

Research Digest

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Item 1

NextGEN for Airports. Volume 2, Engaging Airport Stakeholders. Guidebook

TRANSPORTATION RESEARCH BOARD (TRB)

ACRP Report 150 • 2016

"The Next Generation Air Transportation System (NextGen) refers to the federal programs (predominately airspace, air traffic, or avionics related) that are designed to modernize the National Airspace System (NAS). ACRP's NextGen initiative aims to inform airport operators about some of these programs and how the enabling practices, data, and technologies resulting from them will affect airports and change how the operate. [This volume] is the second report in this series. This report provides guidance to help airports engage the FAA, aircraft operators, community representatives, and other airport stakeholders during the planning, environmental review, design, deployment, and monitoring phases of NextGen implementation. The guidance includes tools that encourage proactive communication and collaboration specifically tailored for a variety of factors, including airport category, stakeholder role, and type of NextGen technology being implemented. The goal is to help airports establish a continuous engagement strategy that will achieve an equitable balance between stakeholder needs and efficient NextGen implementation." -- Foreword (80 pages)

CONTENTS

- Summary
- Chapter 1. Introduction
- Chapter 2. NextGen from an Airport's Perspective
- Chapter 3. Stakeholders in NextGen
- Chapter 4. Stakeholder Engagement Objectives
- Chapter 5. Effective Engagement Methods
- Chapter 6. Helpful Engagement Tools
- Chapter 7. Engagement Materials
- Chapter 8. Establishing and Maintaining a Stakeholder Engagement Program
- Chapter 9. Case Studies
- References
- Appendix. Stakeholders in NextGen Implementation

This report is available for free download:

<http://www.trb.org/main/blurbs/175117.aspx>

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Item 2

NextGEN for Airports. Volume 3, Resources for Airports

TRANSPORTATION RESEARCH BOARD (TRB)

ACRP Report 150 • 2016

"The Next Generation Air Transportation System (NextGen) refers to the federal programs (predominately airspace, air traffic, or avionics related) that are designed to modernize the National Airspace System (NAS). ACRP's NextGen initiative aims to inform airport operators about some of these programs and how the enabling practices, data, and technologies resulting from them will affect airports and change how they operate. This volume is the third report in this series. It is a resource guide that provides a comprehensive list of NextGen technologies and initiatives categorized and described for airport practitioners, and presents existing Federal Aviation Administration (FAA) plans that could potentially affect airports of all sizes and roles, the larger aviation industry, and the public. This guide presents a likely timeline for implementation and highlights the FAA's planned rollout of near- and mid-term elements as well as its long-range vision. Appendices include a glossary of terms and a Public Information Toolkit for communicating about the NextGen initiative to the broad spectrum of external stakeholders." -- from TRID
(86 pages)

CONTENTS

- Chapter 1. Introduction
- Chapter 2. NextGen Architecture
- Chapter 3. NextGen Programs and Portfolios
- Chapter 4. NextGen Airport by Airport
- Chapter 5. Working with the FAA
- Appendix A. Acronyms and Abbreviations
- Appendix B. Glossary
- Appendix C. Public Information Toolkit

This report is available for free download:

<http://www.trb.org/Main/Blurbs/175473.aspx>

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Item 3

Guidelines for Improving Airport Services for International Customers

TRANSPORTATION RESEARCH BOARD (TRB)

ACRP Report 161 • 2016

"This report is a guidebook to assist airport practitioners in implementing departure and arrival processes, passenger services, and wayfinding techniques for international travelers navigating through U.S. airports. The guidelines assist with improving overall communication with international travelers and identify acceptable service and levels of service expected by international passengers. The report covers processing from origin through gateway airports to the ultimate destination. The guidelines include an identification of key elements of the international customer experience that can influence satisfaction in light of the customers' diverse backgrounds. It defines acceptable service levels for each key element of each process that an international passenger experiences (i.e., wait times, walking distance, etc.). The guidelines also provide service metrics for passenger processing based upon internationally acceptable wait times to aid U.S. airports in coordinating staffing and delivery of services. The benefits of this report are an enhanced understanding of international customers and their needs, and strategies that airports and other stakeholders could employ to meet those needs." -- from TRID
(204, A-8, B-10 pages)

CONTENTS

- Summary
- Chapter 1. Introduction
- Chapter 2. The Customer Experience
- Chapter 3. International Departing Passengers
- Chapter 4. International Arriving Passengers
- Chapter 5. Connecting Passengers
- Chapter 6. Precleared Arriving Passengers
- Chapter 7. Gateway of the future
- References
- Appendix A. Common Sign Design Elements
- Appendix B. Primer on Planning, Deploying, Operating and Maintaining a Digital Information Program

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Item 4

Guidebook for Preparing and Using Airport Design Day Flight Schedules

TRANSPORTATION RESEARCH BOARD (TRB)

ACRP Report 163 • 2016

"This report is designed to provide airport leaders an understanding of design day flight schedules (DDFS) and their uses, while at the same time provide airport staff and consultants with detailed information on how to prepare one. DDFS are used at airports for a number of different purposes, including the planning and programming of airport operations and facilities, airfield and landside modeling, and construction phasing, among others. In addition to a number of inputs, the assumptions that are also used must be well understood by users to fully understand the analysis from the results. Also, like any forecast, uncertainty is inherent in DDFS, and this uncertainty must be recognized and managed. While DDFS are used routinely in the industry, there are not consistent methods for the development and use of them. One of the purposes of this guidebook is to ensure that users and preparers are fully aware of the advantages and potential pitfalls associated with DDFS. By understanding the assumptions incorporated into and the information generated from a DDFS, airport decision makers can communicate more effectively with the person or persons preparing the DDFS, the scope, and the results. This guidebook discusses the many different projects where a DDFS can best achieve the objective in planning and simulation modeling." -- from TRID (144 pages in various pagings)

CONTENTS

- Summary
- Chapter 1. Introduction and Overview
- Chapter 2. What is a DDFS
- Chapter 3. When Should DDFSs Be Used
- Chapter 4. Which Elements Need to Be Included in a DDFS
- Chapter 5. How to Scope a DDFS
- Chapter 6. How to Prepare a DDFS for Base Year and Future Conditions
- Chapter 7. How to Apply DDFS Outputs
- Chapter 8. How to Address Risk and Uncertainty in DDFSs
- Chapter 9. How and When to Communicate DDFS Results
- References
- Appendix A. Case Study Examples from MSP DDFSs
- Appendix B. Stability and Predictability of Critical DDFS Factors
- Appendix C. Evaluation of DDFS Uncertainty
- Appendix D. Confidence Intervals for DDFS Elements
- Appendix E. DDFS Quality Control Checks
- Appendix F. Data Sources
- Appendix G. Glossary

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Item 5

Exhaust Emissions from In-Use General Aviation Aircraft

TRANSPORTATION RESEARCH BOARD (TRB)

ACRP Report 164 • 2016

"The Federal Aviation Administration's Emission and Dispersion Modeling System (EDMS) used to perform air quality analysis is going to be replaced with the Aviation Environmental Design Tool (AEDT). Both modeling systems use emissions data for various aircraft engines, but there is greater confidence in the data for larger commercial aircraft engines. For smaller aircraft, such as piston and small turbine-powered aircraft, emission factor data, which is either non-existent or has not been independently verified, can result in under- or overestimating aircraft emissions and can make it difficult for airports with significant general aviation (GA) operations to characterize their emissions inventories. The research team validated existing data for GA aircraft engines, supplemented the existing data, and recommended substitutions for when aircraft engine data does not exist. Their research consisted of measuring emissions from 47 engines while those engines were in use. The resulting data is available in a spreadsheet on the TRB website. The emissions data can be added to the FAA's AEDT database of aircraft engines so as to better understand and estimate GA aircraft emissions. Piston engine emissions were found to be extremely variable due to the flexible way in which they are operated. The effect on airports of these new emissions factors and their variability is quantified and discussed. A PowerPoint presentation provides an overview of the findings and also is available on the TRB website. This report, with the PowerPoint presentation, provides the information in different formats so as to be accessible to both those with a deep understanding of air quality modeling and those needing to understand the effect at their airport." -- from TRID (90, 21 unnumbered pages)

CONTENTS

- Summary
- Chapter 1. Background
- Chapter 2. Research Approach
- Chapter 3. Trends in Emission Indices
- Chapter 4. Sensitivity Analysis on Airport Emissions
- Chapter 5. Other Parameters Affecting Emissions
- Chapter 6. Conclusions
- Appendix A. Engine Prioritization List
- Appendix B. Test Matrix
- Appendix C. ICAO vs. FOCA Databases
- Appendix D. Method for Calculating Emission Ratios
- Appendix E. Method for Calculating Emission Indices
- Appendix F. Variability in Emissions Results from Variability in the Engine
- Appendix G. Gas-Phase Measurement Instruments
- Appendix H. PM Measurement Instruments
- Appendix I. PM Line Losses
- Appendix J. Estimating Fuel Flows for Piston Engines
- Appendix K. Carbon Content of AVGAS 100 LL
- Appendix L. Hypothetical Airport Engine Mapping
- Appendix M. Terminology and Abbreviations
- Appendix N. References
- Appendix O. List of Data Products
- Appendix P. Emission Index Data Tables

This report is available for free download:

<http://www.trb.org/Publications/Blurbs/175323.aspx>

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Item 6

Tracking Alternative Jet Fuel

TRANSPORTATION RESEARCH BOARD (TRB)

ACRP Report 165 • 2016

"The aviation industry strongly supports the introduction of alternative jet fuels that have the potential to provide environmental, economic, and security-of-supply benefits compared to conventional fuels. These fuels are expected to be drop-in fuels, meaning that they can be used in existing aircraft and supporting infrastructure. Some airlines have started taking delivery of alternative jet fuel at Los Angeles International Airport (LAX), and other similar commercial arrangements are expected in the near future. As alternative jet fuels start to enter the supply chain, there may be a need to keep track of such fuels for technical (e.g., quality control, fuel efficiency); regulatory (e.g., tracking reductions in local air quality pollutants or greenhouse gases); and commercial (e.g., contract verification, corporate social responsibility marketing/sustainability reporting) reasons. A logical point to institute fuel-tracking mechanisms may be at the airport because the supply chains for conventional and alternative jet fuels converge before the fuel gets loaded into the aircraft. Airports can play a key role to incentivize the commercialization of alternative jet fuels by helping to facilitate some of the logistics associated with using these drop-in fuels, in particular fuel tracking. This report provides guidance to help airports and other interested stakeholders identify the potential needs for effectively and efficiently tracking alternative jet fuel into the airport. This guidance, along with a companion decision-support tool (available on the Transportation Research Board website), compares different types of tracking mechanisms and evaluates their advantages and disadvantages, impediments to implementation, and potential impacts." -- from TRID (ix, 56 pages)

CONTENTS

- Preamble: How to Use this Guidebook
- Chapter 1. Introduction and Motivation
- Chapter 2. Current and Potential Tracking Mechanisms
- Chapter 3. Detailed Discussion of Tracking Mechanisms
- Chapter 4. Comparing the Requirements of the Different Mechanisms for Tracking Alternative Jet Fuel
- Chapter 5. Alternative Fuels Tracking and Greenhouse Gas Tracking Toolkit
- Chapter 6. Conclusion
- Appendix A. Summary of Sustainability Frameworks and Chain-of-Custody Requirements
- Acronyms and Abbreviations
- Endnotes

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Item 7

Synthesis of Information Related to Airport Practices

TRANSPORTATION RESEARCH BOARD (TRB)

ACRP RRD 26 • 2017

"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 (ACRP) 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 prepares concise, documented reports on specific topics. Reports from this endeavor constitute an ACRP report series, "Synthesis of Airport Practice." This staff digest reports on the progress and status of ACRP Project A11-03. It contains the following five tables: (1) ACRP Synthesis Studies—Active as of December 2016; (2) ACRP Synthesis Studies—2017 Projects; (3) Published ACRP Syntheses; (4) ACRP Project Panel A11-03; and (5) Index to Syntheses and Studies (2016)." -- from TRID (9 pages)

CONTENTS

- Introduction
- The Synthesis Program
- Studies in Progress and Planned for 2017
- Available Publications
- Selection of Topics
- Conduct of the Studies
- Index of Topic Studies

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Item 8

Emergency Communications Planning for Airports: A Synthesis of Airport Practice

TRANSPORTATION RESEARCH BOARD (TRB)

ACRP Synthesis 73 • 2016

"All airports are faced with the challenges of dealing with the flow of accurate information during emergencies—flows within the airport's organization, between the airport and its response partners, and between the airport and the public, either directly or through the media. Changing technology affects all these flows, and airports are challenged to acquire and effectively use the technology. Many airports find benefits from going beyond regulatory minima for communication plans. This is true of the FAR Part 139 airports as well as for the general aviation airports. An effective communication plan enhances not only safety but also customer service. The focus of the report is on emergency communications planning and is specifically designed for use by airport senior management, public information officers, and first responders and emergency managers. The report includes sample communication plan tables of contents, field operations guides, and the checklist of effective communications plans. These materials were derived from a survey of 60 U.S. airports regarding their specific communications plans and procedures as well as from five highly detailed case examples and five additional focused interviews. The checklist is designed to assist airport managers, emergency managers, and planners in the development, implementation, and evaluation of effective communications plans or crisis communications plans." -- from TRID (87 pages)

CONTENTS

- Summary
- Chapter One. State of the Practice
- Chapter Two. Communication and Information at Airports
- Chapter Three. Scope and Methodology
- Chapter Four. Emergency and Crisis Communications Planning and Plans
- Chapter Five. Roles of the Primary Audiences for this Study
- Chapter Six. Role of Social Media
- Chapter Seven. Issues with Contact Lists
- Chapter Eight. Evaluating the Effectiveness of Emergency and Crisis Communications
- Chapter Nine. Conclusions and Suggestions for Further Research
- Acronyms
- Glossary
- References and Bibliography
- Appendix A. Survey Questions
- Appendix B. Participating Airports
- Appendix C. Case Examples
- Appendix D. FOG1--Lead PIO Functions and Duties
- Appendix E. FOG2--Deputy Lead PIO Functions and Duties
- Appendix F. FOG3--Functions and Duties of PIO Coordinator for Social Media
- Appendix G. FOG4--Functions and Duties of PIO in PR Office or 24-Hour Duty Officer
- Appendix H. FOG5--Functions and Duties of PIO at Media Assembly Site
- Appendix I. FOG6--Functions and Duties of PIO at News Conference Site
- Appendix J. FOG7--Functions and Duties of Airport Photographer
- Appendix K. FOG8--Functions and Duties of Airport Videographer
- Appendix L. FOG9--Functions and Duties of Airport Graphic Designers
- Appendix M. Checklist for Effective Planning Practices for Creating and Sustaining Effective Emergency Communications Plans for Airports

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Item 9

Civil Integrated Management (CIM) for Departments of Transportation. Volume 1, Guidebook

TRANSPORTATION RESEARCH BOARD (TRB)

NCHRP Report 831 • 2016

"This report presents guidance for state departments of transportation (DOTs) and other agencies for adopting and applying practices and tools entailing collection, organization, and management of information in digital formats about a highway or other transportation construction project. The business of facility production and management is moving rapidly toward all-digital practices, driven by the increasing availability, accuracy, and affordability of digital formats and advances in design technology and in-field positioning that use these formats. Much of the leadership for development and adoption of Civil Integration Management (CIM) practices has come from construction contractors, but DOTs and other transportation agencies stand to realize significant benefits from increased adoption of CIM. CIM can serve all project stakeholders, consistently providing appropriate, accurate, and reliable information from the asset's initial planning through its in-service maintenance. The guidance and background information presented in this two-volume report will be helpful to DOT staff and others responsible for the agency's project development and delivery activities. Volume 1, the guidebook, includes chapters on CIM tools and functions, the impact of CIM on project delivery, an implementation framework, and supplemental resources." -- from TRID

(64 pages)

CONTENTS

- Summary
- Chapter 1. Introduction
- Chapter 2. Overview of CIM Tools and Functions
- Chapter 3. Impact of CIM on Project Delivery
- Chapter 4. Implementation Framework for CIM
- Chapter 5. Supplemental Resources
- References
- Acronyms
- Appendix A. Catalog of CIM Resources
- Appendix B. Executive Briefing [Available on the [NCHRP Project 10-96 web page](#)]

This report is available for free download:

<https://www.nap.edu/catalog/23697/>

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Item 10

Civil Integrated Management (CIM) for Departments of Transportation. Volume 2, Research Report

TRANSPORTATION RESEARCH BOARD (TRB)

NCHRP Report 831 • 2016

"This report presents guidance for state departments of transportation (DOTs) and other agencies for adopting and applying practices and tools entailing collection, organization, and management of information in digital formats about a highway or other transportation construction project. The business of facility production and management is moving rapidly toward all-digital practices, driven by the increasing availability, accuracy, and affordability of digital formats and advances in design technology and in-field positioning that use these formats. Much of the leadership for development and adoption of Civil Integration Management (CIM) practices has come from construction contractors, but DOTs and other transportation agencies stand to realize significant benefits from increased adoption of CIM. CIM can serve all project stakeholders, consistently providing appropriate, accurate, and reliable information from the asset's initial planning through its in-service maintenance. The guidance and background information presented in this two-volume report will be helpful to DOT staff and others responsible for the agency's project development and delivery activities. The chapters of Volume 2--the research report--include a literature review, research objective, methodology, state of the practice surveys, case studies, and implementation framework." -- from TRID
(89 pages)

CONTENTS

- Chapter 1. Introduction
- Chapter 2. Literature Review
- Chapter 3. Research Objective
- Chapter 4. Methodology
- Chapter 5. CIM State of Practice at DOTs: Agency and Project Surveys
- Chapter 6. CIM Case Studies
- Chapter 7. CIM Implementation Framework: Formulation and Validation
- Chapter 8. Conclusion
- References
- Acronyms
- Appendix A. Agency Survey Questionnaire
- Appendix B. Project Survey Questionnaire
- Appendix C. Interview Guide for Case Studies
- Appendix D. Case Study Question Format_V1
- Appendix E. Validation Survey Questionnaire

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Research Digest

Item 11

Assessing, Coding, and Marking of Highway Structures in Emergency Situations. Volume 1, Research Overview

TRANSPORTATION RESEARCH BOARD (TRB)

NCHRP Report 833 • 2016

"A critical component of any emergency response plan is the process for inspectors to assess the integrity of highway structures impacted by an event. To date, a uniform methodology for rapidly assessing, coding, and marking highway structures after an emergency event does not exist. To this end, the primary purpose of this report is to establish a uniform methodology along with a consistent framework for coordinating the emergency response effort in a safe and efficient manner. This scalable approach provides guidance on response levels based on the severity of the event. The assessment process presented in this report consists of four stages: Fast Reconnaissance, Preliminary Damage Assessment (PDA), Detailed Damage Assessment, and Extended Investigation. This hierarchical approach accounts for the need for rapid yet reliable information at the early periods of the emergency situation followed by progressively more detail as the process continues to ensure appropriate allocation of resources during the repair and recovery phase. The approach also accounts for the diverse skill sets and capabilities of persons needed for the assessment process. Finally, it provides guidance for determining appropriate response levels and mobilization based on incoming warnings or information for each emergency event. The assessment procedure was developed with a simplified taxonomy in order to group common forms of damages so that a systematic process could be implemented that is nearly independent of the hazard type. A coding and marking procedure was developed for use after the assessment is completed where each structure is physically marked with a placard and digitally marked in a database to improve communication between responders for various organizations. Providing PDA responders with a uniform process will help to support the overall emergency response framework, regardless of the scale of the event. Nonetheless, it is recognized that each agency will have different capabilities, resources, organizational structures, challenges, and priorities. Hence, the assessment process was developed to identify and recommend methodologies that can be practically implemented by today's state highway agencies, along with the training materials to support these activities." -- from TRID

(100 pages)

CONTENTS

- Summary
- Chapter 1. Introduction
- Chapter 2. State of the Art and State of the Practice: Literature Review and Questionnaire
- Chapter 3. Evaluation of Assessment Technologies and Coding/Marking Practices
- Chapter 4. Assessment Process
- Chapter 5. Coding and Marking Guidelines
- Chapter 6. Smart App Development Guidelines
- Chapter 7. Training Materials and Recommendations
- Chapter 8. Implementation Plan
- Chapter 9. Conclusions and Future Outlook
- References
- Acronyms and Abbreviations
- Glossary

This report is available for free download:

<http://www.trb.org/Main/Blurbs/175318.aspx>

Research Digest

Item 12

Assessing, Coding and Marking of Highway Structures in Emergency Situations. Volume 2, Assessment Process Manual

TRANSPORTATION RESEARCH BOARD (TRB)

NCHRP Report 833 • 2016

"A critical component of any emergency response plan is the process for inspectors to assess the integrity of highway structures impacted by an event. To date, a uniform methodology for rapidly assessing, coding, and marking highway structures after an emergency event does not exist. To this end, the primary purpose of this report is to establish a uniform methodology along with a consistent framework for coordinating the emergency response effort in a safe and efficient manner. This scalable approach provides guidance on response levels based on the severity of the event. The assessment process presented in this report consists of four stages: Fast Reconnaissance, Preliminary Damage Assessment, Detailed Damage Assessment, and Extended Investigation. This second volume presents the Assessment Process Manual, intended for managers who will oversee the emergency response. It identifies technologies that are appropriate for each structure type and addresses prioritization, coordination, communication, and redundancy." -- from TRID (129 pages)

CONTENTS

- Summary
- Chapter 1. Introduction
- Chapter 2. Emergency Events
- Chapter 3. Response Process Framework
- Chapter 4. Planning and Preparation
- Chapter 5. Assessment Process
- Chapter 6. Coding and Marking Guidelines
- Chapter 7. Coordination and Communication
- Chapter 8. Supporting Technology
- Chapter 9. Conclusions and Future Outlook
- Appendix A. Highway Structure Background
- Appendix B. Emergency Event Response Levels and Notifications
- Appendix C. Traffic Levels and Capacity
- Appendix D. Equipment List
- Appendix E. Example Communication Flowcharts
- Appendix F. Assessment Forms
- References
- Acronyms and Abbreviations
- Glossary

This report is available for free download:

<http://www.trb.org/Main/Blurbs/175319.aspx>

Research Digest

Item 13

Assessing, Coding, and Marking of Highway Structures in Emergency Situations. Volume 3, Coding and Marking Guidelines

TRANSPORTATION RESEARCH BOARD (TRB)

NCHRP Report 833 • 2016

"A critical component of any emergency response plan is the process for inspectors to assess the integrity of highway structures impacted by an event. To date, a uniform methodology for rapidly assessing, coding, and marking highway structures after an emergency event does not exist. To this end, the primary purpose of this report is to establish a uniform methodology along with a consistent framework for coordinating the emergency response effort in a safe and efficient manner. This scalable approach provides guidance on response levels based on the severity of the event. The assessment process presented in this report consists of four stages: Fast Reconnaissance, Preliminary Damage Assessment (PDA), Detailed Damage Assessment, and Extended Investigation. This volume, Coding and Marking Guidelines, is intended as a field manual for PDA responders who will evaluate the highway structures. The volume is presented in three parts: background; preliminary damage assessment of highway structures; and damage photos." -- from TRID

(141 pages)

CONTENTS

- Part I. Background
 - Chapter 1. Introduction
 - Chapter 2. Overview of Highway Structure Safety Evaluation
 - Chapter 3. Preliminary Damage Assessment
 - Chapter 4. Overview of Emergency Events
- Part II. Preliminary Damage Assessment of Highway Structures
 - Chapter 5. Bridges
 - Chapter 6. Tunnels
 - Chapter 7. Culverts
 - Chapter 8. Walls
 - Chapter 9. Overhead Signs
- Part III. Damage Photos
 - Chapter 10. Bridge Damage Photos
 - Chapter 11. Tunnel Damage Photos
 - Chapter 12. Culvert Damage Photos
 - Chapter 13. Wall Damage Photos
 - Chapter 14. Overhead Sign Damage Photos
 - Chapter 15. Scour Damage Photos
- Appendix A. PDA Equipment List
- Appendix B. Field Safety
- Appendix C. Contact List Form
- Appendix D. Emergency Routes
- Appendix E. Example of a Completed Assessment Form
- References
- Acronyms and Abbreviations

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Item 14

Continuing Project to Synthesize Information on Highway Problems

TRANSPORTATION RESEARCH BOARD (TRB)

NCHRP RRD 401 • 2017

"There is information on nearly every subject of concern to highway administrators and engineers. 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 highway community, the American Association of State Highway and Transportation Officials—through the mechanism of the National Cooperative Highway Research Program—authorized the Transportation Research Board to undertake a continuing study. This study, NCHRP Project 20-05, "Synthesis of Information Related to Highway Problems," searches out and synthesizes useful knowledge from all available sources and prepares concise, documented reports on specific topics. Reports from this endeavor constitute an NCHRP report series, Synthesis of Highway Practice. This staff digest reports on the progress and status of NCHRP Project 20-05. Table 1 presents a list of the topics being studied. Table 2 contains synthesis topics selected for the FY 2016 program. NCHRP Synthesis Oversight Panel SP20-5 members are listed in Table 3. Table 4 lists completed syntheses. Table 5 contains an index to the 2016 syntheses and studies." -- from TRID
(24 pages)

CONTENTS

- Introduction
- The Synthesis Project
- Studies in Progress and Planned for 2017
- Selection of Topics
- Available Publications
- Index of Topic Subjects
- Conduct of the Studies

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Item 15

Application of Pedestrian Crossing Treatments for Streets and Highways: A Synthesis of Highway Practice

TRANSPORTATION RESEARCH BOARD (TRB)

NCHRP Synthesis 498 • 2016

"This synthesis summarizes the types of pedestrian crossing treatments being used in different places throughout the United States, and what policies and processes are used to select and prioritize treatments and treatment locations. The study was developed by (1) surveying state departments of transportation and local transportation agencies, (2) identifying and synthesizing effective practices and policies, and (3) performing a comprehensive literature review of safety evidence for more than 25 pedestrian crossing treatments. Case examples highlight more comprehensive pedestrian safety practices." -- from TRID (145 pages)

CONTENTS

- Summary
- Chapter One. Introduction
- Chapter Two. Policies Guiding Selection of Pedestrian Crossing Improvements
- Chapter Three. Guidance and Current Practices Regarding Selecting and Prioritizing Pedestrian Crossing Improvements
- Chapter Four. Recommended Applications, Effectiveness, and Current use of Pedestrian Crossing Treatments
- Chapter Five. Examples of Guidance Tools and Original Case Examples on Provision of Safer Pedestrian Crossings
- Chapter Six. Summary and Conclusions
- Acronyms and Terms Used in this Report
- References
- Bibliography
- Appendix A. Survey Questionnaire and Summary of Survey Responses
- Appendix B. Detailed Synthesis of Literature Review of Treatments

This report is available for free download:

<https://www.nap.edu/catalog/24634/>

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Item 16

Alternate Design/Alternate Bid Process for Pavement-Type Selection: A Synthesis of Highway Practice

TRANSPORTATION RESEARCH BOARD (TRB)

NCHRP Synthesis 499 • 2017

"Alternate design/alternate bid (ADAB) is a contracting technique that allows the pavement-type selection decision to be made as part of the procurement process. Contractors are permitted to bid their preferred pavement-type alternative using real-time market pricing for the paving materials. This synthesis documents the state of the practice in ADAB for pavement-type selection by highway agencies. The report covers: design aspects; life-cycle cost analysis; procurement policies, procedures, and programs; administration procedures; and case studies. Information used in this study was gathered through a literature review, a survey of state departments of transportation (DOTs), review of DOT pavement design and procurement documents, and case examples." -- from TRID

(77 pages)

CONTENTS

- Summary
- Chapter One. Introduction to Alternate Design/Alternate Bid
- Chapter Two. Alternate Design/Alternate Bid Design Aspects
- Chapter Three. Alternate Design/Alternate Bid Life-Cycle Cost Analysis
- Chapter Four. Department of Transportation Alternate Design/Alternate Bid Procurement Policies, Procedures, and Programs
- Chapter Five. Alternate Design/Alternate Bid Contract Administration Procedures
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Research Digest

Item 17

Pavement Management Systems: Putting Data to Work: A Synthesis of Highway Practice

TRANSPORTATION RESEARCH BOARD (TRB)

NCHRP Synthesis 501 • 2017

"Pavement management systems are recognized as important tools to help transportation agencies optimize the use of available funding, better communicate funding needs, and more objectively manage their pavement network. This synthesis documents current pavement management practices in state and provincial transportation agencies. The report focuses on the use of pavement management analysis results for resource allocation, determining treatment cost-effectiveness, program development, and communication with stakeholders. Information used in this study was gathered through a literature review and a survey of state departments of transportation and Canadian provincial transportation agencies. Follow-up interviews with selected agencies provided additional information. According to the survey results, nearly all respondents have inventory and condition information for their high-volume highway networks. Fewer agencies have inventory and condition information for the lower-volume systems and there is a significant drop in the number of agencies that compile this information for frontage roads, shoulders, entrance and exit ramps, and high-occupancy lanes or bus lanes. Almost half of respondents are using customized proprietary pavement management software, and 16% are using software that was developed in house. Sixteen percent are using vendor-supplied software that has been modified in house. The results also indicated that 69% develop customized models developed specifically for their agency using agency data. Family models are used by 27 agencies (56%) and 23 agencies (48%) model performance indices rather than individual distresses. Only seven agencies (15%) are using probabilistic models. Ten percent report that their system does not predict pavement performance and 6% that they use default models. Of the 47 agencies responding to this question, 38% estimated that their pavement management recommendation and funded projects match at least 70% of the time. Additional findings as well as suggestions for further research are detailed in the report." -- from TRID (78 pages in various pagings)

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