Civil Engineering

"The Highway Safety Manual (HSM) is a resource that provides safety knowledge and tools in a useful form to facilitate improved decision making based on safety performance. The focus of the HSM is to provide quantitative information for decision making. The HSM assembles currently available information and methodologies on measuring, estimating and evaluating roadways in terms of crash frequency (number of crashes per year) and crash severity (level of injuries due to crashes). The HSM presents tools and methodologies for consideration of 'safety' across the range of highway activities: planning, programming, project development, construction, operations, and maintenance. The purpose of this is to convey present knowledge regarding highway safety information for use by a broad array of transportation professionals"—P. xxiii.

Highway Safety Manual

Civil Engineering PE All-in-One Exam Guide: Breadth and Depth, Fourth Edition

NCHRP Report 612

Now there is a comprehensive reference to provide tools on implementing an
energy audit for any type of facility. Containing forms, checklists and handy working aids, this book is for anyone implementing an energy audit. Accounting procedures, rate of return, analysis and software programs are included to provide evaluation tools for audit recommendations. Technologies for electrical, mechanical and building systems are covered in detail.

Accommodation of Utilities on Right-of-way of the Illinois State Highway System

Urban Transport XXVI

With the encroachment of the Internet into nearly all aspects of work and life, it seems as though information is everywhere. However, there is information and then there is correct, appropriate, and timely information. While we might love being able to turn to Wikipedia® for encyclopedia-like information or search Google® for the thousands of links on a topic, engineers need the best information, information that is evaluated, up-to-date, and complete. Accurate, vetted information is necessary when building new skyscrapers or developing new prosthetics for returning military veterans. While the award-winning first edition of Using the Engineering Literature used a roadmap analogy, we now need a three-dimensional analysis reflecting the complex and dynamic nature of research in the information age. Using the Engineering Literature, Second Edition provides a guide to the wide range of resources available in all fields of engineering. This second edition has been thoroughly revised and features new sections on nanotechnology as well as green engineering. The information age has greatly impacted the way engineers find information. Engineers have an effect, directly and indirectly, on almost all aspects of our lives, and it is vital that they find the right information at the right time to create better products and processes. Comprehensive and up to date, with expert chapter authors, this book fills a gap in the literature, providing critical information in a user-friendly format.

Geometric Design of Roads Handbook

Manual for Assessing Safety Hardware, 2009

AASHTO LRFD Bridge Design Guide Specifications for GFRP-reinforced Concrete Bridge Decks and Traffic Railings

The Global Status Report on Road Safety 2018, launched by WHO in December 2018, highlights that the number of annual road traffic deaths has reached 1.35 million. Road traffic injuries are now the leading killer of people aged 5-29 years. The burden is disproportionately borne by pedestrians, cyclists and motorcyclists, in particular those living in developing countries. The report suggests that the price paid for mobility is too high, especially because proven measures exist. Drastic action is needed to put these measures in place to meet any future global target that might be set and save lives.

Manual on uniform traffic control devices for streets and highways

This comprehensive design guide summarizes current developments in the design
of concrete pavements. Following an overview of the theory involved, the authors detail optimum design techniques and best practice, with a focus on highway and infrastructure projects. Worked examples and calculations are provided to describe standard design methods, illustrated with numerous case studies. The author provides guidance on how to use each method on particular projects, with reference to UK, European and US standards and codes of practice. Concrete Pavement Design Guidance Notes is an essential handbook for civil engineers, consultants and contractors involved in the design and construction of concrete pavements, and will also be of interest to students of pavement design.

Human Factors Guidelines for Road Systems

This review book has all the problems and solutions you need to review for the transportation engineering portion of the "Professional Engineer (PE) exam for Civil Engineering. This is for engineers planning to take the "Civil Engineering PE exam in transportation. The chapters are taken from the "Civil Engineering License Review and "Civil Engineering License Problems and Solutions. The review book contains the complete review of the topics and includes example questions with step-by-step solutions and end-of-chapter practice problems. Also featured is information from the latest "Codes-1998 Highway Capacity Manual. There are 15 problems with complete step-by-step solutions.

Transportation Depth Reference Manual for the Pe Civil Exam

"This report completes and updates the first edition of NCHRP Report 600: Human Factors Guidelines for Road Systems (HFG), which was published previously in three collections. The HFG contains guidelines that provide human factors principles and findings for consideration by, and is a resource document for, highway designers, traffic engineers, and other safety practitioners."--Foreword.

Urban Street Design Guide

Explore the Art and Science of Geometric Design The Geometric Design of Roads Handbook covers the design of the visible elements of the road—its horizontal and vertical alignments, the cross-section, intersections, and interchanges. Good practice allows the smooth and safe flow of traffic as well as easy maintenance. Geometric design is covered in depth. The book also addresses the underpinning disciplines of statistics, traffic flow theory, economic and utility analysis, systems analysis, hydraulics and drainage, capacity analysis, coordinate calculation, environmental issues, and public transport. Background Material for the Practicing Designer A key principle is recognizing what the driver wishes to do rather than what the vehicle can do. The book takes a human factors approach to design, drawing on the concept of the "self-explaining road." It also emphasizes the need for consistency of design and shows how this can be quantified, and sets out the issues of the design domain context, the extended design domain concept, and the design exception. The book is not simply an engineering manual, but properly explores context-sensitive design. Discover and Develop Real-World Solutions Changes in geometric design over the last few years have been dramatic and far-reaching and this is the first book to draw these together into a practical guide which presents a proper and overriding philosophy of design for road and highway designers, and students. This text: Covers the basics of geometric design Explores key aspects of multimodal design Addresses drainage and environmental issues Reviews practical standards, procedures, and guidelines Provides
additional references for further reading. A practical guide for graduate
students taking geometric design, traffic operations/capacity analysis, and
public transport, the Geometric Design of Roads Handbook introduces a novel
approach that addresses the human aspect in the design process and
incorporates relevant concepts that can help readers create and implement safe
and efficient designs.

Guide Specifications for Seismic Isolation Design

Facilities Development Manual

A general overview of the use of utility distribution poles, including for
electric supply and communications applications. Overhead Distribution Lines:
Design and Applications provides information on the design and use of power
and communication distribution lines. An excellent resource for those in the
power and communication utilities industry, this book presents information on
the physical characteristics of utility poles, overhead supply and
communication cables, installation practices, joint-usage issues, and safety
rules, including the National Electrical Safety Code (NESC), California-
specific rules, and others. It describes how to select the proper poles for
specific applications. The especially valuable final chapter provides examples
showing how it all works in practice, providing a background allowing more
effective use of related industry software. Rather than delving into detailed
design and installation techniques, this book serves as an overview for
engineers and non-technical audiences alike. At the same time, it serves as a
compendium of technical information not readily available elsewhere. This
unique book: Offers an overview of pole structures, pole installation and
maintenance, wires and cables, and cable installation and maintenance—with
examples Provides information on national standards documents such as the
National Electrical Safety Code (NESC), ANSI O5.1, California General Order
95, and more. Explores the "sag-tension" relationship between wires and poles
Includes appendices that cover properties of messenger strands, wireless
attachments, solution of equations to determine sag, under uniform and point
loads. Overhead Distribution Lines: Design and Applications offers readers an
understanding of the basic principles and various issues related to electric
supply and communications distribution lines. It is a valuable resource for
utility engineers, as well as those without a technical background.

Design of Highway Bridges

Concrete Pavement Design Guidance Notes

"This guide provides information on how to accommodate bicycle travel and
operations in most riding environments. It is intended to present sound
guidelines that result in facilities that meet the needs of bicyclists and
other highway users. Sufficient flexibility is permitted to encourage designs
that are sensitive to local context and incorporate the needs of bicyclists,
pedestrians, and motorists." -- Publisher's website.

Civil Engineering

Guide for the Development of Bicycle Facilities
This edition is based on the work of NCHRP project 20-7, task 262 and updates the 2nd (1999) edition -- P. ix.

The Handbook of Highway Engineering

Mechanistic-empirical Pavement Design Guide

Using the Engineering Literature, Second Edition

Modern highway engineering reflects an integrated view of a road system's entire lifecycle, including any potential environmental impacts, and seeks to develop a sustainable infrastructure through careful planning and active management. This trend is not limited to developed nations, but is recognized across the globe. Edited by renowned authority

A Policy on Geometric Design of Highways and Streets, 2011

Overhead Distribution Lines

Urban Soils

The NACTO Urban Street Design Guide shows how streets of every size can be reimagined and reoriented to prioritize safe driving and transit, biking, walking, and public activity. Unlike older, more conservative engineering manuals, this design guide emphasizes the core principle that urban streets are public places and have a larger role to play in communities than solely being conduits for traffic. The well-illustrated guide offers blueprints of street design from multiple perspectives, from the bird’s eye view to granular details. Case studies from around the country clearly show how to implement best practices, as well as provide guidance for customizing design applications to a city’s unique needs. Urban Street Design Guide outlines five goals and tenets of world-class street design: • Streets are public spaces. Streets play a much larger role in the public life of cities and communities than just thoroughfares for traffic. • Great streets are great for business. Well-designed streets generate higher revenues for businesses and higher values for homeowners. • Design for safety. Traffic engineers can and should design streets where people walking, parking, shopping, bicycling, working, and driving can cross paths safely. • Streets can be changed. Transportation engineers can work flexibly within the building envelope of a street. Many city streets were created in a different era and need to be reconfigured to meet new needs. • Act now! Implement projects quickly using temporary materials to help inform public decision making. Elaborating on these fundamental principles, the guide offers substantive direction for cities seeking to improve street design to create more inclusive, multi-modal urban environments. It is an exceptional resource for redesigning streets to serve the needs of 21st century cities, whose residents and visitors demand a variety of transportation options, safer streets, and vibrant community life.

Accident Mitigation Guide for Congested Rural Two-lane Highways

Glass fiber reinforced polymer (GFRP) materials have emerged as an alternative...
material for producing reinforcing bars for concrete structures. GFRP reinforcing bars offer advantages over steel reinforcement due to their noncorrosive nature and nonconductive behavior. Due to other differences in the physical and mechanical behavior of GFRP materials as opposed to steel, unique guidance on the engineering and construction of concrete bridge decks reinforced with GFRP bars is needed. These guide specifications offer a description of the unique material properties of GFRP composite materials as well as provisions for the design and construction of concrete bridge decks and railings reinforced with GFRP reinforcing bars.

Roadway Lighting Design Guide

Globally, 30% of the world population lived in urban areas in 1950, 54% in 2016 and 66% projected by 2050. The most urbanized regions include North America, Latin America, and Europe. Urban encroachment depletes soil carbon and the aboveground biomass carbon pools, enhancing the flux of carbon from soil and vegetation into the atmosphere. Thus, urbanization has exacerbated ecological and environmental problems. Urban soils are composed of geological material that has been drastically disturbed by anthropogenic activities and compromised their role in the production of food, aesthetics of residential areas, and pollutant dynamics. Properties of urban soils are normally not favorable to plant growth—the soils are contaminated by heavy metals and are compacted and sealed. Therefore, the quality of urban soils must be restored to make use of this valuable resource for delivery of essential ecosystem services (e.g., food, water and air quality, carbon sequestration, temperature moderation, biodiversity). Part of the Advances in Soil Sciences Series, Urban Soils explains properties of urban soils; assesses the effects of urbanization on the cycling of carbon, nitrogen, and water and the impacts of management of urban soils, soil restoration, urban agriculture, and food security; evaluates ecosystem services provisioned by urban soils, and describes synthetic and artificial soils.

Roadside Design Guide

A Guide for Achieving Flexibility in Highway Design

A continuous requirement for better urban transport systems and the need for a healthier environment has resulted in an increasing demand for new solutions. Innovative systems, new approaches and original ideas need to be thoroughly tested and critically evaluated before they can be implemented in practice. Moreover, there is a growing need for integration with telecommunications systems and IT applications in order to improve safety, security and efficiency. This volume also addresses the need to solve important pollution problems associated with urban transport in order to achieve a healthier environment. The variety of topics covered by the included research works, which were presented at the 26th International Conference on Urban Transport and the Environment, reflect the complex interaction of urban transport systems with their environment and the need to establish integrated strategies. The goal is to arrive at optimal socio-economic solutions while reducing the negative environmental impacts of current transportation systems.

Sustainability, Eco-efficiency, and Conservation in Transportation Infrastructure Asset Management

The latest in bridge design and analysis—revised to reflect the eighth edition
of the AASHTO LRFD specifications Design of Highway Bridges: An LRFD Approach, 4th Edition, offers up-to-date coverage of engineering fundamentals for the design of short- and medium-span bridges. Fully updated to incorporate the 8th Edition of the AASHTO Load and Resistance Factor Design Specifications, this invaluable resource offers civil engineering students and practitioners a comprehensive introduction to the latest construction methods and materials in bridge design, including Accelerated Bridge Construction (ABC), ultra high-performance concrete (UHPC), and Practical 3D Rigorous Analysis. This updated Fourth Edition offers: Dozens of end-of-chapter worked problems and design examples based on the latest AASHTO LRFD Specifications. Access to a Solutions Manual and multiple bridge plans including cast-in-place, precast concrete, and steel multi-span available on the Instructor’s companion website. From gaining base knowledge of the AASHTO LRFD specifications to detailed guidance on highway bridge design, Design of Highway Bridges is the one-stop reference for civil engineering students and a key study resource for those seeking engineering licensure through the Principles and Practice of Engineering (PE) exam.

A Policy on Geometric Design of Highways and Streets, 1990

Worldwide there is a growing interest in efficient planning and the design, construction, and maintenance of transportation facilities and infrastructure assets. The 3rd International Conference on Transportation Infrastructure ICTI 2014 (Pisa, April 22-25, 2014) contains contributions on sustainable development and preservation of transportation infrastructure assets, with a focus on eco-efficient and cost-effective measures. Sustainability, Eco-efficiency and Conservation in Transportation Infrastructure Asset Management includes a selection of peer reviewed papers on a wide variety of topics: • Advanced modeling tools (LCA, LCC, BCA, performance prediction, design tools and systems) • Data management (monitoring and evaluation) • Emerging technologies and equipment • Innovative strategies and practices • Environmental sustainability issues • Eco-friendly design and materials • Re-use or recycling of resources • Pavements, tracks, and structures • Case studies Sustainability, Eco-efficiency and Conservation in Transportation Infrastructure Asset Management will be particularly of interest to academics, researchers, and practitioners involved in sustainable development and maintenance of transportation infrastructure assets.

A Policy on Design Standards—interstate System

Global Status Report on Road Safety 2018

AASHTO Load and Resistance Factor Design Movable Highway Bridge Design Specifications

Written by seven civil engineering professors, this book is designed to be used as either a stand-alone volume or in conjunction with Civil Engineering: License Review. Engineers looking for exam problems, a sample exam, and detailed solutions to every problem should find this book useful.

Highway Design Manual

*Add the convenience of accessing this book anytime, anywhere on your personal device with the eTextbook version for only $50 at ppi2pass.com/etextbook-

American Jurisprudence Proof of Facts, 3d Series

AASHTO Guide for Design of Pavement Structures, 1993


Provides text and sample testimony to assist in preparing for and proving facts that may be in issue in judicial and administrative proceedings. Kept up to date by packet supplements. Library has second and third series.

Handbook of Energy Audits

The most complete, up-to-date Civil Engineering PE exam guide Fully updated for the latest technical standards and exam content, this effective study guide contains all the information you need to pass the challenging Civil Engineering PE exam. Written by a registered PE and experienced educator, Civil Engineering PE All-in-One Exam Guide: Breadth and Depth, Fourth Edition, features equations, diagrams, and study strategies along with nearly 200 accurate practice questions and solutions. Beyond exam preparation, this comprehensive resource also serves as an essential on-the-job reference. Covers all material on the NCEES PE Civil exam, including: Reinforced concrete beams, slabs, and columns Steel beams, tension members, and compression members Bridge, timber, and masonry design Soil sampling, testing, and classification Design loads on buildings and other structures Shallow and deep foundations and retaining walls Seismic topics in geotechnical engineering Water and wastewater treatment Freeways, multilane highways, and two-lane highways Engineering economics, project scheduling, and statistics
A Policy on Geometric Design of Highways and Streets, 2001

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