



Research Digest

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Research Digest

Item 1

Commercial Truck and Bus Safety Synthesis Program : A Status Report

TRANSPORTATION RESEARCH BOARD

CTBSSP Research Results Digest 6 • 2007

This is a staff digest of the progress and status of the Commercial Truck and Bus Safety Synthesis Program, which is administered by the Transportation Research Board. Individual studies for the program are managed by Christopher W. Jenks, Manager, Commercial Truck and Bus Safety Synthesis Program.

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

http://onlinepubs.trb.org/onlinepubs/ctbssp/ctbssp_rrd_6.pdf

Item 2

Guidance for Implementation of the AASHTO Strategic Highway Safety Plan Volume 17: A Guide for Reducing Collisions Involving Young Drivers

TRANSPORTATION RESEARCH BOARD

NCHRP Report 500

Vol. 19 • 2007

TRB's National Cooperative Highway Research Program (NCHRP) Report 500, Vol. 19, Guidance for Implementation of the AASHTO Strategic Highway Safety Plan: A Guide for Reducing Collisions Involving Young Drivers provides strategies that can be employed to reduce collisions involving young drivers.

In 1998, the American Association of State Highway and Transportation Officials (AASHTO) approved its Strategic Highway Safety Plan, which was developed by the AASHTO Standing Committee for Highway Traffic Safety with the assistance of the Federal Highway Administration, the National Highway Traffic Safety Administration, and the Transportation Research Board Committee on Transportation Safety Management. The plan includes strategies in 22 key emphasis areas that affect highway safety. The plan's goal is to reduce the annual number of highway deaths by 5,000 to 7,000. Each of the 22 emphasis areas includes strategies and an outline of what is needed to implement each strategy.

Over the next few years the National Cooperative Highway Research Program (NCHRP) will be developing a series of guides, several of which are already available, to assist state and local agencies in reducing injuries and fatalities in targeted areas. The guides correspond to the emphasis areas outlined in the AASHTO Strategic Highway Safety Plan. Each guide includes a brief introduction, a general description of the problem, the strategies/countermeasures to address the problem, and a model implementation process.

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

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_500v19.pdf



Research Digest

Item 3

Effects of Subsurface Drainage on Pavement Performance

TRANSPORTATION RESEARCH BOARD

NCHRP Report 583 • 2007

Effects of Subsurface Drainage on Pavement Performance: Analysis of the SPS-1 and SPS-2 Field Sections explores the effects of subsurface drainage features on pavement performance through a program of inspection and testing of the subsurface drainage features present in the Long-Term Pavement Performance SPS-1 (flexible hot-mix asphalt pavement) and SPS-2 (rigid portland cement concrete pavement) field sections.

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

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_583.pdf

Item 4

Rail Freight Solutions to Roadway Congestion - Final Report and Guidebook

TRANSPORTATION RESEARCH BOARD

NCHRP Report 586 • 2007

TRB's National Cooperative Highway Research Program (NCHRP) Report 586: Rail Freight Solutions to Roadway Congestion—Final Report and Guidebook explores guidance on evaluating the potential feasibility, cost, and benefits of investing in rail freight solutions to alleviate highway congestion from heavy truck traffic.

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

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_586.pdf

Item 5

Improved Conditioning and Testing Procedures for HMA Moisture Susceptibility

TRANSPORTATION RESEARCH BOARD

NCHRP Report 589 • 2007

TRB's National Cooperative Highway Research Program (NCHRP) Report 589: Improved Conditioning and Testing Procedures for HMA Moisture Susceptibility explores whether combining the environmental conditioning system with the simple performance test would provide a superior procedure for determining the moisture susceptibility of hot-mix asphalt (HMA).

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

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_589.pdf

Item 6

Multi-Objective Optimization for Bridge Management Systems

TRANSPORTATION RESEARCH BOARD

NCHRP Report 590 • 2007

Multi-Objective Optimization for Bridge Management Systems examines the development of methodologies for network- and project-level optimization of multiple, user-specified bridge management performance criteria. The report also explores the development of bridge management software modules to implement the methodologies.

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

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_590.pdf



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Item 7

Simplified Live Load Distribution Factor Equations

TRANSPORTATION RESEARCH BOARD

NCHRP Report 592 • 2007

Simplified Live Load Distribution Factor Equations explores recommended Load and Resistance Factor Design (LRFD) live load distribution factor design equations for shear and moment that are simpler to apply and have a wider range of applicability than current methods.

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

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_592.pdf

Item 8

Countermeasures to Protect Bridge Piers from Scour

TRANSPORTATION RESEARCH BOARD

NCHRP Report 593 • 2007

TRB's National Cooperative Highway Research Program (NCHRP) Report 593: Countermeasures to Protect Bridge Piers from Scour explores practical selection criteria for bridge-pier scour countermeasures; guidelines and specifications for the design and construction of those countermeasures; and guidelines for their inspection, maintenance, and performance evaluation. Produced along with the report is an interactive version of the countermeasure selection methodology, which defines the proper conditions for the use of each specific countermeasure, and a reference document that contains detailed laboratory testing results and translations of three German "Code of Practice" documents.

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

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_593.pdf

Item 9

Guidebook for Integrating Freight into Transportation Planning and Project Selection Processes

TRANSPORTATION RESEARCH BOARD

NCHRP Report 594 • 2007

TRB's National Cooperative Highway Research Program (NCHRP) Report 594: Guidebook for Integrating Freight into Transportation Planning and Project Selection Processes explores a framework for incorporating freight needs for all modes into transportation planning and priority programming by state, regional, metropolitan, local, and special transportation agencies. The report covers technical issues, organizational suggestions, and communication requirements of freight planning and programming.

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

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_594.pdf



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Item 10

Application of the LRFD Bridge Design Specifications to High-Strength Structural Concrete: Flexure and Compression Provisions

TRANSPORTATION RESEARCH BOARD

NCHRP Report 595 • 2007

TRB's National Cooperative Highway Research Program (NCHRP) Report 595, Application of the LRFD Bridge Design Specifications to High-Strength Structural Concrete: Flexure and Compression Provisions explores recommended revisions to the American Association of State Highway and Transportation Officials' Load and Resistance Factor Design (LRFD) Bridge Design Specifications to extend the applicability of the flexural and compression design provisions for reinforced and prestressed concrete members to concrete strengths greater than 10 ksi.

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

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_595.pdf

Item 11

Using the Results of Contractor-Performed Tests in Quality Assurance

TRANSPORTATION RESEARCH BOARD

NCHRP Research Results Digest 323 • 2007

RB's National Cooperative Highway Research Program (NCHRP) Research Results Digest 323: Using the Results of Contractor-Performed Tests in Quality Assurance explores whether state departments of transportation can effectively use contractor-performed test results in the quality-assurance process. Select chapters of the contractor's final report are available as NCHRP Web-Only Document 115.

This digest summarizes key finding from NCHRP Project 10-58(02), "Using Contractor-Performed Tests in Quality Assurance," conducted by Auburn University, Auburn, Alabama. The digest is an abridgement of the project final report that was authorized by F. Parker, the principal investigator, and R.E. Turochy of Auburn University. Select chapters of the contractor's final report are available as NCHRP Web-Only Document 115.

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

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rrd_323.pdf



Research Digest

Item 12

Simulating the Effects of Hot Mix Asphalt Aging for Performance Testing and Pavement Structural Design

TRANSPORTATION RESEARCH BOARD

NCHRP Research Results Digest 324 • 2007

TRB's National Cooperative Highway Research Program (NCHRP) Research Results Digest 324: Simulating the Effects of Hot-Mix Asphalt Aging for Performance Testing and Pavement Structural Design summarizes the results of an NCHRP effort that examined the limitations associated with provisional protocols on hardening potential of asphalt binders and mixes, and explored ways to enhance the predictive capabilities of these protocols. Detailed information on the conduct and results of these experiments was published as NCHRP Web-Only Document 113.

This digest summarizes key findings from Part 1 of NCHRP Project 9-23, "Environmental Effects in Pavement Mix and Structural Design Systems," conducted by Arizona State University, Tempe, Arizona. The Part 1 final report was authored by W. N. Houston, M. W. Mirza, C. E. Zapata, and S. Raghavendra and is available online as NCHRP Web-Only Document 113.

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

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rrd_324.pdf

Item 13

Continuing Project to Synthesize Information on Highway Problems

TRANSPORTATION RESEARCH BOARD

NCHRP Research Results Digest 325 • 2007

Highway 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 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 20-5, "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.

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

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rrd_325.pdf



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Item 14

Cone Penetration Testing

TRANSPORTATION RESEARCH BOARD

NCHRP Synthesis 368 • 2007

TRB's National Cooperative Highway Research Program (NCHRP) Synthesis 368: Cone Penetrating Testing explores the current practices of departments of transportation associated with cone penetration testing (CPT). The report examines cone penetrometer equipment options; field testing procedures; CPT data presentation and geostatigraphic profiling; CPT evaluation of soil engineering parameters and properties; CPT for deep foundations, pilings, shallow foundations, and embankments; and CPT use in ground modifications and difficult ground conditions.

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

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_368.pdf

Item 15

Animal-Vehicle Collision Data Collection

TRANSPORTATION RESEARCH BOARD

NCHRP Synthesis 370 • 2007

TRB's National Cooperative Highway Research Program (NCHRP) Synthesis 370: Animal-Vehicle Collision Data Collection examines the extent to which data from animal-vehicle collision accident reports and animal carcass counts are collected, analyzed, and used throughout the United States and Canada.

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

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_370.pdf

Item 16

Managing Selected Transportation Assets: Signals, Lighting, Signs, Pavement Markings, Culverts, and Sidewalks

TRANSPORTATION RESEARCH BOARD

NCHRP Synthesis 371 • 2007

TRB's National Cooperative Highway Research Program (NCHRP) Synthesis 371: Managing Selected Transportation Assets: Signals, Lighting, Signs, Pavement Markings, Culverts, and Sidewalks explores the state of the practice for managing transportation infrastructure assets other than pavements and bridges, and documents gaps in knowledge and areas in need of potential further study.

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

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_371.pdf



Research Digest

Item 17

Improving ADA Complementary Paratransit Demand Estimation

TRANSPORTATION RESEARCH BOARD

TCRP Report 119 • 2007

TRB's Transit Cooperative Research Program (TCRP) Report 119: Improving ADA Complementary Paratransit Demand Estimation examines tools and methods designed to predict demand for complementary paratransit service by public transit agencies that comply with legal requirements for level of service as specified by the Americans with Disabilities Act of 1990 (ADA) and implementing regulations. The ADA created a requirement for complementary paratransit service for all public transit agencies that provide fixed-route service. Complementary paratransit service is intended to complement the fixed-route service and serve individuals who, because of their disabilities, are unable to use the fixed-route transit system.

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http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_119.pdf

Item 18

Synthesis of Information Related to Transit Problems

TRANSPORTATION RESEARCH BOARD

TCRP Research Results Digest 86 • 2007

Transit 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 transit 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 to make it available to the entire transit community, the Transit Cooperative Research Program Oversight and Project Selection (TOPS) Committee authorized the Transportation Research Board to undertake a continuing study. This study, TCRP Project J-7, "Synthesis of Information Related to Transit Problems," searches out and synthesizes useful knowledge from all available sources and prepares concise, documented reports on specific topics. Reports from this endeavor constitute a TCRP report series, Synthesis of Transit Practice.

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

http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rrd_86.pdf



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Item 19

Paratransit Manager's Skills, Qualifications, and Needs

TRANSPORTATION RESEARCH BOARD

TCRP Synthesis 71 • 2007

Paratransit Manager's Skills, Qualifications, and Needs examines current requirements for being a paratransit manager and actual experiences of current paratransit managers in their positions. The synthesis is designed to help enhance the paratransit management profession and paratransit service delivery.

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

http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_syn_71.pdf

Item 20

Metropolitan Travel Forecasting

NATIONAL RESEARCH COUNCIL. TRANSPORTATION RESEARCH BOARD (TRB)

TRB Special Report 288 • 2007

TRB Special Report 288, Metropolitan Travel Forecasting: Current Practice and Future Direction, examines metropolitan travel forecasting models that provide public officials with information to inform decisions on major transportation system investments and policies. The report explores what improvements may be needed to the models and how federal, state, and local agencies can achieve them. According to the committee that produced the report, travel forecasting models in current use are not adequate for many of today's necessary planning and regulatory uses. The findings of the surveys of metropolitan planning organizations used to help develop this report are available online.

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

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