

Preston L. Schiller, Eric C. Bruun and Jeffrey R. Kenworthy



An Introduction to Sustainable Transportation

Policy, Planning and Implementation



Contents

<i>List of Figures, Tables and Boxes</i>	<i>ix</i>
<i>Acknowledgements</i>	<i>xvii</i>
<i>Foreword</i>	<i>xix</i>
<i>Introduction and Overview</i>	<i>xxi</i>
1 A Highly Mobile Planet and Its Challenges: Automobile Dependence, Equity and Inequity	1
Sustainable transportation	1
What is sustainable transportation about?	1
Unsustainable transportation: The magnitude of the problem	3
Hypermobility	3
The problems of automobile dependence	7
Equity and auto dependence	16
Conclusions	21
2 Automobile Cities, the Car Culture and Alternative Possibilities	25
Introduction	25
Walking cities, transit cities and automobile cities	25
Additional lessons from city types	29
Car culture	31
Tourism: The car culture evolves into the fly-drive and recreational vehicle cultures	42
Conclusions	46
3 History of Sustainable and Unsustainable Transportation: From Walking to Wheels and Back to Walking	51
Transportation history: The intersection of modes, infrastructure and society	51
Transportation infrastructure: From animal paths to ‘Good Roads’	63
The rise of automobility	66
Rail and railways	74
Maritime and water travel	75
Feat of flying	76
Telecommunications and transportation	77
Lessons for sustainable transportation	78
4 Modes, Roads and Routes: Technologies, Infrastructure, Functions and Interrelatedness	87
Introduction	87
In-town modes: Getting to work, school, shopping, services and recreation	88
Regional–metropolitan area modes: Long commutes, regional services, recreation, peak demand	102

	The barrier effects of different rights of way	104
	Long distance: Modes and types of travel	105
	Sustainability considerations	113
	Futuristic modes	118
	Conclusions	120
5	Moving Freight, Logistics and Supply Chains in a More Sustainable Direction	123
	Introduction and overview	123
	Background to current freight movement factors	125
	Factors that shape freight movement: Supply chains, logistical systems and shipping strategies	125
	Problems of global supply chains	138
	Total logistics cost: Widgets near or widgets far?	139
	Elements aimed at increasing freight sustainability	140
	Considerations of policy change	148
	De-globalization of freight?	150
6	Transportation Economics and Investment: Improving Analysis and Investment Strategies	153
	Introduction	153
	Basic concepts and principles	154
	Current evaluation methods	155
	Hidden and intentional subsidies and externalities	159
	Opportunity costs	167
	Critique of current methods with respect to sustainable outcomes	171
	Regulation versus pricing	172
	Time–area: An important tool for analysing a transportation investment	174
	Moving public policy and investment evaluation towards promoting sustainability	174
	Case studies	179
7	Public Policy and Effective Citizen Participation: Leadership, Deliberation, Back-Casting, Scenarios, Visualization and Visioning	189
	The public, policy and participation	189
	Transportation policy: From mobility promotion to mobility management and sustainability	190
	The public and participation	196
	Public participation in transportation	200
	From business as usual to sustainability in transportation	210

8 A New Planning Paradigm: From Integrated Planning, Policy and Mobility Management to Repair, Regeneration and Renewal	217
Lessons learned from preceding chapters	217
The recognition of the need for a new paradigm:	
The Buchanan Report and its critics	221
Overview of the new paradigm: Integrated policy-making, planning and mobility management	223
Towards better management of existing transportation features	223
Integrated planning	228
Moving from planning and policy to regeneration, repair and renewal	236
Sustainable transportation agenda and priorities	253
From the new paradigm to its embodiment	253
9 Exemplars of Sustainable Transportation: Walking the Talk in Vancouver, Portland, Boulder, Freiburg, Seoul and Surabaya	259
Introduction	259
The exemplars	261
Conclusions	295
10 Conclusion: Growing More Exemplars	299
Necessities for growing more exemplars	299
Success builds success: The power of demonstration projects	308
Appendix 1: Transit Primer	313
Appendix 2: Sustainable Transportation Resources Toolbox	319
<i>List of Acronyms and Abbreviations</i>	323
<i>Glossary</i>	327
<i>Index</i>	329