



Synthesis of Information Related to Airport Practices: 2016

DETAILS

6 pages | 8.5 x 11 | PAPERBACK

ISBN 978-0-309-27201-8 | DOI 10.17226/21934

AUTHORS

TRB

BUY THIS BOOK

FIND RELATED TITLES

Visit the National Academies Press at NAP.edu and login or register to get:

- Access to free PDF downloads of thousands of scientific reports
- 10% off the price of print titles
- Email or social media notifications of new titles related to your interests
- Special offers and discounts



Distribution, posting, or copying of this PDF is strictly prohibited without written permission of the National Academies Press. (Request Permission) Unless otherwise indicated, all materials in this PDF are copyrighted by the National Academy of Sciences.

Copyright © National Academy of Sciences. All rights reserved.

AIRPORT COOPERATIVE RESEARCH PROGRAM

Sponsored by the Federal Aviation Administration

Responsible Senior Program Officer: Michael R. Salamone

Research Results Digest 23

SYNTHESIS OF INFORMATION RELATED TO AIRPORT PRACTICES

This is a staff digest of the progress and status of ACRP Project A11-03, "Synthesis of Information Related to Airport Practices," for which the Transportation Research Board is the agency conducting the research. Individual studies for the project are managed by Gail R. Staba, Senior Program Officer, and Jon M. Williams, Program Director, Synthesis Studies, serving under the Studies and Special Programs Division of the Transportation Research Board, Stephen R. Godwin, Director.

INTRODUCTION

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

There is information on nearly every subject of concern to the airport industry. Much of it derives from research or from the work of practitioners faced with problems in their day-to-day work. To provide a systematic means for assembling and evaluating such useful information and making it available to the entire airport community, the Airport Cooperative Research Program authorized the Transportation Research Board to undertake a continuing study. This study, ACRP Project A11-03, "Synthesis of Information Related to Airport Practices," searches out and synthesizes useful knowledge from all available sources and

You can submit your topic proposals at: <http://www.trb.org/SynthesisPrograms/Suggest.aspx> under "Synthesis Topic Submittals." Topics suggested must be accompanied by a brief (one or two paragraphs) scope statement, including a discussion of the problem. A title (preferably 10 words or less) and the name and affiliation of the submitter are also necessary. Suggestions for updates of published syntheses are also welcome. The ACRP Project Panel meets once each year to make the final selections. To be considered at the next annual meeting, all submissions should be received by October 2016. If a topic is not selected, the problem statement must be resubmitted the following year to be reconsidered.

Interested in writing a synthesis? For details, see the Synthesis homepage (address above) under "New Topics" (<http://www.trb.org/SynthesisPrograms/ACRPSynthesisNewStudies.aspx>).

 TRANSPORTATION RESEARCH BOARD

The National Academies of

SCIENCES • ENGINEERING • MEDICINE

prepares concise, documented reports on specific topics. Reports from this endeavor constitute an ACRP report series, *Synthesis of Airport Practice*.

THE SYNTHESIS PROGRAM

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

To develop these syntheses in a comprehensive manner and to ensure inclusion of significant knowledge, TRB employs a consultant to gather and analyze available information from numerous sources, including airport operations agencies. A panel of experts in the subject area is established to guide the consultant in organizing and evaluating the data collected on each topic and to review the synthesis report.

For each topic the project objectives are (1) to locate and assemble documented information; (2) to learn what practice has been used for solving or alleviating the problems; (3) to identify all ongoing research; (4) to learn what problems remain largely unsolved; (5) to organize, evaluate, and document the useful information that is acquired; and (6) to disseminate the synthesis information to all who might benefit from it.

Each synthesis is an immediately useful document that records practices that were acceptable within the limitations of the knowledge available at the time of its preparation. New knowledge can be expected to be added to that which is now at hand and eventually the synthesis may need to be updated or redone. The readers and users of the syntheses are in the best position to know when this has occurred.

Table 1 ACRP SYNTHESIS STUDIES—Active as of December 2015

| No. | Title |
|-----------|--|
| S15-01-11 | Planning for Operational Recovery at Small Airports |
| S15-02-12 | Airport Sustainability Practices—Drivers and Outcomes for Small Commercial and General Aviation Airports |
| S15-02-13 | Helicopter Noise Information for Airport and Communities |
| S15-02-14 | Airport Sustainability Practices |
| S15-04-13 | Combining Mixed Use Flight Operations Safely at Airports |
| S15-04-14 | Airport Safety Risk Management Panel Activities and Outcomes |
| S15-04-15 | Flight Operations Advisories at Non-Towered Airports |
| S15-04-16 | Emergency Communication Planning for Airports |
| S15-04-17 | Table Top and Full-scale Exercises for General Aviation, Non-hub, and Small Hub Airports |
| S15-09-07 | Building Information Modeling for Airports |

Whenever you believe that a synthesis should be updated, it would be appreciated if you would contact TRB and propose a synthesis update by contacting the ACRP Manager, Transportation Research Board, 500 Fifth Street, NW, Washington, D.C. 20001.

Studies in Progress and Planned for 2016

Work is currently under way on the topics listed in Table 1. Topics selected for the 2015 program are listed in Table 2. Questions on these topics should

Table 2 ACRP SYNTHESIS STUDIES—2016 Projects

| No. | Title |
|-----------|---|
| S16-01-12 | Airport Equity Participation in Mineral Development |
| S16-01-13 | How Airports Document Costs for Non-airline Tenant Rents and Charges |
| S16-01-14 | Alternative Methods for Funding Infrastructure Investments at Airports |
| S16-01-15 | Airport Operator Options for Delivery of FBO Services |
| S16-02-15 | Airport Experience with Alternative Fuels for Ground Transport |
| S16-02-16 | Airport Experience with Implementing Notifications Required by the Aircraft Drinking Water Rule |
| S16-03-11 | Transportation Network Companies: Challenges and Opportunities for Airport Operators |
| S16-03-12 | Arriving Flights and Passenger Quarantine Planning at Airports |
| S16-03-13 | Estimating Truck Trip Generation for Airport Air Cargo Activity |
| S16-04-18 | Uses of Social Media to Inform Emergency Responders During an Airport Emergency |

be addressed to the project study manager, Gail R. Staba, by e-mail at gstaba@nas.edu, or by phone at 202-334-2442; or the Synthesis Study Manager, Jon M. Williams, by e-mail at jwilliams@nas.edu, or by phone at 202-334-3245.

Available Publications

The syntheses of airport practice that have been completed under this project are listed in Table 3.

Copies of these syntheses can be obtained from the Publications Office, Transportation Research Board, 500 Fifth Street, N.W., Washington, D.C., 20001; by calling 202/334-3213; and through the Internet at: <https://www.mytrb.org/store>. Please send check orders to: TRB, PO Box 741494, Atlanta, GA 30374-1494, or fax to: 202/334-2519. All ACRP reports are available free of charge as online publications (http://www.trb.org/Publications/PubsACRP_SynthesisReports.aspx).

Table 3 PUBLISHED ACRP SYNTHESSES

All publications are free online at: <http://www.trb.org/Publications/PubsACRPSynthesisReports.aspx>
Printed versions in black and white can be purchased at: <https://www.mytrb.org/store>.

| No. | Title/Pages |
|-----|---|
| 1. | Innovative Finance and Alternative Sources of Revenue for Airports (2007) 43 pp., \$34 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_001.pdf |
| 2. | Airport Aviation Activity Forecasting (2007) 32 pp., \$34 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_002.pdf |
| 3. | General Aviation Safety and Security Practices (2007) 44 pp., \$44 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_003.pdf |
| 4. | Counting Aircraft Operations at Small and Non-towered Airports (2007) 33 pp., \$44 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_004.pdf |
| 5. | Airport Ground Access Mode Choice Models (2008) 104 pp., \$39 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_005.pdf |
| 6. | Impact of Airport Pavement Deicing Products on Aircraft and Airfield Infrastructure (2008) 58 pp., \$42 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_006.pdf |
| 7. | Airport Economic Impact Methods and Models (2008) 67 pp., \$45 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_007.pdf |
| 8. | Common Use Facilities and Equipment at Airports (2008) 121 pp., \$52 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_008.pdf |
| 9. | Effects of Aircraft Noise: Research Update on Select Topics (2008) 90 pp., \$50 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_009.pdf |
| 10. | Airport Sustainability Practices (2008) 112 pp., \$52 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_010.pdf |
| 11. | Impact of Airport Rubber Removal Techniques on Runways (2008) 108 pp., \$52 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_011.pdf |
| 12. | Preventing Aircraft–Vehicle Incidents During Winter Operations and Periods of Low Visibility (2008) 70 pp., \$45 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_012.pdf |
| 13. | Effective Practices for Preparing Airport Improvement Program Benefit-Cost Analysis (2009) 65 pp., \$43 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_013.pdf |
| 14. | Airport System Planning Practices (2009) 71 pp., \$41 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_014.pdf |
| 15. | Identification of the Requirements and Training to Obtain Driving Privileges on Airfields (2009) 43 pp., \$48 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_015.pdf |
| 16. | Compilation of Noise Programs in Areas Outside DNL 65 (2009) 104 pp., \$51 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_016.pdf |
| 17. | Approaches to Integrating Airport Development and Federal Environmental Review Processes (2009) 34 pp., \$38 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_017.pdf |
| 18. | Aviation Workforce Development Practices (2010) 36 pp., \$39 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_018.pdf |

(continued on next page)

Table 3 (Continued)

| No. | Title/Pages |
|-----|--|
| 19. | Airport Revenue Diversification (2010) 55 pp., \$41 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_019.pdf |
| 20. | Airport Terminal Facility Activation Techniques (2010) 127 pp., \$58 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_020.pdf |
| 21. | Airport Energy Efficiency and Cost Reduction (2010) 73 pp., \$47 http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_021.pdf |
| 22. | Common Airport Pavement Maintenance Practices (2011) 103 pp., \$54 http://www.trb.org/Publications/Blurbs/165167.aspx |
| 23. | Bird Harassment, Repellent, and Deterrent Techniques for Use on and Near Airports (2011) 32 pp., \$41 http://www.trb.org/Publications/Blurbs/165829.aspx |
| 24. | Strategies and Financing Opportunities for Airport Environmental Programs (2011) 218 pp., \$70 http://www.trb.org/Publications/Blurbs/165852.aspx |
| 25. | Strategies for Reuse of Underutilized or Vacant Airport Facilities (2011) 62 pp., \$42 http://www.trb.org/Publications/Blurbs/166101.aspx |
| 26. | Current Airport Inspection Practices Regarding FOD (Foreign Object Debris/Damage) (2011) 86 pp., \$54 http://www.trb.org/Publications/Blurbs/165911.aspx |
| 27. | Airport Self-Inspection Practices (2011) 111 pp., \$54 http://www.trb.org/Publications/Blurbs/166012.aspx |
| 28. | Investigating Safety Impacts of Energy Technologies on Airports and Aviation (2011) 39 pp., \$41 http://www.trb.org/Publications/Blurbs/166099.aspx |
| 29. | Ramp Safety Practices (2011) 59 pp., \$46 http://www.trb.org/Publications/Blurbs/166314.aspx |
| 30. | Airport Insurance Coverage and Risk Management Practices (2011) 51 pp., \$43 http://www.trb.org/Publications/Blurbs/166472 |
| 31. | Airline and Airline–Airport Consortiums to Manage Terminals and Equipment (2011) 596 pp., \$98 http://www.trb.org/Publications/Blurbs/166364.aspx |
| 32. | Managing Aerial Firefighting (2012) 44 p., \$42.00 http://www.trb.org/Publications/Blurbs/167310.aspx |
| 33. | Airport Climate Adaptation and Resilience (2012) 87 pp., \$57.00 http://www.trb.org/Publications/Blurbs/167238.aspx |
| 34. | Subsurface Utility Information for Airports (2012) 50 pp., \$46.00 http://www.trb.org/Publications/Blurbs/167502.aspx |
| 35. | Issues with Use of Airfield LED Light Fixtures (2012) 35 pp., \$43.00 http://www.trb.org/Publications/Blurbs/167509.aspx |
| 36. | Exploring Airport Employee Commute and Parking Strategies (2012) 70 pp., \$49.00 http://www.trb.org/Publications/Blurbs/167704.aspx |
| 37. | Lessons Learned from Airport Safety Management Systems Pilot Studies (2012) 63 pp., \$46.00 http://www.trb.org/Publications/Blurbs/167600.aspx |
| 38. | Expediting Aircraft Recovery at Airports (2012) 100 pp. http://www.trb.org/Main/Blurbs/168018.aspx |
| 39. | Airport Wildlife Population Management (2013) 69 pp., \$52.00 http://www.trb.org/Publications/Blurbs/168836.aspx |
| 40. | Issues with Airport Organization and Reorganization (2013) 32 pp., \$44.00 http://www.trb.org/Publications/Blurbs/169008.aspx |
| 41. | Conducting Aeronautical Special Events at Airports (2013) 119 pp., \$61.00 http://www.trb.org/Publications/Blurbs/168988.aspx |
| 42. | Integrating Environmental Sustainability into Airport Contracts (2013) 68 pp., \$52.00 http://www.trb.org/Publications/Blurbs/169023.aspx |
| 43. | Environmental Assessment of Air and High-Speed Rail Corridors (2013) 36 pp., \$44.00 http://www.trb.org/Publications/Blurbs/169411.aspx |
| 44. | Environmental Management System Development Process (2013) 50 pp., \$46.00 http://www.trb.org/Publications/Blurbs/168917.aspx |

Table 3 (Continued)

| No. | Title/Pages |
|-----|--|
| 45. | Model Mutual Aid Agreements for Airports (2013) 56 pp., \$49.00 http://www.trb.org/Publications/Blurbs/169180.aspx |
| 46. | Conducting Airport Peer Reviews (2013) 40 pp., \$44.00 http://www.trb.org/Publications/Blurbs/169124.aspx |
| 47. | Repairing and Maintaining Airport Parking Structures While in Use (2013) 46 pp., \$46 http://www.trb.org/Publications/Blurbs/169084.aspx |
| 48. | How Airports Measure Customer Service Performance (2013) 93 pp., \$58.00 http://www.trb.org/Publications/Blurbs/169468.aspx |
| 49. | Helping New Maintenance Hires Adapt to the Airport Operating Environment (2013) 52 pp., \$46.00 http://www.trb.org/Publications/Blurbs/169521.aspx |
| 50. | Effective Cooperation Among Airports and Local and Regional Emergency Management Agencies for Disaster Preparedness and Response (2014) 44 pp., \$44.00 http://www.trb.org/Publications/Blurbs/170368.aspx |
| 51. | Impacts of Aging Travelers on Airports (2014) 27 pp., \$44.00 http://www.trb.org/Publications/Blurbs/170493.aspx |
| 52. | Habitat Management to Deter Wildlife at Airports (2014) 75 pp., \$52.00 http://www.trb.org/Publications/Blurbs/170766.aspx |
| 53. | Outcomes of Green Initiatives: Large Airport Experience (2014) 63 pp., \$64.00 http://www.trb.org/Publications/Blurbs/170655.aspx |
| 54. | Electric Vehicle Charging Stations at Airport Parking Facilities (2014) 62 pp., \$49.00 http://www.trb.org/Publications/Blurbs/170689.aspx |
| 55. | Backcountry Airstrip Preservation (2014) 76 pp., \$55.00 http://www.trb.org/Publications/Blurbs/170879.aspx |
| 56. | Understanding the Value of Social Media at Airports for Customer Engagement (2014) 157 pp., \$68.00 http://www.trb.org/Publications/Blurbs/170977.aspx |
| 57. | Airport Response to Special Events (2014) 136 pp., \$64.00 http://www.trb.org/Publications/Blurbs/170872.aspx |
| 58. | Safety Reporting Systems at Airports (2014) 65 pp., \$49.00 http://www.trb.org/Publications/Blurbs/170978.aspx |
| 59. | Integrating Airport Geographic Information System (GIS) Data with Public Agency GIS (2014) 66 pp., \$52.00 http://www.trb.org/Publications/Blurbs/171387.aspx |
| 60. | Airport Emergency Post-Event Recovery Practices (2015) 76 pp., \$55.00 http://www.trb.org/Publications/Blurbs/172539.aspx |
| 61. | Practices in Preserving and Developing Public-Use Seaplane Bases (2015) 85 pp., \$58.00 http://www.trb.org/Publications/Blurbs/172567.aspx |
| 62. | Cell Phone Lots at Airports (2015) 63 pp., \$51.00 http://www.trb.org/Publications/Blurbs/172784.aspx |
| 63. | Overview of Airport Fueling System Operations (2015) 106 pp., \$61.00 http://www.trb.org/Publications/Blurbs/172631.aspx |
| 64. | Issues Related to Accommodating Animals Traveling Through Airports (2015) 73 pp., \$55.00 http://www.trb.org/Publications/Blurbs/172800.aspx |
| 65. | Practices to Develop Effective Stakeholder Relationships at Smaller Airports (2015) 62 pp., \$51.00 http://www.trb.org/Publications/Blurbs/172885.aspx |
| 66. | Lessons Learned from Airport Sustainability Plans (2015) 88 pp., \$61.00 http://www.trb.org/Publications/Blurbs/172887.aspx |
| 67. | Airside Snow Removal Practices for Small Airports with Limited Budgets (2015) 100 pp., \$61.00 http://www.trb.org/Publications/Blurbs/172978.aspx |
| 68. | Strategies for Maintaining Air Service (2015) 52 pp., \$48.00 http://www.trb.org/Publications/Blurbs/173208.aspx |

Selection of Topics

ACRP Project Panel A11-03 meets each year to select topics for study using funds from the upcoming fiscal year. The membership of this committee is given in Table 4. Current funding allows for initiation of about ten syntheses per year. These, plus some alternate topics, are selected by the committee at its annual project meeting.

The following factors are considered in the selection process for synthesis topics:

- The topic should address a problem that is widespread enough to generate broad interest in the synthesis.
- The topic should be timely and critical with respect to safety, economic, or social impact.
- The topic is appropriate if current practice is nonuniform or inconsistent from agency to agency, or if the validity of some practices appears to be questionable.
- The quality and quantity of useful available information should indicate a need to organize and compress that which has already been learned and written on the topic.
- The topic should not be one where ongoing research or other activities in progress might be expected to render the synthesis obsolete shortly after completion.

Each year more topics are suggested for the committee’s consideration than can be programmed

for study in Project A11-03. Nevertheless, the continued success of this project depends on a constant supply of worthy synthesis topics. The interest of those who have recommended topics is sincerely appreciated, and they are urged to continue. Candidate topics are suggested by members of the panel and by a variety of other sources, including airport, airline, and state aviation personnel; FAA and TRB committees; aviation organizations; and other practitioners and researchers.

Conduct of the Studies

Following the project panel’s selection of topics, studies are initiated in the order of priority assigned by the panel. A topic panel consisting of practitioners and researchers is formed for each topic. At its first meeting, this topic panel thoroughly discusses the topic, refines the scope, suggests sources of information, and identifies and selects potential topic consultants based on expressions of interest received in response to an industry-wide solicitation.

Following this meeting, a consultant is hired to gather information on the topic, synthesize it, and draft a report. Typically, the agreement covers a period of six to seven months. Information gathering and preparation of the first draft of the synthesis report takes about four months. This draft is reviewed by the topic panel with the consultant, often at the

Table 4 ACRP PROJECT PANEL A11-03

| | Name | Affiliation |
|----------------------|---------------------------|--|
| Chair | Julie Kenfield | Jacobsen/Daniels Associates LLC |
| Member | Joshua Abramson | Easterwood Airport |
| Member | Deborah Ale Flint | Los Angeles World Airports |
| Member | Debbie K. Alke | Montana DOT |
| Member | David N. Edwards, Jr. | Greenville–Spartanburg Airport Commission |
| Member | Linda Howard | Consultant, Bastrop, Texas |
| Member | Arlyn Purcell | Port Authority of New York & New Jersey |
| Member | Christopher J. Willenborg | Massachusetts Department of Transportation |
| Liaison | Paul Devoti | Federal Aviation Administration |
| Liaison | Matthew J. Griffin | Airports Consultants Council |
| Liaison | Liyong Gu | Airports Council International–North America |
| TRB Liaison | Christine Gerencher | Transportation Research Board |
| ACRP Synthesis Staff | Gail R. Staba | Transportation Research Board |
| ACRP Manager | Michael R. Salamone | Transportation Research Board |

second panel meeting. A revised draft is then prepared by the consultant. Subsequent drafts and meetings are scheduled, if needed, although this rarely occurs.

After the staff is substantially satisfied with the report, a final draft is sent to members of the topic panel for their last chance to review the report and then ACRP Project Committee A11-03 for final

approval. The report is subsequently published as an *ACRP Synthesis of Airport Practice*.

Index of Topic Studies

Table 5 is a key word index of published syntheses.

Table 5 INDEX TO SYNTHESSES AND STUDIES (2015)

| | |
|--|---|
| Access control 3 | Capital financing 1, 21 |
| Aeronautical revenue 1, 19 | Cell phone lots 62 |
| Aeronautical events 41 | Charging stations 54 |
| Aerial firefighting 32 | Climate change 33 |
| Aging travelers 51 | Commercial development 1, 21, 25 |
| Air and rail 43 | Common Use 8, 19 |
| Aircraft noise 9, 16 | Common Use Passenger Processing Systems (CUPPS) 8, 19 |
| Aircraft recovery plan 38, 60 | Common Use Self-Service (CUSS) 8, 19 |
| Airfield driving 12, 15, 49 | Communication 68 |
| Airport access/egress 5, 15, 49, 51 | Community Noise Equivalent Level (CNEL) 9, 16 |
| Airport budgeting, 22, 31 | Community engagement 68 |
| Airport construction 20, 21, 47 | Computer aided design and drafting 34 |
| Airport design 20, 21 | Consortiums 31 |
| Airport development environmental review 7, 8, 10, 13, 16, 17, 21 | Contracting 31, 42 |
| Airport environment 10, 17, 21, 24, 53 | Corrosion damage 6 |
| Airport facilities, 25, 63 | Cost recovery 4, 19, 21, 25, 62 |
| Airport human resources 12, 15, 18, 20 | Costs 68 |
| Airport Improvement Program (AIP) 2, 13, 14, 24, 34 | Counting aircraft 4 |
| Airport Layout Plan 59 | Customer engagement 56 |
| Airport maintenance 11, 21, 22, 26, 47, 49 | Customer service 48, 51 |
| Airport management 23, 30, 31, 36, 39, 53 | |
| Airport operations 3, 4, 8, 11, 12, 13, 15, 20, 21, 26, 27, 28, 29, 30, 33, 36, 39, 46, 48, 51, 56, 57, 58, 60, 62, 65, 67, 68 | Data and information technology 56 |
| Airport organization 40 | Data collection 26, 29, 58 |
| Airport planning 14, 22, 28, 31, 54 | Data exchange 59 |
| Airport system planning 14 | Day-Night Average Sound Level (DNL) 9, 16 |
| Airport terminal facility activation 20 | Debris removal 26 |
| Air pollution 43 | Debris detection, 26 |
| Air Service 68 | Disabled aircraft 38 |
| Airshows 57 | |
| Animals 64 | Economic development 7, 10, 13, 19, 25 |
| Asset management 47 | Economic impact 7, 25, 53, 57, 61, 65 |
| Aviation activity forecasting 2, 4, 5 | Economic viability 66 |
| Aviation noise abatement 16 | Electric vehicles 54 |
| Aviation operations 12, 28 | Electric vehicle charging stations 54 |
| | Electronic information 34, 45 |
| Backcountry airstrips 56 | Emergency plan 45, 60 |
| Baggage 8 | Emergency preparedness 60 |
| Benefit-cost 13, 59 | Employee commute options 36 |
| | Energy audit 10, 19, 21 |

(continued on next page)

Table 5 (Continued)

| | |
|---|---|
| Energy conservation 35 | Noise 9, 16, 43, 55 |
| Energy management system 10, 19, 21 | Non-aeronautical revenue 1, 19, 57 |
| Energy technologies 28 | |
| Environmental assessment 13, 17, 33, 43 | Organizational structure 40 |
| Environmental practices 10, 11, 21, 42, 66 | Ownership 55 |
| Environmental initiatives 24, 53 | |
| Environmental Impact Statement (EIS) 17 | Parking 36, 47, 54, 62 |
| Environmental management system 44 | Passenger facility charge 1, 20 |
| Environmental regulations 63 | Passenger services 8, 19, 47, 51, 56 |
| Environmental sustainability 42 | Pavement 6, 22 |
| Equipment, snow removal 67 | Pavement deicing 6 |
| | Peer reviews 46 |
| Facility activation 20 | Performance measures 48, 67 |
| Federal Interagency Committee on Noise (FICON) 9, 16 | Performance standards 31 |
| Financing 23 | Personnel, airport 49 |
| Foreign object debris/damage 26, 29, 37 | Planning, aeronautical 41 |
| Fueling system operations 63 | Preservation, airstrip 55 |
| | Preservation, pavement 22 |
| General aviation 1, 3, 4, 17, 19, 20, 21, 26 | Preservation, seaplane bases 61 |
| Geographic Information System data 59 | Privatization 1 |
| Green initiative 53 | |
| Ground service equipment 29 | Quality assurance 48 |
| Ground vehicle operations 49 | |
| | Ramps 29 |
| Hazard, wildlife 39, 52 | Regulations 63 |
| Hiring 49 | Rehabilitation, pavement, 22 |
| | Rehabilitation, structures 47 |
| Incident 37, 38 | Reuse, 25 |
| Infrastructure 6, 47, 54 | Revenue 1, 13, 19, 25, 57 |
| Innovative finance 1 | Risk financing 30 |
| Inspection practices 26, 27 | Risk management 30, 37, 55, 63 |
| Irregular operations 57 | Rubber removal 11 |
| | Runway safety 3, 11, 12, 15, 23, 26, 67 |
| Lighting 35 | |
| Low visibility 12 | Safety 3, 11, 12, 15, 23, 26, 27, 28, 29, 32, 35, 39, 45, 52, 58, 61, 63 |
| | Safety management system 29, 37, 58 |
| Maintenance 47, 49 | Safety reporting 58 |
| Management, 32, 55 | Safety risk management 37 |
| Management systems 8, 21, 22, 40, 44 | Schultz Curve 9 |
| Master plans 17, 66 | Seaplane bases 61 |
| Mobile technology 56 | Security 3 |
| Mode choice/mode of transportation 5 | Service 68 |
| Modeling 5, 7 | Service animals 64 |
| Mutual Aid agreement 45 | Signage 8, 45 |
| | Skid resistance 11 |
| National Environmental Policy Act (NEPA) 9, 17, 24, 43 | Small airports 65, 67 |
| National Incident Management System 60 | Snow removal 67 |
| National Plan of Integrated Airport Systems (NPIAS) 2, 7, 13, 14, 60, 61 | Social media 56 |
| | Sound Exposure Level (SEL) 9, 16 |
| | Special events 57 |
| | Stakeholders 65 |

Structures, parking 47
Subsurface utilities 34
Sustainability 10, 14, 42, 44, 53, 66

Terminal area forecast 2
Title Code of Federal Regulations Part 139 58, 63
Training 3, 12, 15, 18, 20, 27, 29, 49
Travel forecasting 2, 5, 13, 14
Traveling with pets 64

Vehicle-aircraft incidents 12
Voice over IP (VoIP) 8, 20

Waterblasting 11
Wildlife control 23, 39, 52
Wildlife risk management 23, 37, 52
Wildlife strike, 52
Winter operations 6, 12, 67
Workforce development 3, 12, 15, 18, 20, 47

Transportation Research Board

500 Fifth Street, NW
Washington, DC 20001

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

The nation turns to the National Academies of Sciences, Engineering, and Medicine for independent, objective advice on issues that affect people's lives worldwide.

www.national-academies.org

Subscriber Categories: Aviation • Energy • Environment • Education and Training • Finance
Maintenance and Preservation • Safety and Human Factors • Terminals and Facilities



These digests are issued in order to increase awareness of research results emanating from projects in the Cooperative Research Programs (CRP). Persons wanting to pursue the project subject matter in greater depth should contact the CRP Staff, Transportation Research Board, National Academies of Sciences, Engineering, and Medicine, 500 Fifth Street, NW, Washington, DC 20001.

COPYRIGHT INFORMATION

Authors herein are responsible for the authenticity of their materials and for obtaining written permissions from publishers or persons who own the copyright to any previously published or copyrighted material used herein.

Cooperative Research Programs (CRP) grants permission to reproduce material in this publication for classroom and not-for-profit purposes. Permission is given with the understanding that none of the material will be used to imply TRB, AASHTO, FAA, FHWA, FMCSA, FRA, FTA, Office of the Assistant Secretary for Research and Technology, PHMSA, or TDC endorsement of a particular product, method, or practice. It is expected that those reproducing the material in this document for educational and not-for-profit uses will give appropriate acknowledgment of the source of any reprinted or reproduced material. For other uses of the material, request permission from CRP.