 47%. Smaller companies, in total, represented 4% of the market.

Figure 7-8: Rental Car Company Market Shares, 2013 U.S. Operating Revenues



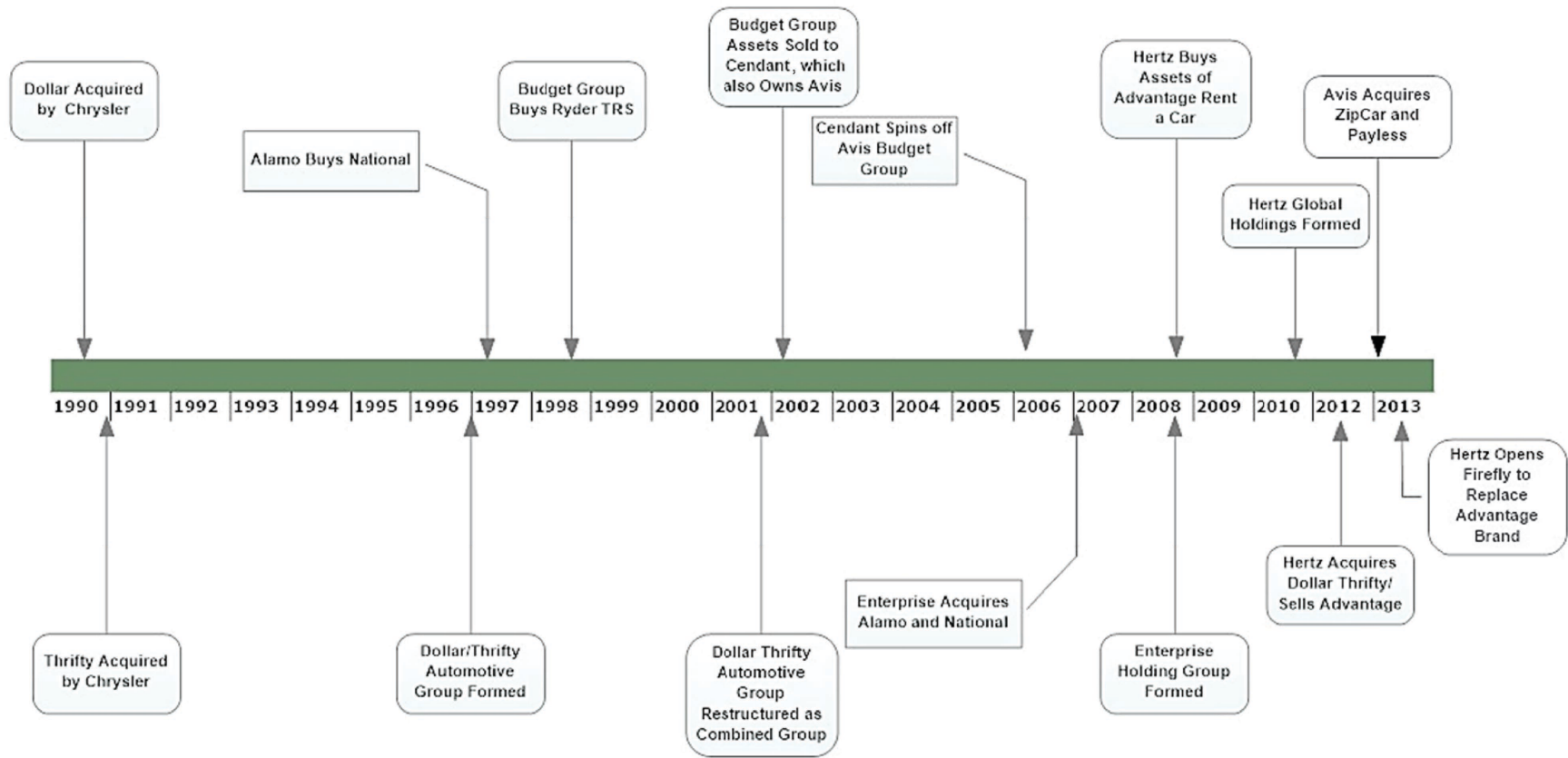
Source: Auto Rental News, *FACT BOOK 2014*

Figure 7-9 displays a timeline of how the industry arrived at this point of consolidation, beginning in 1990-91 when Chrysler acquired Dollar and Thrifty. Most of the consolidation was completed by 2009. However, in 2012, Hertz acquired Dollar Thrifty Automotive (by then the holding company for Dollar and Thrifty) and sold Advantage. In 2013, Avis Budget acquired ZipCar and Payless, and Hertz opened its Firefly brand to replace Advantage. Each of the three largest players now offers a full suite of premium and value brands.¹²

Figure 7-10 shows how the Great Recession of 2008 led to contraction of both revenues and the number of rental cars in the United States. However, the industry has since recovered, with revenues in 2013 at record levels. That said, **Figure 7-11**, which shows operating revenue per rental car suggests that, while revenues are increasing, revenue per rental car declined in 2012 and again in 2013. This in turn suggests that rentals for value brands are growing faster than rentals for premium brands.

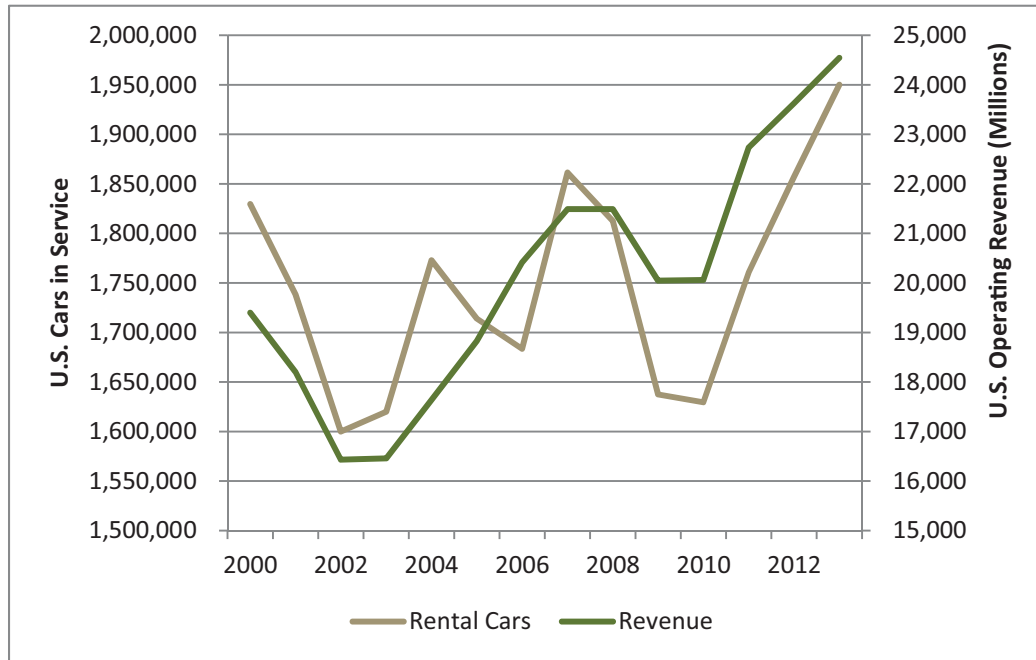
¹² Eleven brands have consolidated into three dominant “brand families” and today represent 96% of the rental car market: Enterprise Holding, Inc.: Enterprise, Alamo and National; Avis Budget Group, Inc.: Avis, Budget, ZipCar, and Payless; Hertz Global Holdings, Inc.: Hertz, Advantage, Dollar and Thrifty.

Figure 7-9: Rental Car Consolidation Timeline



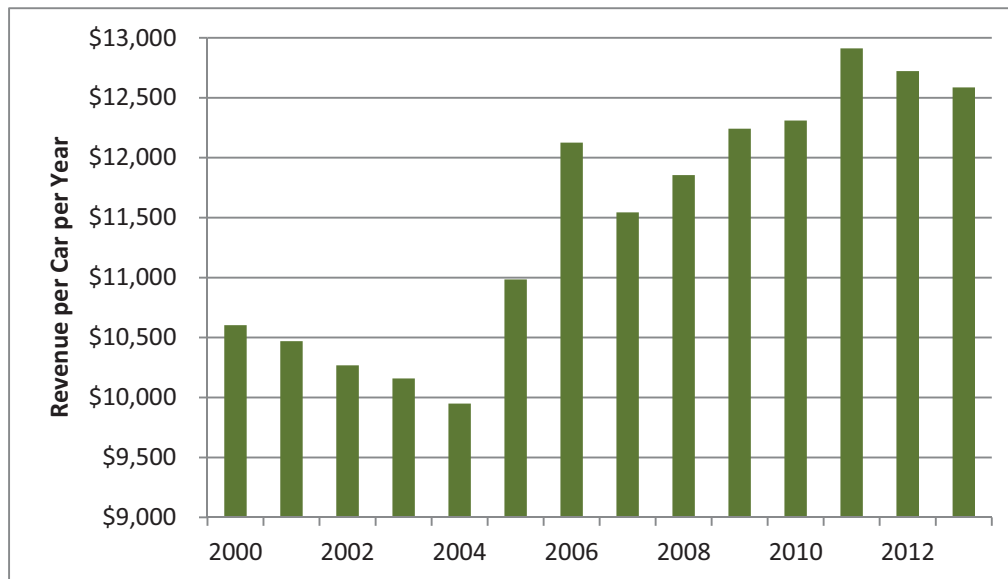
Source: Prepared by KRAMER aerotek inc., 2014

Figure 7-10: Comparison of U.S. Rental Cars and Annual Operating Revenue



Source: Auto Rental News, *FACT BOOK 2014*

Figure 7-11: Annual Operating Revenue per Rental Car (United States)



Source: Auto Rental News, *FACT BOOK 2014*

7.4.2 Rental Car Management Alternatives

TECHNIQUES TO MANAGE RENTAL CAR CONCESSIONS

The consolidation of the rental car industry and maintenance of individual brands gives airport operators choices about how to manage the rental car concessions.

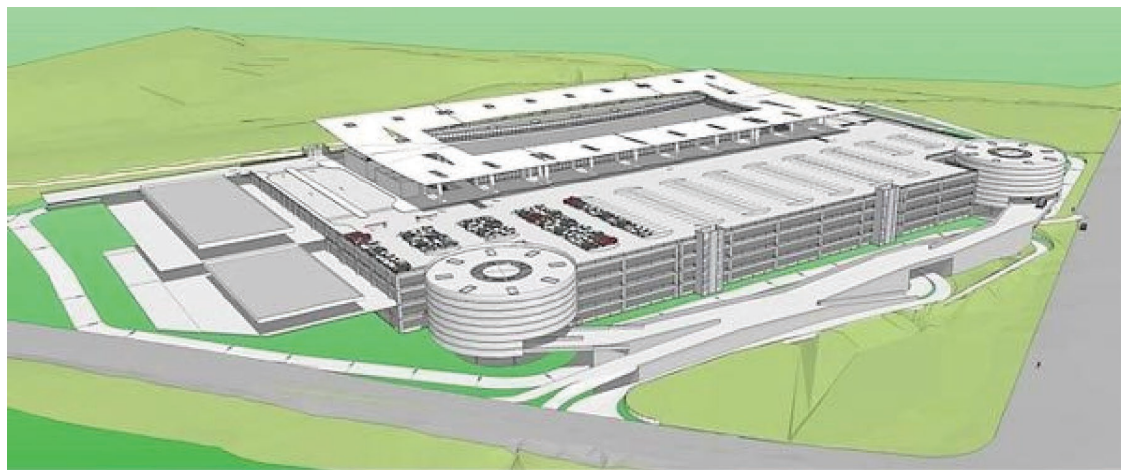
CN-5: DIRECT CONTRACTS WITH INDIVIDUAL BRANDS OR BRAND FAMILIES

Airports typically enter into direct contracts with rental car companies. However, the airport branding policy has varying revenue and administrative implications. If an airport solicits bids from brand families, there will be fewer contracts to manage. Having fewer brands offered at the airport is likely to reduce competition and the level of service to the traveling public. When determining brand policy before preparing the rental car solicitation, it is suggested that an airport sponsor consider:

- Size and configuration of available space for rental cars on airport property
- Ease of reallocation of available space
- Degree to which the rental car market splits between on- and off-airport locations
- Competitive environment for brand families and independents
- Rental car demand and implications for future facility plans such as a consolidated rental car facility (CONRAC) or quick turnaround facility (QTA)
- Potential consequences of prohibiting, permitting, or requiring single, dual, or multi-branding

CN-6: CONRACs AND QTAs

Figure 7-12: Rendering of 5,400-Vehicle Rental Car Facility at Seattle-Tacoma International Airport



Source: *Seattle Times* 2008

In the early 1980s, airports began to develop rental car facilities that housed all on-airport rental car companies and their associated operations, including rental counters, customer service, administrative offices, ready/return parking, fueling, and maintenance facilities (see **Figure 7-12**). CONRAC facilities can

be located in garage structures or remote sites on the airport, and are financed typically with a pledge of proceeds from customer facility charges (CFCs).¹³

Table 7-5 lists some CONRAC facilities. Most of these examples involve larger airports and substantial rental car demand. Generally, an airport that has greater than 700,000 enplaned passengers can support a CONRAC where individual rental car companies operate their own facilities. However, even an airport with 300,000 enplaned passengers could support a CONRAC, particularly if facilities were cross-utilized.

Table 7-5: Examples of Consolidated Car Rental Facilities at U.S. Airports and CFCs

Airport	Year Facility Opened	CFC Fee (as of Feb. 2011)
Albuquerque International Sunport	2001	\$3.90/day
Baltimore/Washington International Thurgood Marshall Airport	2003	\$3.75/day
Cleveland Hopkins International Airport	1998	\$2.50/day
Dallas/Ft. Worth International Airport	2000	\$4.00/day \$2.20/day transportation fee
Fort Lauderdale-Hollywood International Airport	2005	\$3.95/day/7-day maximum
Hartsfield-Jackson Atlanta International Airport	2009	\$4.50/day
George Bush Intercontinental Airport (Houston)	2003	\$3.00/day \$4.49/day transportation fee
Kansas City International Airport	2007	\$3.00/day \$2.00/day transportation fee
McCarran International Airport, Las Vegas	2007	\$3.00/day
Memphis International Airport	2012	\$4.00/day
Miami International Airport	2010	\$4.00/day
Louis Armstrong New Orleans International Airport	2012	\$6.20/day
San Francisco International Airport	1998	\$20.00/transaction
San Jose International Airport	2010	\$10.00/transaction
Seattle-Tacoma International Airport	2012	\$5.00/day
Phoenix Sky Harbor International Airport	2006	\$6.00/day \$0.77/day facility maintenance fee
Ted Stevens Anchorage International Airport	2007	\$4.87/day

Source: Ricondo & Associates; rental car company websites; compiled by KRAMER aerotek inc., 2011

¹³ A CFC is a fee required by an airport sponsor (established by state law, local ordinance, or resolution) to be collected by the car rental companies from customers. CFCs collected are generally dedicated funds to pay for the cost of a CONRAC or rental car service facilities or the infrastructure that serves these facilities. CFCs vary from \$1.50 to \$8.00 per vehicle contract day or \$2.25 to \$10.00 per transaction. CFCs are usually established ahead of a CONRAC project and are currently in place at more than 110 U.S. airports. CFCs can be used to finance, design, construct, and operate:

- Consolidated airport car rental facilities
- Common-use transportation systems that move passengers between airport terminals and consolidated car rental facilities, including acquisition, operation and maintenance of vehicles (for use in that system), and bus maintenance facilities
- Terminal modifications solely to accommodate and provide customer access to common-use transportation systems
- Terminal roadway and curbside improvements, utilities, access roadways, and environmental remediation

Some smaller airports operate consolidated QTAs and ready/return spaces. An airport sponsor may construct a quick turnaround facility separately or as a part of a CONRAC. Quick turnaround facilities are usually located in a garage near the terminal to provide refueling, fluid top-off, and washing services for the rental car agencies that serve the airport. These services can be provided by the airport via direct contract, by individual rental car companies, or by consortiums. **Table 7-6** provides examples of QTAs and their CFCs.

Table 7-6: Examples of Consolidated QTAs at U.S. Airports and Their CFCs

Airport	CFC Fee (as of Feb. 2011)
Abraham Lincoln Capital Airport, Springfield, IL	\$2.25/transaction
Burlington International Airport, Chittenden County, VT	\$2.00/day
Durango-La Plata County Airport, La Plata County, CO	\$1.00/day
The Eastern Iowa Airport, Cedar Rapids, IA	\$1.62/day
Erie International Airport, Erie, PA	\$3.50/day/ 5 day maximum
Fresno Yosemite International Airport, Fresno, CA*	\$10.00/transaction
Greater Binghamton Airport, Binghamton, NY	\$2.00/day
Monterey Regional Airport, Monterey, CA*	\$10.00/transaction
Northwest Arkansas Regional Airport, Bentonville, AR	\$3.00/day
Northwest Florida Beaches International Airport, Panama City, FL	\$3.00/day
Quad City International Airport, Moline, IL	\$3.00/day
Santa Barbara Airport, Santa Barbara, CA*	\$10.00/transaction
Tulsa International Airport, Tulsa, OK	\$2.60/day
Valley International Airport, Harlingen, TX	\$3.75/day
Yampa Valley Regional Airport, Hayden, CO	\$4.00/day
Yeager Airport, Charleston, WVA	\$3.00/day

* State law regulates CFCs in California.

Source: Ricondo & Associates; rental car company websites; compiled by KRAMER aerotek inc., 2011

CONRACs and QTAs offer efficiencies by moving rental car companies to shared facilities, which can sometimes reduce ground transportation costs, improve customer service, and more easily address environmental compliance. Consolidated facilities can also provide a series of benefits to the airport sponsor and rental car companies. First, CONRAC facility financing methods recover the cost of facilities from passengers renting cars, not from the rental car companies. Rental car companies do not have to pay a portion of their rental income to the airport sponsor for rental car facilities. Airports also can allocate an appropriate amount of infrastructure cost to CONRACs, thus somewhat reducing infrastructure and overhead costs assigned to other cost centers at the airport. If an airport has developed a CONRAC or QTA, reductions in rental car fleets may result in less CFC revenue and

necessitate inclusion (and activation) of a contingent rent clause to cover capital and operating costs of the CONRAC.¹⁴

CONRACs and QTAs (**Figure 7-13**) also present a revenue opportunity for the airport sponsor to provide shared services at market rates. These could include common area maintenance, security, and administration of the facilities at a 15% markup. At QTAs, airport sponsors could sell fuel directly to the rental car companies and provide maintenance, security, and administration services at retail markup. If the airport sponsor does not have in-house staff to perform these functions, they can arrange for direct service contracts to do the same.

Lastly, airport sponsors could require off-airport rental car companies to pick up their customers at the CONRAC. This would focus customer attention on the CONRAC as the rental car center at the airport.

Figure 7-13: Tampa International Airport Rental Car Quick Turnaround Facility



Source: Creative Contractors, Inc. and Hillsborough County Aviation Authority

¹⁴ On-airport rental car companies typically pay the MAG or privilege fee and rent on all the facilities they use, including: rental car counters, office space, storage space, and ready/return stalls. In the terminal, the rents are based on the prevailing rental rate paid by the airlines for similar space. For other facilities, ground rent is charged for the space occupied and set to recover all direct and indirect costs associated with the space, including an allocated portion of debt service. CFCs are intended to cover CONRAC debt service, coverage and operations, and maintenance. If the CFCs are insufficient to cover the costs and expenses associated with the CONRAC, airport sponsors can include a provision in rental car concession agreements to remedy deficiencies through collection of contingent rents to produce enough revenue for the CONRAC to pay all obligations when due.

7.4.3 Rental Car Administrative Improvements

Airports can achieve higher net revenues through careful preparation of bid documents, definition of terms, rents, levy of off-airport privilege fees, and a continuous audit program. Each of these administrative improvements is described in the next set of implementation techniques.

CN-7: DEFINITION OF TERMS IN RENTAL CAR AGREEMENTS

Given that concession fees are the principal source of revenue to the airport sponsor from rental car companies, definition of terms is particularly important. The majority of airports will require a percentage of gross revenue or a MAG, whichever is higher. In concession agreements with rental car companies, the definition of gross revenues determines the amount owed to the airport sponsor. Optimizing revenue from car rental concessionaires involves tightly defining gross revenue. Gross revenue typically is determined by the total charges on the face of a customer’s contract receipt, excluding taxes, CFCs, insurance proceeds, and the wholesale transfer of salvage vehicles. The definition of gross revenues should also include add-ons, such as GPS rentals, additional-driver fees, fuels sales, insurance fees, and other extra charges.

CN-8: BID DOCUMENTS AND CONCESSION AGREEMENTS

Contracts with rental car companies are an area where administrative improvements could make a big difference in revenue results to the airport sponsor. As mentioned in CN-7, defining what is and what is not included in the gross revenues is critical. For example, if there are taxes, are they counted as part of gross revenue or not?

Branding policy will also guide the bidding process. Some airport operators prefer to contract with individual brands; others will negotiate a contract with the brand family.

If an airport sponsor levies a CFC, the calculation method of the CFC is very important. For most airports, the CFC is based on a day or fraction-of-a-day rental, but this must be clearly defined in the contract. For example, sometimes a rental car customer may keep a vehicle for one or more additional hour(s) beyond the 24-hour period. Unless the contract specifies that the CFC must be included, the rental car company may charge a rental fee for the additional hour(s) but not charge the additional CFC fee, which goes back to the airport sponsor.

Some airports are sensitive about how and where rental car companies list the CFC on a customer’s rental car contract. Because the CFC is a pass-through fee to pay off debt service, some rental car companies list it below the line as an individual fee and call it an “airport tax.” Airports can stipulate in concession agreements what the CFC is called and where it is placed on customer rental contracts.

The bid documents and concession agreements must include a clear explanation of rights and obligations to be offered to rental car concessionaires. The rights and obligations generally require the rental car concessionaire to operate a full-service rental car concession and to operate under the brand name(s) in its proposal.

Although it may be tempting to review other airports' rental car concession bid documents, every airport has unique situations and requires a custom set of documents.

CN-9: RENTAL CAR FACILITY RENTS (IF NOT IN A CONRAC)

For maximum revenues, rental car companies should be required to pay rent on all facilities they use at the airport, including rental car counters, office space, storage space, and ready/return stalls. If rental car concessionaires have on-airport service facilities, they should pay a ground rent for the space they occupy. The rental rate for this space should be revised at least every 5 years.

In addition to concession fees, rental car companies pay rents for counter, office, and storage space in the terminal building. These rents are based on the prevailing rental rates paid by the airlines for similar space. The rental rates paid by the rental car concessionaires should recover all direct and indirect costs and debt service allocable to the space.

Rental car concessionaires pay for automobile ready/return spaces where their automobiles are staged for customers. Generally, ready/return spaces are allocated to specific companies based on criteria, such as MAG bid, proportion of revenue paid to the airport sponsor, or number of rental car transactions. Most concession agreements for rental car companies provide for periodic adjustment of ready/return spaces among companies based on activity or concession fees paid to the airport sponsor. The rental car concessionaire should be responsible for the maintenance of their ready/return spaces and should be responsible for the cost of signage and corporate identification (if not in a CONRAC).

CN-10: OFF-AIRPORT PRIVILEGE FEE

Many airports levy a privilege fee to off-airport rental car companies that is equal to the privilege fee paid by on-airport rental car companies. Although it is not necessary to do so, some airports offer a somewhat lower privilege fee for off-airport operations in recognition of the off-airport rental car companies' busing costs. Off-airport rental car companies located within 5 miles of the airport should be required to pay a privilege fee on all transactions. To protect on-airport rental car market shares, it also is appropriate for airport sponsors to levy privilege fees to recover the roadway, and to cover traffic control and terminal curbside costs from off-airport rental car companies. These transportation fees can be a percentage of gross revenue, a charge per day, a charge per trip, or a charge per transaction.

CN-11: AUDITS

Regular audits of rental car companies allow airport sponsors to determine that they are faithfully following the terms of the concession agreement. Mistakes can happen at the individual contract level. Auditors can verify that the rental car concessionaires are using the proper definitions of gross revenue in the calculation of concession fees, not using unauthorized offsets or exclusions, and not excluding rental car transactions that may occur at fixed base operator locations or private hangars.

Airport sponsors also can consider a staggered program of enforcement that includes audits of a few rental brands each year so that, in a span of 3 years, each brand has an audit. Because of the complexity of rental car transactions compared to other airport operations, internal auditors or auditors familiar

with rental car concessions and contracts are preferred to complete the audits. It may be cost-effective to have the auditors receive special training for auditing rental car operations.

CN-12: ENVIRONMENTAL MITIGATION

When drafting concession agreements for rental car companies, it is important to include provisions for monitoring of state and federal environmental regulation compliance by rental car companies. Airport sponsors may choose to retain an attorney that specializes in environmental law to make certain that adequate provisions are made explicit in the agreement.

CN-13: TRASH RECYCLING

Many airports have established programs for trash recycling. Airport sponsors can include rental car companies in these programs when rental car contracts renew.

CN-14: LETTERS OF CREDIT

Bank letters of credit that name the airport sponsor as the sole beneficiary to the rental car company are an excellent safety net to secure faithful performance of lease terms, including payment of rent and clean-up. In the event of a bankruptcy, bank letters of credit are beyond the reach of the bankruptcy court; consequently, they provide security of payment to the airport sponsor. Letters of credit are typically negotiated as part of an agreement. It is important for an airport sponsor to monitor the letter of credit throughout the term of the contract, however, to confirm that adequate funding is maintained to cover the terms of credit.

7.4.4 Rental Car Wrap-up

Airports typically manage rental car concessions directly. Consolidation within the industry allows airport sponsors to reconsider what branding policy and mix of rental car products will best serve their market. Airport managers can solicit bids from individual brands or brand families.

Both on-airport and off-airport rental car companies deliver revenues to the airport sponsor first from a MAG or privilege fee of 10% of gross revenues. If the airport has a CONRAC and/or QTA, the airport sponsor can also collect CFCs and, potentially, fees from maintaining and managing shared or cross-utilized facilities and ground transportation. Lastly, airports can earn revenue by selling fuel to rental car companies.

When an airport sponsor rebids rental car concessions, there is opportunity to tighten up definitions and terms of contracts. Because rental car concessions are one of an airport's top non-aeronautical revenue sources, attention to the bid process, contract terms, and on-going management and enforcement of contracts could reap substantial additional revenues to an airport sponsor.

7.5 APPLICATION OF THE STRATEGY TO IN-TERMINAL CONCESSIONS

7.5.1 The Concession Opportunity

In-terminal concessions consist of food and beverage, retail, duty free, and other shops and services. These traditional revenue generators can return considerable operating revenues to an airport sponsor. **Table 7.7** summarizes the contribution of concessions to overall operating revenues in 2013. Concessions represent 11% of operating revenues at large hub airports and 7% at medium hub airports. At airports with fewer passengers, the contribution of concession revenue is less; however, concessions contribute 9% to airport operating revenues overall.

Table 7-7: Contribution of Food and Beverage, Retail, and Services to Operating Revenues, 2013

Airport Hub Type	Airports Reporting	Food & Beverage, Retail, and Services	Total Operating Revenues	Share of Total Operating Revenues
Large	29	\$1,324,940,135	\$12,594,081,124	11%
Medium	35	\$223,970,863	\$3,205,785,744	7%
Small	74	\$88,744,251	\$1,495,248,144	6%
Non-Hub	329	\$20,330,499	\$806,427,864	3%
Total	467	\$1,657,985,748	\$18,101,542,876	9%

Source: FAA, Form 127, Operating and Financial Summary, 2014

Concession programs are a cornerstone of passenger-dependent non-aeronautical revenue. Consequently, one growth path for increasing non-airline revenues is to improve the concession program to achieve greater concession sales with existing airport passengers. **Table 7-8** shows 2012 average sales per enplanement for different types of concessions.

Table 7-8: Concession Sales per Enplaned Passenger, 2012 (Excluding Duty Free)

U.S. Hubs	Number Reporting	Enplaned Passengers (EP)	Food & Beverage Sales/EP	Specialty Retail Sales/EP	News & Gifts Sales/EP	Total Sales/EP
Large Hubs	22	447,537,720	\$6.14	\$1.76	\$1.90	\$9.79
Medium Hubs	15	89,841,431	\$5.74	\$1.28	\$2.12	\$9.14
Small Hubs	13	30,187,067	\$5.34	\$1.33	\$2.65	\$9.32
Total Sample	50	567,566,218	\$6.07	\$1.65	\$1.92	\$9.64

Source: R. Chinsammy Consulting, *Airport Revenue News Fact Book 2014*

Current average expenditures per transaction at U.S. airport concessions are estimated at \$10 to \$18 for food and beverage; \$20 to \$40 for specialty retail; and \$7 to \$10 for news and gifts [R. Chinsammy Consulting]. These transaction averages suggest that there is considerable room to increase sales from the existing enplaned passengers, and reason to take a close look at achieving increased revenue for airport concessions.

Table 7-9 estimates capture rates (transactions per enplaned passenger) using an average expenditure per transaction of \$14 for food and beverage, \$25 for specialty retail, and \$8 for news and gifts. In 2012, U.S. airports had a capture rate of 37% of enplaned passengers for food and beverage, 6% for specialty retail, and 20% for news and gifts. Even assuming one transaction per enplaned passenger regardless of category of purchase, approximately 35% to 40% of passengers are not making any purchases. That is where opportunity lies.

Table 7-9: Estimated Percent of Enplaned Passengers Using Concessions, 2012 Capture Rate

U.S. Hubs	Number Reporting	Food & Beverage	Specialty Retail	News & Gifts
Large Hubs	22	42%	8%	22%
Medium Hubs	15	40%	6%	25%
Small Hubs	13	37%	6%	31%
Total U.S. Sample	50	42%	7%	23%

Sources: R. Chinsammy Consulting, *Airport Revenue News Fact Book 2012*, Transaction & Capture Rate Analysis

No longer can an airport sponsor simply put out a bid request for food and beverage, merchandising, and advertising, then wait for responses. Today, such an ad hoc plan will yield sub-optimal results and could leave millions of dollars untapped.

Concessions remain an area of innovation and change because they affect the overall quality of passenger experience and represent growth potential for both concessionaires and the airport sponsor. The three important elements of this strategy are: (1) how the airport sponsor manages concessions; (2) improvements to the planning and contracting process; and (3) airport programs to encourage innovation and achieve deeper penetration into existing concession activity. In this Airport Guide, Chapter 3: Customer Focus presented new ideas to improve actual offerings and services to customers.

7.5.2 Concession Management Alternatives

ALTERNATIVES TO MANAGE IN-TERMINAL CONCESSIONS

Airport sponsors can use five different management techniques to run in-terminal concessions:

- **Direct Contract** – The airport leases individual locations or small groups of locations directly with the concessionaire.
- **Fee Manager** – The airport has an agreement with a third party to develop, market, lease, and manage the concessions without directly operating any of them. The fee manager does not invest in facilities or operate concessions. A fee manager receives compensation for services provided.
- **Master Concessionaire** – The airport leases all space in a category to a single operator. A master concessionaire can operate all of the concessions in several categories (food/beverage and merchandise) or may sublease some of the locations to other operators.

- **Prime Concessionaire** – The airport leases packages of locations to one or two prime concessionaires, each of which has multiple locations (more than 3) within the airport.
- **Third-Party Developer** – The airport has an agreement with a third party to develop, market, lease, and manage the concessions without directly operating any of them. The third-party developer negotiates concession leases on behalf of the airport sponsor. Developers receive a portion of concession revenue for the services provided. Developers can be required to make investments in facilities, equipment, and common spaces.

Each management approach may deliver strong financial results for the airport sponsor. Which approach is best will be highly dependent on the size of airport, the governance of the airport, and the number of airport staff available to develop or direct the concession program. The following sections describe and compare management techniques.

CN-15: DIRECT CONTRACTS WITH IN-TERMINAL CONCESSIONAIRES

With the direct contract alternative, all concession agreements and management contracts are between the airport sponsor and the concessionaire or management contractor providing the services. This approach provides the airport sponsor with the most control over its concession programs. The direct contract approach also tends to enhance competition among concessionaires.

Figure 7-14 shows a diagram of the direct contract alternative.

Figure 7-14: Direct Contract Alternative



Source: Michael G. Moroney & Associates, Inc., 2014

The direct contract alternative results in the highest overall revenue to the airport sponsor. The airport sponsor controls price and service competition, concepts, product variety, and number of concessionaires participating. This approach tends to optimize revenue.

This technique requires an experienced concession management staff and can result in higher staff costs and administrative costs because of management responsibilities over multiple concession contracts. Furthermore, it can require the airport sponsor to finance, construct, and maintain common areas, such

as food courts, or incorporate the construction of such areas into its direct contracts with concessionaires.

For a direct contract alternative to be practical, airport management must have the freedom to make timely business decisions with a minimum of political considerations. When the political structure or procurement policies impede timely decisions, other management alternatives may produce stronger financial results.

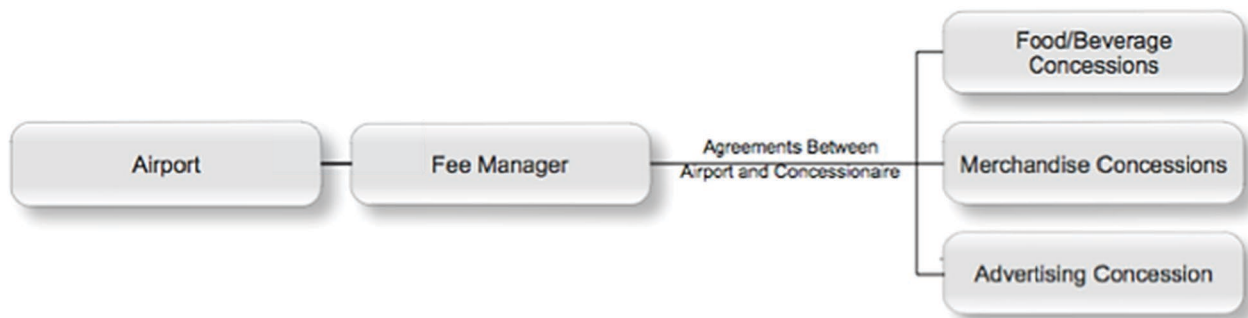
Airports such as Dallas/Fort Worth International, Indianapolis International, Denver International, Portland International, San Francisco International, and McCarran International (Las Vegas) use the direct contract approach and have developed actively managed programs with in-house staff that offer a variety of locally owned and operated establishments. Chapter 8 includes a case study of the Indianapolis International Airport concession program.

CN-16: FEE MANAGER ALTERNATIVE

The fee manager alternative involves the airport sponsor contracting with a third party to provide concession development and management services. In essence, the fee manager acts as the “concession management department” of the airport sponsor. All concession agreements are between the airport sponsor and the concessionaires. Fee structures vary. The fee could be a fixed fee or a percentage of rents collected. Because the fee manager is not responsible for investing in improvements, the fees are lower than those that are paid to a third-party developer.

Figure 7-15 shows the structure of the fee manager alternative.

Figure 7-15: Fee Manager Alternative



Source: Michael G. Moroney & Associates, Inc., 2014

Some airport sponsors prefer this approach because there is more flexibility and control for the airport—and, at the same time, the airport benefits from the knowledge, contacts, and experience of the fee manager, which can result in increased revenues. However, some airport sponsors may not allow (or favor) delegation of contracting authority to third-party managers who are not also investors in the airport.

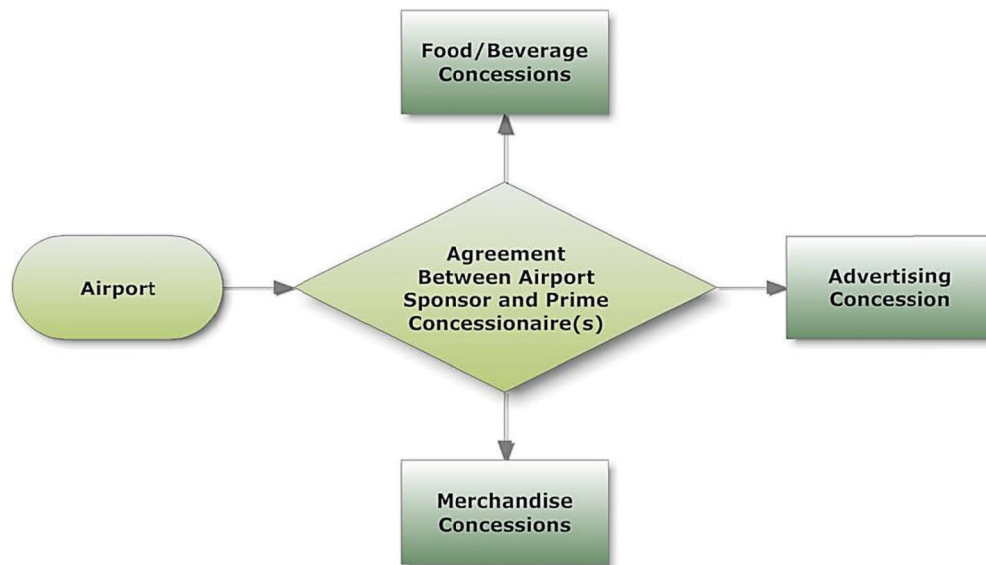
The Metropolitan Washington Airports Authority (MWAA) uses the fee manager approach at Ronald Reagan Washington National and Washington Dulles International airports.

CN-17: MASTER OR PRIME CONCESSIONAIRE ALTERNATIVE

With the master concessionaire approach, the airport sponsor leases concession space in a particular category (e.g., food and beverage or merchandise) to a single operator. A prime concessionaire approach involves the airport selecting one or two concessionaires for different locations in the airport. Prime and master concessionaires operate most of the concession units themselves. They may sublease a minimum number of concessions to meet the sponsor’s Airport Concessions Disadvantaged Business Enterprises (ACDBE) goal, to provide local or regional brands, or to satisfy other requirements.

Figure 7-16 shows a diagram of this alternative. Hartsfield-Jackson Atlanta International, Tampa International, and San Diego International airports use prime concessionaires.

Figure 7-16: Prime Concessionaire Alternative



Source: Michael G. Moroney & Associates, Inc., 2014

Some airport sponsors have agreements with one prime concessionaire to operate food and beverage facilities and another prime concessionaire to operate merchandise facilities. Other airport sponsors can have the same prime concessionaire operate both categories of concessions. Concession revenues and minimum rents¹⁵ tend to be higher with a prime concessionaire because of the greater operational efficiencies with a larger operation.

¹⁵ A minimum rent per month is the smallest amount of rent owed by a tenant when rent is based on a percentage of gross sales.

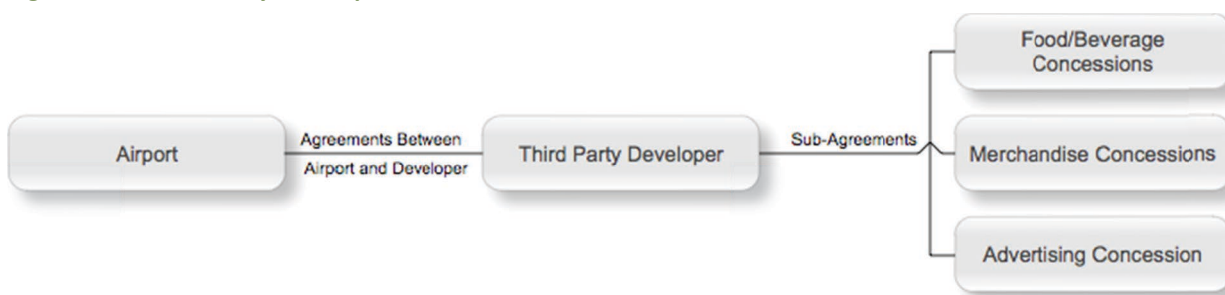
With fewer responsibilities and contracts to administer, the prime concessionaire alternative requires fewer airport staff to manage concessions. This approach tends to yield the least amount of competition, however, because one or two prime concessionaires control the entire concession program, concession space, and the terms and conditions for subleases.

CN-18: THIRD-PARTY DEVELOPER ALTERNATIVE

With a third-party developer approach, the airport sponsor enters into a contract with a developer (via a lease) to prepare and manage a concession program for the terminal(s). The airport sponsor leases all concession space in the terminal(s) to the developer. Developers typically invest capital into (a) basic infrastructure and development of common areas, (b) logistics space for storage and delivery, and (c) shared services for concession support. Developers may self-operate a concession or, in some agreements, they must delegate operations to other concessions by sub-agreement.

Figure 7-17 shows the structure of the third-party developer alternative.

Figure 7-17: Third-Party Developer Alternative



Source: Michael G. Moroney & Associates, Inc., 2014

This management alternative maximizes competition because the developer selects the concessionaires that will optimize revenues. Developer concession programs generally produce a high level of customer service and satisfaction. Airport sponsors that select this alternative are willing to pay the developer a percentage of revenue in return for the professional experience, skill, judgment, and network of concession operators. The developer’s fee can be as much as 20% to 30% of gross concession revenues. The third-party developer alternative can produce the greatest level of revenue of all the alternatives, but because the developer’s fee may be high, net revenue to the airport sponsor can be less than with other approaches. Airport sponsors using this alternative believe that the developer can generate significantly more gross revenue than other alternatives; so much so, that the airports’ shares of revenue will be higher than alternatives even after accounting for the developer fees.

An additional benefit of this alternative is that the developer can expedite concession and subcontract agreements that might not be possible with public-sector contracting.

Pittsburgh International Airport was one of the first airports to embed the mall concept into an airport terminal and use a third-party developer. Today, airports with larger numbers of passenger enplanements and available space are typical candidates for this management alternative.

Baltimore/Washington International Thurgood Marshall Airport used a developer to improve older terminal infrastructure and update concession spaces. Boston Logan International and Newark Liberty International airports also use the developer alternative.

CN-19: COMBINED MANAGEMENT APPROACH

Some airports use a combination approach that suits specific locations in a terminal to achieve the best program. For example, Orlando International Airport contracts with a third-party developer for the pre-security central terminal concession area. For other locations in the terminal, it uses a group of prime concessionaires. Seattle-Tacoma International Airport uses multiple prime concessionaires in the different concourses and uses direct leasing with a fee manager for the central terminal.

According to the *Airport Revenue News*, in a 2012 survey of 35 airports, nine of the top 35 U.S. airports used direct contracts; 11 used prime concessionaires; six used third-party developers; and nine used a combination of approaches. None of the top 20 airports used the master concessionaire alternative.

Table 7-10 provides airport examples of the different concession approaches.

Table 7-10: Airports Using Different Concession Models

Direct Contract	Master/Prime Concessionaire	Third-Party Developer	Fee Manager	Combined Approach
Dallas/Fort Worth International	Charleston International	Boston Logan International	Washington Dulles International	John F. Kennedy International (Prime: Terminal 5; Direct: Terminal 4)
Denver International	Minneapolis-St. Paul International	Newark Liberty International	Ronald Reagan Washington National	Orlando International (Prime/Developer)
Portland International	Nashville International	Pittsburgh International		Miami International (Prime/Direct/Developer)
San Francisco International	Tampa International			Oakland International (Prime/Direct)
	Tulsa International			Seattle-Tacoma International (Prime/Direct)
Examples of Companies				
	Delaware North Co.	AirMall USA		
	HMS Host International	MarketPlace Development		
	SSP Group Ltd.	Westfield Concession Management		
	The Paradies Shops			

Sources: LeighFisher, *ACRP Report 54: Resource Manual for Airport In-Terminal Concessions* and KRAMER aerotek inc., 2014

MANAGEMENT APPROACHES COMPARED

Each management model has strengths and weaknesses.

- **Direct contracts** offer an airport sponsor more control over concession agreements and management contracts. Direct contracts also lead to higher total revenue received from concessionaires, and more opportunity for local businesses to participate in programs. Direct contracts can result in higher airport administrative costs and require additional airport management talent and time to manage the programs.
- The **fee manager** approach brings experienced professionals to the concession program and provides a single point of contact for the airport. The airport sponsor can retain more control over the concession program and will take responsibility for capital investment in common areas of use.
- The **prime/master concessionaire model** results in fewer contracts and agreements for airport staff to manage, as the concessionaire is responsible for management and administration of the concession subcontracts. This model can result in less competition because there are fewer potential operators.
- The **third-party developer model** often results in high customer satisfaction, usually the highest gross sales, and a wide variety of individual concession concepts. However, developer fees reduce revenue to the airport.

Table 7-11: Comparison of Concession Management Models

	CN-15 Direct Contract	CN-16 Fee Manager	CN-17 Master/Prime Concessionaire	CN-18 Third-Party Developer
Potential for Improving Net Revenues	High	Medium-High	Medium	Medium
Airport Assumption of Risk	High	Medium-High	Medium	Medium
Airport Capital Investment	High	High	Medium	Medium
Airport Administrative Burden	High	Medium	Medium-Low	Low
Variety in Concession Programs	High	High	Medium	High
Complexity to Implement	Medium	High Initially	High Initially	High Initially
Political/Institutional Challenges	Low	High	High	High

Source: Michael G. Moroney & Associates, Inc., 2014

SELECTING A MANAGEMENT ALTERNATIVE

An airport sponsor should select its concession model(s) based upon consideration of the following factors:

- The demographic and volume of the airport’s passengers
- Terminal area layout, terminal building geometry, and layout of concession space and support areas
- The size and experience of airport staff to manage the various programs and the airport sponsor’s willingness to fund administrative costs

- Level of interest on the part of third-party developers, fee managers, and concessionaires to operate at the airport
- Airport net revenue estimates under each management alternative
- The degree of airport autonomy and flexibility to develop and manage its concession and customer service programs given the airport sponsor’s policies, procedures, and legal structure
- The unique issues and opportunities present at the airport
- Capital requirements and the airport sponsor’s ability to attract private capital with each alternative
- Terminal development plans
- Opportunities and flexibility to optimize revenue during the course of the contract

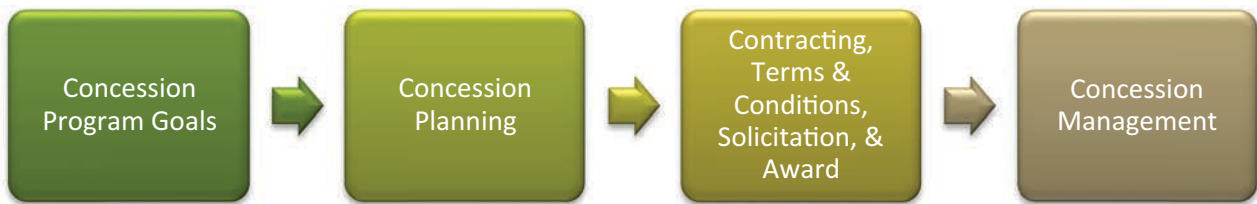
Selecting the appropriate management alternative for an airport can result in greater revenue, less administrative and other costs, and preservation of the airport sponsor’s capital.

7.5.3 Concession Program Planning and Administrative Improvements

Five key factors contributing to a successful concession program are: (1) organizational preparedness and pre-planning; (2) adherence to best administrative practices; (3) the support of motivated participants at the right levels in the organization; (4) a fresh mix of concession offerings targeted at the airport’s customer segments; and (5) strategic location of concessions pre- and post-security to encourage shopping. The sections that follow discuss the planning, design, and solicitation improvements for in-terminal concessions and the advertising necessary to achieve additional non-aeronautical revenue from existing businesses. New ideas for product offerings and advertising are discussed in Chapter 3: Customer Focus.

Concession process improvements focus on “doing things right,” which means the airport sponsor must invest in developing concession plans and policies that are unique to the airport and contain informed, contemporary approaches that optimize revenue and services and resemble a private-sector business plan. **Figure 7-18** shows potential areas of improved planning, solicitation, and management of concessions.

Figure 7-18: Concession Process Improvements

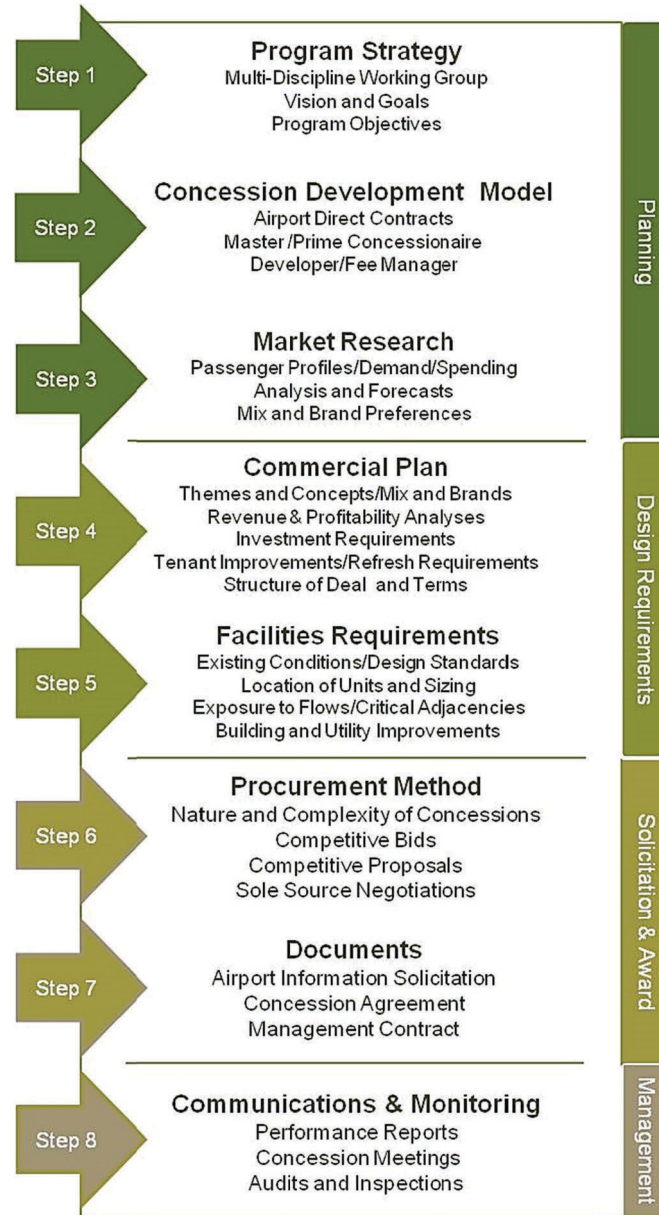


Source: Michael G. Moroney & Associates, Inc., 2014

Figure 7-19 outlines a concession program planning process that commercial service airports of all sizes can accomplish. The process involves seven development steps and a management step. The process includes a planning component, design guidelines and requirements, and a solicitation and award phase, followed by on-going management of the program. The next sections discuss each component.

For a detailed discussion of agreements, procurement processes, and management of concessions, please consult *ACRP Report 54: Resource Manual for Airport In-Terminal Concessions*.

Figure 7-19: Overview of Planning, Design, Solicitation, and Management of Concession Programs



Source: Michael G. Moroney & Associates, Inc., 2014



STEP 1 – CN-20: PROGRAM STRATEGY, VISION, GOALS, AND OBJECTIVES

Concession Working Group

To develop successful concession plans, facilities, and documentation, it is useful to form a multi-disciplinary working group that represents the following mix of skills:

- Concessions program development
- Airport finance
- Concessions/commercial legal
- Properties and terminal operations
- Terminal planning/shopping center architect
- Local jurisdiction purchasing requirements

At larger airports, staff will have many of these skills. Smaller airports may need to engage outside consultants, planners, and attorneys. Because airport functions within the terminal area are changing, a multi-disciplinary working group will help to determine what opportunities might exist, not only to improve but also to expand the existing footprint of the concession program to include areas that are no longer leased by the airlines. In addition, older areas of the terminals, old phone banks, or other customer service amenities that are no longer needed can be repurposed for better use.

All concession programs evolve over years. Maintaining continuity of the working group to review performance and, periodically, to refresh the concession program will help to evolve the airport’s program.

Vision Statement

A concession program must have direction to be effective. Thus, a vision statement and long-term goals are useful to focus staff and advisers on what the airport sponsor has determined is important.

“If you don’t know where you’re going, you will end up somewhere else.”

– Yogi Berra

A vision statement is a vivid description of a desired outcome that inspires, energizes and helps create a mental picture of achievement of goals. It can be a direct statement, such as this one developed by Denver International Airport:

“A Concession Program that is among the best in the world offering value, excitement and wide range of culinary and retail experiences and services that evoke a strong sense of place reflecting the best of Denver, Colorado and Rocky Mountain West.”

Long-Term Goals

Goals for the concession program are broad statements about the airport sponsor’s intention to maximize generation of revenues, fulfill the long-term public service goals inherent to the operation of public-use facilities, and attract investment of private capital to the development of the airport.

Examples of goals for a concession program include:

- Enhance customer service and the overall customer experience
- Encourage healthy competition
- Enhance the passenger experience through designs that offer interesting and exciting concepts and motivate passengers to patronize the concessions
- Represent the best local, regional, national, and international concepts – use local brands to create a sense of place
- Provide travelers’ necessities
- Maximize non-airline revenue in a manner that is consistent with the airport’s public service role to reduce the impact of airport costs on airlines
- Develop the concession program with a cost structure that will permit concessionaires to comply with street pricing requirements without undue economic burden
- Optimize small and local businesses and ACDBE opportunities
- Provide for periodic re-concepting and facilities refreshment to keep the concessions program fresh and vibrant
- Recruit top local, regional and national food and beverage and retail brands and concepts
- Achieve a cost-effective approach to investment in concession space for both the airport and concessionaires (i.e., adding terminal space for concessions, constructing concession support areas, and providing utilities and other investments necessary to present a high quality concession program)

Program Objectives

Objectives are realistic and measurable targets established to evaluate and track progress during implementation of a concession program. Objectives are typically short-term and achievable within a specific timeframe. Examples of program objectives are:

- Recruit and negotiate a direct contract with two local specialty retail vendors for the terminal in the third quarter
- Increase gross sales of post-security concessionaires by 5% over the next 12 months

Having a coherent concession program strategy facilitates the maximum generation of—and raises the likelihood of—private capital investment in development of the concession program. The strategy will also help staff focus on program priorities.



STEP 2 – CN-21: SELECTION OF CONCESSION MANAGEMENT ALTERNATIVE

This step involves evaluation and selection of the concession management model or combination of models:

- Direct contract
- Fee manager
- Master/prime concessionaire
- Third-party developer

Selection of a concession management model will affect the airport’s approach to solicitation and management of the programs.



STEP 3 – CN-22: MARKET RESEARCH

Surveys

Airport size, the mix of passengers (originating/connecting, domestic/international, and business/leisure travelers), and customer demographics all figure into program design. To help build an effective concession program, airports often survey customers to determine preferences for services, products, brands, needs, wants, and desires.

ACRP Report 26: Guidebook for Conducting Airport User Surveys provides guidance in creating and implementing an effective survey.

Many commercial service airports are striving to monitor current concession programs and revenue performance. Some airports have staff that can undertake market research in-house; other airports work with their prime and master concessionaires to accomplish the same. An on-going marketing research program is useful to determine:

- Customer satisfaction with existing concessions
- Passenger profiles (domestic, international, leisure, and business)
- Enhancement opportunities based on existing and projected spending patterns
- The traveling public's needs and wants concerning future potential mixes of concession brands and concepts

Performance Measures and Peer Airport Comparisons

The following performance measures also are useful market research tools to evaluate concession programs:

- Recent enplaned passengers history
- Sales by retail and food/beverage
- Sales per enplaned passenger
- Sales per square foot by retail and food/beverage
- Type of concession management models in use

If the airport sponsor operates more than one terminal, benchmarks should be collected separately for each terminal. Similar data is available from the ACI-NA Benchmarking Survey for other airports. Airports that participate in the survey have access to other airports' data.

Detailed Concession Analysis

When an airport plans to rebid a concession space or group of stores, a more detailed analysis would look at results from specific establishments. Relevant data for this type of analysis includes an evaluation of

- Food and merchandise offerings
- Passenger satisfaction
- Capture rates

- Concession layouts
- Pricing information and relationship to street pricing (how much is the airport pricing premium)
- Sales per square foot by concession unit
- Revenue history by month for three to 5 years
- Revenue history for food/beverage (by unit and by type—casual dining, “grab and go,” bar, etc.)
- Revenue history for merchandise (by unit and by type—convenience; specialty; and, where applicable, duty free)
- Revenue history for advertising
- Revenue to the airport
- Revenue to the concessionaires

Demand Analysis and Forecasts

As a part of the market research effort, concession demand analysis and forecasts are typically developed and updated periodically. The purpose of the demand analysis is to determine the extent to which the current concession programs serve existing customer segments and the amount of space required to meet future requirements. The demand analysis identifies the potential size of the concession program given the quantity and consumption characteristics of passengers and the existing facility characteristics. This will guide facilities planning and consideration of alternative concession branding and mix when it is time for a refresh of the concession program.



STEP 4 – CN-23: COMMERCIAL PLAN

To ensure that the program includes a full range of concessions, the airport sponsor (in conjunction with a master concessionaire, prime concessionaire, or concession developer, depending on the model used) prepares a commercial plan. The plan identifies the optimal use of each space within the terminal complex to maximize achievement of the concession program goals.

The commercial plan includes space, business, and offerings plans that define specific types of uses for each space, as well as an overall concession mix that will meet the needs of passengers in each area of the terminal. The results of the market research, performance measures, and demand analysis in Step 3 help determine new directions for the commercial plan.

The commercial plan is updated periodically (at least every 5 years; earlier if a significant event occurs) to reflect changes in terminal use or passenger demand. The plan provides the underlying rationale for each concession opportunity.



STEP 5 – CN-24: FACILITIES REQUIREMENTS

Steps 4 and 5 are likely to be concurrent efforts. Step 5 begins with an analysis of the existing physical condition of concession areas to determine the strengths, weaknesses, and opportunities that each space offers. The purpose of this analysis is to determine patterns of passenger use and to identify new opportunities that could become part of the program design.

Preparations for facility requirements begin with an assessment of concession space and amount of square footage by: (a) concept; (b) type; (c) unit productivity; (d) unit locations; (e) layouts; (f) relationship to flows, critical adjacencies, and market segmentation; and (g) way-finding and signage. This analysis of existing conditions evaluates the impacts of existing terminal and concession designs. Site evaluations focus on design, traffic flow, and obvious customer service issues to determine the effectiveness of facilities. It is crucial to identify factors that could affect concession performance and enhance concession exposure and functionality.

From the analysis of existing conditions and projections of passenger enplanements, an airport's concession planning team can develop a concession plan that identifies individual concession units by location and size. As a part of this evaluation, the concession development team plans adjacencies, way-finding, and expansion possibilities. Guides are available to an airport sponsor for determining the amount of concession space necessary to serve given volumes of passengers. Some planners use the metric of 10 square feet of concession space per 1,000 enplaned passengers.

The findings of the commercial plan and facilities requirements analysis become a document that contains design guidelines and requirements.



STEP 6 – CN-25: PROCUREMENT METHODS

Regardless of the concession model selected, there are three typical procurement methods:

- Competitive bidding to prescribed specifications
- Competitive proposals, based on prescribed specifications
- Negotiation with a single concessionaire on a sole source basis

Competitive Bidding to Prescribed Specifications

Over the years, competitive bidding to prescribed specifications has been used for those concessions or third-party developer situations in which it was difficult (or impossible) to differentiate providers of services, income to be generated, and quality of services or products. In bidding to prepared specifications, the bidder that offers the airport sponsor the highest guaranteed revenue wins the award.

Competitively bid concession agreements typically have had long durations. In the past, this approach has resulted in problems with quality of service, high prices, and less than optimal revenue to the airport sponsor. Using such competitive bid agreements for food and beverage or specialty retail concessions has lost favor. However, competitive bidding for rental car, baggage cart, and foreign exchange contracts is common.

Competitive Requests for Proposals

Competitive RFPs are solicited for those concessions or third-party developers for which the service type, business volume, services or products quality, and management capability and depth can be clearly differentiated among concessionaires. This method involves issuing an RFP with minimum qualifications identified in the solicitation. A selection committee evaluates each proposal and selects

the concessionaire with the best proposal for negotiation of final terms and conditions. On arriving at an agreement, the concessionaire receives the concession award.

Solicitation of most in-terminal concessions and advertising contracts is done by RFP. Concessions frequently awarded by this process include parking, retail merchandise, food and beverage, and advertising.

Direct Negotiation

Direct negotiation is normally used only if services offered are patented, unique, or available only from one concessionaire. In many communities, local law requires that all privileges be awarded on a competitive basis; in these communities, direct negotiation is not allowed.

Comparison of Procurement Methods

Of the three methods of awarding concession privileges, the most rigid is competitive bidding to prescribed specifications. If competitive bidding is used, it is virtually mandatory that the highest dollar bid (by a financially qualified organization) be accepted. The most flexible method of awarding concession privileges is by direct negotiation, where the award of the privileges can be based on an evaluation of qualifications established by the airport sponsor.

The method of inviting competitive proposals by RFP is neither as rigid as competitive bidding to prescribed specifications nor as flexible as negotiation, but does permit evaluation of all factors and the awarding of privileges on a basis other than the highest dollar bid. Consequently, the airport sponsor may sometimes select lower dollar guarantees in the interest of ensuring a given level of investment and the desired level of service.

Legal Basis of the Competitive Process

As discussed above, most often airport sponsors use the competitive process to select concessionaires. The following is a summary of the legal reasons for this approach.

Under federal statute 49 CFR Part 23, and various grant assurances, an airport sponsor is required to grant leases of real property on a competitive basis. Further, an airport sponsor is required to award concession contracts to the entity that (1) proposes development or utilization that fulfills the airport sponsor's land use and development criteria for the property; (2) demonstrates an economically feasible program that will produce a market value rental return to the airport sponsor over the term of the lease; and (3) possesses the financial capacity and managerial ability to develop and maintain the property at its highest and best use over the term of the lease.

The federal statute and various grant assurances require an airport sponsor to (1) take all necessary and reasonable steps to ensure non-discrimination in the award and administration of contracts; (2) not use quotas or set-asides for ACDBE participation, but follow the airport sponsor's adopted and FAA-approved ACDBE Program; (3) not enter into long-term exclusive concession agreements (unless approved by the FAA); and (4) not use any local geographic preference.

Qualifications of Proposers and Bidders

Perhaps the most important aspect of awarding concession privileges, regardless of the method used, is determining each prospective concessionaire's ability to meet certain financial, management, and experience requirements.

Before any concession award process (bid, proposal, or negotiation) begins, the airport sponsor formally establishes a stated level of qualifications and experience that any prospective concessionaire must meet to qualify. For many concession privileges, it is important that concessionaires have airport experience.

The qualifications and experience requirements are particularly important when awarding privileges in new or expanded terminal facilities. Qualifications and experience requirements can be formulated carefully, to reflect (1) Federal Trade Commission rulings concerning antitrust and nondiscriminatory practices, and (2) the requirements of the regulations for minority business enterprises (49 CFR Part 23).

If a competitive process is used, the airport sponsor should schedule pre-proposal and pre-bidding conferences (except in those instances where services are standard) and invite representatives of interested organizations to attend the conference.

Pre-proposal and pre-bidding conferences are extremely useful in exchanging information between the airport sponsor and the concessionaires. They provide a forum whereby the concessionaires can gain an understanding of the goals and desires of the airport sponsor. Similarly, they provide a means for the airport sponsor to obtain insight into management and operational problems of the various types of concession operations, as well as advice on sizing, location, and concession support requirements.

Determining Concession Fees

In general, except for parking, the financial return to the airport sponsor from concessions should be based on the greater of (1) a MAG or (2) a percentage of the concessionaire's gross receipts from sales, where gross receipts are clearly defined in the agreement. Some airports also include a provision for profit sharing when gross receipts exceed a threshold established in the agreement.

Just as the definitions and terms of parking and rental car agreements must be well defined (because they determine the calculation method of the airport's revenue), the terms of concession agreements also must be well defined and comprehensive. The basic components of concession fees are:

- **MAG or Percentage Rent** – Concession fees paid to the airport sponsor are usually based on the greater of two numbers: a MAG or a percentage of the concessionaire's gross receipts from sales. The percentage of gross receipts usually falls in the 10% to 15% range, although duty free is somewhat higher, and advertising is considerably higher.
- **Profit Sharing** – An evolving trend is for airports to participate in the profit generated by a concessionaire or other lessee on airport property. Typically, the airport sponsor has a standard agreement with the lessee that sets the MAG or percentage of gross receipts, whichever is higher. Once a certain level of business is attained, a profit sharing formula is activated. This

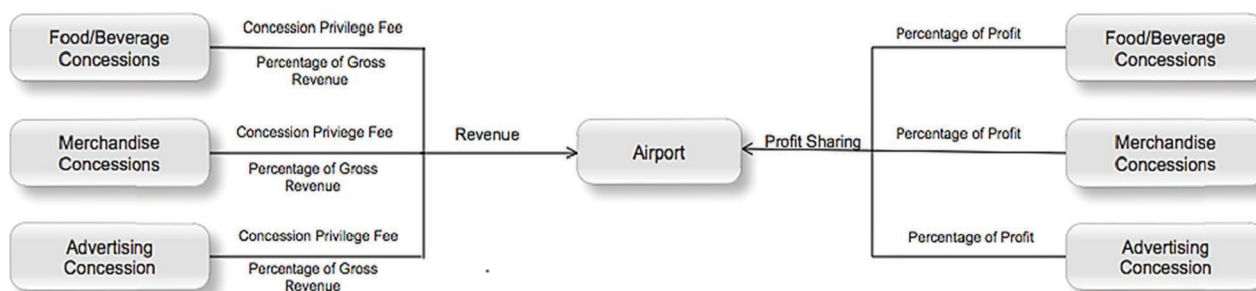
allows an airport to offer a lower basis for initial startup of commercial activity and services, and to share in profitability once the business is established.

The profit sharing arrangement can be defined in agreements in a number of ways, such as a percentage (25% to 50%) of net revenues,¹⁶ a fixed sum, or a sliding scale based on profitability. The exact terms of profit sharing must be carefully defined in agreements, especially if net revenues are the determining factor for activation of a revenue sharing formula.

Figure 7-20 shows how profit sharing can add to airport operating revenues.

- Other Fees and Charges** – In addition to concession fees based on gross receipts or a MAG, concessionaires pay for rent of back offices and storage, common area maintenance (CAM) fees, logistics support (which may involve a central receiving dock, warehouse, and delivery to concession spaces), utility costs, and, possibly, contributions to a marketing fund.

Figure 7-20: Profit Sharing Schematic



Source: Michael G. Moroney & Associates, Inc., 2014

For most concession privileges in the terminal building (food and beverage, news/gifts, and any other merchandising concessions), the airport sponsor establishes the percentage(s) to be paid by the concessionaires and the dollar amount of the lowest acceptable minimum annual guarantee (MAG).

If the concession privilege is to be awarded on a competitive basis, the bidders and proposers bid the minimum guarantee (in excess of the stated acceptable minimum), and the privilege is awarded based on the highest dollar guarantee. The minimum fee and any percentage fees are set on an annual basis, but are typically paid in monthly installments.



STEP 7 – CN-26: CONCESSION DOCUMENTS

General concession documents consist of solicitations, concession information documents, and concession agreements. It is crucial that the solicitations and agreement be clear, concise, and

¹⁶ Net revenues are gross revenues less operation and maintenance expenses, capital costs, and taxes, if any.

comprehensive. The concession documents are subject to federal, state, and local laws and regulations, and to airport policies and rules.

Ultimately, improving the quality of documents will contribute to stronger financial results. As airport sponsors develop sound contemporary documents, questions and issues will arise that require additional study and research. Through this process, competent documents will evolve that are tailored to the individual airport and the desired concession program. The process helps to: (a) eliminate the possibilities of misunderstanding or misstating the concession privileges offered; (b) properly exploit the revenue opportunity; and, (c) realize the sponsor’s desired financial results.

Ideally, airport sponsors will standardize agreements based on types of tenants and concessionaires. In this way, each type of tenant or concessionaire on the airport is governed by the same terms, conditions, covenants, and standards as others of the same type.

Solicitations

The concession RFP typically requires the following elements in a proposal:

- Transmittal letter and submittal checklist
- Executive summary
- Statement of qualifications
 - Years of experience in airport concessions (minimum 3 to 5 years)
 - Demonstration of proposer’s ability to generate sales
 - Company’s legal organization and history
 - Other airport concession operations and references
 - Financial statements and capability
- Concept and brand development plan
 - Use of national/local brands
 - Merchandise
 - Menus
- Facilities Plan (design, materials, capital investment)
- Management and operations (staff, organization, training)
- Participation plan for ACDBEs
- Financial projections for revenue and expenses
- Marketing and promotion plan
- Signed statement of airport sponsor policy and pricing preferences
- Proposed bonds, guarantees or sureties
- References

Outreach – Generating Interest in Airport Solicitations

One important way to improve the quality of concession bids and earn higher revenue for the airport is to advertise the RFP widely. Airport staff can develop and maintain email lists of companies that have expressed interest in past or future concession opportunities. Solicitations can be advertised on the airport website, in local newspapers and business publications, as well as in airport industry

publications. In addition, airport sponsors can list their solicitations on the websites of ACI-NA and the AAAE.

Review of Proposals

Because concession contracts are large and, ultimately, affect the passengers' experience of the airport, airport sponsors often convene selection panels to review the proposals. The panels consist of industry experts, airport staff, and representatives of the airport sponsor. The panel evaluates the element of each proposal based on criteria published in the RFP. The panel also considers the concessionaire's capacity to:

- Satisfy the minimum qualifications
- Construct, operate, and make money on the concept and business plan described
- Demonstrate adequate financial resources to perform and adhere to the terms of the concession agreement
- Meet the ACDBE target

The panel reviews the concessionaire's financial performance at other airports, identifies the highest-ranking proposals, and interviews those candidates.



STEP 8 – CN-27: COMMUNICATIONS AND MONITORING

This last step involves on-going management of the concession program. Effective communication is the key to administration of a quality concession program. It is important that concessionaires receive feedback from the airport sponsor concerning concession operations and public perceptions. Likewise, it is important for the airport sponsor to understand the operational and market issues confronting the concessionaire. Communications tend to be the best at airports that have a formal communications program with their concessionaires that includes regular meetings, communiqués, and reports.

Formal concessions policies, together with formal concession plans, provide tools for: (a) management control of the process; (b) timely execution of required actions; and (c) monitoring and measuring of success.

The airport sponsor has a quality assurance role in the management and administration of concession agreements that can involve a number of operational practices, including:

- Adherence to the performance standards in the concession agreement
- Hours of operation
- Pricing policies (street pricing, street plus a percentage, other comparative basis)
- Cleanliness and upkeep of concession space
- Handling of waste
- Level and quality of customer service
- Compliance with safety standards and regulations
- Freshness of the concept – incorporating trends
- Compliance reviews
- Working with underperforming concessionaires

- Feedback to concessionaires
- Response to public complaints
- Delivery and transportation of the product through the terminal
- Performance indicators
- Overall evaluation of concessionaire performance¹⁷

The airport sponsor needs to communicate regularly with concessionaires regarding the results of quality assurance checks. Each concessionaire needs to know that the airport sponsor is monitoring operations and is available to consult on issues affecting concessionaire success. The best practice for monitoring performance also involves regular inspections of concession facilities to assure that the level of maintenance, cleanliness, and appearance meets the requirement of the concession agreements.

Furthermore, airport sponsor audits of concessionaires will determine whether the financial and program terms of the concession agreement are being observed. Regular audits help to alert and resolve any departures from the agreements before they become a major issue with financial consequences for the airport and the concessionaire. This is the primary level of an airport sponsor’s due diligence responsibility.

7.5.4 Wrap-up on Concessions

Given a relatively low rate of concession spending per enplaned passenger at U.S. airports, improved planning, solicitations, and management of concession programs hold strong potential for improving net revenues to the airport sponsor. This strategy is applicable to the full spectrum of airports. Larger airports tend to have more mature concession programs; however, elements of their concession programs always can be strengthened and improved.

Smaller airports generally do not have as defined an approach to concession programs as larger airports often do. These airports could see significant improvements in revenue by employing a disciplined and organized approach.

Airport sponsors employ a variety of management alternatives to develop and manage concession programs. Direct contracts with concessions provide a way for the airport to handpick the establishments desired in the terminal and increase direct revenue flows back to the airport sponsor. However, direct contracts involve greater financial risk for the airport and more staff time to manage the program. Some airports are employing a hybrid approach with a combination of direct agreements with concessionaires or service providers, prime concessionaires, or a third-party developer. Regardless of the management alternative, good concession programs require on-going staff attention, discipline, and focus to optimize the quality of the programs and financial results.

¹⁷ *ACRP Report 19A: Resource Guide to Airport Performance Indicators* identifies the following core and key performance measures for concessions:

- Concession revenue to the airport as a percentage of total operating revenue
- Concession revenue to the airport per enplanement
- Concession gross sales per enplanement
- Concession gross sales per square foot
- Concession net revenue to the airport per square foot

The resources required to implement a vibrant concession program will vary by size of airport and by management model selected. At non-hub and small hub airports, staff for concessions may be one part-time employee or one full-time employee; at medium and large hub airports, dedicated concession staff ranges from two to more than six employees. For airports with smaller staffs, the services of outside professionals with experience in concession program development may be required.

Improvements to concession program design often require updating or modifying the terminal building. This is a normal part of improvements to the concession program. With security checkpoints a permanent function in the terminal area, balancing concession offerings both before and after the checkpoints presents an opportunity to reach different customers, to expand the concession program, and to increase concession revenues to the airport sponsor. With a carefully planned and executed concession program, the resources expended should be more than recovered over the life of the concession program.

7.6 WRAP-UP

At most commercial service airports, passenger-dependent concessions and services represent the largest share of non-aeronautical revenue. The three most significant revenue generating activities are parking, rental cars, and concessions. This strategy focuses on how airports can manage existing passenger concessions and services to achieve new revenue.

For planning, design, and management initiatives to be successful, they must have the support of the airport sponsor's governing group (e.g., city council, county commission, authority board, and advisory board). The key to developing support is to keep these governing groups informed about the goals, objectives, and achievements of initiatives. Likewise, maintaining regular communication with concessionaires and service providers contributes positively to a vibrant program and compliance with concession agreements and contracts.

This chapter has concentrated on best practices with respect to the planning, process, and management of existing passenger-dependent businesses.

7.7 ADDITIONAL REFERENCES

ACRP LRD 7: Airport Governance and Ownership (Kaplan Kirsch & Rockwell, LLP), Transportation Research Board of the National Academies, Washington, DC, 2009

ACRP Report 19A: Resource Guide to Airport Performance Indicators (Oliver Wyman Inc., JDB Associates LLC, TJB Aviation LLC, and Trillion Aviation), Transportation Research Board of the National Academies, 2011

ACRP Report 24: Guidebook for Evaluating Airport Parking Strategies and Supporting Technologies (Jacobs Consultancy, Walker Parking Consultants, Mannis Group, and DMR Consulting), Transportation Research Board of the National Academies, Washington, DC, 2011

ACRP Report 26: Guidebook for Conducting Airport User Surveys (Jacobs Consultancy, Aviation System Consulting, LLC, JD Franz Research, Inc. & J.P. Cripwell Associates), Transportation Research Board of the National Academies, Washington, DC, 2009

ACRP Report 34: Handbook to Assess the Impacts of Constrained Parking at Airports (Ricondo & Associates, Inc., DMR Consulting, Resource System Group Inc.), Transportation Research Board of the National Academies, Washington, DC, 2010

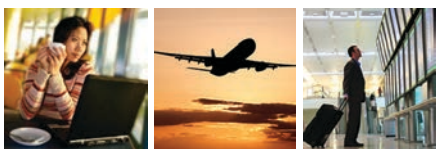
ACRP Report 54: Resource Manual for Airport In-Terminal Concessions (LeighFisher and Exstare Federal Services Group, LLC), Transportation Research Board of the National Academies, Washington, DC, 2011

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Chapter 8

Case Studies

- 8.1 Overview of the Case Studies
- 8.2 Boston Convention and Exhibition Center – Value Capture
- 8.3 Dallas/Fort Worth International Airport – FTZs and Value Capture
- 8.4 Indianapolis International Airport – Optimizing Concession Programs
- 8.5 McCarran International Airport – Innovative Leasing Program
- 8.6 Pittsburgh International Airport – TIF/Participatory Lease
- 8.7 Springfield-Branson National Airport – Airport-Operated Ground Handling

8.1 OVERVIEW OF THE CASE STUDIES

The six case studies presented in this chapter explore in greater depth the application of revenue development strategies discussed in the Airport Guide. Considerable time and detail went into the case studies to obtain actual financial results from implementation of the strategies. Several case studies included site visits. The first two cases illustrate different aspects of value capture.

The Boston Convention and Exhibition Center (BCEC), although not an airport, provides an interesting example of how different jurisdictions and stakeholders came together to financially support a large facility that transformed Boston’s waterfront area. While airport sponsors have less experience with value capture techniques, the use of value capture for the BCEC development demonstrates the potential of this strategy to finance large projects.

Dallas/Fort Worth International Airport’s foreign trade zone (FTZ) illustrates how an airport sponsor can leverage its cargo and passenger operations and its standing as a regional economic center to stimulate economic value beyond the “airport gate.” Dallas/Fort Worth International encompasses 18,000 acres and spans five municipalities. The case study takes a hard look at multi-party agreements made by the airport sponsor and the municipalities to develop the FTZ, to plan and build an airport city around the airport, and to share tax revenues.

The Indianapolis Airport Authority took the opportunity to plan and completely redesign a new concession program as part of its new Midfield Passenger Terminal (Midfield Terminal) building complex. The program emphasized a focus on customer experience, an innovative approach to solicitation of concessions, inclusion of many local businesses at the airport, and a lean management approach to oversee the program. The case study offers a window into innovative ways that an airport can design (or refresh) a concession program, recruit concessionaires, and manage the program.

Two case studies—McCarran International Airport (LAS) and Pittsburgh International Airport (PIT)—have maximized non-aeronautical revenue opportunities through real estate development. Clark County, Nevada, the owner of LAS, seized an opportunity to participate in real estate projects through joint ventures, public-private partnerships (PPPs), and participatory leases not previously used by a municipal entity. Prior to 2008, the initial phases of the program produced new and significant sources of commercial revenue for the airport sponsor. Following the Great Recession, Clark County repositioned its real estate portfolio to take on less risk through more traditional ground leases.

The Allegheny County Airport Authority (ACAA), which operates Pittsburgh International Airport (PIT), faced the loss of the US Airways hub and a stagnant real estate market by forming a Tax Increment Finance District and offering a participatory lease to a local developer that converted a portion of ground rent in exchange for future payments of rent. The speculative office building quickly leased, and additional development of other commercial and industrial space followed.

The last case study tells the story of how Springfield-Branson National Airport (SGF) expanded its fixed-base operator (FBO) and fueling business into a full-service ground handling company. The ground handling service became a valuable air service incentive, helped to retain airlines, and provided revenue to the airport sponsor.

Each case study offers a different perspective on how airport sponsors and local governments respond to unique opportunities for revenue development. In every instance, the airport sponsors demonstrated the ability to recognize the opportunity, engage leadership and stakeholders, and use forward-thinking measures beyond traditional practice. Airports considering similar approaches to revenue development must verify that each initiative is in compliance with Airport Improvement Program (AIP) grant assurances¹ and in compliance with state and local laws.

¹Specifically, FAA's Policy and Procedures Concerning the Use of Airport Revenue, 64 Fed. Reg. 7696, February 16, 1999 (Revenue Use Policy).

8.2 BOSTON CONVENTION AND EXHIBITION CENTER – VALUE CAPTURE



Source: AECOM Projects via [Flickr.com/view](#)

8.2.1 History of the BCEC

In the early 1990s, the commonwealth of Massachusetts began to investigate the feasibility of building new convention facilities in several areas of the state, including a large facility in Boston. Proponents of a downtown Boston location, including the city administration, acknowledged that a new facility would not generate enough revenue to cover its construction and operating costs. Proponents maintained, however, that the additional tax revenue created by businesses dependent on convention center activity and the jobs created would provide an economic benefit to the region and state that would far exceed the costs of the project. Furthermore, supporters contended the convention center would stimulate private investment and development within the vicinity of the facility. The city and state decided to pursue financing through capturing some of this value generated at off-site businesses that benefited from the convention center.

The Boston Convention and Exhibition Center (BCEC) provides an instructive example of how revenue generation through off-site value capture can help to finance a capital improvement project. Several public entities participated in the financing of the project. The city of Boston financed the land acquisition, some of the site cleanup, and the preparation costs of the project with short-term notes and long-term special obligation bonds, while the commonwealth of Massachusetts issued special obligation bonds to finance construction of the facility. In addition, an occupancy tax for new hotels in Boston and existing hotels near the convention center; sales taxes from businesses within the convention center finance district; vehicle rental fees; a fee on tours in the city of Boston; and the sale of hackney licenses provided a dedicated revenue stream for repayment of the bonds. These revenue sources, which represent value capture derived from off-site economic activity generated from the new convention center, were specifically dedicated to note and bond repayment because incremental increases in each

could be tied directly or indirectly to the success of the convention center. These techniques raised enough revenue to retire some of the bonds early and provide additional revenues for convention center operations, additional capital investments, and contributions to commonwealth and city general funds.

The example of the BCEC is relevant to airports. Airports create demand for similar types of off-site services, generating economic development off-airport through supplier relationships, visitor spending, and business location benefits. In fact, the geographic area of influence of an airport for generating regional economic development, and the types of industries that benefit from proximity to an airport, are greater than those of a convention center. For example, the Dulles Corridor in northern Virginia/metropolitan Washington, DC, is home to an estimated 575,000 jobs.² Hartsfield-Jackson Atlanta International Airport supports 317,000 jobs at firms that supply on-airport businesses, businesses that benefit from visitor spending, and production jobs that rely on air cargo.³ Thus, the off-site value capture strategies used to finance the BCEC offer a high potential source of revenues for financing new airports or airport improvements.

8.2.2 Revenue Sources

In 1996, the Boston Redevelopment Authority and the Massachusetts Convention Center Authority (MCCA) jointly commissioned a study to analyze the market and financial feasibility of the proposed BCEC. Published in March 1997, the results of that analysis:

- Outlined the need for a new convention center in Boston
- Identified a site in South Boston for the facility
- Projected the costs of constructing the center
- Forecast the economic benefits of such a facility to the region in terms of job creation, income, and additional tax revenues
- Identified alternative strategies for financing the facility through capturing the value created by the BCEC in the economy of the Boston region.

The fiscal impact analysis focused on projecting the tax revenue resulting from the BCEC itself, as well as on business generated by the BCEC at off-site establishments. **Table 8-1** shows annual tax revenues the study projected to be generated by the BCEC.

² NAI KLNB, <http://dullestechnologycorridor.com/>, and NAI KLNB, <http://www.dullestechnologycorridor.com/Commercial-Real-Estate-Why-Choose-Us-Vienna-VA.html>

³ Landau, S. R., "Airports, Airport Cities, Airport Corridors, Aerotropolises, & Economic Development," PowerPoint presentation at 91st annual meeting of the Transportation Research Board, Washington, DC, January 24, 2012

Table 8-1: Projected Annual Tax Revenue Impacts of BCEC

Revenue Sources	Projected Annual Revenue (\$ millions*)
Personal Income Tax	\$13.7
Corporate Income Tax	\$3.1
Sales and Meals Tax	\$8.8
Property Tax	\$10.3
Hotel Tax	\$9.7
Total	\$45.4

*1997 dollars

Source: C.H. Johnson Consulting, Inc.⁴

The study also identified eight potential sources of tax and fee revenues for value capture previously used to finance convention centers around the United States. These included:

- Hotel room occupancy taxes
- Sales taxes
- Meals taxes
- Car rental fees
- Parking taxes/fees
- Airport access fees
- Tolls
- Development fees

For the purposes of financing the BCEC, the study ultimately focused on the first five techniques, as well as a \$5 fee on all land and water-based tours that originate in the commonwealth within the city limits of Boston. A major selling point for using these funding sources was that primarily out-of-town visitors, not residents, would be paying for the development of the BCEC. **Figure 8-1** delineates the BCEC Finance District used for value capture purposes.

BCEC Case Study Abbreviations	
BANs	Bond Anticipation Notes
BCCFD	Boston Convention Center Finance District
BCEC	Boston Convention & Exhibition Center
BROEF	Boston Room Occupancy Excise Fund
MCCA	Massachusetts Convention Center Authority
ROETF	Room Occupancy Excise Tax Fund

The selected value capture techniques did not include income and property taxes derived from businesses that benefited from the BCEC, even though analysis showed that these two taxes generate the most revenue potential. However, MCCA never seriously considered these taxes as potential funding sources for a new facility, in large part because they more directly adversely affect residents. Furthermore, much of the income tax revenues came from indirect and induced jobs created in the

⁴ C.H. Johnson Consulting, Inc. for the City of Boston and the Commonwealth of Massachusetts, *Boston Convention and Exhibition Center Technical Appendices Volume 1*, March 1997, Fiscal Impact Chapter, pp. 12-13.

Greater Boston region, rather than from jobs directly tied to the convention center. Value capture through property taxes on nearby land development was also unattractive because:

- The convention center itself would not be paying property taxes (and, in fact, would take land off the tax rolls).
- The city and commonwealth were providing other incentives to developers who chose to build hotels and other commercial establishments in proximity to the convention center.^{5,6}

BCEC financial strategists also took care to ensure that adopted value capture techniques would not create a competitive disadvantage for Boston in attracting conventions. For example, the research team collected data on hotel taxes for 38 convention destination cities in the United States and found that the average rate for hotel taxes was 12.3%. The rate in the Boston area, including both state and city taxes, was 9.7%. The plan proposed a new 2.75% convention center finance fee on hotel rooms in Boston and Cambridge, thus keeping the total hotel taxes and fees to 12.45%, very near the average for competing cities.⁷

In November 1997, the Boston Redevelopment Authority released the Boston Convention Center Development Plan. This plan included a feasibility study for the project with a land acquisition and construction timeline and a forecast of future revenues assuming combinations of the value capture financing tools listed above.

8.2.3 Special Legislation

Pursuant to the release of these two reports, the Massachusetts Legislature adopted Chapter 152 of the Acts of 1997 titled, *An Act Relative to the Construction and Financing of Convention and Exhibition Centers in the Commonwealth* (the Act.) The Act detailed funding sources for financing the BCEC, as well as expansions to facilities in Springfield and Worcester, and for creation of additional meeting facilities in other regions of the Commonwealth. Similar special legislation would undoubtedly be required if an airport authority or municipal airport sponsor were to engage in similar value capture finance.

In keeping with the BCEC goals, the Act placed the majority of new tax burdens on visitors to the region, not on its residents. It authorized both the city of Boston and the commonwealth of Massachusetts to establish convention center financing funds to pay the debt service and interest on bonds issued for the

⁵ Johanna Storella, finance director of the Boston Convention Center Authority

⁶ For example, Vertex, a pharmaceutical company, received support from the commonwealth's I-cubed program. I-cubed is similar to TIF, but uses state income tax rather than local property taxes to pay off infrastructure bonds. (Even though BCEC financing did not use state income tax revenue, developing in the adjoining area was eligible to use anticipated income tax revenues for funding under the I-Cubed program.) About \$50 million of infrastructure (streets, sewers, a park, etc.) will be done by the developer, who will then be reimbursed as Mass Development (a state agency) sells bonds that will be paid off with state income taxes from new and retained workers at the site. It is state money, but the city is a participant/advocate. This infrastructure will be deeded over to the city when the job is done. Vertex also got a property tax break worth about \$12 million over 7 years, or about 15%-20% off their bill. Source: Boston Redevelopment Authority

⁷ In 2010, the state legislature passed a bill allowing municipalities to increase local hotel occupancy taxes by 2% (to 6%), and Boston chose to do so, making the total hotel occupancy tax in Boston higher than the 12.3% national average in 1997. This bill was part of a municipal relief package in response to cuts in state aid to municipalities. The extra revenue is not used to pay debt service on the BCEC.

BCEC. The Act also identified specific state and local sources to provide a revenue stream for repaying the bonds. All of these sources represented value capture from off-site economic activity generated by the BCEC.

The Boston Room Occupancy Excise Fund (also called the Boston Convention Center Fund) established by the Act would pay for land acquisition as well as some site cleanup and site preparation costs. The Commonwealth Convention Center Fund would use fees and taxes collected at the state level to repay bonds issued to finance construction of the BCEC. The Act established a three-tiered catchment area for collecting revenues in the Boston area, with some specific taxes and fees collected in each. The areas are: (1) the cities of Cambridge and Boston; (2) the city of Boston only; and (3) the Boston Convention Center Finance District (BCCFD).

Table 8-2 identifies the sources of revenue collected for both the state and city, and identifies those specific to a determined catchment area.

Table 8-2: Authorized BCEC Funding Sources

Commonwealth Convention Center Fund
Convention Center Financing Fee of 2.75% on room occupancy receipts in Boston and Cambridge, above the 5.7% state room occupancy tax
All of the commonwealth’s existing 5.7% room occupancy tax for existing and new hotels within the BCCFD
5% tax on all sales at new retail shops within the BCCFD
5% surcharge on the ticket price for any land- or water-based tours in Boston
The commonwealth’s share of \$10 rental vehicle surcharge for vehicles rented within Boston, \$9
\$2 per day surcharge on parking at any facility constructed as part of the BCEC
Boston Room Occupancy Excise Fund
City’s local option room occupancy excise tax of 4% within Boston, with an allowance to increase the tax to 4.5% ⁸
Proceeds from the sale of the first 260 hackney licenses sold within Boston after the effective date of the Act
City’s share of the \$10 rental vehicle surcharge for vehicles rented within Boston, \$1

Sources: Boston Redevelopment Authority and the Massachusetts Convention and Visitors Center

Figure 8-1 identifies the geographic region of the BCCFD and the area intended for BCEC-related development. The BCCFD comprises an area of approximately 0.9 square miles roughly bounded by the Boston Harbor to the northeast, Haul Road and Pappas Way to the southeast, West 1st Street and Mount Washington Avenue to the southwest, and Atlantic Avenue to the west-northwest. **Figure 8-1** shows the location of the BCCFD within the cities of Boston and Cambridge and **Figure 8-2** provides a more detailed map of the BCCFD within the South Boston neighborhood. Some taxes and fees paid into the Commonwealth Convention Center Fund, as identified in **Table 8-2**, are only collected on activities within this district. In this way, the BCCFD resembles a special assessment district.

⁸ The City opted not to increase the room occupancy tax to 4.5%.

Three aspects of the approved funding sources are particularly noteworthy. First, the financing strategy was developed to avoid use of existing sources of revenue to the city and commonwealth general funds. Therefore, the Act allows for the use of *state* hotel room surcharges only on *new hotels* (i.e., those built after July 1997) outside the BCCFD, but allows the use of hotel occupancy taxes on hotels built prior to July 1997 within the BCCFD. The latter are the existing hotels most likely to benefit from the new BCEC, and thus generate occupancy taxes as a direct result of the BCEC. The legislation allows the *city* to use its share of hotel occupancy taxes from existing hotel rooms as a revenue source for the Boston Room Occupancy Excise Fund.⁹

Second, the Act targets new fees and taxes to activities that have a clear connection to the convention center, such as fees on rental cars, sales at new establishments within the BCCFD (which will directly generate business from visitors to the BCEC), and parking surcharges. The surcharge on tour ticket prices also has a connection to convention center activities, as conventioners and conference attendees take advantage of such tours. Because these activities tie directly to the BCEC, the tax revenues and fees they generate represent value attributable to the BCEC.

Third, the legislation defines specific geographic impact areas subject to the value capture fees and taxes. Three specific areas are identified: the BCCFD for the imposition of the state’s hotel tax on existing lodging facilities and sales taxes on new businesses, the cities of Boston and Cambridge for imposition of the 2.75% Convention Center Financing Fee on hotel rooms, and the city of Boston for local hotel room occupancy taxes and other fees, taxes, and surcharges. This tiered impact area approach recognizes that the influence of the BCEC on off-site businesses both varies by business, and diminishes with distance from the BCEC.

The Act recognizes that the construction of the BCEC is important for economic development and growth within the region, creating economic value outside its walls. However, it also recognizes that the facility itself will not generate enough revenue to cover its construction and operating costs. Thus, the Act specifies three uses for the revenue deposited into the Commonwealth Convention Center Fund:

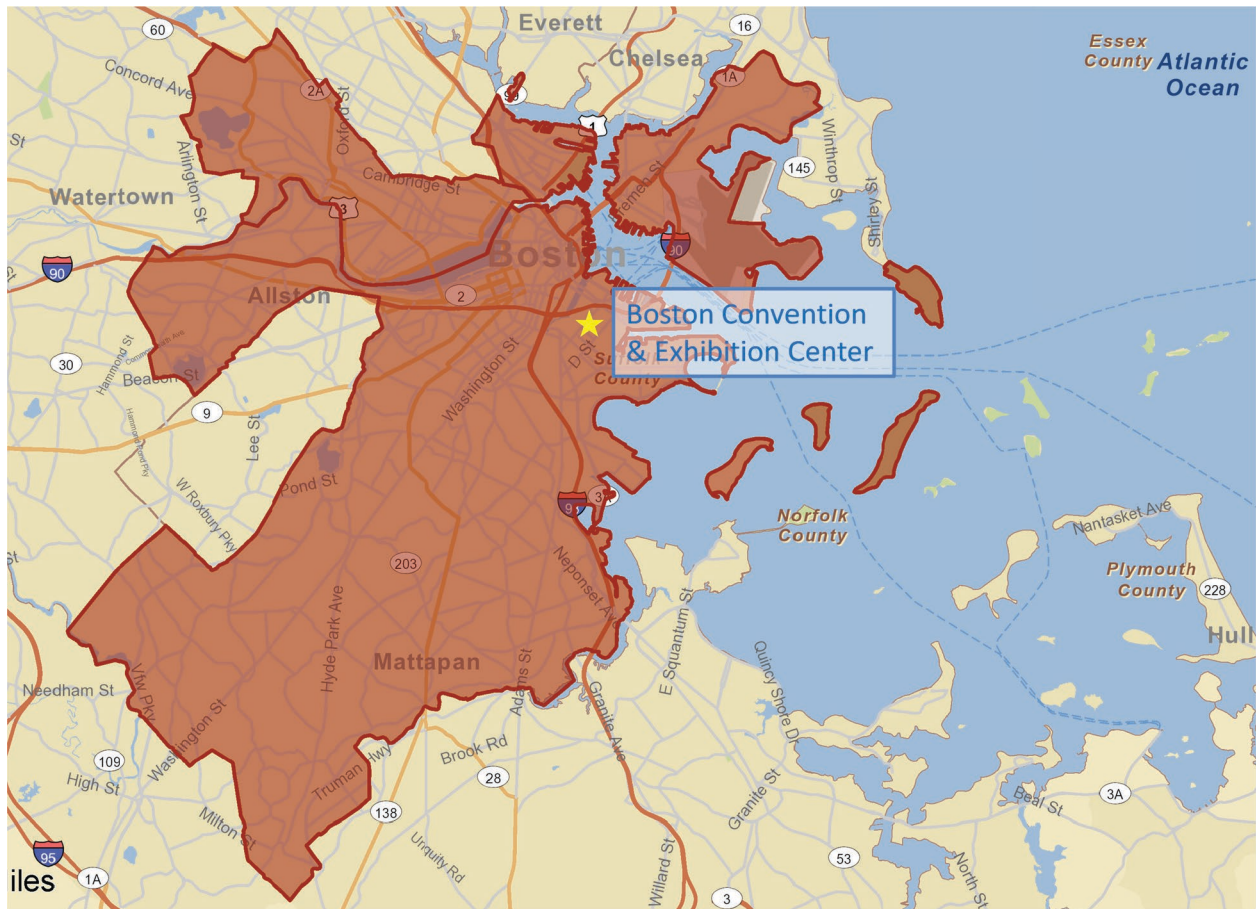
1. Payment of the principal and interest on special obligation bonds issued to finance the construction of the BCEC
2. Maintenance of, or provisions for, any reserves for debt service and other capital expenses
3. Direct expenditures for any costs of the project and for operation, promotion and marketing of the BCEC.

The Act further authorizes MCCA to contribute excess fund revenue to the commonwealth’s general fund, if so requested. Boston Room Occupancy Excise Fund revenues first go to pay costs associated with administering the fund or for the payment of the debt service and interest. The city can withdraw excess funds and deposit them into the general fund.¹⁰

⁹ This type of development by an airport may be restricted to those ubiquitous hotel/motel districts that are found near many commercial airports. Like the BCEC district concept, the value capture nexus may not be discernible for hotel and restaurant development downtown or at a significant distance from an airport

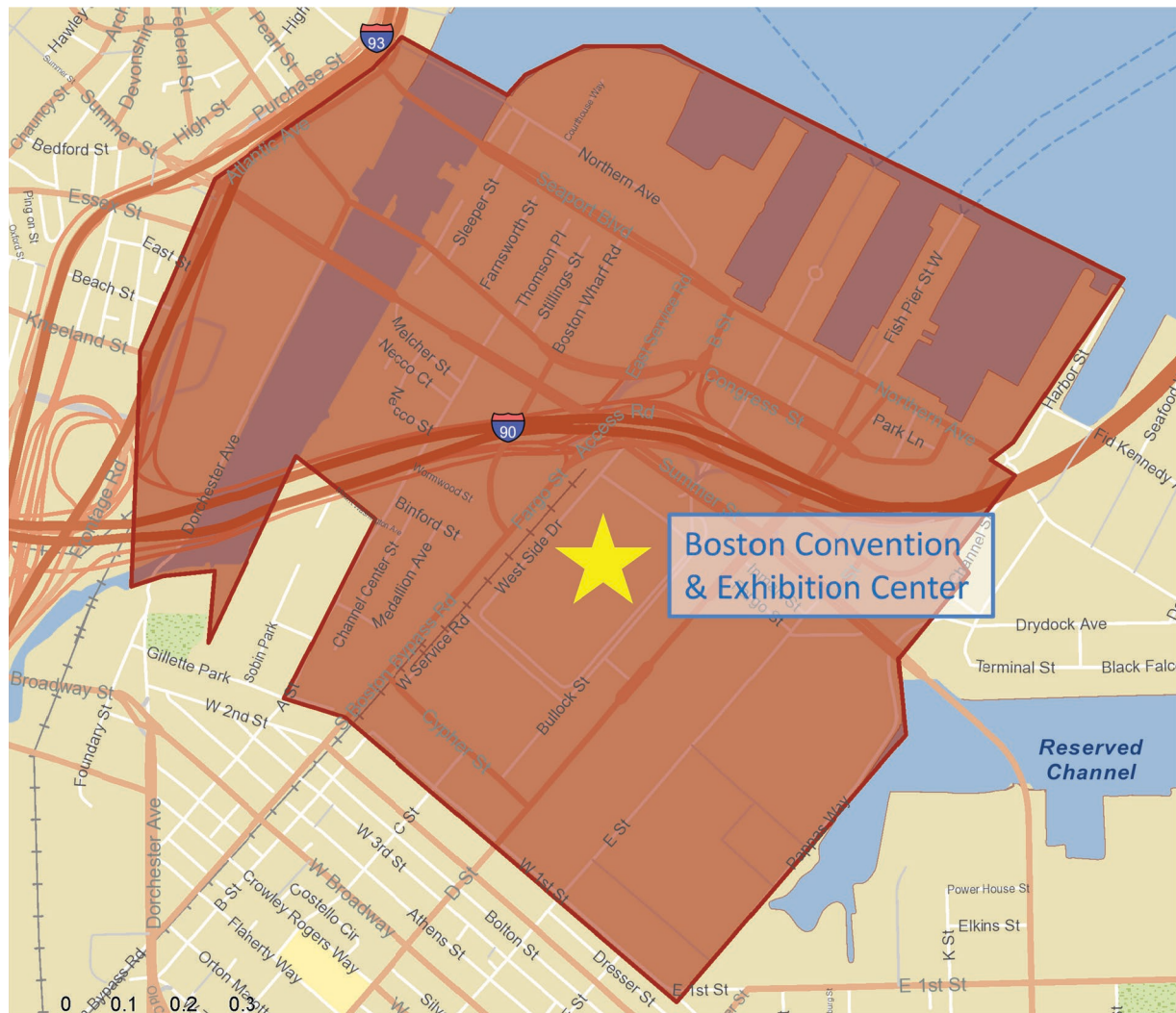
¹⁰ Sections 8(b) and 10(c) of Chapter 152 of the Commonwealth of Massachusetts Acts of 1997

Figure 8-1: BCEC Finance District



Source: Made with ESRI Business Analyst by EDR Group based on a map provided by Massachusetts Convention Center Authority.

Figure 8-2: BCEC Location in the South Boston Neighborhood



Source: Made with ESRI Business Analyst by EDR Group based on a map provided by Massachusetts Convention Center Authority.

8.2.4 Financing Strategy

The financing strategy for the BCEC used each of the value capture techniques allowed under the Act, with the exception that the city of Boston chose not to increase its hotel room occupancy tax from 4% to 4.5%. The commonwealth established a Convention Center Fund, managed by MCCA. Value capture proceeds that originated from state taxes or fees went directly into this fund. The city established the Boston Room Occupancy Excise Fund (also called the Boston Convention Center Fund) for collecting city revenues.

CITY OF BOSTON REVENUE STRATEGIES AND RESULTS

The city capitalized the Boston Room Occupancy Excise Fund (BROEF) using value capture techniques, including the citywide 4% room occupancy tax, the \$1 vehicle rental surcharge, and proceeds from the sale of hackney licenses. The city initially issued short bond anticipation notes (BANs) totaling \$157.8

million to fund land acquisition and site preparation costs, secured by the Room Occupancy Excise Tax Fund (ROETF). **Table 8-3** shows the city revenues collected from each source from 1999 through 2002. In 2002, the city issued long-term special obligation bonds totaling \$116.9 million. From 1999 through 2002, the greatest source of revenue came from the hotel tax.¹¹ In 1999 and 2000, the sale of hackney licenses also contributed significantly to the BROEF, with sales dropping significantly after 2000. The city was able to issue these bonds for only \$116.9 million because \$40.9 million of the BANs were paid off using the greater-than-expected receipts from some of the dedicated revenue sources. For example, revenue estimates for the sale of all 260 hackney licenses were \$23 million; but the actual sale of the first 235 licenses generated \$36.2 million.¹² Between Fiscal Year (FY) 2003 and FY 2009, the average receipts from new hotel excise taxes averaged \$6.8 million, car rentals fees averaged \$1 million, and the sale of one additional hackney license netted \$3 million. Interest earnings fell to historic lows and contributed little to the fund. After the debt fell below \$100 million, the city refinanced using general obligation bonds.

**Table 8-3: City of Boston Room Occupancy Excise Fund
Historic Revenues, FY 1999-2002^a**

	1999 Actual	2000 Actual	2001 Actual	2002 Estimated
Fund Balance at Beginning of Year	\$213,200 ^b	\$14,825,800	\$37,417,200	\$52,873,900
Hotel Excise Tax – Pre-July 1, 1997, hotels	\$23,710,200	\$25,079,900	\$25,675,300	\$19,809,300
Hotel Excise Tax – Post-July 1, 1997, hotels	\$1,419,700	\$2,671,300	\$4,093,600	\$4,143,500
City's Share of Vehicle Rental Surcharge	\$1,281,100	\$1,045,500	\$1,307,200	\$1,300,000
Hackney License Sales	\$10,748,900	\$21,049,500	\$1,683,100	\$2,732,000
Reimbursement from Commonwealth Convention Center Fund ^c			\$1,758,500	\$1,521,100
Interest Earnings	\$252,600	\$2,210,000	\$2,598,600	\$1,100,000
Fund Balance Prior to Transfers to Pay Debt and to General Fund ^d	\$37,625,800	\$66,882,000	\$74,533,400	\$83,479,800

Notes:

^a The table shows collections for the 4 years during which BANs were outstanding. The city converted the BANs to long-term special obligation bonds in April 2002. The text describes receipts in subsequent years.

^b Boston established the room occupancy excise fund at the beginning of FY 1999 with an initial fund balance of \$213,211 (a sum equal to vehicle rental surcharge receipts received from the commonwealth during the previous fiscal year).

^c The convention center funding legislation required the commonwealth to contribute to the costs of the land acquisition if it exceeded \$157.8 million. This reimbursement represents the commonwealth's obligation for land acquisition costs.

^d Columns may not add up due to rounding.

Sources: City of Boston, Auditing Department and Office of Budget Management

¹¹ The dip in the hotel tax revenues in 2002 corresponds to the recession of the early 2000s.

¹² Boston Municipal Research Bureau, "BCEC Land Purchase Complete," in *Bureau Update*, December 2006.

The city retired all the debt incurred to finance the BCEC long before the 20-year period elapsed and was able to discontinue the ROETF and transfer remaining revenues to the general fund.¹³ The city continues to collect the 4% hotel tax, vehicle rental fees, and hackney license fees. These revenues all now go directly into the city’s general fund and finance regular city budget items.

COMMONWEALTH OF MASSACHUSETTS REVENUE STRATEGIES AND RESULTS

Revenues accumulating in the Commonwealth Convention Center Fund pay the debt service on 30-year bonds issued to finance the construction of the BCEC. So far, the revenue stream has exceeded the amount needed to repay the bonds. **Table 8-4** details the revenues generated by the value capture techniques, starting in 2005, the year bonds were issued to finance construction. Years 2005 through 2011 represent actual revenues collected to date. The table also shows projected collections for every 5 years starting with 2015. The 2.75% room occupancy surcharge generates the most revenue because the surcharge applies to all hotel rooms in Boston, Cambridge, Worcester, and Springfield, no matter where they are located or when they were built. The 5.75% room occupancy tax generates the second-highest revenue for the fund. It generates less than the hotel room surcharge because it applies only to rooms within the BCCFD or rooms built in Boston and Cambridge after July 1, 1997.

Between 2005 and 2011, revenues from these two sources totaled between 66% and 71% of the total revenues deposited in the Commonwealth Convention Center Fund annually. Revenues from the vehicle rental surcharge have not grown substantially (and actually decreased in 2009 and 2010), while sales tax revenues have steadily increased. Thus, the percentage of revenues coming from the vehicle rental surcharge has decreased from approximately 18% in 2005 to 12.5% in 2011, while the revenues from sales taxes have increased from approximately 9% to 18.5% over the same period. Revenues from sightseeing tour taxes have fluctuated from a low of 1.8% of total revenues in 2009 to a high of 3.3% in 2011. The decreases in some revenue categories in 2009 and 2010 reflect the impacts of the global recession during that period. To date, MCCA has used funds from the Convention Center Fund to pay debt service and interest on the bonds, help cover operating costs, finance capital reinvestments, and, at times, contribute to the commonwealth’s general fund.

¹³ James Kennedy, City of Boston Office of Finance and Administration, telephone conversation of January 27, 2012, and follow-up email of February 1, 2012

Table 8-4: Commonwealth Convention Center Fund, Base Case Scenario – No Additional Bonds

Fiscal Year	Room Occupancy Tax 5.7% ^a	Convention Center Finance Fee 2.75% ^b	Vehicular Rental Surcharge ^{c,f}	Sales Taxes ^{d,f}	Sightseeing Surcharge ^{e,f}	Total Taxes ^h
2005	10,785,200	24,857,300	9,203,800	4,530,300	1,185,900	50,562,400
2006	11,601,900	27,398,900	9,773,500	5,012,500	1,265,900	55,052,700
2007	15,771,100	30,656,600	10,369,000	8,008,300	1,542,000	66,347,000
2008	19,934,700	34,594,100	10,859,300	11,437,000	2,158,300	78,983,400
2009	18,940,700	31,752,600	9,961,700	11,940,300	1,322,200	73,917,500
2010	20,172,400	29,668,200	9,596,100	14,031,500	1,964,500	75,432,700
2011	22,479,200	33,351,500	10,551,900	15,736,800	2,785,700	84,905,100
2015	24,562,000	36,441,700	11,820,000	17,628,100	3,120,500	93,572,500 ⁸
2020	27,439,000	40,710,200	11,820,000	17,628,100	3,120,500	100,787,000
2025	30,653,000	45,478,700	11,820,000	17,628,100	3,120,500	108,855,400
2030	34,243,400	50,805,600	11,820,000	17,628,100	3,120,500	117,793,200
2035	38,254,400	56,756,600	11,820,000	17,628,100	3,120,500	127,773,300
2040 ^g	42,735,100	63,404,500	11,820,000	17,628,100	3,120,500	138,902,000
2042 ^g	44,671,100	66,276,900	11,820,000	17,628,100	3,120,500	143,710,300

Notes:

^a The 5.7% room occupancy tax comprises (a) all state room occupancy taxes collected on rooms in the Boston Convention Center Financing District (BCCFD), including all rooms built prior to and after July 1, 1997, and (b) taxes collected on rooms in Cambridge and Boston outside the BCCFD built on or after July 1, 1997. The July 1, 1997, date was 1 month after passage of Chapter 152 of the Acts of 1997, which authorized the Convention Center Fund.

^b The Convention Center Finance Fee is an additional 2.75% fee charged on room occupancy in the cities of Boston, Cambridge, Springfield, and Worcester, established by the Act to help defray the costs of convention center projects in the commonwealth. The fee went into effect July 1, 1997.

^c A Convention Center Financing Fee of \$10 is charged on every rental vehicle contract in the city of Boston, beginning in July 1997. Most (\$9) of the fee goes into the Commonwealth Convention Center Fund, and the remaining \$1 goes into the BROEF.

^d Sales taxes are collected on all meals, beverages, and other tangible personal property within the Convention Center Financing District sold at establishments first opened on or after July 1, 1997, and on any such goods sold at lodging establishments outside the district but within Cambridge and Boston, which opened on or after July 1, 1997.

^e A 5% surcharge is charged on the purchase price of any land- or water-based sightseeing or entertainment tour originating or located in the commonwealth and conducted wholly or partly within Boston. All children's tickets valued at less than \$6, and organized youth tours are exempt.

^f Revenues from the vehicle rental surcharge, sales taxes, and sightseeing surcharge were held constant after 2012 to present a conservative estimate of future revenues.

^g The BCEC debt will be paid off in 2034. However, the projections show continued collection of revenue because the commonwealth expects that bonds will be issued for the Springfield Convention Center sometime in the next 10 years, and those bonds will still be outstanding in 2042.

^h Totals may not add up due to rounding.

Sources: 2011-2015 occupancy tax, local option tax, and convention center finance fee projections are provided by Pinnacle in the 2010 sufficiency report and for 2016 and beyond in their report dated October 13, 2009; 2011 vehicle rental surcharge provided by Pinnacle in the 2010 sufficiency report and assumes no growth thereafter; 2011 sales tax projections provided by Pinnacle in the 2010 sufficiency report. Thereafter, sales taxes are grown at the same rate as provided in prior models as provided by MCCA. 2011 sightseeing surcharge provided by Pinnacle in the 2010 sufficiency report and assumes no growth thereafter.

Pursuant to the provisions of Chapter 152 of the Acts of 1997, the Commonwealth Convention Center Fund and the BROEF will be dissolved when all indebtedness and interest incurred under the Act has been paid off. Any fees and taxes that have accrued in the fund up to this point will then be deposited in the general fund of the commonwealth or city, respective to their origin.

8.2.5 Partners and Stakeholders

The financing for the BCEC was complex and required cooperation from several groups. The city and commonwealth needed to work together to prepare the analyses that showed the value of the BCEC to the state and regional economies, and to identify financing options without imposing substantial additional taxes and fees on residents of Massachusetts. The Massachusetts Legislature needed to write new legislation and, ultimately, adopt Chapter 152 of the Acts of 1997, authorizing the development of the BCEC and the funding sources to repay debts and interest incurred to build the facility. The Boston City Council needed to vote to use room occupancy receipts and other fees to pay for the land acquisition and site preparation costs, and to sell the land acquired for the BCEC to Massachusetts for \$1. The commonwealth transferred responsibility for the development and operation of the BCEC to MCCA. In addition, hotel operators and tour companies fully supported the imposition of increased taxes and fees on their products to pay for the BCEC. While these taxes and fees did not require their endorsement, their willing support made the process much easier. Lastly, both city and commonwealth needed to manage separate funds to pay off the debt and interest on the BCEC.

8.2.6 Implementation Issues

Because the revenue sources established to pay for the BCEC included increases in allowable taxes, as well as the redirection of existing sales taxes to a specific use, special legislation was required to establish the funding mechanisms for the BCEC. This was not a significant hurdle; studies showed that (a) the facility would create economic value for the commonwealth and (b) visitors shouldered most of the new taxes and fees.

As shown in **Table 8-2**, the Act required the establishment of two new funds, the Commonwealth Convention Center Fund administered by the state Treasurer’s Office and the BROEF administered by the city Treasurer’s Office. The legislation:

- Allows for revenues collected through new taxes and fees to pay for administrative costs associated with the funds. The reporting for hotel taxes, sales taxes, tour fees, and rental car fees is the responsibility of the business operators.
- Establishes fee schedules. The government entities establish reporting requirements.
- Requires accounting of taxes collected at new retail establishments in the district, existing hotels within the district, and new hotels throughout the cities of Boston and Cambridge so that these revenues remain separate from total hotel occupancy and sales tax receipts.

8.2.7 Applicability to Airports

The value capture techniques used to finance the BCEC have direct relevance to airports. Like convention center investments, airport investments can be justified based on the overall benefits of increased capacity and improved service to a region's and/or a state's economy. In fact, the off-site economic value created by airports has a broader geographic reach and bolsters a broader base of industries than does convention centers. In today's global economy, many industries benefit from access provided by airports.

As with a convention center, a direct connection exists between airport facilities and the success of nearby businesses, such as hotels, restaurants, vehicle rental businesses, taxi operators, and tour operators. The preponderance of hotels and rental car companies that locate near airports provides evidence that an airport creates value for these businesses. The BCEC provides an example of how state or local taxing authorities can create a special district and fund new facilities with revenue from direct beneficiaries of the improvement.

For larger airports, particularly large hub airports, the value created by the airport extends both to a larger geographic area and to a broader range of businesses. For example, facilities near Schiphol Airport in Amsterdam, Logan International Airport in Boston, and the Washington Dulles Corridor near Washington Dulles International Airport in Virginia show that major corporations locate near an airport to take advantage of access to domestic and international markets.

Given that most airports do not have taxing authority, implementation of value capture techniques near the airport will require a joint effort among local and state taxing authorities. Intentional focus on visitor taxes and fees (not on residents or employees) and avoidance of redirection of existing local tax revenues to the project helped gain acceptance for the BCEC value capture strategy.

In the case of the BCEC, the city of Boston and the commonwealth of Massachusetts were clear partners in the project. The city fully supported using existing revenue streams from the hotel occupancy tax to pay for the convention center because it believed the economic benefits would more than offset the loss of these revenues for other projects. Because the economic benefit of an airport has a broader geographic reach than that of a convention center, similar revenue sources could be tapped in communities further from the airport, although it may be more difficult to convince municipalities of the airport's economic value as the distance from the airport increases. However, state legislation can assign revenues from state taxes for a particular project without involving local taxing authorities.

As with convention centers, improvements and expansions of airports often are justified by the economic value they create in the regional economy in addition to the specific job creation impacts of the facility. Airport economic impact studies are a useful tool to explain the value of an airport to the community, the region, and the state. Economic impact studies can also serve as a baseline analysis to investigate the incremental impacts of an airport's new facility or improvement. The incremental impacts are the candidates for value capture techniques. For example, capital investments at airports that lead to more direct flights to markets in other regions (both as an increase in service to markets

already served by the airport and in service to new markets) may lead to increased business activities for local industry sectors near the investments. An economic analysis could quantify the catalytic benefit to the region triggered by the capital investments and the resulting additional local, state, or regional taxes generated.

Controls on value capture revenues built into the BCEC legislation are also applicable to an airport situation. In the BCEC case, the state Convention Center Fund permits use of revenues for convention center operating costs and other capital rehabilitation projects, as long as revenues exceed the amount needed to cover the debt service and interest on the bonds. An airport or municipal fund could be set up to allow a similar use of excess funds.

One caveat to the value capture techniques used to fund the BCEC is that tax receipts tend to fluctuate with the economy. Thus, substantial reliance on tax revenues to fund operating costs must recognize the ebb and flow of the economy as a risk factor.

Although MCCA did not rely on value capture through property tax increases to help pay for the BCEC, MCCA did recognize that the new facility would increase property values in its vicinity. The state chose not to ask the city to give up any property tax increases to fund the BCEC. The city, however, offered property tax incentives to some new businesses that located in the district. Both Vertex Pharmaceutical, which located its headquarters in the area, and the Marriott Renaissance Hotel were granted tax exemptions on the increased property values generated by their developments.^{14,15} The BCEC paid for the site preparation and the foundation for the Westin Hotel, and the city provided them with a small tax break. Airport expansions may increase property values within the vicinity of the airport, and property taxes could provide another source of value capture funding, should the local taxing authority agree.

8.2.8 Lessons Learned

The BCEC financing strategy provides several clear lessons that are applicable to the funding of capital improvements at airports. These include:

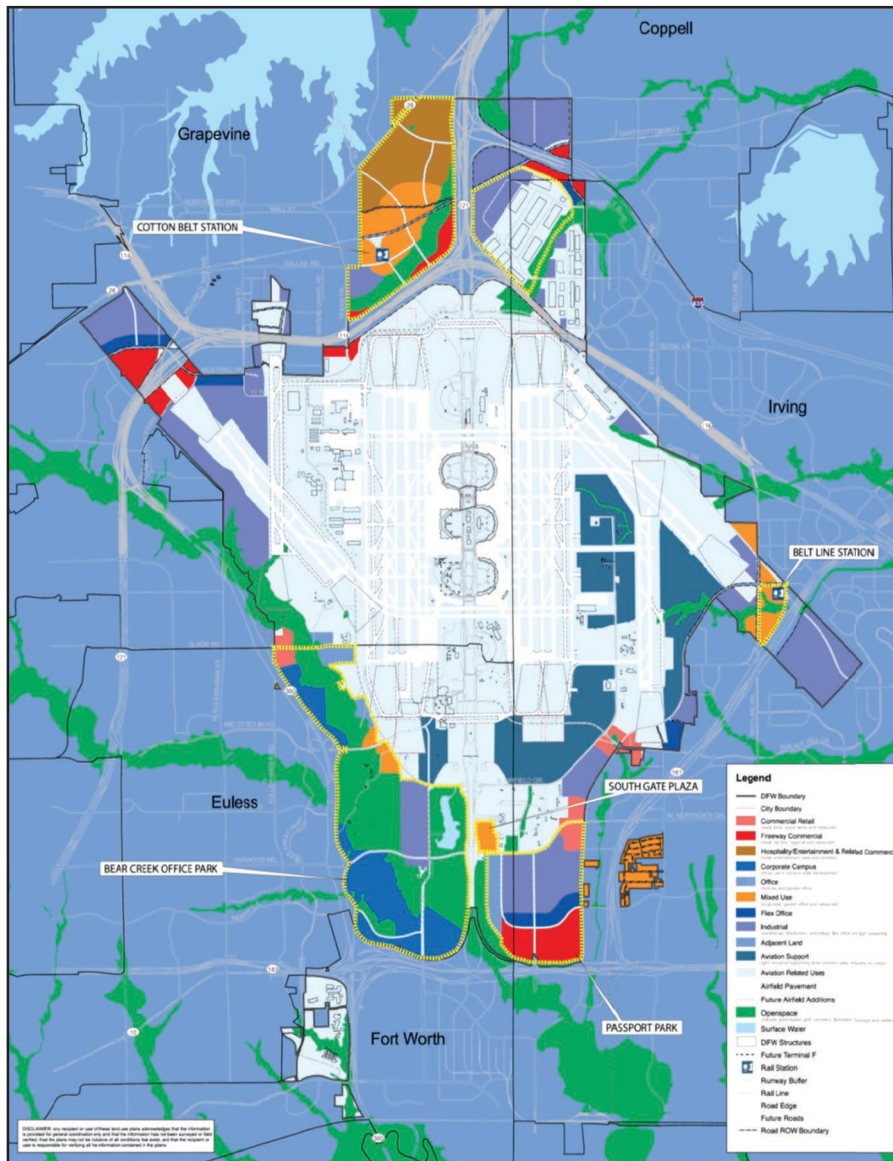
- The financing plan for the BCEC required multiple sources of funding, including value capture techniques. Airports also are likely to require various funding sources for large capital projects.
- Support for the BCEC gained traction after feasibility studies clearly demonstrated how local businesses would benefit from the project. The BCEC established measures to quantify project impacts and connect the added benefits of the convention center to specific taxes and fees. Compelling evidence helped recruit vendors, such as tour operators and taxi companies, to agree willingly to increased fees.

¹⁴ Under Massachusetts law, up to 100% of the taxes that would be generated by the increased land value created by the development can be waived, creating an incentive for the developer.

¹⁵ As mentioned above, Vertex also received a tax incentive through the State Infrastructure Investment Incentive (I-Cubed) Program. I-Cubed is similar to a traditional TIF, but instead of property taxes, increases in state income taxes are used to pay off infrastructure bonds.

- The BCEC market analysis compared hotel costs and fees in competing markets to existing fees in Boston, then adopted fees only up to a level that ensured Boston’s hotel rates would remain competitive with other cities. This type of analysis can be helpful to convince the public and businesses that any new taxes or fees will not negatively affect their businesses, and this approach could be used with other types of taxes and fees.
- Cooperation between different government entities is important to develop a financing plan that utilizes the wide range of potential value capture financing techniques. Support is needed at state and local levels and may involve an airport authority and private partners. The legislation that enabled the use of value capture techniques for the BCEC required support from the state, the Cities of Springfield, Worcester, Boston, and Cambridge, and the MCCA.
- Value capture techniques at airports are best suited to projects with identifiable beneficiaries and quantifiable benefits. If the airport owns land available for commercial or industrial development, certain value capture techniques are a potential option to fund some aspects. If the airport adds value to surrounding off-airport land, local government will have a primary interest in revenues collected with value capture techniques. The BCEC case study demonstrates a high level of cooperation from various stakeholders for a common purpose.

8.3 DALLAS/FORT WORTH INTERNATIONAL AIRPORT – FTZs AND VALUE CAPTURE



Source: 2009 Airport Development Plan Update, Dallas/Fort Worth International Airport

8.3.1 Overview

The Dallas/Fort Worth International Airport (DFW) case study illustrates how an airport can leverage its cargo and passenger operations, and its standing as an economic center, to stimulate non-aeronautical activity on airport property and in the region around the airport. It also provides an example of how an airport sponsor and municipalities can implement multi-party agreements to share tax revenues.

DFW is located near the cities of Fort Worth, Coppell, Euless, Grapevine, and Irving in Texas. DFW is home to Foreign Trade Zone (FTZ) 39, which was established in 1979. The 2,500-acre FTZ has established the airport as a major non-aeronautical commercial hub, with more than \$1 billion of goods imported and exported through the FTZ each year.¹⁶ The FTZ has expanded to more than 1 million square feet on airport property. Business activity in the FTZ has served as a catalyst for development of additional (non-FTZ) airport property and for economic growth in off-airport areas. Non-aeronautical on-airport activities include air cargo and passenger-dependent businesses such as hotels, offices, retail stores, and industrial buildings. In addition, subzones of the FTZ located off-airport in eight municipalities include 10 buildings and 4.2 million square feet of developed space.

DFW management monitors economic impacts in terms of jobs created on-airport and in subzones. It estimates creation and support of 1,000 jobs because of the DFW FTZ,¹⁷ establishing a direct connection between on-airport activity and economic development in the eight communities that house the subzones.¹⁸ Aside from minimal fee revenues, however, the economic value generated through companies using the FTZ is not shared with the airport or airport sponsors.

DFW is implementing an Airport Use Plan that will add a comprehensive airport city environment to its FTZ.¹⁹ The plan envisions an airport city environment as it develops land located in the cities of Irving, Euless, Grapevine, and Coppell (the “host” cities). Approximately 6,600 acres of land are available for future development for uses such as commercial retail, freeway commercial, hospitality and entertainment, corporate campus, office, flex office, industrial, transit-oriented development (TOD) at Dallas Area Rapid Transit (DART) and commuter rail stations, aviation support, aviation-related uses, and open space.²⁰

As part of DFW’s vision, the airport and its municipalities are entering into tax-sharing agreements that will divide tax revenues generated by this development among the host cities and the airport sponsor. The board of directors (the Board) has negotiated a tax revenue sharing agreement with the cities in which the airport is located to allow the owner cities of Dallas and Fort Worth to benefit more directly from new revenue generating development on airport land located outside the cities’ jurisdictions.

8.3.2 Background on DFW

GOVERNANCE

DFW opened in 1974. The Cities of Fort Worth and Dallas jointly own and operate the airport, and the Board (a 12-member, semi-autonomous entity) governs the airport. Owner cities appoint 11 members to the Board in proportion to their ownership stake in the facility, with seven members appointed by the city of Dallas and four appointed by the city of Fort Worth. The twelfth position, which is a non-voting

¹⁶ Annual Report Foreign Trade Zone, October 1, 2009 – September 30, 2010: FTZ Annual Report – GP Zone #39, compiled by DFW staff and submitted to the U.S. Foreign Trade Zones Board of the U.S. Department of Commerce

¹⁷ Research supplied by Commercial Development Department of DFW

¹⁸ The DFW FTZ also has secondary sites in the cities of Dallas, Fort Worth, and Denison, Texas. Employment is not directly tracked at these “second sites,” but the scale of development and companies using these sites are reported.

¹⁹ http://www.dfwairport.com/pv_obj_cache/pv_obj_id_7A0FDFFB3F0BD2C93E0B3FACC6B0C7424A7A1C01/filename/LandUsePlan.pdf

²⁰ http://www.dallascityhall.com/council_briefings/briefings0811/DFW-LandUse_080311.pdf

member, rotates annually among the four non-owner host cities of Irving, Euless, Grapevine, and Coppell. The Board must seek approval for its annual budget, bond sales, and other similar measures from the city councils of the owner cities, but can enter into contracts without such approval.²¹

SIZE AND ACTIVITY

Encompassing about 18,000 acres, DFW is the second-largest airport in the United States in terms of land area (behind Denver International Airport). It has seven runways, the shortest of which is 8,500 feet and the longest of which are 13,400 feet (four runways); an eighth runway is planned. With total 2011 operations of 646,803, DFW is the fourth-busiest airport in the world in terms of operations. DFW is the eighth-busiest airport in the world in terms of passengers served, with 20 passenger airlines (11 domestic) serving 191 destinations. In 2011, some 57,806,918 passengers passed through the airport. In that same year, the airport handled 652,655 U.S. tons of cargo.²²

DFW is a regional employment center, with approximately 60,000 on-airport employees. The airport contributes an estimated \$16.6 billion in economic activity to the North Dallas economy each year, supporting 305,000 full-time jobs throughout the region and generating \$7.6 billion in payroll.²³

FOREIGN TRADE ZONE

DFW's FTZ 39, established in 1979, comprises 2,500 acres of on-airport land, as well as several off-airport sites. It includes a 21-acre industrial park and two cargo distribution centers that provide direct ramp access. The airport's general use warehouse also is located within the FTZ. Approximately 460 people work at the on-airport FTZ. The FTZ provides advantages to businesses that locate within its boundaries, including:

- Exemptions from duties on imported products
- Inventory tax exemptions for inventory imported into the FTZ or held in the FTZ for export
- Exemption on "freeport property," which is inventory held in Texas for 175 days or less
- Exemption on leasehold properties (i.e., buildings built on leased property)

Current companies operating in the on-airport FTZ include:

- American Eurocopter – manufacturer of helicopters and helicopter spare parts
- CEVA Logistics – freight forwarders and the airport's general-purpose warehouse operator
- Dallas Cowboys Merchandising – producer and warehouse of Dallas Cowboys merchandise
- DHL Global Forwarding – freight forwarders
- NEC – manufacturer of telecommunications sets and parts
- Valeo Compressor North America, Inc. – manufacturer of vehicle air conditioning units

A total of 7,273 acres of airport property are developed with runways, taxiways, terminals, roads, and commercial property. The Airport Master Plan identifies an additional 6,500 acres of land available for

²¹ DFWIA Web Site <http://www.dfwairport.com/about/admin/index.php>

²² DFWIA web site http://www.dfwairport.com/visitor/P1_009559.php

²³ DFWIA web site http://www.dfwairport.com/visitor/P1_009559.php

commercial development and open space, with development projected to occur over 30 years.²⁴ In its land leasing policy, DFW identifies the following preferred airport-related uses for future development:

- Aviation-related development requiring taxiway access (e.g., airline passenger terminals, air cargo terminals, airline maintenance and hangar facilities)
- Aviation-related development not requiring taxiway access (e.g., freight forwarders, flight catering kitchens, air cargo processing facilities, warehouse and aviation fuel storage)
- FTZ development desiring proximity to aviation facilities (e.g., warehousing, distribution centers, manufacturing and assembly)
- Aviation operations and maintenance support facilities (e.g., administration and maintenance buildings, utility plants, storage facilities, police/fire/emergency medical facilities)
- Commercial development of property located within the revenue sharing area of non-constituent municipalities as stated in Senate Bill 569 or in the cities of Euless and Irving in a manner consistent with the existing and planned airport uses and users
- Aviation business and service-related facilities (e.g., reservation centers, office/business centers, aviation training facilities, travel-related businesses)
- Consumer business activity providing goods and services to employees and passengers (e.g., hotels, food and retail services, banks, automobile services, day cares, medical and dental services)
- Other development that cannot be accommodated by the cities and would otherwise locate in a different region or state if DFW land were not available²⁵

Although these uses are preferred because of their interrelationship with aviation activity, development will ultimately go for the highest and best use of the property that will generate the greatest tax revenues. These are often hotel, retail, restaurant, and office uses.

8.3.3 Value Capture Through Tax Revenue Sharing

The DFW owner cities and the host cities recognize that the airport creates a positive influence on land values and marketability on all airport properties, both on- and off-airport. Host and owner cities consider the airport an economic development asset. The host cities derive a large percentage of their operating budgets from on-airport developments. Because much of the airport is located outside the taxing jurisdictions of the owner cities, they would not automatically accrue direct financial benefits from development that occurs on airport land. In order to share in the revenue generated by this development, the owner cities have pursued land value capture with the host cities through tax revenue sharing.

REVENUE SHARING AGREEMENTS

The cities of Dallas and Fort Worth have tax revenue sharing agreements with the cities of Euless, Irving, and Grapevine, and are seeking a similar agreement with the city of Coppell. The agreements allow both the host cities and the owner cities to benefit from new development on airport-owned land. Each host city retains 1/3 of the increased revenue, with the owner cities splitting the remaining 2/3 based on their percentage ownership of the airport (7/11^{ths} to Dallas and 4/11^{ths} to Fort Worth). The agreement

²⁴ FY 2012 Adopted Budget DFW cost center

²⁵ Dallas/Fort Worth International Airport Land Leasing Policy, issued by DFW

establishes base year (1998) revenues collected on the properties. “Increased revenues” are defined as revenues collected on the properties in excess of the base year revenues. This is similar to the structure of tax increment financing. Revenues shared include all of the following:

- Ad valorem²⁶ taxes on property
- Sales and use taxes
- Mixed beverage taxes
- Other revenues received, credited to and/or collected by the host city from the property (including hotel occupancy taxes), excluding municipal court revenues²⁷

The host cities are also awarded the same proportion of all municipal court fines, fees, and costs resulting from citations written on the properties, excluding fees and costs collected as required by state law. Each host-city agreement includes a clause that, should another host city negotiate an agreement allowing it to retain a larger percentage of the increased revenue, then all host cities’ agreements shall be amended to allow the same.

Under the revenue sharing agreements, the owner cities are obligated to promote development on the airport. At the same time, the airport sponsor has agreed not to compete directly with the owner cities for development. Thus, if there is potential development that could be sited in other areas of Dallas or Fort Worth, those sites will be promoted before airport sites. Further, until a revenue sharing agreement with Coppell is in place, the airport will not develop any airport land located within that city.

The airport provides police services, fire protection, and infrastructure to development on airport property. Developers are responsible for building all new infrastructure required at each site.

At this time, all the revenue accruing to the owner cities from these agreements goes directly into the general funds of the cities. It is not earmarked for airport operations, maintenance, or capital projects, and has never been allocated for such costs. Presently, cities look to airports as revenue generators whose operations support their on-going activities. However, the model in place at DFW could be replicated elsewhere so that all or some portion of the revenue generated through this type of airport-supported development is earmarked to finance airport activities.

CURRENT AND PROJECTED REVENUES

Table 8-5 lists the acres of already-developed land on the airport and their non-aeronautical uses. Currently, these parcels generate approximately \$63 million per year in tax revenues for the owner and host cities.

Available land at DFW is located in 13 separate development districts, as defined by the airport and shown in **Figure 8-3**.

²⁶ A tax based on the value of real estate or personal property

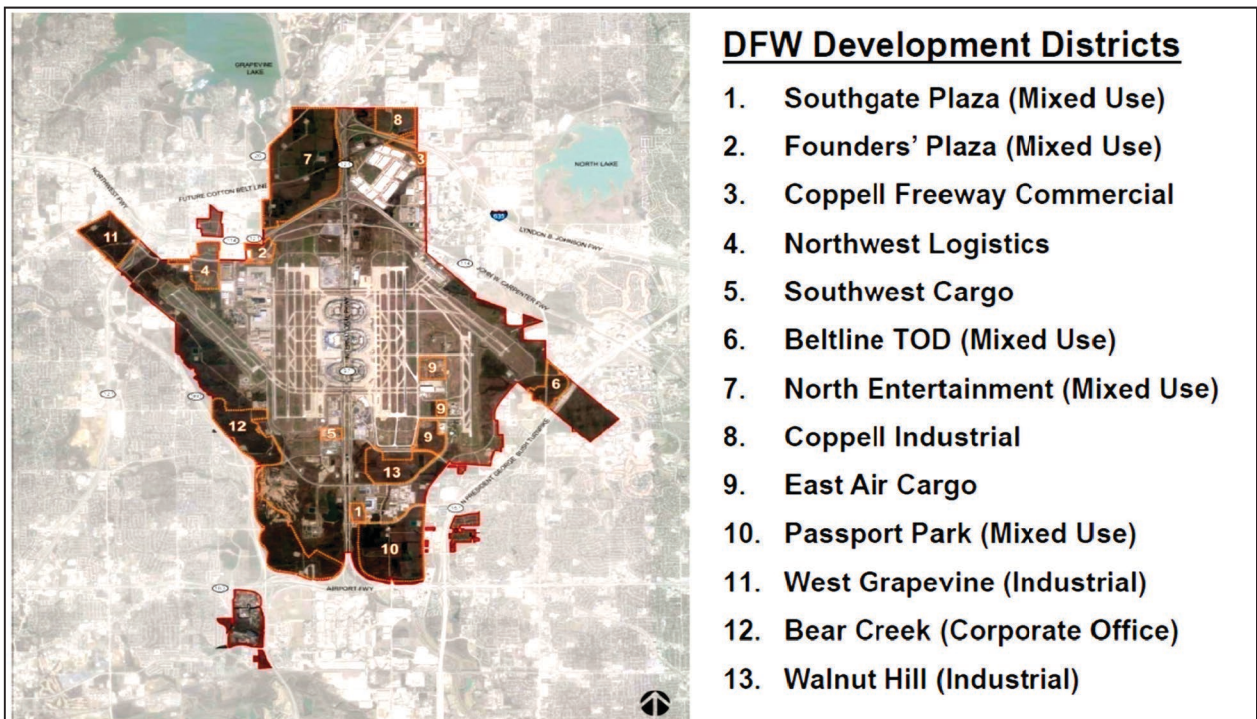
²⁷ Interlocal Agreement between the Cities of Fort Worth and Dallas and Irving, dated November-December 1998

Table 8-5: Existing Non-Aeronautical Land Uses, 2012

Land Use	Acres
Cargo	345.0
Ground Leases	601.0
Hotel	6.2
Retail	4.6
Other Land Uses	141.0
Total	1,097.8

Source: Dallas/Fort Worth International Airport

Figure 8-3: DFW Development Districts



Source: Jones Lang LaSalle, Dallas/Fort Worth International Airport, Commercial Development Business Modeling, June 6, 2011

In 2011, DFW airport management commissioned a study to evaluate the revenue-producing potential of these districts when they are built-out. **Table 8-6** shows the potential acreage and square footage of development by use in all 13 districts.

Table 8-6: Additional Land Planned for Development

	Acres	Square Feet	Rooms
Retail	290.1	2,021,160	n/a
Restaurant	172.9	877,179	n/a
Hotel	98.6	2,875,500	4,410
Office	572.8	11,198,962	n/a
Industrial	983.7	16,466,000	n/a
Air Cargo	217	1,649,000	n/a
Theme Park	356	8,000,000	n/a
Total	2,691.1	43,087,801	4,410

Source: Jones Lang LaSalle, Dallas/Fort Worth International Airport, Commercial Development Business Modeling

Table 8-7 shows annual cash flow and cumulative revenue potential to DFW, the owner cities, and the host cities with a full build-out of airport land. DFW’s revenue comes from the ground rent and percent of sales (for retail and restaurant uses). The host-city and owner-city revenues come from the taxes and fees covered in the revenue sharing agreements.

At full build-out, DFW will annually receive between \$105 million and \$142 million in ground lease and percent-of-sales revenues. All other jurisdictions, including the host cities, school districts, and counties, will receive between \$386 million and \$412 million in tax revenue annually.²⁸

Table 8-7: Projected Revenues at Full Build-Out, 2038

Jurisdiction	Total Stabilized Annual Cash Flow ^a		Total Cumulative Revenues ^a		
	Estimates	Conservative	Market	Conservative	Market
DFW ^b		\$141,695,892	\$261,315,703	\$8,900,880,254	\$15,431,436,527
Owner Cities ^c		\$96,818,134	\$105,278,050	\$4,733,610,579	\$5,117,673,082
Other Jurisdictions ^d		\$385,811,481	\$411,743,764	\$17,724,755,269	\$9,136,862,315
Total		\$624,325,507	\$778,337,517	\$31,359,246,102	\$39,685,971,924

Notes:

^a The total revenues for other jurisdictions include revenues that accrue to the counties and to school districts, in addition to the host cities. The revenues also include the base revenue collected prior to the execution of the revenue sharing agreements. Therefore, the portion of revenue going to other jurisdictions is much greater than the one-third of “increased revenues” that accrues to the host cities.

^b Net of debt service and on-going infrastructure costs

^c Inclusive of existing commercial development revenues

^d Inclusive of existing tax revenues

Source: Jones Lang LaSalle, Dallas/Fort Worth International Airport Commercial Development Business Modeling

²⁸ The amount of tax revenue that accrues to the other jurisdictions is more than 1/3 of the total tax revenues because the airport only has revenue sharing agreements with the host cities, not the school districts or county. In addition, the total for the cities includes the base revenues that were collected prior to the revenue sharing agreements.

8.3.4 Implementation Issues

The degree of difficulty in establishing revenue sharing agreements has varied with the host cities. Agreements with Euless and Irving were established in 1998 without too much difficulty. The cities of Grapevine and Coppell, however, emerged as less willing partners. All of the airport terminals are in Grapevine and, for years, all tax revenues from terminal activities accrued to that city, while the airport sponsor provided all public services for these uses. State legislation was required to force Grapevine to enter into a revenue sharing agreement. The legislation included a grandfathering provision that allowed Grapevine to accrue all revenue from some development around the terminals. Coppell has yet to enter into a revenue sharing agreement with the host cities. The airport and the host cities will not allow development on any of its land not already covered by a revenue sharing agreement until such agreements are reached.

By entering into revenue sharing agreements with the owner cities early on, the host cities of Irving and Euless acknowledged that the land value generated by the airport far exceeds the development value of the land without the presence of the airport. The reluctance of Grapevine and Coppell to enter such agreements illustrates the difficulty of convincing a municipality to give up some of its potential tax revenues to another entity.

8.3.5 Unique Features of DFW

The DFW case study is unique because Dallas and Fort Worth own a vast amount of undeveloped land on the airport. In this case, the cities of Dallas and Fort Worth have the advantage of controlling the land that benefits from proximity to the airport. Because these cities own the land, they can prevent the property from developing and adding *any* additional revenues to a host city's tax base unless the host city agrees to the revenue sharing agreement. This is exactly what has occurred on property located in Grapevine and Coppell that is not currently subject to a revenue sharing agreement.

In many cases in the United States, the airport sponsor does not control much land associated with the airport or off-airport parcels. In these cases, structuring revenue sharing deals may be more difficult. Legislative action by the state may be required to implement such agreements.

8.3.6 Lessons Learned

The Dallas/Fort Worth International Airport case study demonstrates that airports create additional value for development sites in their vicinity. Value is generated from economic activities that are directly related to the airports, either through the FTZ or because of commercial/industrial development on airport-owned land in the four host cities. With tax agreements in place with three of the four host cities, Dallas and Fort Worth can capture a portion of the enhanced real estate value generated from airport-related development in the other host cities.

The primary lesson learned though this case study is that, through creative partnerships with the cities surrounding an airport, local governments (and potentially airport sponsors) can capture financial benefits from increased land values.

Other lessons learned from this case study include:

- Airports generate land value for development parcels in their vicinity, attracting a range of activities, from airport-dependent cargo operations to airport supportive hotel development to offices whose workers and visitors benefit from proximity to the airport.
- An FTZ can be a catalyst for airport-area development, attracting businesses that use the airport and businesses that benefit from the incentives offered by the FTZ.
- Ownership of land that benefits from airport proximity provides leverage when negotiating revenue sharing agreements. By creating a supportive development environment with business incentives such as an FTZ, a critical mass of development was attracted to the vicinity of the DFW airport.
- Although owner-city revenues generated through off-airport development go into the general funds of both Dallas and Fort Worth and are not earmarked for the airport, an airport sponsor can choose to allocate all or part of such a revenue stream to support airport activities. To ensure this revenue stream to the airport, documents allocating revenues should clearly indicate the methodology that calculates the airport share.
- Airport-centric development can be in competition with regional city centers, which may affect the vibrancy of both an established downtown and an emerging airport city. This impact can be mitigated through non-compete agreements. In the DFW case, airport sponsors agreed not to market land for development when suitable sites existed in either downtown Fort Worth or Dallas. In addition, potential tenants are required to certify that they considered locating in Dallas and Fort Worth, but could not identify a suitable site. In rare cases, the airport has received direction from one or both cities not to pursue a tenant because the cities' economic development departments were interested in the prospect.
- DFW is one of just a few airports with large holdings of developable land that provide leverage for negotiating revenue sharing agreements with the municipalities in which the land is located. State legislation may be required for revenue sharing agreements for airport-related development that is not located on land owned by the airport or its owner city. In cases where the airport does not own the land that benefits from proximity to the airport, the airport or owner city could develop incentives, such as direct airport connections to development parcels, to encourage revenue sharing agreements. Municipalities also may be encouraged to develop revenue sharing agreements with airports that demonstrate the importance of the airport as a major regional employment center and economic engine. Other planning/zoning techniques may also be used to create an incentive for cooperation among jurisdictions. For example, overlay design zones to focus development, with density and use benefits that increase developer return, as well as overall tax revenues, might be applicable if market conditions support increased development next to or near the airport that otherwise might not occur.

8.4 INDIANAPOLIS INTERNATIONAL AIRPORT – OPTIMIZING CONCESSION PROGRAMS



Indianapolis International Airport, Midfield Terminal

8.4.1 Overview

In 2008, Indianapolis International Airport (IND) opened its Midfield Terminal building complex. Among several notable firsts, this new terminal showcased a brand-new concession concept and program. With the new facility, the Indianapolis Airport Authority (the Authority) took the opportunity to plan and design a new concession program. The IND experience shows innovative ways an airport can design a concession program as well as recruit and manage concessionaires.

The Indianapolis concession program also has received accolades from the industry. In 2009, *Airport Revenue News* (ARN) awarded IND three “2009 Best Concession” awards in the medium airport category:

- Best Concession Program Design
- Best Overall Concession Program
- Best Concession Management Team (tied with Nashville and San Antonio)

ARN also recognized the Authority’s concession management team for developing a responsive, efficient, accessible, and partner-oriented approach to their concession program, labeling the management as industry innovators. ACI-NA²⁹ also recognized the Authority and its concessionaires

²⁹ ACI-NA

for the quality of its retail program and its food and beverage program, as well as for the “green” initiatives of its concessionaires. In 2014, for the third time, ACI awarded IND the title of “best airport in North America” for service quality performance.

Many innovative aspects of IND’s program make it a rich case study for concession programming ideas and ways to manage a concession program that maximize net revenues to the airport sponsor.

8.4.2 Objectives

The Authority’s overall objective for the concession program was to maximize benefits for the airport and the traveling public. Several innovative elements of the Authority’s philosophy and execution of the concession program stand out.

AUTHORITY CONTROL OVER CONCESSION PROGRAM DEVELOPMENT

The Authority maintains control over concession program development and concession management. For the new terminal, airport staff employed a direct leasing approach with concessionaires, so that no middlemen were involved. Staff worked with individual concessionaires to ensure that the public received the highest quality offerings and services. They also crafted financially feasible contractual terms that would benefit both the concessionaire and the Authority.

Individual concessionaires agreed to (1) contract for the construction of improvements and (2) pay for tenant improvements themselves. The Authority’s responsibilities included the review and approval of concession layouts, approval of construction plans, and monitoring of construction projects to ensure they follow approved plans.

FOCUS ON CUSTOMER EXPERIENCE FIRST, NOT REVENUE

The Authority focused on providing customers with a great experience. The Authority reasoned that a customer service–oriented concession program would drive revenues by offering a high quality, diverse mix of retail goods, foods, and beverages, and by solving bottlenecks at security lines so customers could enjoy the Central Plaza without worrying about arriving at the gate on time.

EMPHASIS ON LOCAL BUSINESSES AT THE AIRPORT

The concession concept called for strong participation from local businesses to reinforce the unique aspects of the “Indianapolis experience” and to support the local economy more directly. To that end, the Authority focused on attracting businesses that best represented Indianapolis history and traditions.

INNOVATIVE APPROACH TO SOLICITATION OF CONCESSIONS

The Authority did not use the customary request for proposals (RFP) process to select concessionaires. Staff met with hundreds of concessionaires to determine the industry’s range of concession offerings and the relative quality of these offerings. The Authority released a request for letters of interest (RLI) with extremely low entry barriers to attract the highest level of participation. This approach permitted Authority staff to select a mix of local and national concessionaires that would match the needs and wants of the IND customer. Concessionaires were selected and assigned concession locations based on the Authority’s concession design.

An important aspect of this process is an Indiana statute that permits the Authority to select concessionaires via direct negotiation—a process not allowable for many airport sponsors. However, this process is critical to the execution of the Indianapolis model, and may benefit other airport staff who can obtain this type of contracting flexibility.

CUSTOM CONCESSION AGREEMENTS

The Authority’s objective was to create a business arrangement that would permit the concessionaires to thrive, to serve the customers, and to avoid an environment of high concessionaire turnover (that can result in poor service to customers). Therefore, the Authority negotiated unique arrangements with each concessionaire. Negotiations focused on (1) quality of the customer experience; (2) quality of the offering; and (3) unique terms and conditions for each concessionaire to promote the sustainability of each concession.

LEAN MANAGEMENT APPROACH

The Authority developed and implemented its concessions program with a staff of three and currently manages the program with the same number of staff. During the program development phase, the Authority hired outside consultants to advise on the overall concession plan, selection of concessionaires, and negotiation of concession agreements. However, the Authority maintained control over the entire design, contractual, and administrative process of the concession program.

MID-TERM RETURN TO NEW CONDITION

The Authority’s requirement for mid-term refurbishment of each concession is not limited to a fixed dollar amount as is usual practice in the airport industry. Instead, concessionaires are contractually obligated to refurbish their facility to its opening-day state (called “opening-day fresh” in the leases) at the mid-point of each concession agreement.

8.4.3 Background on the Airport

This section provides an overview of the Airport’s governance and historical airport passenger and cargo activity.

AIRPORT GOVERNANCE

The Authority has extensive powers to operate and manage its system of five airports and a heliport. The Authority’s board consists of nine voting members: the city of Indianapolis appoints five members and Marion, Hamilton, Hendricks, and Morgan (advisory) counties appoint one each. Authority members serve for a 4-year term and can be reappointed. The board hires the executive director, who is responsible for overseeing the day-to-day management of the airport and for planning, development, and implementation of airport system projects.

COMMERCIAL/AIR CARGO SERVICE

Several airlines serve the airport, including: American Airlines, Air Canada, Delta Airlines, Frontier Airlines, Southwest Airlines, United Airlines, and US Airways. Together, these airlines averaged 133 daily departures with service to 35 daily nonstop destinations in 2014. IND is also a FedEx hub. The airport is

FedEx’s second-largest facility in the world, and ranked as the eighth-largest domestic cargo facility in 2013. **Table 8-8:** shows domestic and international enplaned passengers for 2011 and 2013.

Table 8-8: Indianapolis Passenger Enplanements, 2011 and 2013

Enplaned Passengers	2011	2013
Domestic	3,757,552	3,583,432
International	12,917	15,286
Total Enplaned Passengers	3,770,469	3,598,718

Source: Indianapolis Airport Authority, Airline Activity Report, December 2011, 2013

FACILITIES

Located 7 miles west of downtown Indianapolis, Indiana, IND occupies approximately 7,500 acres of land in Marion and Hendricks Counties. Two of the airport’s three runways—Runway 5R-23L, at 10,000 feet long, and Runway 5L-23R, at 11,200 feet long—are equipped with Category III precision instrument landing systems. Runways 5L-23R and 5R-23L have the necessary separation for simultaneous independent operations.

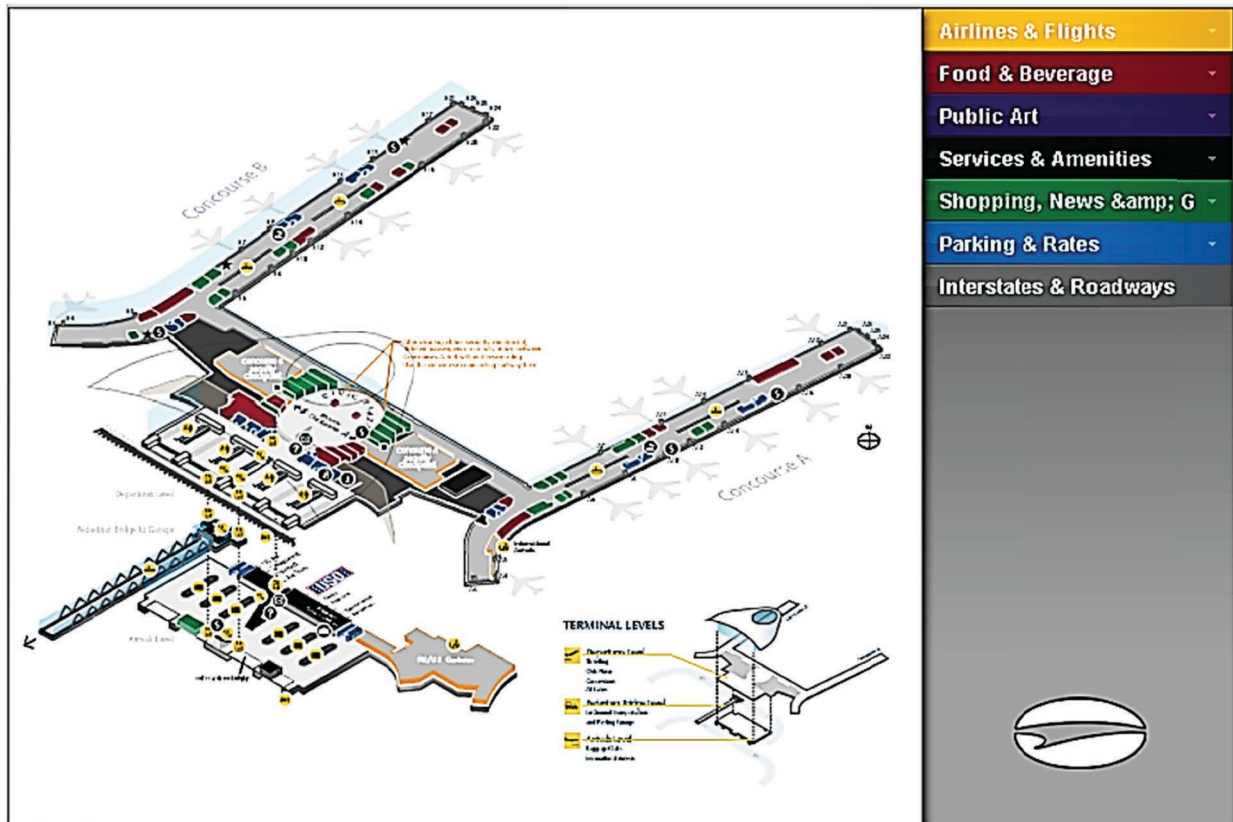
Figure 8-4: IND Runways



Source: Indianapolis Airport Authority

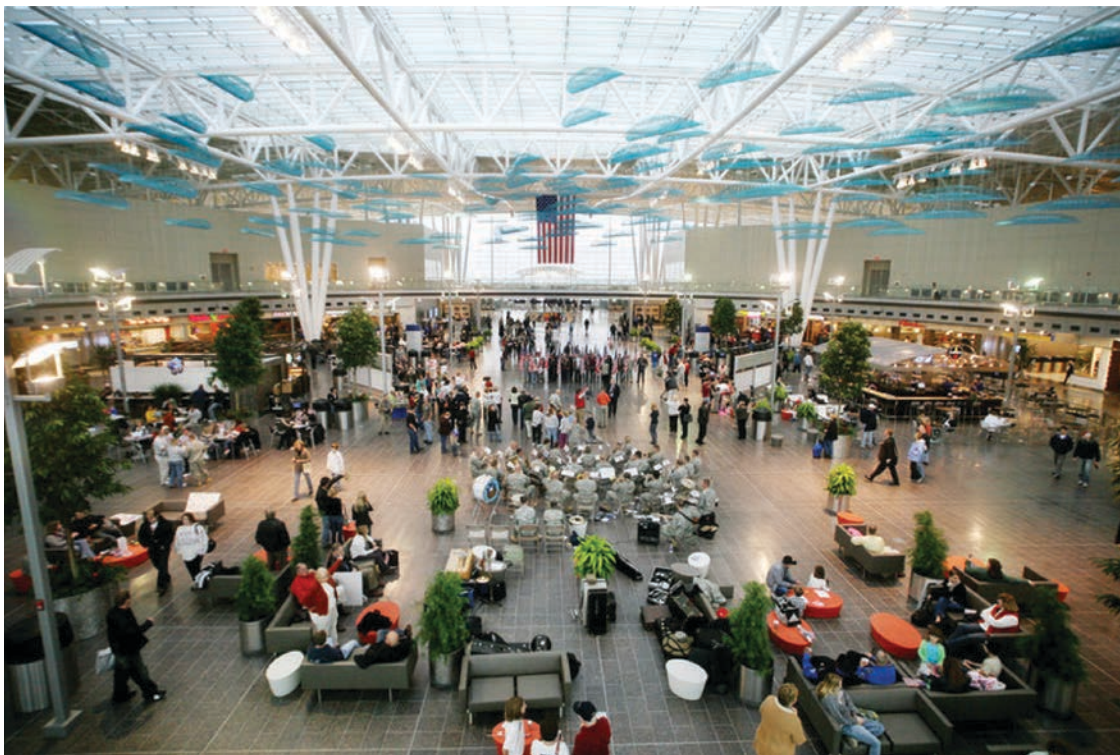
In 2008, after many years of planning and an extensive land acquisition program, the Midfield Terminal was completed in the area between the airport’s two main runways (**Figure 8-5**). The heart of the terminal building is Civic Plaza, a central gathering point modeled after the circular shape of Monument Circle, Indianapolis’s central public space (**Figure 8-6**). Civic Plaza was designed as a functional space to (a) concentrate passengers before security checkpoints and (b) enhance the customer experience by offering a beautiful public space where visitors could relax and enjoy local Indianapolis restaurants and shops.

Figure 8-5: IND Midfield Passenger Terminal



Source: Indianapolis Airport Authority

Figure 8-6: Midfield Terminal – Civic Plaza



Source: *The Indianapolis Star*

Table 8-9 shows the key dimensions of the airport’s new terminal building.

Table 8-9: Key Terminal Dimensions

Terminal Area	Space	
Total Terminal Area	1,200,000	sq. ft.
Central Baggage Processing Area	165,000	sq. ft.
Retail Space	90,000	sq. ft.
Domestic Baggage Claim	55,000	sq. ft.
Terminal Frontage on 1,000 ft., Two-Level Curb Front	500	ft.
Length of Each Concourse	1,300	ft.
Width of Each Concourse	100	ft.

Source: Indianapolis Airport Authority

8.4.4 Concession Program Design and Implementation

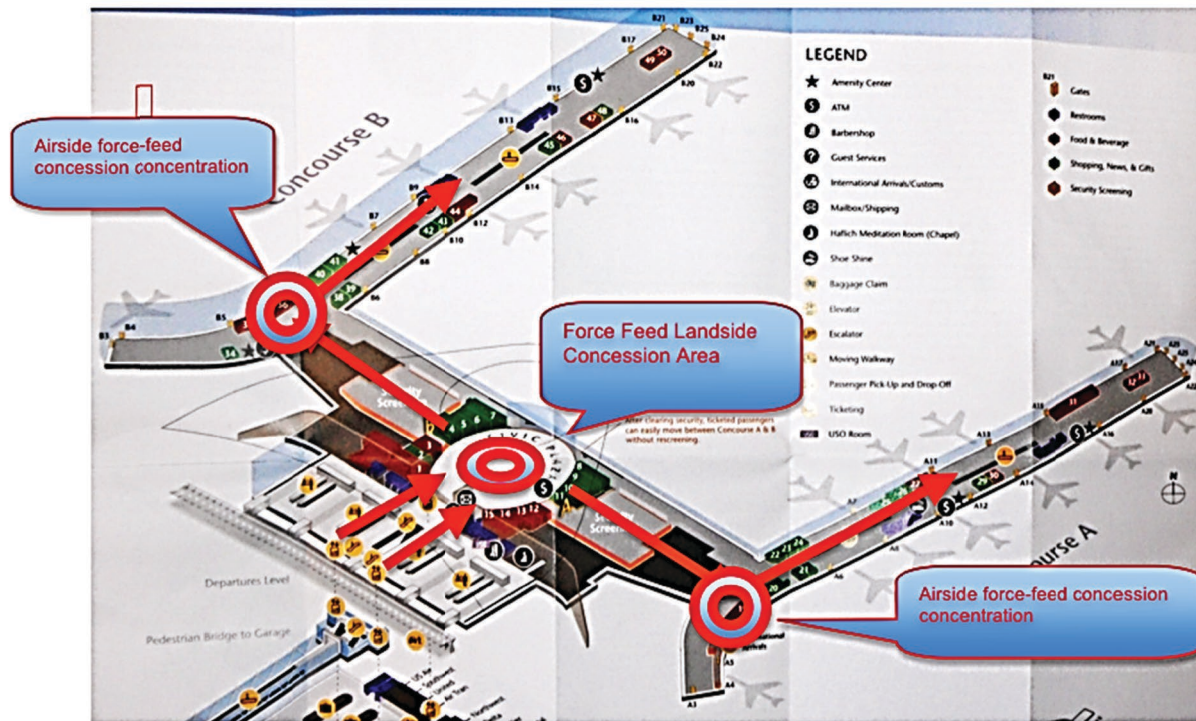
OPPORTUNITIES PRESENTED BY THE NEW TERMINAL

The Midfield Terminal gave the Authority the opportunity to establish new policies, goals, and approaches to the concession program, and to design a program that maximizes contact with passengers from the time they enter the terminal to the time they reach the gate.

PASSENGER FLOWS AND TERMINAL DESIGN

IND’s Midfield Terminal serves as a good example of how terminal design can both optimize concession revenue potential and improve the overall level of service to the traveling public. **Figure 8-7** shows the terminal’s three major concession areas: Civic Plaza, and the connectors of Concourses A and B to the landside building. All enplaning passengers pass through Civic Plaza and continue on to either Concourse A or B; deplaning passengers also must pass through Civic Plaza.

Figure 8-7: Terminal Layout and Passenger Flow Diagram



Source: Indianapolis Airport Authority

The terminal building layout offers passengers different retail, food, and beverage opportunities. In each area of the terminal, the Authority has placed concessions that are appropriate for a passenger’s progressive movement toward the gate. Civic Plaza offers more pre-security concession choices than most airports, providing accommodation for airport staff and passenger meeters and greeters in the pre-security area. Food and beverage choices in Concourses A and B allow for leisurely sit-down options, quick-service restaurants, and “grab-and-go” opportunities. Most aircraft gates can be seen from the concession concentration areas in the concourse. Strategically designing the terminal and placing concessionaires as such increases the passengers’ time to shop or dine before flights. In summary, the terminal building design facilitates the optimization of concession revenues and passenger services by:

- Increasing the percentage of concession customers by concentrating passenger flows through Civic Plaza before security screening and creating a revenue generating area that many airports forego or have abandoned

- Providing a mix of concessions in spaces at appropriate locations that offer customers a broad selection of service and product choices
- Integrating food and beverage with retail to create synergy and encourage spending across various retail categories

IMPORTANCE OF FAST THROUGHPUT AT PASSENGER SCREENING AREAS

Consistent and predictable passenger screening throughput can positively influence concession revenue for both pre- and post-security locations. IND has two large, well-staffed passenger screening areas adjacent to Civic Plaza. According to airport officials, there are rarely appreciable lines at security. Reliably short security wait times encourage passengers to dwell longer in the pre-security concession area without the fear of a delay.

AIRPORT AUTHORITY’S ACTIVE ROLE

Previous Management Agreement with British Airport Authority-Shaped Approach

The concession program evolved over several years beginning in 1999. Many of the program’s details grew out of the Authority’s experience with a previous airport management contract with the British Airport Authority (BAA). The Authority retook direct management of its operations after the termination of the BAA contract in 2007.

Management Approach

The Authority implemented a direct contracting approach for its concession program to ensure strong customer service, representation of local brands and businesses, and maximized revenues. Airport staff solicited interest from concessionaires; determined the priority mix of food, beverage, and retail space; negotiated vendor-contract agreements; and, ensured contractual compliance from concessionaires.

Strategic Goals

The Authority adopted the following goals to guide concession program development:

- Optimize concession space at a level that could be supported by airport passenger traffic
- Convey a sense of place and identity with Indianapolis
- Project quality and friendliness and a high level of service to customers
- Achieve a mix of concessions that are financially sustainable
- Balance sustainability for the concessionaire with revenue generation for the Authority
- Strive to be the best new concession program in the United States and a model for other airports to utilize

CONTRIBUTION OF CONCESSION REVENUES

Table 8-10 shows the major sources of operating revenue at the airport in 2011. Concession revenue was 12.2% of total operating revenue and remains an important overall contributor to airport operating revenues. Parking and airline revenues were the two largest sources of revenue. The Authority also received considerable revenue from leases, the Indianapolis Maintenance Center (IMC), and the FedEx cargo facility.

Table 8-10: Estimated 2011 Operating Revenues (\$000s)

Revenue Sources	Amount	% of Total
Airline Passenger	\$38,710	28.5%
Airline Cargo (Landing Fees)	\$9,250	6.8%
Parking	\$40,057	29.5%
Concessions/Car Rental	\$16,647	12.2%
Rented Buildings and Other Areas	\$17,335	12.8%
IMC	\$9,516	7.0%
Other	\$4,380	3.2%
Total	\$135,895	100.0%

Source: Indianapolis Airport Authority

IMPLEMENTATION OF THE CONCESSION PROGRAM

Planning and Staffing

The concession program was 9 years in the making. The Authority started developing concession space requirements from 1999 to 2002. The space requirements were re-visited during subsequent phases of concept planning and design development, which concluded in 2004. The new Concession Plan doubled the amount of concession space previously available in the old terminal.

Authority staff developed the program. Staff included a concession development manager supported by two additional staff members. The Authority hired outside consultants to advise them on the development of the Concession Plan and the negotiation of concession agreements.

After the completion of the terminal, three staff members work in concession management, which involves concession agreement compliance, performance measurement, and resolving issues as they arise.

Concessionaire Selection Process

Indiana state law permits public agencies to select concessionaires directly rather than go through an RFP process. The Authority developed a program that involved direct selection of concessionaires by putting out an RLI. This approach was popular among existing concessionaires because it allowed them to demonstrate their working knowledge and experience in the IND market. It was also popular among new concessionaires, who could apply for space without navigating through a cumbersome and costly process.

To achieve its goal of constructing a concession program that reflected local values and culture, the Authority conducted an outreach program from 2005 through 2007. Through the outreach program, the Authority spoke with many businesses interested in concession space. Interest in the concession program was so high that the airport received RLIs requesting five times the available space for concessions.

The Authority worked through a selection process that established a synergistic mix of concessions in the three primary areas of the terminal. The final concession mix met three conditions: First, its diversity ensured that the Authority would be targeting the wide spectrum of passengers who frequent

the airport; second, the Authority avoided under-merchandising the market by carefully determining the spending power of the Airport’s passengers; finally, because the Authority generated considerable interest in the concession program from local businesses, it was able to avoid contracting with concessionaires that were geographically generic.

The staff established a concessionaire selection committee that evaluated various combinations of concessionaires in order to determine the final mix in each of the three areas. The committee sought to include a mix of national and local concessionaires that represented a wide variety of dining and retail options that met the Authority’s strategic goals and that appealed to a wide spectrum of travelers. Ultimately, the committee recommended a final list of concessionaires with which the Authority negotiated concession agreements. Kiosks were also planned for Civic Plaza to feature seasonal or special-event merchandise.

Concession agreements were 5, 7, or 10 years in length and depended largely on each concessionaire’s initial capital investment. Each agreement required that concessionaires refurbish and refresh their establishment midway through their lease. The concession agreements also required the concessionaires to install utility meters so the Authority can invoice them for the cost of utilities.

On-Going Concession Marketing Program

The Authority is involved with concession marketing and promotion through brochures, concession directory boards, web-based advertisements, special events, banners, menu boards, and signs. In addition, the Authority reserves certain locations in the terminal for concessionaires to advertise their products. As a convenience for customers, the terminal layout, down to the location of individual concessionaires, is available on Google Maps. The Authority also markets with social media outlets, including Facebook and Twitter, to make information available to passengers and customers while they are in the airport.

Concession Failure/Replacement – Flexibility for Change

The Authority designed the program to optimize flexibility for change by avoiding exclusive contracts, not conveying unqualified rights to space, restricting the concessionaires’ right to change, reserving the right to take space back from failing concessionaires, optimizing the mix of prime and individual concessionaires, and not having to go through an extended request for proposal process for

Final Concession Mix at IND

Champps; Cold Stone Creamery (two locations); Giorgio’s Pizza; Green Leaf’s & Bananas; Qdoba; South Bend Chocolate; Vinea Wine Bar; Areas USA Inc.; HUB Convenience; RELAY; USA Today; Travel Zone; Artizan/Fruits & Passion; HDS Retail-North America; 96th St. Steakhburgers; Café Patachou; Facetime (in partnership with RDG Concessions); King David Dogs; Pacific Outfitters (in partnership with RDG); Starbucks; Wolfgang Puck; HMSHost Corp.; Brooks Brothers; Civic Plaza Travel Mart; CNBC Indianapolis; Cultural Crossroads; Hoosier MarketPlace; Indiana MarketPlace; Vera Bradley; The Paradies Shops; Camden Food Co.; Harry and Izzy’s; Indy 500 Grill and Retail Store; Shapiro’s Delicatessen; SSP America; Borders; Brickyard Authentics; Brookstone; Copper Moon Coffee (CC Holdings); Enroute Spa; Harley Davidson; Johnston & Murphy; Just Pop In; Lids; McDonald’s; Naked Tchopstix; Natalie’s Candy Jar; T.G.I. Friday’s; Sterling Works; and Travelex

replacement concessionaires. Although several concessions did not succeed, because of the flexibility of their program, the Authority was able to replace troubled concessions quickly. This was accomplished by maintaining a “hot list” of prospects through regular communication with concessionaires that participated in the RLI process and on-going coordination and communication with the concessions community.

Performance Standards

Airport staff defined clear performance, development, and operating standards in the concession agreements and actively managed the program to ensure that concessionaires perform to these standards. Performance standards have included hours of operation, requirements for responding to customer complaints, minimum management qualifications, dress code, staff training, signs, merchandising, cleanliness of facilities, and recycling. Some performance standards are generic, whereas others are tailored for each individual concession agreement. Of particular significance to the Authority were performance standards related to the “feel” of the concession spaces. For example, sit-down restaurants both pre- and post-security are required to utilize china (i.e., non-plastic) plates and silverware instead of plasticware. In addition, the concessionaires are contractually required to meet or exceed the quality standards of their non-airport counterparts.

Performance Monitoring

The Authority has a staff compliance representative who monitors concession performance, concession appearance, hours of operation, customer complaints, and dress code compliance. Consistent performance monitoring is one of the primary audit techniques that the airport relies on to ensure that concessionaires’ term agreements are followed and that concession establishments appear “opening-day fresh” throughout the duration of the concession agreement.

The Authority also has a “mystery shopper” program to monitor and measure the quality of service and the customer experience. Mystery shoppers perform specific tasks, such as purchasing products, asking questions, registering complaints, or behaving in a certain way, and then provide detailed feedback about their experiences.

In addition, the Authority periodically conducts performance audits that are based on terms stipulated in each concession’s individual agreement. The Authority makes the scores and findings of the performance audits available to individual tenants.

FINANCIAL ASPECTS OF CONCESSION AGREEMENTS

Important financial elements of the concession agreements are the pricing policy, financial basis, minimum capital investment, mid-term refurbishment, utility expenses, and a performance guarantee.

Pricing Policy

Concession agreements include a provision that requires post-security concessionaires to offer food, beverages, merchandise, and services at no more than 110% of off-airport “street” pricing. Concessionaires located in Civic Plaza must offer 100% “street” pricing. The higher allowable rate for post-security concessions reflects the additional logistical costs that concourse establishments incur, primarily for screening and delivering all merchandise to the concession.

Financial Basis

The financial return to the airport from each concession is based on a privilege fee expressed as a percentage of gross revenues (sales) against a minimum annual guaranteed (MAG) amount.

The Authority negotiated a practical MAG amount in a manner that would not adversely affect the sustainability of concessions. Once established, the MAG is reset each contract year to an amount equal to 85% of the amount paid to the airport during the previous 12-month period, or the first year MAG, whichever is greater.

Through discussions with the concessionaires, the Authority establishes the percentage of gross privilege fee for each concession individually. The level of the privilege fee is designed to appropriately compensate the Authority while not adversely affecting the sustainability of each concession.

Minimum Capital Investment

Negotiations with each concessionaire also establish a minimum required level of capital investment. The minimum capital investment for each concession reflects the likely cost of constructing quality improvements consistent with the quality of the new terminal building. The expectation of the parties is that the actual construction cost will exceed the minimum investment requirements. The minimum investment includes both soft costs and hard costs.

The Authority requires each concessionaire to provide auditable documentation of incurred construction costs to verify that each concession has met its minimum capital investment requirement. The Authority has a “claw back clause” requiring concessionaires that spend less than the minimum capital investment to pay the difference to the Authority. The Authority has not needed to exercise this option with any concessionaires.

Mid-Term Refurbishment

Concessionaires are required to cover all costs associated with refurbishing their establishment to opening-day condition at the mid-point of the lease term.

Utility Expenses

Concession agreements include a requirement that each concessionaire install a utility meter and reimburse the Authority in full for utilities used.

Performance Guarantee

The Authority also requires a performance guarantee in the form of an irrevocable letter of credit or performance bond equal to 15 months of the MAG.

ACTUAL FINANCIAL RESULTS – SALES AND REVENUE

Table 8-11 estimates net revenue to the Authority for terminal concessions. Assuming that the Authority received an average of 10% of gross sales, concessions delivered approximately \$67 per square foot of retail terminal space. Extrapolating, 100% of gross sales would be approximately \$600-\$700 per square foot, exceeding the gross sales of some major food, beverage, and retail establishments in the United States. For example, in 2011, gross sales per square foot at Walgreens were \$672 per

square foot; at CVS Caremark, \$666; and at Urban Outfitters, \$532.³⁰ The IND results also compare favorably or exceed the gross sales per square foot of many regional shopping centers.³¹ Revenue per square foot and per enplanement has remained relatively stable through 2013, despite a 6% decline in passenger enplanements.

Table 8-11: IND Concession Revenue per Square Foot, 2010 and 2013

	2010	2013
Food/Beverage and Retail Revenue	\$6,024,246	\$6,017,806
Passenger Enplanements	3,770,383	3,535,015
Approximate Retail Terminal Space (Square Feet)	90,000	90,000
Revenue per Square Foot	\$66.94	\$66.86

Source: Extrapolated from Indianapolis Airport Authority Records and FAA ATADS

Because of IND’s innovative concession program, food, beverage, and retail sales received a significant boost with the new terminal. **Table 8-12** shows that food and beverage sales increased from \$2,205,045 in 2007 (the last full year of operations in the former terminal building) to \$3,525,415 in 2010. Food and beverage revenue per enplaned passenger increased from \$0.53 to \$0.94 in 2010 and was \$0.99 in 2013. Retail sales have increased from \$2,106,107 in 2007 to \$2,519,155 in 2013. Retail revenue per enplaned passenger has increased from \$0.51 to \$0.71.

Table 8-12: Comparison of New Terminal Versus Old Terminal Results

	2007 ^a Old Program	2010 New Program	Initial Increase	2013 Results
Food/Beverage Revenue	\$2,205,045	\$3,525,415		\$3,498,651
Enplaned Passengers	4,142,657	3,770,383		3,535,015
Food/Beverage Revenue Per Passenger	\$0.53	\$0.94	75.7%	\$0.99
Retail Revenue	\$2,106,107	\$2,498,831		\$2,519,155
Enplaned Passengers	4,142,657	3,770,383		3,535,015
Retail Revenue Per Passenger	\$0.51	\$0.66	30.4%	\$0.71

^a Last full year of operations in the former terminal building

Source: Indianapolis Airport Authority records and FAA 127 reports

CONCESSION PROGRAM ASSESSMENT

The Authority’s concession program demonstrates that a well-planned, actively managed concession program centered on the customer experience can drive revenue increases. In summary, the program’s highlights are:

- **Aesthetics** – Concession units are contemporary, visually interesting, well-constructed with high quality materials, and inviting to potential customers.

³⁰ RetailSales.com

³¹ <http://money.usnews.com/money/blogs/flowchart/2009/06/26/americas-most-profitable-malls>

- **Capacity** – Concessions are appropriately sized to meet customer demand even during seasonal and daily peaks. The Authority also planned for kiosk space that can accommodate seasonal changes and special events, such as the Indianapolis 500 and the 2012 Super Bowl.
- **Customer Service** – Concessionaires and airport staff monitor customer service and its impact on sales and revenue. The Authority periodically conducts customer service seminars to train both airport and concessionaire staff in customer service to achieve a uniform experience for the traveling public.
- **Revenue Production** – The Authority has demonstrated that revenue production is not an end in itself; rather, it is the result of executing a well-conceived concession program that meets the needs of the traveling public.
- **Sense of Place** – A key element of the Authority’s concession program is projecting a sense of place through terminal building architecture, design features, and concessions that offer local food and retail concepts that differentiates the airport from other airports.
- **Value** – Value for money is a key element of the Authority’s concession programs. The Authority has adopted a street pricing policy that ensures the traveling public will receive value in their purchases.
- **Variety** – The Authority has provided a rich range of choices in food and beverage, retail, and service concessions. The choices ensure that the customer will find something they want, which will contribute to higher sales for the concessionaire.
- **The “Wow” Factor** – The Authority’s concession program provides unique, visually interesting, and exciting opportunities to shop and dine. This adds to the overall passenger experience at the airport.

8.4.5 Lessons Learned

Although the opportunity to completely redesign a program is rare, the Indianapolis Airport Authority chose to build its new concession program from the ground up. In the process, airport staff toured other airport concession programs, spoke with a large number of concessionaires and industry experts, and held many internal strategic planning sessions to establish a vision and a set of goals for the new concession program. This rigorous approach resulted in a deep understanding of important principles for design, implementation, and management of a concession program. Key considerations are discussed in this section of the case study.

CONCESSIONS COMPETITIVELY POSITION THE AIRPORT

IND is located in a highly competitive area of the country. The airport competes for passengers with airports in Cincinnati, Dayton, Columbus, Chicago, and Louisville. For this reason, the Authority concluded that it had to optimize the passenger experience at the airport. A major element of the experience is the “wow” factor achieved through the IND concession program. The Authority designed a stimulating concession program that is an incentive to attract passengers to the airport.

CONCESSION SPACE COST RECOVERY AND BENEFITS TO THE AUTHORITY

The fully allocated cost of all “rentable space”³² in the terminal building is \$95 per square foot, which is the terminal building cost center residual rental rate³³ that the airlines paid for terminal space at IND in

³² “Rentable Space” means the total amount of space for rent in the terminal building available to airlines, concessionaires, or any other rent-paying tenants.

2010. The terminal building cost center residual rate includes the cost of space finishes and tenant improvements for airline public-view space, which has a high level of finish, and for non-public space, which has a comparatively lower level of finish. The Authority provides these finishes and tenant improvements for the airlines and other non-concession tenants and amortizes the cost of improvements in the rental rate paid.

Terminal space provided to concessionaires was unfinished concrete shell space with utilities roughed into the leaseholds. As shown in **Table 8-11**, concessions netted the Authority approximately \$67 per square foot in percentage rent. However, concessionaire investment in improvements (required by the Authority) added to total concessionaire occupancy costs per square foot as follows:

$$\text{Total occupancy cost} = \text{minimum annual guarantee or percentage rent} \\ + \text{amortized tenant improvements.}$$

Concessionaires at IND invested approximately \$31.5 million or, on average, \$350 per square foot, for tenant improvements.³⁴ Assuming these improvements are amortized over a 10-year concession agreement term at an annual cost of capital of 5.0%, they result in an annual tenant improvement amortization cost of \$4,080,000 or approximately \$45 per square foot. When the amortization per square foot (\$45) is added to the concession revenue (percentage rent) per square foot (\$67), it produces an estimated return of \$112 per square foot per year (\$45 + \$67 = \$112). Therefore, the net benefit to the Authority equals \$112 per square foot per year. When compared with the terminal building cost center residual airline rental rate (\$95),³⁵ the concessionaires are covering the Authority’s cost to provide the unfinished concrete shell space to them.

Furthermore, fixed capital costs make up a significant portion of the terminal building costs. These costs will not substantially increase in the near future. Concession revenue to the airport sponsor is based on the concessionaire’s gross concession revenue. Therefore, over time, an increasing number of passengers, higher concession sales, and inflation will improve this revenue source for the Authority.

CRITICAL PLANNING FOR CONCESSION PROGRAMS

The early planning process for IND was unusual in a number of ways. The Authority’s 9-year timeframe for the development of the concession program is much longer than the 1 to 2-year timeframe used by most airports to redesign concession programs. The Authority first decided on a concession philosophy and concept. Next, staff attended a series of concession conferences and talked with various airport operators and concessionaires to determine best practices. This networking effort gave staff a very good list of contacts to use for the recruitment phase. The RLI process was an effective way to scan the

³³ This methodology calculates all the expenses allocable to the particular cost center and deducts the revenues that are allocable to or sourced from that particular cost center. The net requirement is then divided by the appropriate divisor (e.g., square feet and landed weight) to derive the rate or fee (Vanden Oever, K., et. al., *ACRP Report 33: Guidebook for Developing and Managing Airport Contracts*, Transportation Research Board of the National Academies, Washington, DC, 2011, p. 10).

³⁴ Jeremiah Wise, Indianapolis Airport Authority

³⁵ This methodology adds all airport expenses and deducts all revenues to arrive at the airline rates and charges (Vanden Oever et. al., p. 10).

field of interested concessionaires and to control the planning and development process. The Authority used a single point of contact for concession communications, which ensured that every group had equal access to information.

The formation of a diverse, talented, and knowledgeable selection committee was also instrumental in the success of the program. The Authority selection committee included internal concession staff plus a nationally recognized independent concession consultant. The selection committee divided potential concessionaires into three categories:

- Core concessions
- Love-to-have concessions
- Eliminated concessions

For IND, the concession planning process is on-going. Mid-term requirements to refresh each concession have Authority staff and concessionaires continuously engaged in the program and planning process.

8.4.6 Conclusions

By taking charge of the entire concession program, the IND airport staff seized the opportunity to consider the vision of the program, its implementation, and its management. As a result, staff set a solid foundation to position the concession program for future growth and increase net revenues to the airport sponsor. It is unusual for an airport to have the opportunity to rebuild a concession program from the ground up, but this case offers important insights for airports in different stages of concession program development or refreshment:

- A small staff of three to five can develop and manage a concession program.
- Concessions offer an opportunity to support local businesses and promote the regional identity of an airport.
- A streamlined solicitation process can encourage a high level of interest in an airport concession program and bring new participants to the table.
- Concession space is highly valued terminal space that can deliver additional revenue to the airport sponsor.
- Attention to concession locations and product offerings can enhance overall concession sales.
- Predictable and streamlined security can revitalize concession opportunities in areas located before checkpoints.

8.5 McCARRAN INTERNATIONAL AIRPORT – INNOVATIVE LEASING PROGRAM



8.5.1 Introduction

Airports that have developable real estate under their control can choose from among numerous potential methods to capitalize on the airport's unique position as a transportation center and to maximize non-aeronautical revenue opportunities through real estate development. Collecting ground rent is the most basic and traditional approach to airport property management. However, many innovative airport directors and business managers have structured other programs to create new revenue sources and to further stimulate regional economic development opportunities that contribute to an airport's growth. McCarran International Airport (LAS) is one of two case studies in this Airport Guide that serve as examples of innovative leasing programs.

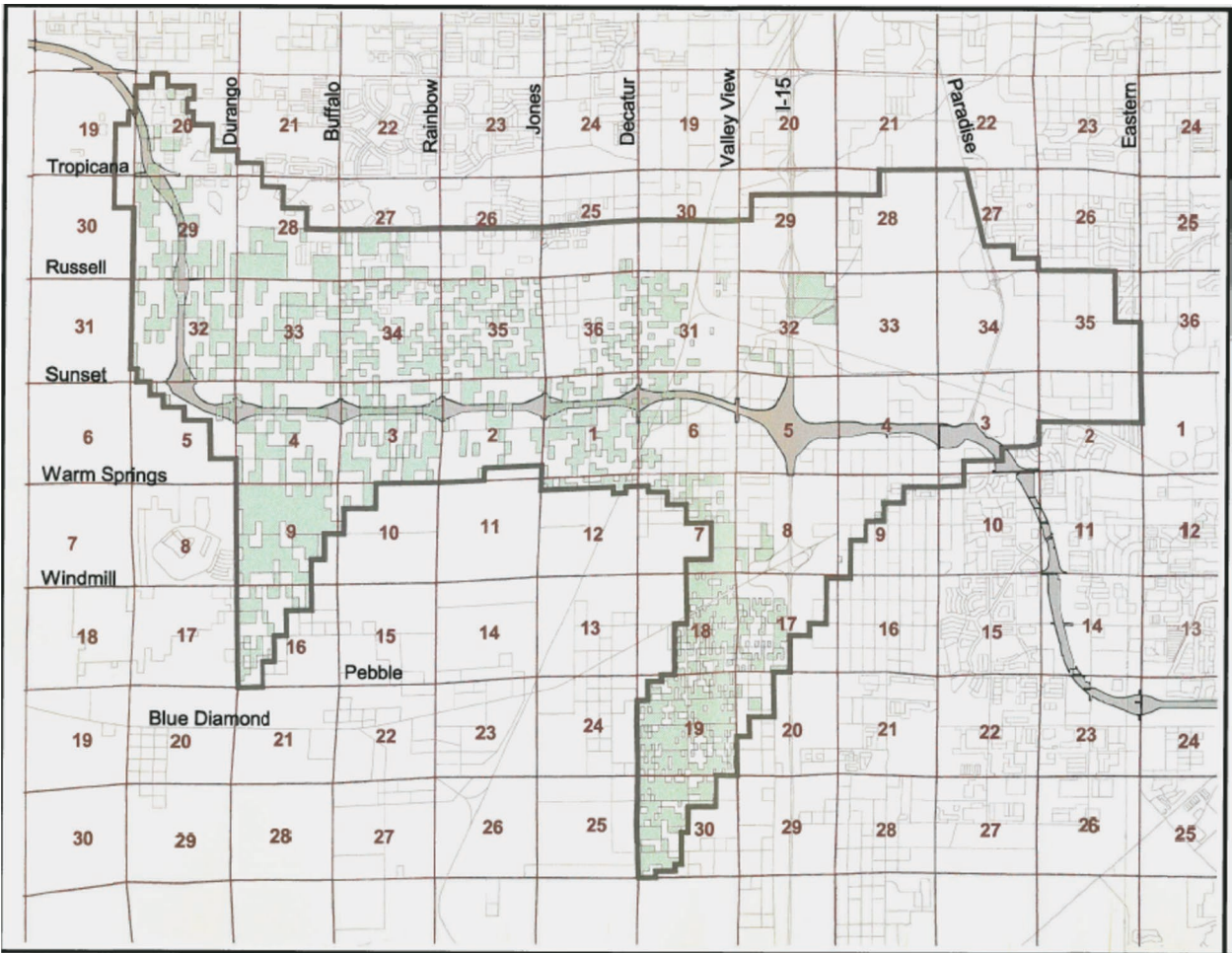
LAS's aggressive development programs were conceptualized during a time when robust economic conditions characterized the region. Officials at LAS seized the opportunity to participate in development projects by creating participation mechanisms that were not previously or customarily used by a municipal entity. Forging creative programs allowed LAS to generate revenues in significant excess of what might have been realized by the more traditional approach of collecting ground rent. LAS's approach required a tolerance for risks not typically associated with airports owned by a municipality or county; however, the initial phases of the program produced new and significant sources of commercial revenue for the airport sponsor.

8.5.2 Background

LAS occupies approximately 2,800 acres of land in Clark County, Nevada, and is operated by Clark County Department of Aviation (the Department). The Department also operates four general aviation airports: North Las Vegas Airport, Henderson Executive Airport, Jean Airport, and Overton Airport. Much of the land owned by the Department was acquired through a land transfer from the Bureau of Land Management (BLM) of the U.S. Department of the Interior. Pursuant to the Southern Nevada Public Land Management Act of 1998 (SNPLMA), BLM transferred 5,226 acres of land to the Department. Because much of the land was located within the airport's noise abatement zone, its use and disposal were subject to airport noise compatibility restrictions. Before the land transfer, the airport had no control over the type of development that took place on off-airport parcels within the noise abatement zone. The Act created the Cooperative Management Area (CMA) and gave the Department authority to sell the land within the CMA and to place deed restrictions on its use; however, the Department had to receive fair market value for any sale, lease, or other transfer of land. The Department also had the authority to sell the land to another government agency.

Figure 8-8 shows the parcels of land transferred to the Department. Many of the parcels received were not contiguous to the airport's primary property and did not necessarily serve an aeronautical purpose. With a booming Las Vegas real estate market in the 1990s (which continued until the bust in 2007), the Department identified an opportunity to capitalize on increasingly valuable and developable real estate, while serving the intended purpose of acquiring land to be deed restricted for compliance with the applicable law and the noise compatibility restrictions referenced above. In addition to generating additional revenues, one of the Department's primary goals was to consolidate as much land area as possible within close proximity to the airport and eliminate residential and other incompatible uses. By trading acquired properties, the Department could impose deed restrictions that would restrict further residential development and help decrease noise contours.

Figure 8-8: CMA Plan Area and Properties Acquired through SNPLMA



Source: McCarran International Airport Land Use and Disposal Plan, 2000

Standard ground leases were initially identified as the best option for development of land in the CMA; however, with ground leases, the Department was subject to a bond ordinance that required them to impose a unilateral rent adjustment on non-aeronautical tenants every 3 years. Because of the Las Vegas land boom, rent adjustments every 3 years rendered an airport ground lease unattractive for most potential tenants. The Department would have been required to adjust rents based on explosive growth in real estate values. With the potential for significant rent escalations every 3 years, it was nearly impossible for a tenant to predict rents and determine project feasibility. Because the Department was mandated by the bond ordinance to maintain its ability to cover its bond debt, it needed to find alternate ways to lease and develop non-aeronautical airport properties.

LAS owned a substantial portfolio of properties acquired for noise mitigation by eminent domain or by virtue of the land grant from the BLM. All revenue produced from the land in the CMA, either by sale or lease, was divided 85% to the BLM, 5% to the state of Nevada, and 10% to the Department. The

participatory leases were used as a mechanism to jumpstart airport-compatible development at a time when housing development was the highest alternate (and incompatible) use.

Prior to the participatory lease program, the Department had investigated participation in joint ventures with developers. With a residual ratemaking base on the airfield and a compensatory arrangement³⁶ on the terminal and the development areas, the Department stood to generate non-aeronautic revenue that could be used as the Department deemed fit in a compensatory lease structure.

The airlines serving the airport initially agreed to creation of an entrepreneurial fund of \$10 million to spur development options. Soon, however, it was determined that county ordinances precluded local government units from becoming investors per se. Still, the Department could participate in other aspects of revenue generated by a lease beyond merely collecting ground rent.

8.5.3 Lease Participation Structure

The participatory leases ultimately used by the Department were structured to operate in a manner similar to a joint venture. In general terms, airport land to be allocated to a particular development was independently valued so that an estimate could be made for a return on the Department’s land contribution. The real estate developer would contribute equity or simply arrange for the construction financing and permanent financing. The modeled pro forma would reflect a gross rent to be received from the end-user tenants. The debt service associated with any development financing would be deducted, as well as the operating costs. The cash equity contributions by the developer, if any, and the land value contributed by the Department would carry a preferred return. The net rent would then be split equally between the developer and the Department. **Table 8-13** illustrates the calculation.

Table 8-13: Example of the Lease Participation Structure

Lease Participation Structure
Total Revenue
Less Debt Service
Less Actual Expenses and Other Approved Costs
Less Capital Improvement Expenditures and Approved Reserves
Equals Available Net Revenues
Distribution:
50% to Department
50% to Developer

Source: McCarran International Airport

³⁶ Compensatory cost centers are those that calculate all expenses for the specific cost center and divide that cost by the applicable divisor (e.g., square feet or landed weight). The divisor for the terminal in a compensatory methodology is generally rented space. Revenues are not deducted in this methodology to calculate rental rate or landing fee (Vanden Oever et. al., p. 10).

The first such development utilizing the above structure was a 14-acre tract on which a 400,000-square-foot warehouse space was developed. The Department split \$2,000,000 annually with the developer.

If the Department wants to proceed with a participatory lease, the developer selected by the Department presents a pro forma (financial analysis) for the proposed land development that is subject to review by the Department. The Department obtains a land appraisal for the subject property and, based on the pro forma and appraisal, if the Department determines that positive cash flow will be generated by the development, then the participatory lease arrangement is pursued and terms of the particular transaction are negotiated. Two examples of successful participatory leases are described in this case study: the Blue Diamond Business Center and Beltway Business Park.

BLUE DIAMOND BUSINESS CENTER-BUILDING 2, LLC

Overview of the Development

Blue Diamond Business Center is a 110-acre master-planned business park that was started in 2005 and today encompasses more than 1.5 million square feet of existing and planned industrial office and warehouse space. The park is located in the southwest industrial submarket near Interstate 15 and Blue Diamond Road and very near to Blue Diamond Crossing, another LAS development project that includes a 530,000-square-foot power center anchored by Target and Kohl's.



Blue Diamond Business Center Lease Agreement

In 2005, the Department entered into a lease agreement (Lease) with Blue Diamond Business Center-Building 2, LLC, a special purpose entity³⁷ formed for the development of certain commercial facilities including retail, office, warehouse, or similar compatible use. Pursuant to the Lease with Blue Diamond (Developer), the Developer was responsible for providing any required construction or permanent financing for the development of the facilities. The Department acted as a participant in the project with the Developer, in accordance with the terms of the Lease. In its role as a participant, the Department was entitled to receive 50% of the project's net revenue (defined as the amount of available cash after allowable deductions had been made from total revenue). Total revenue included all rents and other income collected with respect to the leased property. Allowable deductions included:

- Debt service
- Actual expenses authorized in an approved budget, including the cost of any maintenance and operations, or other approved project costs
- Capital improvement expenditures

³⁷ A special purpose entity is an entity formed for the limited purpose described in its organization charter. A special purpose entity is usually created to limit liability of its organizer and its capitalization reflects the extent of the risk that the organizer has agreed to assume.

- Management fee
- A reasonable reserve for maintenance and operations or any reserve required by any lender under any approved financing
- Repayment of any equity contribution plus return on equity contribution

The management fee ranged from 3% for industrial space to 4.5% for office space to 5% for retail space, and was paid to cover all property management administration expenses.

It is worth noting that the Department was able to achieve its primary goal of ensuring that the property would not be used for any purpose incompatible with airport operations. The Department also maintained approval rights over the construction standards and the plans and specifications to ensure that the property would be developed as a first-class commercial facility. Additionally, the Department maintained approval rights over the subleases to be extended to the end users of the project.

To the extent that the Department was required to make any equity contribution for the development, the net revenues would first be applied to provide an 11% pre-negotiated rate of return on that equity. With respect to the Department’s equity contribution, the parties acknowledged that the Department received fair market value for all leases. The Department’s return on equity was then based on the fair market value of the property that it contributed to the development.

BELTWAY BUSINESS PARK, LLC

Overview of the Development



Source: Lochsa Engineering

In 2001, the Department entered into a Lease Option Agreement (Lease) with the Thomas and Mack Development Group to develop 298 acres of land within the CMA. The option was granted to Beltway Business Park, LLC, another special purpose entity created for the purposes of developing the property. The business park was planned as a 400-acre facility located on the south side of the Southern I-215

Beltway between Jones and Decatur Boulevards. At build-out, Beltway Business Park (Beltway) was envisioned to have approximately 5 million square feet of office, distribution, and retail facilities.

Beltway Lease Agreement

Although the transaction with Beltway is similar to that of the Blue Diamond Business Center, the structure of the agreement was slightly different. It again reflected the creative techniques used by the airport's business development staff.

The Department granted Beltway an option to lease the property in accordance with a pre-negotiated form of lease. The option extended to all or any portion of the property provided that (1) the option could not be exercised for fewer than 40 acres and (2) the property had to be either contiguous to other portions of the optioned property leased by the developer or otherwise located to develop the optioned property in an orderly progression. The Department retained the right to adjust the acreage upwards or downwards for each option exercised.

Beltway agreed to pay the Department an option fee which, in lieu of a direct payment by Beltway, could be considered as an equity contribution by the Department and, thereby, receive the same priority for payment as the Beltway's equity contribution under the Lease Agreement. Beltway and the Department agreed that the initial value of the option fee was \$78,000. This amount was subject to an upward or downward adjustment during the first year of the Lease based on 10% of the appraised value of the optioned property (appraised as raw land) to an amount equal to 1% of any lease value.

To illustrate how the option fee was calculated, consider the following:

- Appraised value = \$6.00 per square foot
- Lease value (10% of appraised value) = \$0.60 per square foot per year
- Option fee value (1% of lease value) = \$0.006 per square foot per year

For each area of land placed under a Lease, Beltway would take a pro rata share of the option fee and make priority payments to the Department for the pro rata amount of that fee related to each project as part of the Department's equity contribution.

The arrangement enabled Beltway to apply for a credit toward the option fee in the amount of approved costs of all development work for the build-out of the optioned property (such as survey costs, engineering, environmental work, soils, drainage studies and/or infrastructure placement required for the development). The foregoing development costs were treated as an equity contribution by the Department, thereby receiving the same priority payment as the option fee. The approved development costs were considered Beltway's contribution under the Option Agreement.

The ground lease was then structured similarly to the lease described in the Blue Diamond transaction above, with total revenue calculated. To reach net revenue, the debt service, approved budgetary expenses, capital improvement expenditures, a 3% management fee, and a maintenance and operation reserve were deducted. The balance was then split 50/50 between the Department and Beltway. Once again, due to the use restrictions imposed on the Lease, the Department was able to ensure its goal of consolidating as much area as possible away from incompatible land uses such as residential.

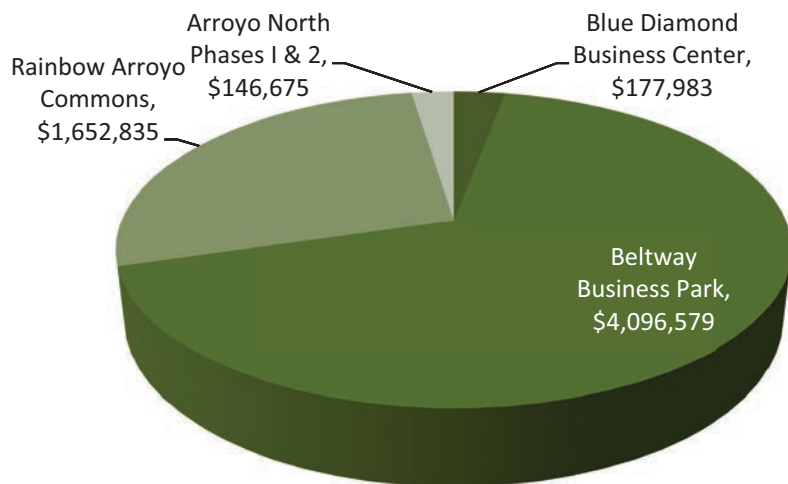
The Department retained the right of recovery of the leased premises to the extent that it was necessary for airport or other public uses. Furthermore, the Department mitigated its risks by retaining a right to convert the deal structure to a flat ground rent if the anticipated improvements for the development were not made within 36 months of the Lease. The ground rent was set at the fair market value for unimproved real estate at its location, with consideration given to the impact of the deed and lease restrictions on the value of the property. The ground rent structure then continued until the improvements were completed.

8.5.4 Results of the Leasing Program

In the early 1990s, faced with a BLM plan to auction properties in southern Nevada in 2.5 acre to 5 acre tracts without deed restrictions, the Department recognized the need to take action. By reaching agreement with the BLM, no residential property would be sold within the noise contours of the airport without the Department’s approval. The land sat for 8 to 10 years without the ability to sell, and the area began to suffer as a result. By recognizing the advantage of commercial and industrial development in a growing Las Vegas market, the Department was able to obtain the necessary deed restrictions on properties and to convert neighborhoods to airport-compatible uses, while developing new non-aeronautic revenue. Furthermore, the cash used for capital projects did not hit the rate base and, thereby, avoided Airport Improvement Program (AIP) or federal funds, which allowed the Department the freedom to use the cash revenues as it deemed fit.

Figure 8-9 shows the revenues collected for land rental in calendar year (CY) 2011. The Beltway Business Park represents approximately two-thirds of the annual land rental revenues on CMA properties.³⁸

Figure 8-9: Total Land Rental Revenues for CMA Properties, CY 2011



Source: Clark County Department of Aviation

³⁸ Land rental revenues on CMA properties are shared with the BLM and the state of Nevada.

The Department has been able to participate in almost 40 development projects utilizing standard ground leases to the participatory leases described in this section. Since the inception of the development program, CMA properties have generated total revenue of \$110,448,550. **Table 8-14** shows the breakout of CMA revenues.

Table 8-14: CMA Revenue Since Inception

CMA Revenue	
Land Rental	\$30,679,579
Easement Right of Way	\$1,430,049
Land Sales	\$77,675,830
Miscellaneous Land Usage	\$663,092
Total Revenue	\$110,448,550

Source: Clark County Department of Aviation

The real estate bust that began in 2007 set the Department on a path away from participatory leases to ensure steady cash flow and to avoid risks associated with participation arrangements.

Nonetheless, the Department recognized the need for a risk mitigation provision. In response, it included provisions requiring participatory lease participants to complete improvements within a specified period of time or face restructuring of the transaction to a fixed ground rent for the time it takes the developer to complete the improvements.

8.5.5 Lessons Learned

Flexibility in planning and decision making allowed the Department to react to changing Las Vegas real estate market conditions. Although such flexibility is more typically seen in the context of an operating airport authority, LAS provides a clear example of what may be accomplished even outside of an authority context if elected officials empower their airport officials to solicit and act on creative proposals.

The situation of the Department at LAS may be unique, as most municipally run airports are usually subject to constraints imposed by state statute or county/city ordinances. Furthermore, elected officials must consider the political implications of their decisions and would normally be reticent to empower county/city employees with the discretion to undertake risk-based activities. Airport authorities are, for the most part, only restricted by their enabling statutes and their own operational by-laws and regulations, in addition to their Airport Operating Agreement. Authority officials are, therefore, not as constrained in their ability to undertake risks. Furthermore, those elected officials who appoint board members enjoy the political shield of an appointed board whose members must exercise independent business judgment. That said, the LAS program illustrates that, given the appropriate options, airport revenue generating activities may still be used, even though an element of risk may be involved.

8.6 PITTSBURGH INTERNATIONAL AIRPORT – TIF/PARTICIPATORY LEASE



8.6.1 Background

Airport executives must consider how best to maximize the generation of income while maintaining an appropriate balance against risk; thus, the structure of real estate development projects is extremely important. The focus of this case study is on real estate development at Pittsburgh International Airport (PIT). It complements the discussion about joint ventures and participatory leases at LAS.

PIT provides an example of how airport officials, faced with a stagnant real estate market, were able to capitalize on the airport's presence and jumpstart development activities. By utilizing creative financing techniques, such as formation of a Tax Increment Finance (TIF) district, airport officials convinced a well-established local developer to develop a speculative building (a building not pre-leased, but rather built based on the speculation that tenants will be attracted to the building). Additionally, the Allegheny County Airport Authority (ACAA) assumed some of the risk by converting a portion of the ground rent to participation in future tenant rents. The speculative building was quickly leased, reflecting the true demand for office and industrial space in the area; and additional buildings quickly followed. The PIT case study reflects how the utilization of creative structures and a willingness to accept some risk can stimulate new development activity and thereby create new revenue sources for an airport.

AIRPORT GOVERNANCE AND LAND

PIT sits on 8,800 acres that was acquired in two phases. The first phase was during the 1950s and the second phase occurred in the early 1980s for development of PIT's Midfield Terminal.

In the earlier days, the Allegheny County Department of Aviation, a functioning department of Allegheny County, served as the airport sponsor. Although the county had identified development of the airport land as a key element of its economic development plan, little development activity had occurred. Environmental clearance impediments and county bureaucracy stymied potential development opportunities.

In 1999, the county formed the ACAA and charged it with the tasks of not only overseeing all areas of airport operations, but also jumpstarting the development efforts that had been part of the county's

original economic development agenda. Working hand-in-hand with the County's Department of Economic Development, the ACAA embarked on an aggressive plan to develop pad-ready development sites and complete infrastructure improvements such as roads and the installation of water, sewer, and utility connections. One project, the Airside Business Park, was near completion at the time of the ACAA's formation, and initial efforts focused on ensuring completion of the final phase of that project.

The ACAA hired a senior director of development whose primary responsibility was to expeditiously implement a real estate program. One of the first tasks undertaken was the preparation of a Development Master Plan. The master planning process brought together all of the stakeholders who would be impacted by the development of the airport. The list included both Moon and Findlay Townships (the airport straddles both townships); the county; local economic development agencies; and the state.

DEVELOPMENT PLAN

The first step of the planning process was identification of all of the assets that the airport might need for aeronautical use for the next 50 years. These areas were set aside and reserved for future airport use. The balance of the property was approximately 3,800 acres. FAA, as part of the Airport Layout Plan (ALP), approved these parcels for non-aeronautical use. The next step was to analyze the comprehensive plans for Moon and Findlay Townships to determine how development at the airport would fit with community plans. At the time of the initial study, water and sewer systems were in place for only 10% of the airport's development sites. One element of the airport's real estate development program included a strategy for providing transportation and utility infrastructure to the sites. Given the region's challenging topography and the fact that many of the sites had been previously used for coal mining, it was determined that only 1,900 of the 3,800 acres were candidates for development.

ACAA staff, along with planning consultants and representatives of Moon and Findlay Townships, looked at the most probable uses for the sites and settled on warehouse distribution, office, light industrial, tech/flex, and hospitality. The plans eliminated residential as a potential use and included retail development as a support function to the other uses. Also identified were several impediments that would need to be addressed:

- Need for infrastructure improvements
- Grading of pad-ready sites
- Completion of environmental permitting
- Need to overcome community perceptions that airport land developments had too many issues
- Termination of non-performing agreements that tied up huge tracts of land

Community perceptions turned out to be a larger issue than originally anticipated. There was concern that airport development had regulatory issues not associated with other properties near the airport. Additionally, many developers who presumed that they would be able to obtain rights to control tracts of land or lease property at relatively minimal costs were frustrated to learn that federal mandates required that the airport receive fair market value (which would require appraisals to ascertain). Lastly, real estate brokers were under the misapprehension that ACAA could not pay commissions for on-site

development and lease opportunities, so brokers tended to avoid showing airport properties. ACAA staff addressed each issue quickly and interest in the development sites increased rapidly.

FINANCING THE INFRASTRUCTURE WITH A TIF DISTRICT

Funding for the land development was a critical issue. A limited pot of funds was available from the airport, and additional funding clearly was needed. With the help of the county, local communities, and the economic development agency, the state agreed to fund projects on a case-by-case basis. The airport also used tax increment financing (TIF) to cover the gaps in funding.

Faced with financing challenges, ACAA reached out to a well-known industrial developer. ACAA proposed that they would be willing to enter into a risk-sharing arrangement with respect to the development of the first building in a new warehouse industrial park, now known as the Clinton Commerce Park. The developer would be required to proceed with a speculative building. Additionally, as noted above, to ensure the necessary financing for the infrastructure work, the developer agreed to fund a TIF loan, secured by a guarantee from the commonwealth of Pennsylvania. This loan filled a gap in the funds needed to complete the grading, roadway construction and utility installation for the park.

Developers projected the Clinton Commerce Park, at the time of its initial development, to be 1.5 million square feet of large bulk warehouse buildings that would range from 200,000 to 500,000 square feet.

The industrial park required substantial infrastructure improvements as a prerequisite to any potential development. Those improvements—all public—included highway and road construction; interchanges; traffic signal installation; and electrical, sewage, and storm water upgrades, among others. The anticipated cost of the public improvements was \$7.5 million dollars, roughly 40% of a total project cost of \$18.5 million dollars. In order to finance the public improvements, ACAA approached the taxing bodies and the regional redevelopment authority to create a TIF district.

As noted in the TIF Plan:

Under the Airport Market Area Task Force, the Airport Market Area was identified by an expert panel from the Urban Land Institute as one of the key development opportunities in the Southwestern Pennsylvania region because of its proximity to the Pittsburgh International Airport and the availability of potential prime industrial development sites. The Clinton Commerce Park, a former Brownfield site that has been strip-mined or undermined over the last 100 years, is a regional priority in the regional development plan for Southwestern Pennsylvania. The market concept is based on the potential to create new, ready-to-go industrial capacity in the region. This ready-to-go industrial capacity will provide an opportunity for the region to compete nationally with high quality, competitive industrial space.³⁹

The TIF structure involved the creation of a TIF district that included the 150 acres of the proposed industrial park. The taxing bodies, including the local township, school district, and the county, agreed

³⁹ TIF Plan – ACAA document

to contribute 75% of the real estate revenues generated by the development that exceeded the tax base in existence when the TIF district would be established.

Based on that commitment, the County Redevelopment Authority issued its TIF notes, which were payable from the positive tax increments realized from the TIF district. ACAA arranged with the developer to purchase all of the issued TIF notes.

Because of creation of the TIF district, the expected private investment—originally projected at \$60 million dollars—is proving to be conservative. The industrial park has produced many direct and indirect benefits to the local communities, the airport market area, and southwestern Pennsylvania, including:

- Direct and indirect jobs numbering 1,420
- Annual wages of over \$41,000,000
- Over \$850,000 in annual wage taxes

ENGAGING THE FIRST DEVELOPER AND PARTICIPATORY LEASES

ACAA attracted developers by offering a low initial ground rent to the developer. Once the property was built and occupied, ACAA shared in a potential revenue stream that provided a greater return than mere ground rent and with limited risk. Accordingly, ACAA negotiated a ground lease with the developer that included a base rent that phased in an additional percentage rent (APR)⁴⁰ based on occupancy. For the developer, this approach alleviated one element of risk associated with lease renewal. For ACAA, the lease included the benefit of APR over the base rent.

The APR was structured so that each sublease (the lease for the built-out tenant space) would have an APR component. The APR would apply to amounts in excess of the base rent to the sub-lessee. ACAA then receives a percentage of the amounts in excess of that base rent figure. This structure also proved valuable from a competitive standpoint, as the airport properties compete with off-airport developable properties.

The APR structure is as follows:

- Up to the first 20 cents (\$0.20) of the effective rent⁴¹ per square foot in excess of \$3.50 per square foot shall be multiplied by 10% and further multiplied by the rentable square feet used to convert the Effective Rent.
- Up to the next 20 cents (\$0.20) of the effective rent per square foot in excess of \$3.70 per square foot shall be multiplied by 15% and further multiplied by the rentable square feet used to convert the Effective Rent.
- Up to the next 45 cents (\$0.45) of the effective rent per square foot in excess of \$3.90 per square foot shall be multiplied by 20% and further multiplied by the rentable square feet used to convert the effective rent.

⁴⁰ Although additional percentage rent in the retail lease environment usually entails a base rent plus a percent of gross sales in excess of a base amount, the concept is unique with an office or industrial lease.

⁴¹ The effective rent equals the normal base rent less the annual amortization cost of additional improvements over the lessee's standard building finishes and any commission.

- Any additional effective rent in excess of \$4.35 per square foot shall be multiplied by 25% and further multiplied by the rentable square feet used to convert the effective rent.

For example:

1. Sublease of 100,000 square feet at a new rent of \$500,000
2. Converted to square foot per year = \$5.00 per square foot (PSF)
3. Assume the lessor receives 20% of the rent over \$4.00 PSF
4. The \$5.00 results in the following percentage rent calculation:
5. $\$5.00 - \$4.00 = \$1.00 \times 20\% \times 100,000 = \$20,000$ (This is in addition to the base ground rent.)

8.6.2 Lessons Learned

ACAA controlled thousands of acres of developable property, but required creative deal structuring to spur a developer to risk the first speculative project. Establishing a TIF district, the county was able to install needed access and infrastructure to Clinton Commerce Park. By restructuring the traditional ground rent lease into one where the airport absorbed some of the development risk and shared in the benefits, ACAA was able to stimulate further development. After the first building in the Clinton Commerce Park was completed in 2007 (and immediately leased up), not only did the developer then move to its second building, but new companies and developers entered into additional ground leases and ACAA now has 725,000 square feet of new Class A warehouse buildings completed. The park is generating significant revenue. ACAA has also established its reputation as a creative and flexible landowner working with developers to take advantage of a unique real estate asset.

8.7 SPRINGFIELD-BRANSON NATIONAL AIRPORT – AIRPORT-OPERATED GROUND HANDLING



Ground Handling at Springfield-Branson National Airport

8.7.1 Overview

At medium and large hub airports in the United States, airlines typically provide their own ground handling services or contract with a handling agent or another airline. These arrangements also occur at small and non-hub airports as well, but some airports have elected to provide ground handling services directly to one or multiple airlines. There are a number of reasons a U.S. airport will offer ground handling services. The two most common are: (1) the departure or bankruptcy of a sole fixed-based operator (FBO) at the airport or (2) the use of ground handling services as an air service incentive to attract or retain airlines.

At Springfield-Branson National Airport (SGF), the airport sponsor has always owned and operated the FBO and fuel farm. In 2002, when the airport sponsor could not secure a third party to provide ground handling for the 80 to 100 charter aircraft that arrived annually, airport management decided to offer ground services to charters by cross-utilizing airport personnel. Thus began a logical build-out of airport-provided above the wing and below the wing services to commercial and charter airlines. See Table 8-15 below for examples of these services.

This case study explores how SGF developed its ground handling business and demonstrates how ground handling services have contributed directly to net revenues to the airport sponsor. Ground handling services also provided SGF with important indirect benefits in the form of retained air service and increased passengers. More passengers raised the amount of passenger facilities charges (PFCs) and customer facility charges (CFCs) collected, and increased the airport’s eligibility for FAA AIP apportionments.⁴²

8.7.2 Background

GROUND HANDLING SERVICES DEFINED

Ground handling addresses the many service requirements of a passenger aircraft between the time it arrives at a terminal gate and the time it departs on its next flight. Speed, efficiency, and accuracy are important in ground handling services in order to minimize the turnaround time (the time during which the aircraft must remain parked at the gate). Aircraft ground handling includes ramp services (below the wing) and passenger services (above the wing). **Table 8-15** lists the services in each category.

Table 8-15: Examples of Ground Handling Services

Below the Wing - Ramp Services
Aircraft parking, chock, unloading, loading, unchock, pushback
Aircraft cabin services – lavatory service potable water, cabin cleaning/grooming
Aircraft fueling
Aircraft deicing
Aircraft pushback
Baggage and cargo handling
Above the Wing - Passenger Processing
Ticketing, check-in, baggage processing
Gate passenger check-in and related services
Passenger support services
Lost and found
Check-in counter services for the passengers
Gate arrival and departure services.
Passenger transfer and customer service counters, airline lounges, etc.

Source: Compiled by KRAMER aerotek inc., 2014

⁴²Each primary airport apportionment is based on the number of passenger boardings at the airport (*FAA Airport Improvement Program (AIP) Handbook*, Order 5100.38C). If full funding is made available for obligation, the minimum amount apportioned to the sponsor of a primary airport is \$650,000, and the maximum is \$22,000,000, in accordance with Title 49 U.S.C., Section 47114(c)(1)(B). These funds are calculated as follows: \$7.80 for each of the first 50,000 passenger boardings; \$5.20 for each of the next 50,000 passenger boardings; \$2.60 for each of the next 400,000 passenger boardings; \$0.65 for each of the next 500,000 passenger boardings; \$0.50 for each passenger boarding in excess of 1 million.

In the United States, small and non-hub airports are the predominant airports engaged in ground handling services. These airports use ground handling services as a means to attract or retain air carriers that offer limited frequency service. To initiate ground handling operations, airport management often purchases used ramp equipment from airlines, third-party contractors, and auctions. **Table 8-16** lists the equipment most necessary to support an airport ground handling operation.

Table 8-16: Examples of Ground Handling Equipment Required

Ground Handling Equipment
Towing with pushback tractors
Lavatory drainage carts
Water cartage (to refill fresh water tanks)
Jet bridges and preconditioned air units
Air-start units (for starting engines)
Luggage handling (belt loaders and baggage carts)
Air cargo handling (cargo dollies and cargo loaders)
Catering trucks
Refueling (refueling tanker truck or refueling carts)
Ground power units (so that aircraft engines need not be running to provide aircraft power on the ground)
Passenger stairs or jet bridge
Wheelchair lifts, if required

Source: Compiled by KRAMER aerotek inc., 2014

8.7.3 Evolution of Ground Handling in the United States

Since airline deregulation, the management and delivery of ground handling operations have changed as air carriers explored various business strategies to control markets, capacity, and operating costs. In the 1980s, airlines typically provided their own ground handling services at commercial airports. For most network carriers, labor contracts governed ground handling services and unionized airline employees provided the services. Compensation paid to these employees was a living wage and often included rich benefits programs. As airlines expanded hub and spoke systems, the number of markets served grew along with the operating expenses for additional airport stations. Other factors, including the growing presence of low cost carriers and volatile fuel prices, continued to place pressure on network carriers to lower their operating costs and, more recently, to exercise capacity discipline throughout their systems.

To reduce costs, airlines began to decouple ground handling services from union contracts and to outsource ground handling services to third-party contractors at many airports, particularly those airports where the airline had limited frequencies. Third-party contractors were free to pay “market wages” with few benefits. If they served multiple airlines, it was possible to cross-utilize ground service crews and equipment, thereby lowering airline costs for the services.

Today, when airlines have a large concentration of service at a particular airport, they typically self-handle. If an airline leases gate space from another larger airline, ground handling is often included in the lease. For smaller airports, third-party contractors or the airport itself will usually provide ground handling services.

8.7.4 Benefits of Ground Handling by Airports

This case study explores the benefits that accrue when smaller airports provide ground handling services as a means to generate additional operating revenues or to attract/retain air service. These benefits are summarized below.

LOWER STATION COSTS FOR AIRLINES

Airlines over the last decade have sought to lower station costs at most airports, but especially at smaller airports where limited frequencies are offered. Some ways airlines have lowered station costs include: the utilization of self-check-in stations; the preferential or common use gate arrangements instead of exclusive use of gates; and the use of third-party ground handling services and equipment. Airport-provided ground handling is another option that airlines have used.

ACHIEVEMENT OF ECONOMIES OF SCALE BY SERVING MULTIPLE AIRLINES

Small and non-hub airports, such as SGF, which are served by multiple regional carriers, charters, and ultra-low-cost carriers, can effectively cross-utilize both staff and equipment to provide ground handling services to airlines at a competitive price.

OPPORTUNITY TO OFFER GROUND HANDLING AS AN AIR SERVICE INCENTIVE

Some airports offer ground handling services at or below cost as an incentive to retain or attract air carriers. Travel companies like Allegiant Air have come to expect these types of incentives for service to a new city.

ADDITIONAL REVENUE SOURCE

Many airports are working to reduce their dependence on airline space rents and landing fees. Revenue from ground handling services is one revenue alternative for smaller airports.

EXAMPLES OF AIRPORTS THAT PROVIDE GROUND HANDLING SERVICES

Table 8-17 lists six airports that represent different types of ground service operations. A more extensive discussion about SGF follows in the next section.

Table 8-17: Examples of U.S. Airports that Operate Ground Handling Services

Airport	City/State	Airport Size	Management	Service Level
Bangor International	Bangor, ME	Non-Hub	Division of Airport	Full-Service/Federal Inspection
Lehigh Valley International	Allentown, PA	Small Hub	Airport Authority	Full-Service/Passenger and GA
Mobile Regional	Mobile, AL	Non-Hub	Airport Authority	Full-Service
Quad City International	Moline, IL	Small Hub	LCC	First Fueling now Full-Service
Springfield-Branson National	Springfield, MO	Non-Hub	Division of Airport	Full-Service
Front Range Airport	Denver, CO	GA	Airport Authority	Full-Service

Source: Compiled by KRAMER aerotek inc., 2012

8.7.5 Springfield-Branson National Airport (SGF)

SGF is a good case study because the airport offers a 10-year perspective on airport-provided ground handling services. The airport sponsor has owned and operated the FBO and fuel farm for years. However, in 2002, airport management gradually began adding ground handling to its portfolio of services offered to commercial and charter airlines.



New Midfield Terminal at SGF

CHARACTERISTICS OF THE AIRPORT

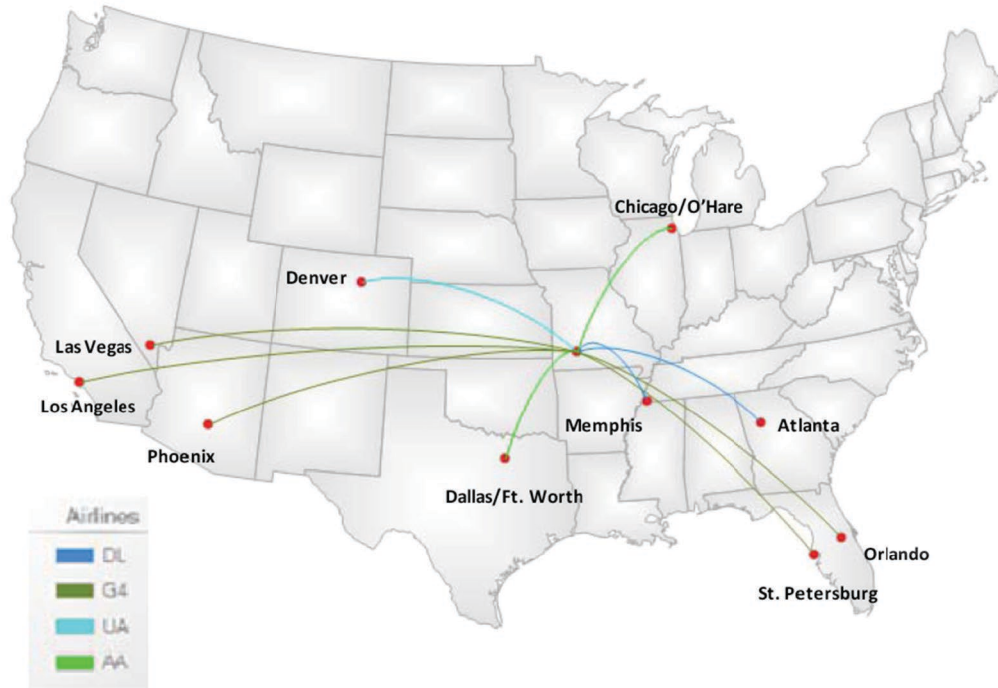
SGF is a publicly owned facility located on 2,791 acres.⁴³ The airport is approximately 190 miles southwest of St. Louis and 150 miles southeast of Kansas City, Missouri.

The city of Springfield owns the airport and an 11-member administrative board (Board) manages SGF. The city manager appoints the Board and the city council confirms members. The airport is a self-supporting facility. The city owns and maintains the terminal, runway/taxiway complexes, and navigation/lighting systems, and it leases space to private companies in the airline, restaurant, and rental car industries. A new Midfield Passenger Terminal opened in May 2009. Reuse of the previous terminal by Expedia and the Missouri Army National Guard is one of the best examples of terminal reuse in the country.

SGF functions as the primary air service gateway for southwestern Missouri and a destination airport for visitors to the Branson, Missouri, entertainment area. SGF's air service offerings are larger than what is typical for a metropolitan area of over 436,000 people and consist of access to multiple connecting hub airports. Total commercial departures from SGF are just under 10,000 per year, and they are split among four airlines. In 2012, American Airlines, United Express, Delta Connection and Allegiant Air served SGF. United Express offers connecting service to its hubs at Chicago O'Hare and Denver. American also provides service to Chicago O'Hare as well as Dallas/Fort Worth. Delta Connection serves Atlanta-Hartsfield and Memphis out of SGF. In addition, Allegiant Air offers limited weekly service to McCarran International, Los Angeles International, Orlando-Sanford, Phoenix-Mesa Gateway, and Tampa-St. Petersburg airports. With the exception of Allegiant Air, which operates a fleet of MD-80 aircraft, regional aircraft provide all other air service. **Figure 8-10** shows the nonstop destinations served from SGF.

⁴³ Springfield-Branson National Airport Master Plan, Working Draft, February 2011

Figure 8-10: Nonstop Destinations from SGF, 2012



Source: Springfield-Branson National Airport Master Plan Working Paper, 2011

GROUND HANDLING SERVICES

Springfield-Branson National Airport began to offer ground handling services in 2002. At that time, SGF had 80 to 100 charter flights flying to and from the airport each year. This relatively low level of charter activity significantly narrowed the pool of interested independent third-party ground handling contractors and airlines on the field gave priority status to their own flights. Airport staff began to provide minor services to the charters in order to make up for the shortfall in ground handling services.

In August 2002, the airport entered into a contract with the airlines serving SGF, stipulating that SGF would provide boarding pass screening. This initial agreement was the foundation for a continuously expanding ground handling program by the airport, which grew until the recession of 2008.

On April 14, 2004, SGF began providing ramp service for Comair for its three flights per day to Cincinnati. The airport sponsor hired former airline employees to perform, manage, and supervise ground services. Delta Air Lines, Inc. partially trained airport employees who assumed ground service handling duties.

At the same time, Comair launched its service to Cincinnati; Northwest Airlines moved to a new wing of the terminal and created an additional security checkpoint. This doubled the SGF boarding pass screening staff requirements.

In 2005, SkyWest (a Delta Connection provider) came to SGF, offering two flights per day to Salt Lake City. Comair handled above the wing services and SGF provided below the wing services. Soon after the

initiation, SkyWest service was canceled. Subsequently, Atlantic Southeast (also a Delta Connection provider) began service from SGF to Atlanta with two daily flights, for which SGF provided below the wing services. The same year, Allegiant initiated twice-weekly service to Las Vegas and within 6 months doubled the weekly frequency. For these flights, SGF provided both above the wing and below the wing handling.

Allegiant continued to expand and, at the end of 2006, initiated two flights per week to Tampa, for which SGF provided ground handling services and passenger processing. July 2011 was SGF's busiest month, when it managed all ground handling services for 107 Allegiant Air flights, which included:

- Charters
- Four flights per week to Las Vegas
- Two flights per week to Orlando
- Two flights per week to Tampa
- Two flights per week to Phoenix
- Two flights per week to Los Angeles

FUELING

The airport sponsor owns and operates the FBO, as well as nine fueling trucks stationed on the airfield. On-duty airport firefighters fuel aircraft. The FBO sells fuel to general aviation users and provides fuel storage and into-plane fueling services for the airlines. Signatory airlines paid \$0.04 per gallon and non-signatory airlines paid \$0.10 per gallon for these services. In 2011, the FBO generated over \$2 million in fuel sales and fuel flowage fees.

MANAGEMENT AND STAFF

Airport's Ground Handling Services Management Team

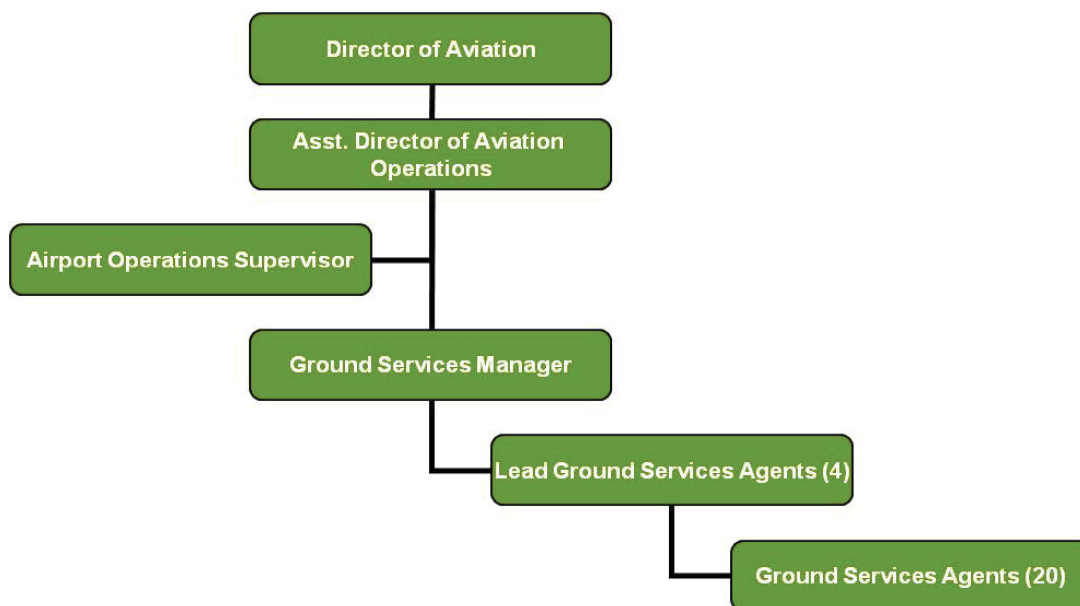
SGF's ground handling services management team consists of four leads and one manager. The management team has experience with the airlines and has a combined experience of 42 years in providing ground handling services. The airport's management team has very low turnover rates. The key is to build a strong, long-term management team that fully buys in to the operation and is 100% focused on the operation's success.

Staff Requirements

The airport's ground handling services staff consists of 24 employees. The four leads are full-time employees of SGF. The other 20 ground handling staff are entirely contract employees. These employees are paid the market rate for their labor and have very limited benefits.

Because of variations in the number of work hours and seasonality of the airport's business, staff turnover is a material factor in managing the business. The airport experiences relatively high turnover with the ground handling staff, which is normal and unavoidable for ground handling operations. Therefore, the airport continuously recruits and trains new ground handling staff. **Figure 8-11** shows SGF's organizational structure for ground handling services activities.

Figure 8-11: SGF Ground Handling Organization



Source: Springfield-Branson National Airport

GROUND HANDLING FINANCIAL MATTERS

The principal initial start-up for the SGF ground handling operation included the acquisition of equipment, the development of a pricing structure, and the coverage of any operating losses.

Pricing Ground Handling Services

SGF charges approximately \$5 per aircraft seat for providing above the wing and below the wing ground handling services. Based on this pricing model, ground handling a regional jet with 50 seats would cost about \$250 for an arrival and departure. A B737 with 135 seats would cost about \$675 for an arrival and departure.

For regular scheduled operations, SGF discounts its \$5 per seat rate based on the volume of activity that it is asked to handle. The airport bases its discount rate on air traffic volume, effect on air services, and profit margins. SGF reports that there is a relationship between the \$5 per seat and their costs, but the discount rate is not calculated based on the costs.

For services such as deicing, lavatory servicing, and boarding potable water, the airport charges additional fees.

Capital Requirements

To engage in aircraft ground handling, SGF required a complement of ground service equipment (i.e., aircraft pushback movers, tugs, baggage carts, air stairs, potable water carts, lavatory carts, deicing units, trucks, air-start/ground power, etc.). As SGF began providing ground handling services, it was able to acquire surplus ground handling equipment at favorable prices from airlines, as well as from state and federal surplus sales. Equipment purchases for the SGF operations were almost all surplus and relatively

low cost. Consequently, SGF was able to fund the acquisitions on a pay-as-you-go basis from their budget, and equipment was not a barrier to starting the service.

Ground Handling Revenue

SGF has projected its ground handling services revenue in FY 2012 to be \$508,000. The airport has budgeted ground handling operating expenses for FY 2012 at \$488,000, and projects net revenue of about \$20,000 before capital and allocated costs.

Profit/Loss

SGF does not produce separate financial statements for its ground handling operations. However, ground handling revenue and expenses are carried as a cost center embedded within SGF’s financial statements, enabling an assessment of net revenues generated. **Table 8-18** shows financial results from FY 2011 for ground handling services, landing fees, into-plane charges, and deicing sales.

Table 8-18: Financial Results from Ground Handling and other Services, FY 2011

Revenues	Amount
Ground handling	
Allegiant Air	\$ 434,000
Other Carriers ^a	\$ 24,000
Charters	\$ 39,000
Landing Fees ^b	
Allegiant Air	\$ 124,000
Charters	\$ 23,000
Into-plane Charges ^c	
Allegiant Air	\$ 181,000
Charters	\$ 3,000
Deicing Sales ^c	
Allegiant Air	\$ 30,000
Total Revenues	\$ 858,000
Direct Expenses	
Wages/Benefits	\$ 448,000
Supplies	\$ 59,000
Total Direct Expenses	\$ 507,000
Net Benefit to the Airport^d	\$ 351,000

Notes:

^a Ice, lavatory, and other services provided

^b Indirect revenue allocated to airfield area

^c Indirect revenue allocated to aviation services area

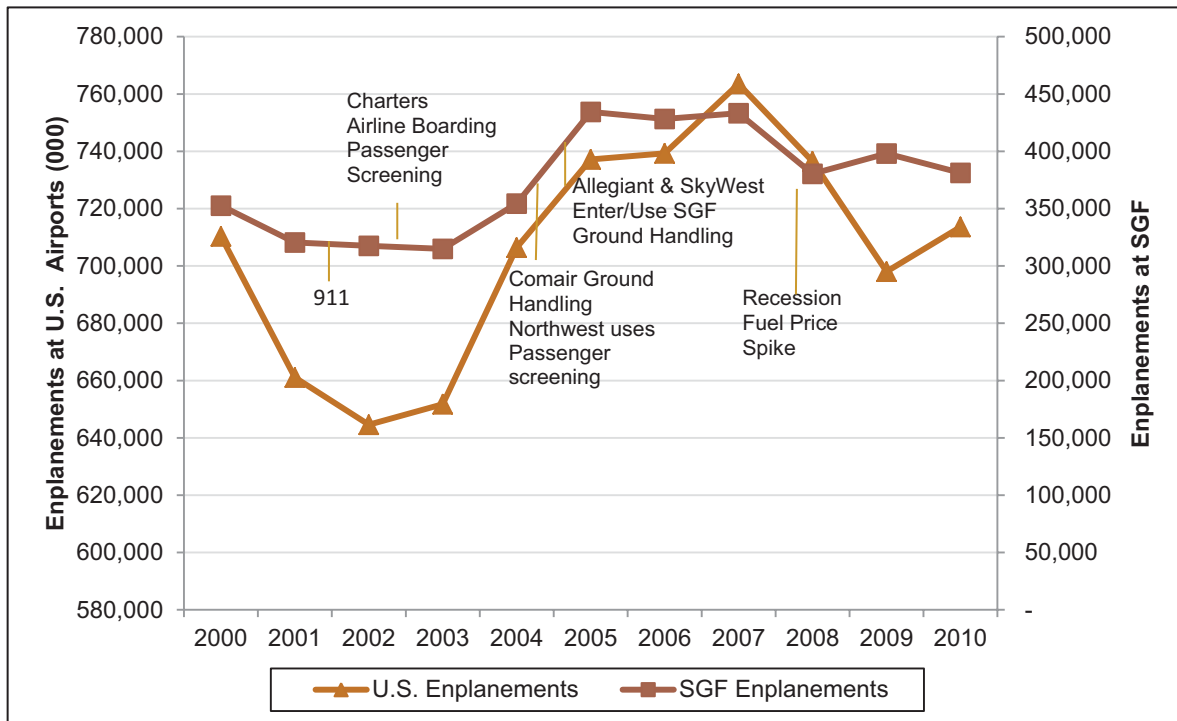
^d Net benefit calculation does not include allocation of indirect charges such as administration and overhead.

Source: Springfield-Branson National Airport

INDIRECT FINANCIAL BENEFITS OF GROUND HANDLING

When ground handling is used as a means to attract or retain limited frequency air service, there are other indirect revenue benefits to the airport that result from increased passengers. Increased passengers will result in additional PFCs, and CFCs such as parking, rental car, and concession revenues. **Figure 8-12** tracks the growth in enplanements at SGF and at all U.S. airports between 2000 and 2010, and identifies important points when SGF ground handling responsibilities increased, especially from 2004 up through 2007.

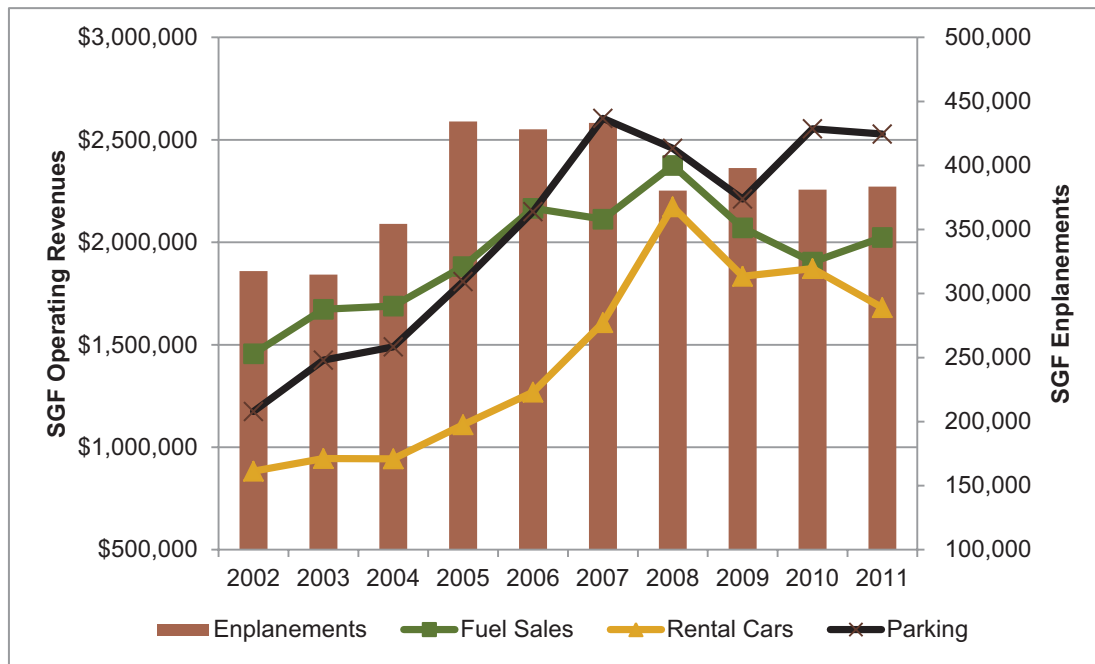
Figure 8-12: Enplanement Trends and Build-out of SGF Ground Handling Services



Sources: FAA Air Carrier Activity Information System (ACAIS) and Springfield-Branson National Airport

Figure 8-13 graphs SGF enplanement trends with commercial service-related operating revenues: fuel sales, parking, and rental cars. Of interest is the period of expanded air service starting with a base year of 2004 through 2007. During this period, enplanements grew at an average annual rate of 5.3%. On the operating revenue side, fuel sales grew annually by 6.4%; rental cars revenues, by 10.5%; and parking, by 14.2%.

Figure 8-13: SGF Enplanement and Operating Revenue Trends, 2002-2011



Sources: FAA Air Carrier Activity Information System (ACAIS) and CATS 127 Reports for Springfield-Branson National Airport

8.7.6 Issues for Airports Entering the Ground Handling Business

RISK FACTORS FOR AIRPORTS

As with any business, the ground handling services business has risks, such as operational liability, financial losses, and negative customer and airline relations. In addition, the airport sponsor must be able to hire and fire staff based on individual needs and performance. Normal municipal employee rights and procedures must match private-sector principles and rules. In assessing the ground handling services business, an airport sponsor must analyze the labor market, turnover rates, profit margins, capital requirements, and barriers to entry. Realistically, competition among ground handling providers is stiff, and the profit margins often are thin.

Furthermore, the airport sponsor must be able to sell to the airlines the potential benefits (lower costs, competitive services, and profit that inures to the airport’s benefit) of using the airport as the ground handling service provider. Airlines are not inclined to contract with the airport sponsor if the airport sponsor reinvests the profit from ground handling services into other areas of the airport.

COMPETITION WITH THE PRIVATE SECTOR

FAA grant assurances encourage airports to operate self-sufficiently. Over the years, a number of airports have decided to develop ground handling businesses. Today, most of the ground handling provided by airport sponsors in the United States is offered at non-hub and small hub airports, and it is possible that an airport will not have enough activity to attract third-party ground handling companies.

In some markets, however, operating a ground handling service for the airlines means that airports must compete with private-sector providers of ground handling services. Airports that must permit competition are not able to be sole providers. Competition from third parties, as well as an airline's ability to service its own fleet within a market, can make it challenging for an airport to offer ground handling services. Most typically, airport sponsors will provide ground handling to fill a service gap. Sponsors should consider whether to offer these services at cost, as an air service incentive or as a revenue-producing enterprise.

8.7.7 Lessons Learned

In the United States, airport-provided ground handling services are carried out mostly at small and non-hub airports and have proven to be effective under the following circumstances:

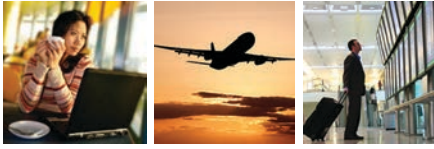
- When the private sector is not providing ground handling services at smaller airports, the airport must be prepared to provide this service or it will lose activity.
- When engaging in private-sector activities like ground handling, an airport sponsor must use private-sector rules that include cross-utilizing employees or part-time employees, paying market wages with little or no benefits, and maintaining the ability to hire and fire quickly based on need and performance.
- When providing ground handling services, an airport should have an operations head with experience providing the airlines with ground handling services.

The provision of ground handling services can benefit an airport in three ways: (1) by accommodating airline activity that would otherwise go elsewhere; (2) by providing air service development incentives (e.g., by offering ground handling services at less than market rates); or (3) by providing ground handling services at a profit to the airport.

Airports that offer ground handling services retain control over the level of service provided to the airlines, passengers, and others. Ground handling services also facilitate increased opportunities to cross-utilize staff (i.e., in administration, maintenance, operations, and support services). For instance, during the summer, ground handling services' employees could assist with maintenance projects, and in the winter, provide deicing services.

8.7.8 Conclusions

Springfield-Branson National Airport provides an excellent example of an airport that has effectively engaged in the provision of ground handling to airlines that serve SGF. This enterprise has fostered an environment whereby multiple airlines serve this destination, resulting in increased direct and indirect revenues to the airport sponsor.



Appendix A

Annotated Bibliography

A.1 ON-AIRPORT REVENUE SOURCES AND TECHNIQUES

“AAAE Panel Considers New Revenue Strategies,” *Aviation News*, May 21, 2010

During AAAE’s Annual Conference and Exposition in Dallas/Fort Worth, Texas, industry officials discussed the importance of the nation’s airports developing alternative revenue sources. Many airports may need to consider business approaches, especially for terminal development, that rely on market demand as opposed to individual airline support and create partnerships without dependency. One industry official suggested that airports need to be more creative and take risks, such as accepting display of corporate icons, implementing business partnerships, adding services like pet hotels, and accepting advertising on jet bridges.

“Aéroports de Paris,” *Hoovers Company Records*, July 2010

Aéroports de Paris, or ADP (Paris Airports), is the airport authority that owns and manages the fourteen civil airports and airfields in the Île-de-France (Paris) area. ADP has been adept at developing, equipping and operating airports in France. ADP also contracts to design and manage airport operations outside of France. The company has worked on more than 80 international contracts since the 1950s. FedEx’s European base is at ADP’s Charles de Gaulle Airport, which is Europe’s largest cargo airport. To increase revenues at its airport retail businesses, ADP and The Nuance Group launched a joint venture in 2008 called Duty Free Paris, which operates about 30 fashion boutiques at Charles de Gaulle and Orly airports.

“Airport Executives Get Tips on Boosting Non-Aeronautical Revenue,” *Aviation News.net*, June 10, 2008 [Online]. Available: http://www.aviationnews.net/?do=headline&news_ID=155748

The airport industry panelists advised delegates at the AAAE’s Annual Conference and Exposition in New Orleans, Louisiana to take a fresh look at parking, land development and terminal concessions while still looking at future uses of new technology to increase non-aeronautical sources of revenue.

“Airports Feed Travelers’ Need for Power Outlet,” *Airports*, May 1, 2007, p. 3

Airports across the country use a variety of models to offer power outlets to travelers trying to charge electronic equipment, including cell phones, laptop computers and MP3 players. Hartsfield-Jackson Atlanta International Airport indicated that they were exploring the possibility of adding sponsored-power stations, but that the decision not to charge for the power would remain the same.

Akomolafe, B., “Experts Canvass Alternative Revenue Sources for FAAN,” *Compass Newspaper*, Apr. 12, 2009

Aviation experts believe that the Federal Airports Authority of Nigeria (FAAN) should focus on non-aeronautical revenue. Experts believe that Nigeria has failed to put in place an efficient way of generating revenue from parking, concession fees and other related sources. Nigeria’s revenue collection system is full of human interference that allows loss of huge income to the industry. Experts agree that the system presently used by Nigeria to capture its revenue from non-aeronautical sources is crude and ripe for sabotage by retail businesses that must pay a percentage of sales/revenue. FAAN could implement Point of Sales Terminals (POS) and a percentage of the concession fee will go directly into FAAN’s account. POS could also be used to obtain accurate statistics on the airports.

“Boingo Extends Sponsored Wi-Fi to Airports via New Marketing Partnership,” *Wireless News*, Nov. 13, 2009

Boingo Wireless, an operator of Wi-Fi networks in airports, announced that recent Wi-Fi access sampling campaigns have generated up to 35% increases in revenue at select airports, while delivering click-through rates of up to 39% for sponsors.¹

Compart, A., “Privately Run U.S. Airport Starts its Own Airline Service,” *Aviation Daily*, Feb. 25, 2010, p. 1

Privately operated Branson Airport and its affiliated travel agency are getting into the airline business by offering scheduled charter service. Ticket prices are determined in consultation with airports at the other end of the routes. The airport and the travel agency currently offer service between Branson and Austin, Texas; Des Moines, Iowa; Houston, Texas; Shreveport, Louisiana; and Terre Haute, Indiana. The airport and travel agency are looking to add three or four more cities by the end of the year.

CPCS, First Class Partnerships, Harral Winner Thompson Sharp Klein, Inc., Portscape Inc., Thompson Galenson and Associates, LLC, *Alternative Financing Approaches for Passenger and Freight Rail Projects*, Draft Working Paper 1: Global Scan and Assessment of Established Financing Models, NCRRP

¹ Click-through rates measure the ratio of clicks to impressions of online marketing campaigns.

Project 07-01, Transportation Research Board of the National Academies, Washington DC, August 2013.

This research project is due for completion in February, 2015. The objective of this research is to identify alternative methods for financing passenger and freight rail project development.

Dallas/Fort Worth International Airport. *Non-Aeronautical Revenue Through Airport Services*. Dallas, Maximizing Non-Aeronautical Revenue through Airport Services Conference, IPQC, August, 2009

This presentation provides an overview of the Dallas/Fort Worth International Airport (DFW) concession program and non-aeronautical revenue activities. On-airport property includes headquarters for 22 Fortune 500 companies. Other commercial developments include a pet hotel and resort, an additional hotel, as well as mixed office and retail space. DFW has also signed with the Chesapeake Energy Corporation to drill for natural gas, gaining 25% of the royalties on all gas produced.

DFS. *Maximizing Non-Aeronautical Revenue*. ACI Asia-Pacific Small Airports Seminar, DFS, Oct. 2008

To maximize revenues, DFS² created an approach aimed at creating partnerships based on complementary strengths and building synergies by focusing on core businesses. The presentation focuses on bringing luxury brands into airports to create a unique shopping experience for the customer. By stationing these boutiques, DFS is hoping to engage and attract consumers with quality guarantee and premium customer service.

“DFW Uses the Internet to Sell Surplus Merchandise,” *Airports*, Jan. 16, 2007, p. 2

Dallas/Fort Worth International Airport (DFW) holds on-line auctions to sell old and unused items. Items include plumbing and utility equipment, building materials, office supplies, electronics, cell phones and furniture. The 2006 auction netted the airport \$500,000. DFW hopes to raise more than \$3,000,000 through this on-line auction.

Ehmer, H. and J. Parappallil, “Potential of Non-Aeronautical Revenues for Airport Dusseldorf International,” *International University of Applied Sciences*, Mar. 23, 2007

The study examines the potential and scope of non-aviation revenue for Dusseldorf International Airport. It evaluates the performance of non-aviation facilities at the airport by comparing the results to that of similar European airports. The study concludes that the airport’s non-aviation entity is underperforming and seeks to find the reasons behind it and offer some practical suggestions for improvements.

²DFS is the German Air Navigation Service (Deutsche Flugsicherung).

Eaton, G. Strategies for Enhancing Success in Increasing Non-Aeronautical Revenues. ACI-NA Airport Board Members & Commissioners Annual Conference; Chicago, April 27, 2009

In this Ricondo & Associates, Inc., presentation there are several principles for increasing revenues, including: (a) updating outdated agreements and rates, (b) improving customer service, (c) capitalizing on intermodal facilities, (d) considering privatizations, and (e) going green. Mr. Garfield Eaton presents the pros and cons of privatization and renewable energy options, such as reduction of carbon emissions to improve public opinion, use of solar and wind power, and geo-thermal siding to reduce operating costs.

Hazel, R., O. Fainsilber, N. Herrmann and S. Sala. Innovative Finance and Alternative Sources of Revenue for Airports. Oliver Wyman, Inc. Retrieved August 2010

Oliver Wyman prepared a report that covers a number of issues that arise for airports when air demand is down and revenue from airlines is more volatile and at risk. In addition to perspective on current conditions, there is interesting discussion about the business model used in Europe to diversify and increase airport revenue.

“Hong Kong to Open Metals Depository for Secure Storage,” *Airports*, Jan. 23, 2007, p. 3

The article discusses a precious metals depository that was scheduled to open at Hong Kong Airport by the end of 2007. According to the article, the depository will provide a central, secure storage facility for traders, institutional investors, gold producers and refineries, and provide service as a physical settlement platform for trades made on the Chinese Gold and Silver Exchange Society and other Asian markets. As a result, the airport authority will generate revenue through rentals of secure storage space and the depository, which will have a total of up to 300 square meters.

Horwitz-Bennett, B., “Airport Cities; Energy Conservation, Sustainability in Performance-Based Design are Key Issues for M/E/P Designers on Airport Projects – And Yes, Airport Security as Well,” *Consulting-Specifying Engineer*, Mar. 1, 2007, p. 28

The reauthorization of the FAA’s Airport Improvement Program has been tied up in Congress for several years, so airports have developed interest in a new business model with some alternative forms of revenue. The “airport city” is a concept with retail and restaurant franchises, hotels, offices and apartments re-creating the airport as a destination. Airport authorities are also accommodating the evolving business plans of airlines. Common use terminal equipment (CUTE) allows carriers to share data transmission and delivery systems. It is very popular, but harder to implement at major hubs because large carriers want to maintain control of their terminals. At Miami International Airport, CUTE is pushed because the facility is landlocked and unable to expand. Airports are also focusing on other factors, such as design challenges, security and saving energy.

“Indian Airports: Catching Up with the Times,” *Business and Industry*, Nov. 2009, p. 14

The article discusses the financial state of the Indian Aviation Industry, and the differences between financing improvements at privately owned airports, publicly owned airports and airports managed through public-private partnerships in India.

“Indy Makes Deal with Chase Bank for Flight Info Display Screens,” *Airports*, June 6, 2006, p. 21

Indianapolis International Airport entered into a one year flight information display screen sponsorship deal with Chase Bank. The sponsorship let the airport increase its non-aeronautical revenue. Chase is also sponsoring power outlets throughout the airport.

Jacobs Consultancy. *ACRP Report 24: Guidebook for Evaluating Airport Strategies and Supporting Technologies*. Transportation Research Board of the National Academies, Washington, DC, 2009

ACRP Report 24 presents current and potential parking programs that can be implemented at airports in the United States. The report focuses on specialized needs for public parking in airports and improvements in customer service. The second part of the report explores new strategies and technologies used to increase efficiency. The third part evaluates the costs, benefits, and implementation of various parking strategies and technologies.

MacGowan, J. *Revenue Growth at Dublin Airport*. Dublin Airport Authority (DAA), Dublin, April 2008

This presentation provides interesting comparisons of aeronautical versus commercial revenues at some of the major European airports. DAA has had low aviation revenues in the past and has embarked on a multi-faceted program to improve traffic, passenger experience and passenger-dependent revenues. DAA upgraded concessions and introduced pre-book parking packages, better restaurants and shopping deals. Dublin has also developed a pre/post airport SMS (short message service) message update on flight conditions and an intermodal ticket system so that passengers can purchase train tickets to destination/connecting cities.

Martel, F., “External Factors and Their Impact on Non-Aeronautical Revenue,” *Journal of Airport Management*, Vol. 3, July-Sept. 2009, pp. 337-344

In recent years, non-aeronautical revenue has played an increasing role in airports’ total revenue. The paper examines the named factors underlying the generation of non-aeronautical revenue at airports. Two significant external factors -- the current credit crisis and worldwide economic recession, and the recent fluctuations in the price of oil--are analyzed with respect to their potential impact on airlines, passenger volumes and the generation of non-aeronautical revenue for airports. The paper concludes that these external factors affect airports and non-aeronautical revenue and, to a certain extent, airports can take action to mitigate this impact.

Mohn, P. *Understanding the Passenger’s Mind-Set at Airports for Increased Commercial Value. Maximizing Non-Aeronautical Revenues Conference, IPQC, August, 2009, M1nd-Set, Switzerland.*

In order to maximize commercial and airport consumer spending, M1nd-Set examined the psychological stages of passengers at airports. Mohn identified four stages: Airport Arrival, Check In, Security Checks, and Gate Location as primary areas where stress occurs. As each barrier is passed, there is a reduction in stress. The article identifies key traits of travelers, as well as general and specific customer service expectations used to determine buyer behavior.

Moses, N., “Aviation: The Future of Airports . . .,” *Business World*, July 2010

This article discusses the viability of India’s airports through real estate projects.

“National Magazine Hosts Airport Industry Executives in Houston,” *Houston Airport System*, Mar. 16, 2010

In this article, industry leaders discuss trends in non-aeronautical revenue. The Houston Airport System (HAS) has been innovative in its alternate revenue source approaches. Its innovative approaches include a center designed to handle fresh cargo imports (Fresh Air Cargo 1 AH Center), which translates into fresher flowers, fruits and vegetables and seafood. HAS also incorporates a mixed-use development design with possible opportunities for a gas station, convenience store, restaurants, shops, banks, hotel, and cell phone lot with airline information monitors.

“Narita Airport Authority Rises to the Challenge of Travel Retail,” *The Moody Report*, Jan. 2005, pp. 34-38

The article discusses Narita Airport Authority’s joint ventures with NAA Retailing Corporation (“NAAR”) to boost commercial revenues and retail sales. Narita Airport Authority also has a joint venture with ADT that will take over the general duty free stores in Terminal 2 for the brand boutiques. The third joint venture is with JAL/DFS that will open new stores in the completed Terminal 1 south wing. This joint venture will run a duty free shop and brand boutiques.

“Narita Unveils New High-End Shopping Mall in Terminal 2,” *Airports*, Apr. 17, 2008, p. 3

Japan’s Narita International Airport opens Narita 5th Avenue. The mall takes up 5,000 square meters, includes 16 new shops such as Burberry, Bvlgari, Cartier, Coach, Gucci, Hermes and Tiffany & Co.

“Non-Aeronautical Revenue,” *Aviation Insight*, Winter 2007

The issue discusses various strategies implemented by industry officials with respect to non-aeronautical revenue.

O'Malley, C., "Airport Ponders Radical Ideas to Boost Revenue," *IBJ.com*, Mar. 27, 2010 [Online]. Available at: <http://www.ijb.com/article/print?articleId=18928>

The Indianapolis Airport Authority is considering numerous ways to maximize revenue, including making the airport a community destination. The airport has hosted numerous small concerts, and is considering using its garage roof for car shows, swap meets, and seasonal festivals to create a venue of entertainment that might provide shopping as a by-product. The airport is also considering providing its expertise to other airports.

"One Bag Rules Severely Impacting Retail Revenue," *Airport Commercial and Retailing*, July 2010

The article discusses the impact that the one bag rule has on non-aeronautical revenues with respect to retail. Some airports affected by this rule have seen a 40% drop in retail revenues.

Ott, J., "Eastern U.S. Airports to Huddle on Impact of Oil and Gas Drilling," *Aviation Daily*, May 17, 2010, p. 6

A drilling conference will be scheduled to discuss exploration and drilling at airports. The drilling conference agenda is being developed around topics such as compliance with FAA and environmental regulations, retaining federal grant assurances, negotiations with oil and gas companies, and how airports can take advantage of the revenue potential.

Ott, J., "Airports Take to Drilling, See a Future in Marcellus Shale," *Aviation Daily*, May 10, 2010, p. 2

Land-rich airports that sit atop oil and natural gas deposits in the eastern U.S. are exploring deals with companies to tap into these natural resources. Several Pennsylvania airports are actively involved in drilling, and the deep-seated reservoir called the Marcellus Shale is offering new opportunities. Pittsburgh International Airport will issue a request for proposals to explore drilling into the Marcellus Shale. In addition, the Arnold Palmer Regional Airport in Latrobe, PA has arranged with a firm to undertake shale gas exploration and drilling. The Bradford Regional Airport in Pennsylvania is the site of 32 oil and gas wells. Oil and gas drilling are good revenue streams with many possibilities for airport revenue.

Ott, J., "Denver Airport Buys Petro-Canada Oil and Gas Wells at DIA," *Aviation Daily*, Mar. 8, 2010, p. 4

Denver International Airport has acquired 27 oil and natural gas wells on its 34 acres from Petro-Canadian Resources. The airport owns the mineral rights on all of its acres, but it had leased the 27,000 acres to Petro-Canadian for exploration. The wells are expected to yield \$3.5 million in additional annual revenue for the airport.

Ott, J., “Google Offering Free Wi-Fi at 47 Airports during Holidays,” *Airports*, Nov. 24, 2009, p. 1

Google’s free Wi-Fi service offered to users at these 47 airports serves as an experiment. Through the free period, Google will be surveying users to determine trends and acquaint them with the search engine’s considerable product offerings. A key stumbling block for airports is that charges for Wi-Fi service have become a source of non-aeronautical revenues, useful funds as the poor economy drags down traffic and sales at airport shops.

Ott, J., “Airports Eye Concessions as Hopes Rise for Big Turnaround,” *Airports*, Nov. 17, 2009, p. 1

The article discusses non-aeronautical revenue largely from concessions. The article states that airport offices were optimistic that passenger traffic would rebound by 2011, which would increase volume of travelers and raise non-aeronautical revenues from concessions.

Ott, J., “Airport Examines Pros, Cons of Managing Ground Handling,” *Airports*, Sept. 29, 2009, p. 1

The article discusses ground handling units at airports and the potential to become new revenue sources for airports. Airports are finding that by offering the service to airlines, it becomes an incentive to build new services and a means to attract other new airline clients.

Ott, J., “Rising Costs, Debt Load Pose Huge Challenges for Miami-Dade,” *Airports*, July 7, 2009, p. 1

The article discusses steps to be taken by Miami-Dade Airport to raise funds from traditional and non-aeronautical revenue sources such as parking and concessions, cargo warehouse projects, private development, and public/private partnership investment programs.

Perrett, B., “Singapore Airport Terminal Services Q4 Profit Up 10.2%,” *Aviation Daily*, May 7, 2010, p. 7

Singapore Airport Terminal Services’ strong performance was driven mainly by the full consolidation of its wholly owned subsidiary, Singapore Food Industries, which contributed revenue of \$165.1 million. This is in contrast to Singapore Airport Terminal Services’ aviation revenue, which comes from ground-handling services it provides at Shanghai and other airports in the region, which contributed \$218.7 million.

Pletz, J., “Attention O’Hare Shoppers: Looking Beyond Food and Drink Kiosks, Airport Aims to Tap Fast Growing Revenue Stream with Retail Expansion,” *Crain’s Chicago Business*, Nov. 19, 2007, p. 2

O’Hare International Airport plans to expand its retail space by 13% to include bi-name apparel brands (like Brooks Brothers, Nike and Nine West), spa services, and business service centers catering to corporate clients. O’Hare’s non-airline revenue has risen about 10% annually in recent years. O’Hare is also looking for bigger cuts from its existing restaurants and shops by increasing original rents from 2% - 25% to 35% - 40% of gross sales.

“Power Port Kiosks Offer Power, Computer Access at Airports,” *Airports*, Jan. 9, 2007, p. 3

PowerPort, a Berea, California-based company, has partnered with several airports across the country (LaGuardia, Minneapolis-Saint Paul International, Lambert-St. Louis International, San Francisco International, San Antonio International and Austin-Bergstrom International), to use kiosks to provide a full range of internet services, charging of electronic equipment and rental of laptop computers. PowerPort splits the money generated from kiosk use under a revenue-sharing program based on airport’s volume and site location.

Sanjeevi, S. *Airport Airline Partnership, Bengaluru International Airport, Maximizing Non-Aeronautical Revenue Conference, Aug. 26, 2009.*

This presentation examines the travel patterns and consumption of various groups of passengers using India’s airports. A number of recommendations are presented about how to increase passenger spending and attract non-flying customers to the airport for shopping.

“SapientNitro and SH&E Launch Multi-channel Airport Platform,” *Business and Industry*, May 11, 2010

SapientNitro, part of Sapient, and SH&E, an aviation consulting firm that is a subsidiary of ICF International, launches a new joint venture: Ionos, a multi-channel communications and marketing platform that blends airport’s real-time travel information with precisely targeted marketing messages for travelers. Ionos integrates into the airport’s existing technical architecture and has an advertising model that allows airports to offer all their marketers a free basic advertising program, in addition to targeted paid advertising. The platforms debuted at Denver International Airport, featuring a website and a corresponding iPhone application called goHow Airports, available free at the iTunes store. Through its different channels, Ionos reinforces airport branding, drives traveler satisfaction and increases revenue per passenger.

Taylor, M. and L. Snell, “Innovative School Facility Partnerships: Downtown, Airport, and Retail Space,” *Public Interest Institute*, Aug. 2001

This policy study discusses innovative ways school districts are partnering with private businesses, airports and retail shopping malls to provide space for classroom facilities. These facility models can be beneficial to the districts, parents, and children and they should be seen as a viable alternative to traditional means of funding school construction.

Thompson, T., “Non-Aeronautical Revenues – Short-Term Opportunities,” *Airport Council International-North America, Economics and Finance Conference, Jacobs Consultancy, Apr. 7, 2009*

The presentation focuses on the importance of revenue diversification in small, medium and large hub airports. The increase in non-aeronautical revenue can enhance the ability of airports to pursue capital programs. Short-term non-aeronautical revenue ideas include identifying opportunities for enhanced

lease revenues, pursuing non-traditional real estate development, naming rights for airports or terminals and outdoor advertising.

Richard, J., “Soft Drinks & Coffee Carry Experiential Marketing into Airport Industry,” *Airport Improvement Magazine*, Jan.-Feb. 2009

Cleveland Hopkins International Airport signs a five-year agreement valued at \$2 million dollars granting Pepsi exclusive pouring rights throughout the terminals. Boston Logan International Airport and Dunkin’ Donuts implemented an experiential campaign to create awareness of the company’s special blend coffee through non-traditional marketing that included quarterly sampling programs and a 7-foot tall brand icon of the Dunkin’ Donuts brand’s styrofoam coffee cup located in two high-traffic areas.

“Wayne County Inks Pouring Rights Deal with Pepsi,” *Aviation Daily*, July 31, 2009, p. 3

Wayne County Airport Authority sold pouring rights to PMG Michigan (Pepsi) for Detroit Metro Airport what will bring in an estimated \$1.4 million a year and as much as \$9.8 million over the seven year contract.

Unnikrishnan, M., “Revenues Revisited,” *Aviation Week and Space Technology*, Mar. 23, 2009, p. 42

U.S. airports are more focused on non-aeronautical revenue as collapsing demand for air travel increases. Columbia Regional Airport Authority (CRAA) is shifting its focus from landing fees, parking and concessions to its number one asset, land. Oakland International Airport saw a 21.5% decline in air traffic in 2008 and is now focusing on corporate and general aviation, as well as cargo. A proposed venture to build a pet hotel on Oakland International land fell through, but Airship Ventures, which offers zeppelin tours in the Bay Area and Napa Valley, uses the airport as a port of call.

Wilson, B., “ACI: Airports, Partners Should Join to Improve Revenue Efforts,” *Aviation Daily*, Sept. 25, 2009, p. 6

This article discusses the importance of airports expanding revenue from commercial activities. Airport business managers need to diversify wisely and build up robust business models that can weather difficult economic times. Airports’ increasingly entrepreneurial approaches and close collaborations with business partners support a stable business model that is good for the airport community.

Wilson, B., “Airports Use Varied Methods to Ensure Balanced Budgets,” *Airports*, Dec. 2, 2008, p. 3

Airports are taking different measures to ward off budget pressures caused by global economic crisis and U.S. airlines’ domestic capacity cuts. Philadelphia International Airport’s budget actions include a limited hiring freeze, an overtime cap and reduced contractual services. Jacksonville International Airport is deferring capital projects and consolidating positions, which resulted in some layoffs.

Wilson, B., “Double Take Bag Carousel Ads Unveiled at Kansas City Airport,” *Airport*, Nov. 18, 2008, p. 2

DoubleTake Marketing partnered with Clear Channel Interspace Airports to install a large banner ad on the moving parts of the baggage carousel at Kansas City International Airport where travelers watch ads as they wait for their baggage. This form of advertising is ideal for technology products, as well as automobiles and entertainment. An Arbitron study showed that advertisers can increase their exposure to upscale Americans via airport advertising. The system is also in place at Dallas/Fort Worth International Airport (see below).

Wilson, B., “DFW Becomes First to Test New Bag Carousel Ad System,” *Airports*, July 8, 2008, p. 3

Dallas/Fort Worth International Airport became the first airport to introduce baggage carousel advertising developed by DoubleTake Marketing and ADspressive Graphic. The system allows companies to put a large banner ad on the moving part of the baggage carousel, gaining access to thousands of passengers as they wait for their baggage. Automobiles, restaurants, local entertainment (such as musicals, plays and movies), and technology products are well suited for this medium.

Yu, Roger. (2006, September 24) *Airports Make Hay from Their Open Land. USA Today*. Retrieved from www.usatoday.com/travel/flights/2006-09-24-airport-revenue-usat_x.htm

This article outlines entrepreneurial efforts by several airports to develop non-aeronautical revenues. Specifically mentioned are: Houston Bush International and Denver International who have rented out excess land to farmers. Dallas/Fort Worth International and Denver International are developing natural gas fields. Other airports discussed are: Kansas City International (office building acquisition), Miami’s Opa-locka West (limestone mining), Jacksonville International Airport Authority (multi-use development) and El Paso International (golf course). The City of Houston formed an affiliate company, Houston Airport System (HAS) Development, to market the airport’s services to foreign airports.

Venturini, Alceste. *Challenges and Opportunities in Building Non-Aeronautical Revenue*. Jacobs Consultancy, Salvador-Bahia, Nov. 2009.

This report analyzes the sources of airport revenue and takes an in-depth look at concessions, parking and passenger planning. The report also examines how another rise in the price of oil could translate into further reductions in travel demand, based on typical price elasticity.

A.2 OFF-AIRPORT REVENUE SOURCES AND TECHNIQUES

1. Adeel, L., D. Levinson, Z. (Jerry) Zhao, M. Iacono, S. Aultman, K. Das, J. Junge, K. Larson, and M. Scharenbroich, *Value Capture for Transportation Finance: Technical Research Report*, Center for Transportation Studies University of Minnesota, June 2009

This study details the relationship between transportation and land values. It describes what benefits might accrue as a result of a transportation investment, and a number of options for capturing this benefit for the purpose of funding a transportation improvement. Major financing techniques associated with value capture explored in the document include land value taxes, tax increment financing (TIF), special assessment districts, transportation utility fees (e.g., taxing based on use of a system), development impact fees, joint development and air rights development. The proposed policies are evaluated in terms of their suitability for implementation locally, based on the criteria of economic efficiency, social equity, adequacy as a revenue source, and political and administrative feasibility. This document provides a good overview of these strategies. Examples of how each technique has been used for transit and roadway infrastructure are given including:

- Land Value Taxation – Pennsylvania, Alabama, Delaware, Australia, New Zealand, Canada
- TIF – Details for Illinois and Oregon, and a table describing TIF in 49 states
- Special Assessment Districts – Transit-related districts in Los Angeles, Miami, Tampa, Washington, DC, Atlanta, Cleveland, Columbus, and Minneapolis; highways in Montana
- Joint Development – Hong Kong, Taiwan, Tokyo, Thailand, Washington, DC, New York City, Portland, Miami-Dade, and Philadelphia
- Impact Fees and Negotiated Exactions – Texas, Georgia, Idaho, Montana, North Carolina, Tennessee, Kansas, Florida, Arizona, Oregon, Utah and Nevada
- Transportation Utility Fees – Colorado, Oregon, Idaho, Texas, Washington, Wisconsin
- Air Rights Development – Transit examples include WMATA, MARTA, MBTA, Los Angeles Metro. Highway examples include Boston, Duluth, Seattle and New York.

The study focuses on how each technique might be implemented in Minnesota and includes a comprehensive bibliography for each tool.

2. GVA Grimley, *Developing Methodology to Capture Land Value Uplift Around Transport Facilities*, for the Scottish Executive, 2004 <http://www.scotland.gov.uk/Publications/2004/11/20385/48346>

The study evaluates strategies for capturing land value increases around transportation facilities. Eight strategies for capturing revenue from the increases in property values are evaluated: business rate levy (applied locally to businesses, not property owners), local authority business growth incentives (similar to TIFs), business improvement districts, land value taxation (focuses on land value rather than building value), green field development tax (one-time tax on the sale or granting of planning permission for a green fields site), freehold charge (one-time charge on increase in property values in a specified area), planning gain/tariff (levy on new development in a designated area similar to a special assessment district), and buy-in charge (methods that charge landowners to capitalize on infrastructure

investments, including connection charges, transit impact fees, density bonuses, and joint development/land acquisition and resale). Each method is assessed based on practicality of introducing the mechanism, transparency, acceptability to various interest groups, effectiveness in terms of policy issues, potential revenue generation, and operation costs. A detailed table summarizing the results of the assessment is provided. Results indicate that each method has plusses and minuses.

- 3. Beltline.org home page.** <http://www.beltline.org/Home/tabid/1672/Default.aspx>
Wheatley, Thomas, *Beltline a TAD Off Track but not Derailed* in <http://clatl.com/atlanta/beltline-a-tad-off-track-but-not-derailed/Content?oid=1272204>

The two sources cited above discuss the Atlanta Beltline Tax Increment Financing District (TAD), which was established in 2005 to provide the local share of funding for land acquisition, multi-use trails, green space, transit, transportation improvements, and affordable workforce housing. Funds can also be used for developer costs such as brownfields cleanup, or to support development in undeveloped areas. The Beltline is a \$2.8 billion redevelopment project centered on a 22-mile rail corridor around downtown Atlanta. The project involves comprehensive land use and transportation planning to influence the development of the metropolitan area over the next 20 years. In addition to the TAD, which is expected to raise \$1.7 billion of the funding, the project will be financed through a capital campaign, additional local funding, and federal transportation funds. The original plan for the TAD involved three taxing districts: Fulton County, the City of Atlanta, and the Atlanta School District. Each agreed to freeze their share of property tax receipts over the next 20 years at 2005 values. All increases would go into a fund to pay for Beltline projects. While the TAD still stands, the second article cited above notes that a state court ruled that the school district cannot allocate funds to the TAD as per state law. Thus, the amount of funds available through the TAD has been cut roughly in half.

- 4. Hudson Yards Infrastructure Corporation,** http://www.hydc.org/downloads/pdf/mta_railyard_deal.pdf. **The Committee on New York City Affairs, *The Financing of the Hudson Yards Development Project*,** http://www.nycbar.org/Publications/record/Vol_62_2/Financing_Hudson_Yards.pdf

The Hudson Yards redevelopment area of New York City (NYC) encompasses approximately 50 city blocks on Manhattan's West Side. The project will involve the redevelopment of 360 acres of underutilized land, including the expansion of the Javits Convention Center and 28 million square feet of office space, 12,000 housing units, and hotel and retail space. The project requires the extension of the #7 subway line, open space, a garage, and other infrastructure that is estimated to cost \$3 billion. To finance 100% of the project, NYC established a new development corporation, the Hudson Yards Infrastructure Corporation, and passed legislation allowing them to issue long-term bonds to pay for the infrastructure investments, which will be repaid by Payments in Lieu of Taxes (PILOT) from new development. (The PILOT route was adopted because NYC would have had to designate the area blighted in order to establish a TIF district.) NYC also agreed to purchase from the Metropolitan Transportation Authority (MTA) a 50% interest in the Eastern Rail Yards transferable development rights, which will be sold to other developers at the Hudson Yards. The second article provides some

criticism of the funding mechanism in light of the financial downturn and the depressed development market.

Note: NYC allows transfer of development rights from a parcel where development is not wanted to a parcel where development is sought. Depending on zoning on sites near an airport, Transfer of Development Rights (TDR) could be employed, selling airport development rights to nearby properties. The usefulness of this tool would be tempered by building height restrictions near airports.

5. Rybeck, R., *Using Value Capture to Finance Infrastructure and Encourage Compact Development*, Sage Publication, 2004, <http://www.reconnectingamerica.org/>

This document discusses the relationship between land values and transportation. It then describes value capture remedies, including taxes on buildings and taxes on land values. In addition, the author describes a betterment district established in Washington, DC to help finance a new Metrorail station. The local government and the Washington Metropolitan Transit Authority (WMATA) worked together to collect evidence that property values around WMATA stations go up substantially. In this case, the City of Washington, DC and the council of the District of Columbia established a betterment district that included properties within 2000 feet of the proposed station. Properties within the district were assessed a Metro Benefit Assessment Fee to help pay for the new station.

6. http://www.transportation-finance.org/pdf/funding_financing/funding/local_funding/Airport_Max_Case_Study.pdf

Airport MAX is a 5.5 mile extension of Portland's light rail system from downtown to the airport. The extension was built by a partnership between Bechtel, the Port of Portland, the City of Portland and TriMet. The project had been planned for several years, but financing was not available. The line would run through 458 acres of land controlled by the Port of Portland and planned for a mixed-use business park to be called the Portland International Center. Bechtel Corporation understood the value of this land and the value of the light rail service to its development. The company approached all the key players about assisting with the financing and building of the light rail extension in exchange for the sole right to design and build the extension, and the right to develop 120 acres of the Portland International Center adjacent to the light rail station. The article describes the roles played by each of the key agencies and Bechtel, and the resulting development. This is a key example of a public-private partnership in building a transit line.

7. E-470 Public Highway Authority, *2009 Fact File – Facts about E-470*, updated January 2009, <http://www.e-470.com/Default.aspx?pn=HEF>

E-470 (short for Extension 470) is a private, 47-mile long toll road that forms an outer beltway around the eastern side of Denver from Colorado C-470/Interstate 25 in the south to Interstate 25/Northwest Parkway in the north. The road passes through Douglas, Arapahoe, Adams, Broomfield and a small sliver of Denver Counties. It also traverses the municipalities of Parker, Centennial, Aurora, Commerce City, Brighton, Thornton and Glendale. The freeway directly serves Denver International Airport and

intersects with Interstate 70 in Aurora. Because no state or federal funds were available in the late 1980s to build the road, several communities along the proposed route joined together to create the E-470 Authority (the Authority). At this time, no state statute existed to grant the Authority the power or revenue sources needed to build the road. Through intensive lobbying, the Authority was able to secure legislation that would allow it to plan, design, finance, construct and operate the facility. In addition to toll collection, the legislation allows the Authority to establish and collect highway expansion fees from developers of property within 1-1/2 mile of either side of the highway, with higher fees imposed the closer a property is to the highway or highway interchange. The premise of the fee is that these developments will utilize the highway more heavily than other developments. The Authority may, with voter approval, levy vehicle registration fees and create special districts. A \$10 vehicle registration fee was voted in by the three communities in the corridor in 1988 to help fund its development.

- 8. *New York Avenue-Florida Avenue_Galludet University Metro Station: A Case Study.* Retrieved from the World Wide Web July 23, 2010. http://transportation-finance.org/pdf/funding_financing/funding/local_funding/New_York_Avenue_Case_Study.pdf**

This article describes the public-private partnership between local land owners, the District of Columbia, the Federal Government, and WMATA to build a new transit station to serve a redevelopment area. The project was expected to cost \$75 million, to be paid in equal shares by the District of Columbia, the Federal Government, and local property owners. The property owners' share came from a special assessment district. The District of Columbia issued bonds which are now being paid back through the special assessment. The special assessment applied to all non-residential properties within the district. The amount of the assessment was calculated on the current assessed value of the property at the time the district was established, and was calculated to ensure that the revenues generated from the assessment would be sufficient to pay off the bonds.

- 9. *Oregon Department of Revenue, Transit Payroll Taxes for Employers at* <http://egov.oregon.gov/DOR/BUS/IC-211-503.shtml>
<http://www.tax.state.ny.us/mctmt/default.htm>
http://www.transportation-finance.org/funding_financing/funding/local_funding/income_payroll_employer_taxes.aspx**

Over 20 states allow local income or payroll taxes for general revenue purposes. A few impose such tax revenues be specified for transportation-related purposes. Local income taxes are imposed on the residents of an area, while payroll taxes are imposed on the total salaries paid by a business and are, effectively, a tax on the place of employment. For transportation purposes, this can be thought of as a commuter tax. The Oregon Department of Transportation administers payroll tax programs for both the Tri-County Metropolitan Transportation District (Tri-Met) and the Lane County Mass Transit District. The tax is assessed at 2/3 of 1% on the gross payroll for services performed in the service areas for each of the two transit agencies. The State of New York Department of Taxation and Finance imposes a transportation mobility tax on certain employers and self-employed individuals operating within the metropolitan commuter transportation district. Those revenues fund the Metropolitan Transportation Authority.

10. Johnson, Jaye Pershing, *Uses of Fees or Alternatives to Fund Transit*, in Legal Research Digest 28, December 2008. <http://www.trb.org/Main/Public/Blurbs/160510.aspx>

This Transit Cooperative Research Program (TCRP) document defines impact fees as “a type of development exaction that is:

- In the form of a predetermined money payment;
- Assessed as a condition to the issuance of a building permit, an occupancy permit, or a plat approval;³
- Pursuant to local government powers to regulate new growth and development and provide for adequate public facilities and services;
- Levied to fund large-scale, off-site, public facilities and services necessary to serve new development;
- In an amount that is proportionate to the need for the public facility generated by a new development.”

Fees are differentiated from taxes in that fees are for a cost imposed for the development for special services (e.g., transit service or road access) directly attributable to or required by the new development upon which the fees are assessed. “Impact fees cannot generally be used for the operation, maintenance, repair, alteration or replacement of capital facilities.” Impact fees for transit have been enacted in Florida and California, but are rarely used elsewhere. One issue is that the jurisdiction that imposes impact fees is usually a municipality or county, while transit districts build and operate transit. In addition, transit capital costs are relatively well-subsidized by federal funds. Transit agencies need funds for operating and maintenance, costs that cannot be funded through impact fees. Experiences with impact fees in Oregon, Washington, California, and Florida are discussed, and the enabling legislation for impact fees in several other localities is documented. The document also discusses TIFs and Special Taxing Districts, noting that TIFs have been used to fund transit in IL, PA, GA and OR, while special taxing districts have been used in Chicago, Pennsylvania, Portland and Georgia. Impact fees in Washington State are described in detail at www.mrsc.org/subjects/Planning/transimpactfees.aspx.

Note: Impact fees would be difficult to impose on new development around an airport, as the airport is creating the development, as opposed to the development creating the need for the airport. Could there be a different kind of impact fee, not based on a geographic area, but based on a business type? For example, in Massachusetts, industries such as biotech are attracted to the region because of the research institutes, but utilize airports extensively and often lead to the need for expansion. Could an industry type be targeted? What would this mean for the ability to attract these businesses to a state? Could a special assessment district also be structured to target an industry group?

³ A plat map shows the locations of lots for sale.

- 11. Hough, J., A. G. Smadi, and J. D. Bitzan, *Innovative Financing Methods for Local Roads in the Midwest and Mountain-Plains States*, July 1997, <http://www.mountain-plains.org/pubs/pdf/MPC97-74.pdf>**

This report discusses thirteen potential revenue sources/strategies for financing rural roads in the Midwest. The strategies are divided into traditional (property tax, fuel tax, vehicle registration, mill levy), innovative (sales tax, special ownership tax, wheel tax, and rural improvement/special assessment districts), and potential sources (severance tax, bond, cost participation, traffic violations, and telephone tax). The text describes advantages and disadvantages of each, and identifies jurisdictions where the strategies are employed.

Note: Sales taxes have been used to finance several transit extensions:

Lynx Blue Line – Charlotte <http://transportation-finance.org/projects/cats.aspx>;

BART Airport Extension http://transportationfinance.org/projects/bart_sf_airport_extension.aspx.

Also see http://www.transportationfinance.org/funding_financing/funding/local_funding_option_sales_taxes.aspx.

A variation of this approach for airports would be a statewide or countywide hotel tax. This would likely require a legislative change.

- 12. http://www.orlandoairports.net/east_airfield/public_hearing_presentation.pdf;
http://www.orlandoairports.net/east_airfield/volume1/2_purpose.pdf.**

Cost participation is a key component of the expansion of the East Airfield Development proposal for Orlando International Airport. The airport is expanding adjacent to a major development corridor. The municipality developed a master plan to identify future infrastructure needs concurrent with the planning for the airport expansion. The airport is working with the surrounding jurisdictions to put in shared infrastructure, such as roadway improvements and water treatment facilities, in order to share and save costs. This is a cost reduction strategy, rather than a revenue enhancement tool.

- 13. Beveridge & Diamond, P.C., *I-CUBED: Massachusetts Infrastructure Investment Incentive Program*, April 2008, <http://www.bdlaw.com/news-431.html>**

The Massachusetts Infrastructure Investment Incentive Program (I-Cubed) authorizes the state to authorize up to \$250 million for infrastructure investments to support new job growth and economic development in support of major new private development. “I-Cubed is a financing agreement whereby the Commonwealth of Massachusetts, the municipality and the private developer share the cost and risk associated with the construction of public infrastructure needed to support a certified economic development project. In order to be certified, the project must be approved by the municipality, the Secretary of Administration and Finance and Mass Development (<http://www.massdevelopment.com/about/industry/public-infrastructure/>) and meet the criteria set forth in the statute and regulations. The public infrastructure improvements for a certified project will be financed by bonds issued by Mass Development. During the construction of the project, the debt service on the bonds will be paid by the

private developer through municipal assessments that will reimburse the Commonwealth for the debt service. Once the commercial component of the project is occupied and generating new state tax revenue, the debt service related to that component will be paid by the Commonwealth. If there is a shortfall in the state tax revenues generated by the project, the municipality will reimburse the Commonwealth for that amount. The developer may agree to cover this shortfall, but is not required to do so.

The Commonwealth announced the first project to receive funding under I-Cubed on May 4, 2010. The Assembly on the Mystic project will redevelop a 66.5 acre industrial site in Somerville. The final project will be a mixed-use, transit-oriented development project that includes 2,100 residential units, 1.8 million square feet of office space, 1.1 million square feet of retail space, a 160-200 room hotel, and parkland. The I-Cubed funds will be used to provide roadway improvements to support a new IKEA store as well as to the MBTA station. More detail about this project can be found at:

<http://www.wickedlocal.com/somerville/news/x1406503903/Somerville-receives-10-million-from-state-for-Assembly-Square-project>.

14. Fogerty, N., N. Eaton, D. Belzer, and G. Ohland, *Capturing the Value of Transit*, prepared for the United States Department of Transportation, Federal Transit Administration, November 2008, <http://siteresources.worldbank.org/INTTRANSPORT/Resources/336291-1152714163458/2744896-1152714187091/raine-presentation.pdf>

This document provides information on a range of techniques used to help fund the capital costs of transit investments. These include:

- Assessment Districts – Los Angeles Metro, Portland Streetcar, South Lake Union Streetcar in Seattle, Dulles Rail Transit Investment District
- Tax Increment Financing (TIF) – Pennsylvania’s Transit Revitalization Investment Districts, which support transit-oriented development around transit stations and allows transit agencies to share in the value capture
- Joint Development – WMATA and BART programs at existing stations, new joint development at Cascade Station in Portland and the West Dublin/Pleasant BART station
- Development Impact Fees – San Francisco and Broward County, FL

The Broward County example is particularly interesting. In 2005, Broward County adopted a Transit-Oriented Concurrency (TOC) system, splitting the county into ten districts and preparing transit development plans for each district. TOC is an approach to assure that capital development of transit is concurrent with changes in economic development. The total cost of needed transit improvements is charged as a fee to all new developments based on a formula that estimates the expected trip generation from the development.

15. Raine, A., *Making the TOD Vision a Reality: Two US Case Studies*. Power Point presentation to The World Bank Transport Forum 2006, Washington, DC, March 28, 2006, <http://siteresources.worldbank.org/INTTRANSPORT/Resources/336291-1152714163458/2744896-1152714187091/raine-presentation.pdf>

This presentation describes the joint development program developed in support of the Tren Urbano light rail system in Puerto Rico. The government of Puerto Rico passed legislation allowing the Highway and Transportation Authority (HTA) to assemble land for joint development, dispose of property for joint development and benefit from joint development revenues. HTA and sister agencies assembled more than 100 acres in the corridor, as well as air rights. Eight sites have been developed with a mix of uses, for an estimated total investment of \$637 million, resulting in an estimated \$44.9 million in proceeds to HTA.

16. Goody Clancy et al., *Appendix F: Literature Review: Transit Oriented Development from a Land Use and Economic Development Perspective*, March 2008. <http://southcoastrail.com/documentframeset.asp?docname=https://www.commentmgr.com/Projects/1212/docs/Appendix%20F%20-%20Literature%20Review.pdf>

This document provides a comprehensive review of the literature related to transit-oriented development, including a section on financing. The financing section discusses examples of tax increment financing, or TIF (Atlanta Beltline, New York City Hudson Yards); special assessment districts (Los Angeles Metro Red Line Benefit Assessment District, WMATA); and joint development (WMATA, Tren Urbano, Portland Airport Extension, Los Angeles Red Line Stations, Atlanta MARTA stations, Albuquerque equity participation in joint development, station connection fees in Atlanta, Washington, and Seattle, and cost sharing agreements in Miami, San Diego and Washington). The Albuquerque equity partnership is a unique example in which the City became an equity partner with a developer to build a 500,000 square foot mixed-use development. The City contributed the land, built a parking structure and provided tax abatements in exchange for a return on the investment.

17. Federal Highway Administration, *2006 Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance, Chapter 13 Innovative Finance*, 2006, <http://wwwcf.fhwa.dot.gov/policy/2006cpr/chap13.htm>

This document provides details about how a variety of tools are being employed to finance transportation infrastructure improvements. Of the tools described, the most applicable is Public-Private Partnerships (P3s). P3s is a term that refers to contractual agreements between public and private partners, with more active participation by the private sector about the design, building and operation of a traditional public infrastructure project. The PPPs described include private toll roads such as the South Bay Expressway (San Diego), the Chicago Skyway, the Trans Texas Corridor, and the Indiana Toll Road. PPPs often involve the development and operation of a highway or transit facility by the private sector, with a substantial up-front payment or long-term lease payment to the public sector entity.

- 18. AASHTO Center for Excellence in Project Finance, *Katy Freeway Reconstruction*, undated, at http://www.transportation-finance.org/projects/katy_freeway.aspx; Energy Corridor District, *Energy Corridor District Mobility Brochure*, undated, at http://www.energycorridor.org/mobility/documents/ECDMobilityBroch-full-mech_web.pdf; www.legaltips.org/texas/SD/sd.004.00.003814.00.aspx**

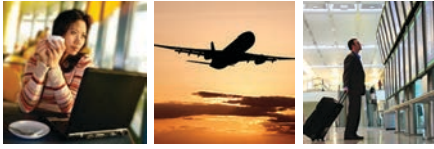
The Energy Corridor District is a special district established by the Texas legislature that incorporates a high growth business district along Interstate 10 (Katy Freeway) in Houston. Through a special assessment, funds were collected from District businesses to help fund the expansion of the Katy Freeway.

- 19. Eweing, R., *Transportation Utility Fees*, in *Government Finance Review*, June 1, 1994, <http://www.allbusiness.com/finance-insurance/465585-1.html>; City of Hillsboro, Oregon *Transportation Utility Fee*, <http://www.ci.hillsboro.or.us/TUF/Default.aspx>**

These two articles address the issue of transportation utility fees (TUF). Transportation utility fees have been imposed at the municipal level to help pay for the maintenance and operation of local roadways. The fees are based on how much traffic a particular land use generates on the local infrastructure. The first article discusses how the fees have been imposed in ten jurisdictions, including some that have been challenged in court, with both positive and negative outcomes. The article provides guidance on structuring a successful TUF. The second article provides details about a TUF imposed in Hillsboro, Oregon, which is used for local road repairs. The article describes how the TUF is calculated for each land use.

- 20. Smith, J. J. and T. A. Gihring, with T. Litman, *Financing Transit Systems Through Value Capture: An Annotated Bibliography*, Victoria Transport Policy Institute, December 30, 2009**

This document provides a comprehensive, annotated bibliography of the theory and practice of various value capture techniques for financing public transit infrastructure. The report documents several studies that attempt to quantify the impacts of transit service on property values, and shows that transit often leads to increases in values within ¼ mile of a station. Tools for value capture that are discussed in the sources listed include land rents, joint development, sale of development sites, privatization of development, higher property taxes for properties within the vicinity of transit, and special assessment districts.



Appendix B

Definitions and Abbreviations

Above the Wing Services – Generally refers to: concierge services, meeting-and-greeting for arriving passengers and crew, airport escort through customs and immigration, security arrangements for passengers, crew, and aircraft, and certain airport ramp-to-city services.

Agglomeration Economy and Economies of Scale – Benefits realized when businesses locate near each other ('agglomerating'). Simply put, as more firms related to each other or to a central point (such as an airport) cluster together, the costs of production and/or transportation may decline significantly. There may be advantages because that cluster attracts more suppliers and customers than a single business could alone, adding to the agglomeration.

AIP Apportionments – Each primary airport apportionment is based upon the number of passenger boardings at the airport. (FAA Airport Improvement Program (AIP) Handbook, Order 5100.38C.) If full funding is made available for obligation, the minimum amount apportioned to the sponsor of a primary airport is \$650,000, and the maximum is \$22,000,000, in accordance with Title 49 U.S.C., Section 47114(c)(1)(B). These funds are calculated as follows:

- \$7.80 for each of the first 50,000 passenger boardings
- \$5.20 for each of the next 50,000 passenger boardings
- \$2.60 for each of the next 400,000 passenger boardings
- \$0.65 for each of the next 500,000 passenger boardings
- \$0.50 for each passenger boarding in excess of 1 million

Air Rights Development – Air rights over a transportation facility are sold or leased to a private developer. For airports and the Federal Aviation Administration (FAA), airports will sometimes actually acquire air rights beyond the airport property to protect airspace. Air Rights have been sold to promote development around roads and highways. The sale of any air rights on an airport property would require the approval of the FAA.

Airline Hub – An airport used by one or more airlines as a transfer point for connecting passengers or cargo.

Airport City and Aerropolis – These two terms are sometimes used interchangeably. However, airport city generally refers to airport properties (inside and outside “the fence”) that host concentrated

non-aviation businesses that assume features of a city. These may include freight and manufacturing establishments, multimodal connections, and services/retail, including hotels, restaurants, entertainment, office complexes, and shopping malls. An airport city generally relies on airport users and airport tenants and their employees to be its core market, but also serve the public outside the airport. When distinguished from an airport city concept, aerotropolis refers to 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.

Airport Corridor – A major highway that directly connects an airport to a nearby urban area. These connections may facilitate development of an airport city and/or a more extended aerotropolis. Land parcels along the corridor or near interchanges (for a limited access highway) are prime opportunities for location of airport dependent businesses. The airport corridor concept may also be applied to transit.

Airport Cost Center – Defined by airport operators as a department or functional area, equipment, or person to whom direct and indirect costs are allocated.

Airport Functional Areas – Key departments or functions at an airport.

Allocated Overhead or Indirect Costs – Overheads are common costs incurred for the benefits of a number of airport cost centers. Allocation of overheads is the process of charging overhead costs to a particular department or cost center. If the overhead cost is associated with a single department or cost center, the whole amount is charged. For example, the whole amount of repair and maintenance expenses for a machine is charged or allocated to that department where the machine is located.

Automatic Vehicle Identification (AVI) is a system that identifies a vehicle as it passes through the range of its microwave or radio frequency identification (RFID) devices. Vehicles must have a transponder or tags that are registered with the AVI system.

Below The Wing Services – A variety of services including aircraft towing, baggage handling, potable water and lavatory services, ground power, air start, and air conditioning services. It can include catering and commissary services arrangements, aircraft refueling arrangements, ground transportation, cabin cleaning, and local maintenance arrangements.

BHS – Baggage Handling Service.

Brand Families – Over the last 15 years, the rental car industry has consolidated extensively. Eleven brands have consolidated into three dominant ‘brand families’ and today represent 96% of the rental car market: Enterprise Holding, Inc.: Enterprise, Alamo and National; Avis Budget Group, Inc.: Avis, Budget, ZipCar, and Payless; Hertz Global Holdings, Inc.: Hertz, Advantage, Dollar and Thrifty.

Business Improvement District – A district voluntarily established by a group of businesses that assesses a fee on each business to fund improvements within the district.

Business Rate Levy – A tax assessed to businesses to help pay for transportation investments.

Buy-In Charges/Connection Fees – Fee charged to a private landowner to allow a direct connection to a transportation infrastructure investment.

CATS – FAA Compliance Activity Tracking System used by commercial airports to report financial information to the FAA.

CNG – Compressed Natural Gas

Commissary Service - Provision of beverages, food, snacks, ice and other consumables to aircraft.

Complementary Customer Services – These services are typically available to parking customers for an additional charge. Examples include car washes and oil changes, pet kennels, dry cleaners, food and beverage concessions on-site or the capability to order.

Consolidated Rental Car Facility (CONRAC, CRCF, or RCF) – In the early 1980s, airports began to develop rental car facilities that housed all on-airport rental car companies and their associated operations including rental counters, customer service, administrative offices, ready/return parking, fueling, and maintenance facilities. CONRAC facilities can be located in garage structures or remote sites on the airport. They are typically financed with a pledge of proceeds from Customer Facility Charges.

Consortiums – With a consortium, the airport sponsor agrees to delegate responsibility for the financing, development, operation and maintenance of airport facilities, equipment and systems. The consortium in turn often contracts with third parties to perform specific duties. In practice, consortiums vary from airport to airport. Most consortiums are formed to manage shared use of equipment and fuel storage and distribution. There are a few instances where consortiums of airlines operate and maintain terminal facilities. For example, the passenger terminal at Atlanta Hartsfield International Airport (ATL) is maintained by Atlanta Airlines Terminal Corporation (AATC), a corporation formed by a consortium of airlines. Likewise, the Detroit Airlines' North Terminal Consortium, Inc. (DANTEC) is a Michigan Not-For-Profit Company originally formed by AirTran Airways, American Airlines, Frontier Airlines, Southwest Airlines, Spirit Airlines, US Airways, Continental Airlines and United Airlines. DANTEC was established for the purpose of constructing, installing, operating, and maintaining select airline equipment and systems, and for providing other operations, maintenance and support services to the airlines at the North Terminal. [<http://www.dantecdtw.com/>].

Cost Participation – Sharing of costs for investment in infrastructure such as water treatment facilities or roads that serve both a major transportation hub and private development.

Cost Recovery – The recovery of direct, indirect and capital costs. Costs that are not directly accountable to a cost object (such as a particular cost center). Indirect costs may be either fixed or variable. Indirect

costs include administration, personnel, maintenance, fire and police costs, and are also known as overhead.

Cross-Utilization – An approach to managing airport operations to maximize the efficiency of an airport’s employees and could include training an employee in multiple areas so that they can switch from one role to another depending upon where they are most needed at a given time.

Customer Facility Charge (CFC) – A CFC is a fee required by an airport sponsor (established by state law, local ordinance, or resolution) to be collected by the car rental companies from customers. CFCs collected reside in dedicated funds to pay for the cost of a CONRAC or rental car service facilities or the infrastructure that serve these facilities.

CFCs are usually established ahead of a CONRAC project and are currently in place at over 110 U.S. airports. CFCs can be used to finance, design, construct, and operate:

- Consolidated airport car rental facilities
- Common use transportation systems that move passengers between airport terminals and consolidated car rental facilities including acquisition, operation and maintenance of vehicles (for use in that system), and bus maintenance facilities
- Terminal modifications solely to accommodate and provide customer access to common use transportation systems
- Terminal roadway and curbside improvements, utilities, access roadways, and environmental remediation.

CFCs vary from \$1.50 to \$8.00 per vehicle contract day or \$2.25 to \$10.00 per transaction. The aggregate amount collected from CFCs cannot exceed the reasonable costs to finance, design, and construct facilities.

Customer Segmentation – A term used by market analysts to describe specific groups of customers. Examples of customer groups for airport parking are: (a) meeters and greeters; (b) weekday travelers; (c) weekend travelers; and (d) long-term travelers.

Development Fee – A fee charged against private developers by the county or city as a condition for granting permission to develop a specific project. The purpose of the fee is to defray the cost of expanding and extending public services to the development.

Direct Contract – Airport leases individual locations or small groups of locations directly with the concessionaire.

Duration – Parking duration refers to the time that a vehicle enters a parking facility and leaves it, usually tracked by an access control device such as a time-stamped ticket, an AVI, or credit card entry record.

Dwell Time – This is the time that vehicles remain on the airport property, usually tracked by AVI systems and used for hotel, rental car, and off-airport parking shuttles, taxis, and buses.

Enplaned Passenger – Passengers boarding an aircraft at a specific airport. Enplaned passengers also include connecting passengers that deplane one aircraft and board another aircraft to continue their journey.

Equity Participation – A situation in which an airport obtains, or has the right to obtain, an ownership interest in the enterprise being developed or operated at an airport.

FAA – Federal Aviation Administration

FBO – Fixed Base Operator

Fee Manager – Airport has an agreement with a third party to develop, market, lease and manage concessions without directly operating any. The fee manager does not invest in facilities or operate concessions. A fee manager receives compensation for services provided.

FIDS – Flight Information Display System

Financial Basis – The salient financial elements or factors of a transaction or operation.

Foreign-Trade Zone (FTZ) – A restricted-access site authorized by the Foreign-Trade Zone Board and supervised by U.S. Customs and Border Protection (CBP). Zones are located in or adjacent to a CBP port of entry and operated pursuant to public utility principles under the sponsorship of a corporation granted authority by the Board pursuant to the Foreign-Trade Zones Act. Under zone 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, in which case, the importer normally has a choice of paying duties either on the original foreign materials or the finished product. Domestic goods moved into a zone for export are considered exported upon entering the zone for purposes of excise tax rebates and drawbacks. FTZ sites and activities remain within the jurisdiction of federal, state and local governments and agencies.

Freehold Charge – A one-time charge on an increase in property values in a specified area.

Front of the House/Back of the House – Front of the house refers to operations and branding presented to the public. Back of the house is a staff only area and is used to mean the parent companies that manage a brand family. For example, Enterprise, National, and Alamo are the front of the house; Enterprise Holdings is the back of the house. In the terminal, passengers deal with the front of the house; at a CONRAC, typically it is the back of the house.

Greenfield Development Tax – A one-time tax on the sale of permitting for a green field site adjacent to a transportation facility.

Gross Receipts – Total revenue

Gross Revenues – In concession agreements with rental car companies, the definition of gross revenues is extremely important in determining the amount owed to the airport sponsor. To optimize revenue from car rental concessionaires involves tightly defining gross revenue. Gross revenue is usually

determined by the total charges on the face of a customer's contract receipt, excluding taxes, CFCs, insurance proceeds, and the wholesale transfer of salvage vehicles. The definition of gross revenues should also include add-ons such as Global Positioning System (GPS) rentals, additional driver fees, fuel sales, insurance fees, and other extra charges.

GSE Storage – Ground service equipment storage

Guidance Systems – Inventory and control systems that communicate with parkers either before they arrive at the airport, at the airport, or while in a parking facility.

Impact Fees/Exactions – A one-time charge to a developer to mitigate the impacts of a new development on a specific transportation facility.

Induced Effects – Induced effects, *for areas around an airport*, refer to business growth as a result of land use change specifically to take advantage of connectivity to airports.

Intelligent Systems – Systems that acquire and analyze information and modify operations based on prior experience. An intelligent system senses its environment. Using its experience, it selects a series of actions that result in the system achieving an objective.

Into-Plane Fueling – Pumping fuel into an aircraft.

Joint Development – A partnership between a public agency and a private developer to develop a site on publicly owned land wherein the two entities will both help pay for the costs of a development and share in the revenues generated by the development. Many airport real estate development projects are structured as joint developments.

Joint Venture – Any partnership between entities for the purpose of a specific project. A joint venture can be between two private individuals or firms and not involve a public entity.

Land Value Taxes – Land assessed at a different rate than buildings to allow for capturing the increased value that a transportation facility can create for undeveloped land.

Local Income or Payroll Tax – Taxes on income (accrue to individuals) or payroll (accrue to a business) with a specified area that benefits from a transportation investment.

Long-Term Management Contract or Lease – Airports have leased some or all of their operations to private companies. This is usually done as a long-term management contract or lease. Management companies receive a fixed fee and often there is close oversight by the airport sponsor of management contracts, including approval of operating budgets. Management contracts occur more frequently for general aviation airports or smaller commercial airports where airport sponsors are seeking to improve the operational and financial efficiency of an airport.

With long-term leases, an airport sponsor grants rights to a third party to develop and manage a property with the understanding the third party is responsible for capital improvements, management

and maintenance. Typically the third party collects rents and fees from tenants and shoulders the risk of the investment.

Master Concessionaire – Airport leases all space in a category to a single operator. A master concessionaire can operate all of the concessions in several categories (food/beverage and merchandise) or may sublease some of the locations to other operators.

Minimum Annual Guarantee (MAG) – A MAG is the minimum annual guaranteed payment submitted in a bid by a concessionaire for each agreement year during the term of the concession agreement. Today, most airport sponsors ask concessionaires to bid a MAG. In some situations, the sponsor will set the MAG.

Multimodal Connectivity – 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).

Naming Rights – The right to name a facility for a period of years. Financial terms are determined at the start of the contract "naming rights" period of time.

Net Margin – Revenues less operating expenses equals **operating margin**. Subtract debt service and amortization, equals net margin. Net margin is particularly important when evaluating the financial performance of an airport facility such as a parking garage because the capital costs of construction are factored in. If airports are looking at individual parking facilities, the allocation of administration and debt to a specific facility also is an important calculation.

$$\text{Net Margin} = \text{Parking Revenues} - \text{Operating Expenses} - (\text{Debt Service} + \text{Amortization})$$

Net Revenue—means Gross Revenue less operation and maintenance expenses, capital costs and taxes if any.

Origin and Destination Markets – Markets where passengers begin or end a trip.

Parking Access and Revenue Control Systems – This is a system that many airports or their contractors use to operate their parking facilities. These systems come in modules that include vehicle access, parking entry, payment, accounting and reporting functions.

Parking Transaction – A transaction is one use of a parking facility. The number of transactions is equivalent to the number of customers.

Participatory Leases – A lease in which an airport sponsor receives a percentage of gross revenue and participates in a share of the Net Revenue as though the airport sponsor was an equity participant.

Passenger Facility Charges (PFCs) – PFCs were first authorized by Congress in 1990 and are tied directly to local airport-related projects that (1) preserve or enhance safety, security and capacity of the national air transportation system, (2) reduce noise from an airport that is part of the system or (3) provide opportunities for enhanced competition between or among air carriers. Original legislation permitted airports to charge a PFC in \$1.00 increments up to \$3.00. The legislation changed in 2000 under the

Wendell H. Ford Aviation Investment and Reform Act for 21st Century (AIR-21), allowing airports to charge up to \$4.50 (although additional regulatory hurdles were added). There have been no adjustments to the PFC program since 2000. (Source: ACI-NA)

Payment in Lieu of Taxes (PILOT) – A payment made to local governments in exchange for elimination of property taxes on a private development project.

Percentage Rent – Concession fees paid to the airport sponsor are usually based on the greater of a minimum annual guarantee (MAG) or a percentage of the concessionaire’s gross receipts from sales where gross receipts are clearly defined in the agreement. Percentage of gross receipts is usually in the 10% to 15% range, although duty free is somewhat higher and advertising, considerably higher.

Preferential Use – Preferential or shared use contractual arrangements represents a shared control between the airport and the airline tenant; the airline tenant acknowledges that under specified circumstances, the airport sponsor can allow use of the leased facility by other airlines.

Prime Concessionaire – Airport leases packages of locations to one or two Prime Concessionaires each of which has multiple locations (more than 3) within the airport.

Privatization—Sale or lease of a publicly owned property to private corporations or other entities. In 1996, Congress established the Airport Privatization Pilot Program (APPP) that authorized the FAA to allow up to five airports to sell or lease an airport and to exempt the airport sponsor from grant assurances and federal requirements that would otherwise require the sponsor to repay federal grants, return property acquired with federal assistance and use the proceeds from the airport’s sale or lease only for airport purposes. The 2012 Reauthorization Act increased the number of participating airports from five to ten. A number of airports have considered participating in the Pilot Program. Stewart International Airport was the first commercial service airport to participate when New York’s Empire State Development Corporation awarded a 99 year lease with National Express Group (NEG) PLC. However, the airport remained privatized from March 2000 until October 2007 when the Port Authority of New York and New Jersey bought out the long-term lease from NEG and took over operations of the airport. Four other airports have active applications to participate in the program: Chicago Midway International, Gwinnett County Briscoe Field (Georgia), Luis Munoz Marin International (Puerto Rico), and Hendry County Airglades (Florida) and several airports have withdrawn or terminated applications. Airport privatization under this program offers municipalities a potential immediate cash windfall; however, the impacts of full privatization on air service or general aviation remain largely untested.

Privilege Fees – A privilege fee is charged to on-airport concessionaires and sometimes to off-airport rental car companies. For on-airport concessionaires the privilege fee is the greater of the minimum annual guarantee (MAG) or 10% of gross revenues. Also, many airport sponsors charge privilege fees to off-airport parking and rental car operators that are located within a certain radius of the airport (typically five miles). The off-airport privilege fee is usually levied monthly and the fee is usually 8% to 10% of gross revenues. Off-airport rental car companies do not pay a MAG.

Profit Sharing – An evolving trend is for airports to participate in the profit generated by a concessionaire, or other lessee on airport property. The typical structure of these arrangements is for the airport sponsor to have a standard agreement with the lessee that sets the MAG or percentage of gross receipts, whichever is higher. Once a certain level of business is attained, a profit sharing formula

is activated. This allows an airport to offer a lower basis for initial startup of commercial activity and services, and to share in profitability once the business is established.

The profit sharing arrangement can be defined in agreements in a number of ways such as a percentage (25% to 50%) of net revenues,¹ a fixed sum, or a sliding scale based upon profitability. The exact terms of profit sharing must be carefully defined in agreements especially if net revenues are the determining factor for activation of a revenue sharing formula.

Public Private Partnership (PPP) – A contractual agreement between public and private sector entities that includes active private sector participation in the design, building and operation of transportation facilities.

Quick Turnaround Facility (QTA) – Separate or as a part of a CONRAC, an airport sponsor may construct a quick turnaround facility, usually in a garage near the terminal, to provide refueling, fluid top-off, and washing services for rental car agencies that serve the airport. These services can be provided by the airport via direct contract, by individual rental car companies, or by consortiums.

RDC – Receiving and distribution center

Refresh Requirements—Renewing, renovating and improving a facility to increase its useful life.

Rents and Contingent CONRAC Rent – On-airport rental car companies typically pay the MAG or Privilege Fee *and* rent on all the facilities they use including: rental car counters, office space, storage space, and ready/return stalls. In the terminal, the rents are based on the prevailing rental rate that is paid by the airlines for similar space. For other facilities, ground rent is charged for the space occupied and set to recover all direct and indirect costs associated with the space including an allocated portion of debt service. CFCs are intended to cover CONRAC debt service, coverage and operations and maintenances. If the CFCs are insufficient to cover the costs and expenses associated with the CONRAC, airport sponsors can include a provision in rental car concession agreements to remedy deficiencies through collection of contingent rents to produce enough revenue for the CONRAC to pay all obligations when due.

Revenue — Amount generated from sale of goods or services, or any other use of capital or assets, associated with the main operations of an airport before any costs or expenses are deducted. Revenue is shown usually as the top item in an income (profit and loss) statement from which all charges, costs, and expenses are subtracted to arrive at the net income of the firm.

Revenue Sharing – Revenue sharing can go both ways. The airport sponsors sometimes share revenues with others or requires revenues to be shared with them.

Revenue, Aeronautical Operating – Income to the airport that comes from aeronautical uses by airlines, aircraft owners, and fixed-base operators (FBOs). Aeronautical use is any activity that involves, makes

¹ Net revenues are gross revenues less operation and maintenance expenses, capital costs and taxes if any

possible, is required for the safety of, or otherwise directly related to the operation of aircraft. Aeronautical use includes services provided by air carriers related directly and substantial to the movement of passengers, baggage, mail, and cargo on the airport. Individuals and businesses, when engaged in the operation of aircraft or flight support, are aeronautical users. Source: ACI-NA Benchmarking Survey, FAA Form 127.

Revenue, Non-Aeronautical Operating – Income to the airport not derived from aeronautical uses. Non-aeronautical revenues include land rentals and non-terminal improved facilities; food, beverage, and retail, rental cars; parking, hotel, ground transportation; utilities sale/resale.

RON Parking – “Remain over Night” aircraft parking.

Royalties – Usage-based payments made by one party (the "licensee") to another (the "licensor") for ongoing use of an asset, sometimes an intellectual property right. Royalties are typically a percentage of gross or net sales derived from use of an asset or a fixed price per unit sold of an item. but there are also other modes and metrics of compensation. A royalty interest is the right to collect a stream of future royalty payments; royalty interests are often used in the oil industry and music industry to describe a percentage ownership of future production or revenues from a given leasehold, which may be divested from the original owner of the asset.

Sale of Development Sites – Public agencies sell publicly owned land adjacent to a transportation facility to a developer. Sometimes, agencies buy land in anticipation of the construction of the facility, and sell at a higher price once the facility is built, thus capturing the increase in land value created by the infrastructure investment. Sale of development sites on airport property would, however, require FAA approval and release.

Sales Tax – States, counties or municipalities can levy special sales taxes in an area the receipts of which can help to finance a transportation project. Special sales taxes have been used to finance primarily public transit projects. However, a portion of receipts from hotel occupancy taxes (a form of sales tax) has been used by communities to support air service development.

Signatory Airlines – Airlines that sign an airport-airline lease and operating agreement at a particular airport that specifies use of airport facilities, duration of agreement and terms.

Special Assessment District/Betterment District – A group of properties that will benefit from a public investment are assessed a fee to help pay for the investment.

Street Pricing – Pricing comparable to what is paid for retail goods and services outside the airport.

Supplier Rebates – Payment by a supplier to encourage an action or an operational emphasis.

Tax Increment Financing – 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.

Third Party Developer – Airport has an agreement with a third party to develop, market, lease, and manage the concessions without directly operating any. The third party developer negotiates concession agreements on behalf of the airport sponsor. Developers are paid a portion of concession revenue for the services provided. Developers can be required to make investments in facilities, equipment and common spaces.

Transfer of Development Rights – The rights to develop a specified property based on the underlying zoning are sold to a developer and transferred to another site within a given jurisdiction.

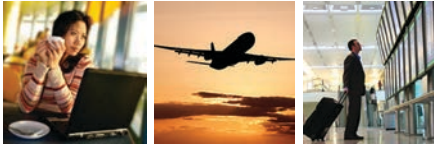
Transportation Fees – Airport sponsors levy fees to recover roadway, traffic control, and terminal costs from off-airport parking operators, rental car companies, and hotel shuttles. Transportation fees can be a percentage of gross revenues, a charge per day, per trip, or on a transactional basis.

Transportation Utility Fee – A fee imposed on individual land uses (e.g., residential, office, retail) based on the amount of traffic that a particular use generates on a transportation facility.

Trunk to Truck – A parking service that picks up the customer at the car, delivers to the terminal, and at the end of the trip, delivers the customer back to his/her car.

Turnaround Time – The time during which the aircraft must remain parked at the gate.

Value-Added Parking Products – These are premium parking products that offer higher levels of service than traditional parking products such as valet parking, reserved or guaranteed parking spaces. Airports are experimenting with various value-added products to see which ones have traction.



Appendix C

Index to Implementation Techniques

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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
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
HMCRRP	Hazardous Materials Cooperative Research Program
IEEE	Institute of Electrical and Electronics Engineers
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute of Transportation Engineers
MAP-21	Moving Ahead for Progress in the 21st Century Act (2012)
NASA	National Aeronautics and Space Administration
NASAO	National Association of State Aviation Officials
NCFRP	National Cooperative Freight Research Program
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
PHMSA	Pipeline and Hazardous Materials Safety Administration
RITA	Research and Innovative Technology Administration
SAE	Society of Automotive Engineers
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005)
TCRP	Transit Cooperative Research Program
TEA-21	Transportation Equity Act for the 21st Century (1998)
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation