



Sustainable Transportation Systems Engineering: Evaluation & Implementation (Mechanical Engineering)

By Francis Vanek, Largus Angenent, James Banks, Ricardo Daziano, Mark Turnquist

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Engineer and implement sustainable transportation solutions

Featuring in-depth coverage of passenger and freight transportation, this comprehensive resource discusses contemporary transportation systems and options for improving their sustainability. The book addresses vehicle and infrastructure design, economics, environmental concerns, energy security, and alternative energy sources and platforms. Worked-out examples, case studies, illustrations, equations, and end-of-chapter problems are also included in this practical guide.

Sustainable Transportation Systems Engineering covers:

- Background on energy security and climate change
- Systems analysis tools and techniques
- Individual choices and transportation demand
- Transportation systems and vehicle design
- Physical design of transportation infrastructure
- Congestion mitigation in urban passenger transportation
- Role of intelligent transportation systems
- Public transportation and multimodal solutions
- Personal mobility and accessibility
- Intercity passenger transportation
- Freight transportation function and current trends
- Freight modal and supply chain management approaches
- Spatial and geographic aspects of freight transportation
- Alternative fuels and platforms
- Electricity and hydrogen as alternative fuels
- Bioenergy resources and systems
- Transportation security and planning for extreme weather events

PRAISE FOR *SUSTAINABLE TRANSPORTATION SYSTEMS ENGINEERING*:

*"This book addresses one of the great challenges of the 21st century--how to transform our resource-intensive passenger and freight transportation system into a set of low-carbon, economically efficient, and socially equitable set of services." -- Dan Sperling, Professor and Director, Institute of Transportation Studies, University of California, Davis, author of *Two Billion Cars: Driving toward Sustainability**

"...provides a rich tool kit for students of sustainable transportation, embracing a systems approach. The authors aptly blend engineering, economics, and environmental impact analysis approaches." -- Susan Shaheen, Professor, Department of Civil and Environmental Engineering, and Co-Director, Transportation Sustainability Research Center, University of California, Berkeley

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Bibliography

- Sales Rank: #1594913 in Books
- Published on: 2014-05-14
- Original language: English
- Number of items: 1
- Dimensions: 9.50" h x 1.20" w x 7.60" l, .0 pounds
- Binding: Hardcover
- 704 pages

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Editorial Review

About the Author

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