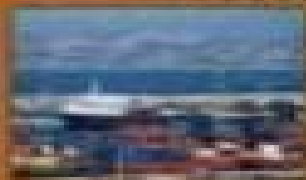


# Freight and Air Quality Handbook

May 2010



California Highways Department  
Federal Highway Administration

# Freight And Air Quality Handbook

**EW Minium**



## **Freight And Air Quality Handbook:**

**Freight and Air Quality Handbook** U. S. Department Transportation, 2015-01-04 The ability of our nation's transportation system to provide for and maintain the efficient movement of freight is important to the continuing economic health of the United States. U.S. domestic freight tonnage is anticipated to approximately double and international freight tonnage expected to nearly triple by 2035. This has led to a growing need to find new ways to address air quality concerns and greenhouse gas emissions associated with freight movements. Diesel exhaust from freight vehicles is a primary source of PM<sub>2.5</sub>, air toxic contaminants, and NO<sub>x</sub> emissions, one precursor to ozone, all of which have potential health implications. Freight emissions comprise close to one third of U.S. transportation greenhouse gas emissions and have grown by more than 50 percent since 1990. As a result, there is a steadily increasing number of challenges faced by both freight and air quality planners as they attempt to simultaneously meet the growing demand for freight while improving environmental outcomes. They must meet the requirements of new and varied initiatives being put into place across the nation as states and regions grapple with air quality issues and emissions budgets, understand how to integrate emerging equipment and infrastructure technologies, look for ways to make the system more efficient, and identify new funding sources for these activities. A wide range of strategies is available to mitigate these freight and air quality challenges, ranging from technological strategies such as engine retrofits and alternative fuels to operations strategies such as congestion mitigation and idling reduction. Not only must planners identify viable mitigation strategies, they also must navigate the myriad transportation and environmental funding programs to identify ones that could be applicable to their project. The Federal Highway Administration's FHWA Office of Freight Management and Operations, in cooperation with the Office of Natural and Human Environment, developed this handbook as a resource for states, metropolitan planning organizations (MPOs), FHWA, and other public and private sector organizations to use in developing solutions to these challenges. This handbook provides the background needed to understand how freight contributes to air quality issues, describes strategies to mitigate those freight-related pollutant emissions, and improve air quality, and identifies funding and financing tools available for freight-related air quality projects, e.g., freight projects designed to reduce the emissions of air pollutants. It is designed to be used by all involved in the identification, financing, and delivery of freight-related air quality projects, whether approaching from a freight or an air quality perspective.

*Handbook on Applying Environmental Benchmarking in Freight Transportation* Laurence O'Rourke, 2012. NCFRP Report 21. Handbook on Applying Environmental Benchmarking in Freight Transportation identifies and evaluates approaches that can be used by public and private entities to estimate, monitor, and reduce freight emissions and impacts across the supply chain by examining how benchmarking can be used as a management tool in the freight and logistics industry to promote environmental performance. The handbook provides a step-by-step overview of the benchmarking process and describes a framework for applying this process to freight carriers, shippers, and freight hubs.

Foreword     **Climate Change and Public Health** Barry Levy, Jonathan Patz, 2015-07-02 Orchestrating and coordinating contributions from more than 75 selected public health specialists and environmental scientists the editors have developed a concise and comprehensive book that represents a core curriculum on climate change and public health including key strategies for adaptation and mitigation Written primarily for students and mid career professionals in public health and environmental sciences the book clearly describes concepts and their application to the health impacts of climate change Chapters are supplemented with case studies graphs tables and photographs The book s organization in 15 chapters makes it an ideal textbook for graduate and undergraduate courses in public health environmental sciences public policy and other fields

**Environmental Planning Handbook** Tom Daniels, 2017-11-08 Environmental protection is a global issue But most of the action is happening at the local level How can communities keep their air clean their water pure and their people and property safe from climate and environmental hazards Newly updated The Environmental Planning Handbook gives local governments nonprofits and citizens the guidance they need to create an action plan they can implement now It s essential reading for a post Katrina post Sandy world

**Transportation Planning Handbook** ITE (Institute of Transportation Engineers), Michael D. Meyer, 2016-08-01 A multi disciplinary approach to transportation planning fundamentals The Transportation Planning Handbook is a comprehensive practice oriented reference that presents the fundamental concepts of transportation planning alongside proven techniques This new fourth edition is more strongly focused on serving the needs of all users the role of safety in the planning process and transportation planning in the context of societal concerns including the development of more sustainable transportation solutions The content structure has been redesigned with a new format that promotes a more functionally driven multimodal approach to planning design and implementation including guidance toward the latest tools and technology The material has been updated to reflect the latest changes to major transportation resources such as the HCM MUTCD HSM and more including the most current ADA accessibility regulations Transportation planning has historically followed the rational planning model of defining objectives identifying problems generating and evaluating alternatives and developing plans Planners are increasingly expected to adopt a more multi disciplinary approach especially in light of the rising importance of sustainability and environmental concerns This book presents the fundamentals of transportation planning in a multidisciplinary context giving readers a practical reference for day to day answers Serve the needs of all users Incorporate safety into the planning process Examine the latest transportation planning software packages Get up to date on the latest standards recommendations and codes Developed by The Institute of Transportation Engineers this book is the culmination of over seventy years of transportation planning solutions fully updated to reflect the needs of a changing society For a comprehensive guide with practical answers The Transportation Planning Handbook is an essential reference

**Handbook of Measurement in Science and Engineering, Volume 1** Myer Kutz, 2015-12-04 A multidisciplinary reference of engineering measurement tools techniques and applications Volume 1 When you can measure

what you are speaking about and express it in numbers you know something about it but when you cannot measure it when you cannot express it in numbers your knowledge is of a meager and unsatisfactory kind it may be the beginning of knowledge but you have scarcely in your thoughts advanced to the stage of science Lord Kelvin Measurement falls at the heart of any engineering discipline and job function Whether engineers are attempting to state requirements quantitatively and demonstrate compliance to track progress and predict results or to analyze costs and benefits they must use the right tools and techniques to produce meaningful useful data The Handbook of Measurement in Science and Engineering is the most comprehensive up to date reference set on engineering measurements beyond anything on the market today Encyclopedic in scope Volume 1 spans several disciplines Civil and Environmental Engineering Mechanical and Biomedical Engineering and Industrial Engineering and covers New Measurement Techniques in Structural Health Monitoring Traffic Congestion Management Measurements in Environmental Engineering Dimensions Surfaces and Their Measurement Luminescent Method for Pressure Measurement Vibration Measurement Temperature Measurement Force Measurement Heat Transfer Measurements for Non Boiling Two Phase Flow Solar Energy Measurements Human Movement Measurements Physiological Flow Measurements GIS and Computer Mapping Seismic Testing of Highway Bridges Hydrology Measurements Mobile Source Emissions Testing Mass Properties Measurement Resistive Strain Measurement Devices Acoustics Measurements Pressure and Velocity Measurements Heat Flux Measurement Wind Energy Measurements Flow Measurement Statistical Quality Control Industrial Energy Efficiency Industrial Waste Auditing Vital for engineers scientists and technical managers in industry and government Handbook of Measurement in Science and Engineering will also prove ideal for members of major engineering associations and academics and researchers at universities and laboratories [EPA National Publications Catalog](#) United States. Environmental Protection Agency,2001

**Climate Change and Public Health** Barry S. Levy,Jonathan A. Patz,Heather L. McStowe,2024 Now updated with key developments in mitigation and adaptation from the last decade Climate Change and Public Health Second Edition offers an engaging overview of climate change and its health consequences alongside evolving methods for climate resilience

**Freight and Air Quality Handbook** Robert C. Hyman,2010

**The Engineering Handbook** Richard C Dorf,2018-10-03 First published in 1995 The Engineering Handbook quickly became the definitive engineering reference Although it remains a bestseller the many advances realized in traditional engineering fields along with the emergence and rapid growth of fields such as biomedical engineering computer engineering and nanotechnology mean that the time has come to bring this standard setting reference up to date New in the Second Edition 19 completely new chapters addressing important topics in bioinstrumentation control systems nanotechnology image and signal processing electronics environmental systems structural systems 131 chapters fully revised and updated Expanded lists of engineering associations and societies The Engineering Handbook Second Edition is designed to enlighten experts in areas outside their own specialties to refresh the knowledge of mature practitioners and

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