



Research Digest

FORWARD ALL REQUESTS TO:

The University of Texas at Austin
Center for Transportation Research **LIBRARY**
3208 Red River • Suite 115 • Austin • Texas • 78705-2650
Phones: (512) 232-3126 and (512) 232-3138 • Fax: (512) 232-3088
Email: ctrlib@uts.cc.utexas.edu

In this Issue:

Transportation Research Board Reports

Table of Contents

Item 1. Lightning-Warning Systems for Use by Airports (ACRP Report 8)	1
Item 2. Effects of Aircraft Noise - Research Update on Selected Topics (ACRP Synthesis 9)	1
Item 3. Airport Sustainability Practices (ACRP Synthesis 10)	1
Item 4. Current Practices in the Use of Alternative Dispute Resolution (NCHRP Legal Research Digest 50)	2
Item 5. Multimodal Level of Service Analysis for Urban Streets (NCHRP Report 616)	2
Item 6. Cost-Effective Performance Measures for Travel Time Delay, Variation, and Reliability (NCHRP Report 618)	2
Item 7. Effectiveness of Behavioral Highway Safety Countermeasures (NCHRP Report 622)	3
Item 8. Identifying and Quantifying Rates of State Motor Fuel Tax Evasion (NCHRP Report 623)	3
Item 9. Traffic Safety Evaluation of Nighttime and Daytime Work Zones (NCHRP Report 627)	3
Item 10. Transportation Implications of Emerging Economic Development Trends (NCHRP Research Results Digest 327)	4
Item 11. Applications of Illuminated, Active, In-Pavement Marker System (NCHRP Synthesis 380)	4
Item 12. Changeable Message Sign Displays During Non-Incident, Non-Roadwork Periods (NCHRP Synthesis 383)	4
Item 13. Civil Rights Implications of the Allocation of Funds Between Bus and Rail (TCRP Legal Research Digest 27)	5
Item 14. Employee Compensation Guidelines for Transit Providers in Rural and Small Urban Areas (TCRP Report 127)	5
Item 15. Potential Impacts of Climate Change on U.S. Transportation (TRB Special Report 290)	5
Item 16. Safety Research on Highway Infrastructure and Operations – Improving Priorities, Coordination, and Quality (TRB Special Report 292)	6



Research Digest

Item 1

Lightning-Warning Systems for Use by Airports

TRANSPORTATION RESEARCH BOARD

ACRP Report 8 • 2008

This report explores the operational benefits associated with delay reductions that lightning detection and warning systems may be able to generate. The report is designed to help in the assessment of whether such systems are cost-beneficial on an individual airport or airline basis.

Full-text PDF of this report is available for free download from
http://onlinepubs.trb.org/onlinepubs/acrp/acrp_rpt_008.pdf

Item 2

Effects of Aircraft Noise - Research Update on Selected Topics

TRANSPORTATION RESEARCH BOARD

ACRP Synthesis 9 • 2008

This synthesis includes an annotated bibliography and summary of new research on the effects of aircraft noise. The report is designed to update and complement the U.S. Federal Highway Administration's 1985 Aviation Noise Effects report.

This synthesis study is intended to inform airport operators, stakeholders, and policy makers of updated information about aviation noise effects. In the decades since Federal Aviation Administration (FAA) Report No. FAA-EE-85-2 "Aviation Noise Effects" was first published in 1985 much has changed in the understanding of this complex issue. Increased air travel, new and quieter aircraft, increased awareness of land use planning and aviation noise, and mitigation of previously incompatible land uses are just a few of the changes. Knowledge of the effects of aviation noise has also changed. The greatest increases in knowledge have come in the areas of health effects, annoyance, sleep disturbance, and potential effects on children's learning abilities in schools. Other areas of increased knowledge include parks and wilderness areas, wildlife and domestic animals, and property values. Knowledge has also increased on the effects of meteorology and topography on aviation noise. This document is intended to synthesize research since 1985 to update and compliment the original FAA report, primarily by providing an annotated bibliography and summary of new research in selected topic areas. Although research inquiry has progressed in many areas, there is still much to be learned. The reader is encouraged to review each chapter for additional information and to be directed to source material.

Full-text PDF of this report is available for free download from
http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_009.pdf

Item 3

Airport Sustainability Practices

TRANSPORTATION RESEARCH BOARD

ACRP Synthesis 10 • 2008

This synthesis explores airport sustainability practices across environmental, economic, and social issues.

Full-text PDF of this report is available for free download from
http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_010.pdf



Research Digest

Item 4

Current Practices in the Use of Alternative Dispute Resolution

TRANSPORTATION RESEARCH BOARD

NCHRP Legal Research Digest 50 • 2008

This digest explores ADR policies and procedures of state departments of transportation in the areas of environment, contracts, rights-of-way, and torts.

Full-text PDF of this report is available for free download from

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_lrd_50.pdf

Item 5

Multimodal Level of Service Analysis for Urban Streets

TRANSPORTATION RESEARCH BOARD

NCHRP Report 616 • 2008

This report explores a method for assessing how well an urban street serves the needs of all of its users. The method for evaluating the multimodal level of service (MMLOS) estimates the auto, bus, bicycle, and pedestrian level of service on an urban street using a combination of readily available data and data normally gathered by an agency to assess auto and transit level of service. The MMLOS user's guide was published as NCHRP Web-Only Document 128 - http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_w128.pdf

Full-text PDF of this report is available for free download from

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_616.pdf

Item 6

Cost-Effective Performance Measures for Travel Time Delay, Variation, and Reliability

TRANSPORTATION RESEARCH BOARD

NCHRP Report 618 • 2008

State departments of transportation, metropolitan planning organizations, public transit authorities, and other transportation stakeholders increasingly are turning to the use of transportation system performance measures to gain and sustain public and legislative support for investments in managing, maintaining, and constructing transportation infrastructure. Measures that express congestion and mobility in terms that system users can understand and use are needed for use in systems planning, corridor development, priority programming, and operations to inform investment decisions directed at improving system performance. This report presents a framework and cost-effective methods to predict, measure, and report travel time, delay, and reliability from a customer-oriented perspective.

Full-text PDF of this report is available for free download from

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_618.pdf



Research Digest

Item 7

Effectiveness of Behavioral Highway Safety Countermeasures

TRANSPORTATION RESEARCH BOARD

NCHRP Report 622 • 2008

This report explores a framework and guidance for estimating the costs and benefits of emerging, experimental, untried, or unproven behavioral highway safety countermeasures.

Full-text PDF of this report is available for free download from

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_622.pdf

Item 8

Identifying and Quantifying Rates of State Motor Fuel Tax Evasion

TRANSPORTATION RESEARCH BOARD

NCHRP Report 623 • 2008

This report explores a methodological approach to examine and reliably quantify state motor fuel tax evasion rates and support agency efforts to reduce differences between total fuel tax liability and actual tax collections.

Full-text PDF of this report is available for free download from

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_623.pdf

Item 9

Traffic Safety Evaluation of Nighttime and Daytime Work Zones

TRANSPORTATION RESEARCH BOARD

NCHRP Report 627 • 2008

This report explores the crash rates for nighttime and daytime work zones and examines management practices that promote safety and mobility in work zones. The report also highlights work-zone crash reporting suggestions designed to help improve the data collected on work zone crashes.

Full-text PDF of this report is available for free download from

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_627.pdf



Research Digest

Item 10

Transportation Implications of Emerging Economic Development Trends

TRANSPORTATION RESEARCH BOARD

NCHRP Research Results Digest 327 • 2008

This report focuses on economic development trends and how transportation relates to these trends. It provides practical information that could be used to relate transportation investment with economic development. The literature review and interviews conducted for this study focused on the following five subject areas: business production, inventory, and logistics and distribution trends and practices; site selection research and practices; labor market considerations; urban and rural development practices; and international trade and global market trends and implications.

Full-text PDF of this report is available for free download from
http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rrd_327.pdf

Item 11

Applications of Illuminated, Active, In-Pavement Marker Systems

TRANSPORTATION RESEARCH BOARD

NCHRP Synthesis 380 • 2008

This synthesis explores the state of IPM technology, experiences with IPM applications, and potential IPM research needs.

Full-text PDF of this report is available for free download from
http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_380.pdf

Item 12

Changeable Message Sign Displays During Non-Incident, Non-Roadwork Periods

TRANSPORTATION RESEARCH BOARD

NCHRP Synthesis 383 • 2008

This synthesis explores the use of CMSs to convey messages on non-recurrent, environmental, special event traffic, and other special problems.

Full-text PDF of this report is available for free download from
http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_383.pdf



Research Digest

Item 13

Civil Rights Implications of the Allocation of Funds Between Bus and Rail

TRANSPORTATION RESEARCH BOARD

TCRP Legal Research Digest 27 • 2008

This digest examines complaints filed under Title VI of the Civil Rights Act of 1964 with the Federal Transit Administration. The report also explores the number of Title VI challenges, the nature of transit agencies' responses to these challenges, U.S. Supreme Court decisions associated with Section 602 disparate impact violations, intentional discrimination claims, immunity, and more.

Full-text PDF of this report is available for free download from

http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_lrd_27.pdf

Item 14

Employee Compensation Guidelines for Transit Providers in Rural and Small Urban Areas

TRANSPORTATION RESEARCH BOARD

TCRP Report 127 • 2008

This report will be of interest to local transit providers and their governing boards. While the Guidebook largely addresses compensation, it also assists transit providers to recruit, hire and retain qualified employees. The Guidebook is accompanied by an interactive computer tool (located on the Transportation Research Board website at http://trb.org/news/blurb_detail.asp?id=9282) that provides an easy way to explore salary and benefit characteristics of transit systems in rural and small urban areas.

Full-text PDF of this report is available for free download from

http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_127.pdf

Item 15

Potential Impacts of Climate Change on U.S. Transportation

NATIONAL RESEARCH COUNCIL. TRANSPORTATION RESEARCH BOARD (TRB)

TRB Special Report 290 • 2008

Leading scientists on the Intergovernmental Panel for Climate Change published their fourth assessment of the state of knowledge about climate change and its impacts in spring 2007. They reached consensus that human activity is responsible for many observed climate changes, particularly the warming temperatures of the last several decades, and concluded that there is a need for far more extensive adaptation than is currently occurring to reduce vulnerability to future climate changes. In September 2007, the National Research Council (NRC) released a report examining the U.S. Climate Change Science Program, which oversees federal research on climate change in the United States. The report noted that understanding of the physical climate system has progressed rapidly but that the use of this knowledge to support decision making, manage risks, and engage stakeholders is inadequate.

Full-text PDF of this report is available for free download from

<http://onlinepubs.trb.org/onlinepubs/sr/sr290.pdf>



Research Digest

Item 16

Safety Research on Highway Infrastructure and Operations - Improving Priorities, Coordination, and Quality

NATIONAL RESEARCH COUNCIL. TRANSPORTATION RESEARCH BOARD (TRB)

TRB Special Report 292 • 2008

This report recommends the creation of an independent scientific advisory committee (SAC). The SAC would be charged with development of a transparent process for identifying and prioritizing research needs and opportunities in highway safety, with emphasis on infrastructure and operations, and using the process developed to recommend a national research agenda focused on highway infrastructure and operations safety. The report also explores opportunities to improve the quality of highway safety research.

Full-text PDF of this report is available for free download from

<http://onlinepubs.trb.org/Onlinepubs/sr/sr292.pdf>