

Stu's Notes #4

Stu's Notes provide selected passages from books that are of interest to Stu. They are primarily direct quotes, though some longer passages are summarized. They do not generally provide a thorough synopsis of the book. Rather, they capture individual facts or opinions of interest, which may or may not be reflective of the overall text.

Unlike other editions of *Stu's Notes*, this one is the complete text of Chapter 8, which itself is a summary of the preceding seven chapters.

Title:	Sustainability and Cities: Overcoming Automobile Dependence
Author:	Peter Newman & Jeffrey Kenworthy
Publisher:	Island Press
Published:	1999
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Summary:	<i>Explores the unsustainability of many cities today, and develops recommendations to move towards greater sustainability. Strong focus on auto-dependence as the core of what needs to be addressed.</i>
Highlights:	<p>It is not possible to solve sustainability in cities without addressing automobile dependence [Chapter 2]</p> <p>Reducing automobile dependence is good for the economy [Chapter 3]</p> <p>Ten myths about the inevitability of automobile dependence [Chapter 4]</p> <p>Sustainable City is multi-centered, linked by quality transit [Chapter 4]</p> <p>"Density" and "transit" seem to be mostly negative concepts in Anglo-Saxon traditions [Chapter 5]</p> <p>Simplistic models with self-fulfilling prophecies [Chapter 6]</p> <p>The need for a rewriting of the manuals and regulations used so effectively for so many years to roll out the fabric of the Auto City [Chapter 6]</p> <p>The fundamental value that drives automobile dependence and unsustainability in cities is privatism, or isolationism [Chapter 7]</p>

In the Preface to this book we presented a set of questions to guide the book's wide-ranging discussion and exploration of sustainability in cities and its relationship to automobile dependence. Here we would like to summarize the approaches we have made to answering these questions.

1: The Concept of Sustainability and Its Relationship to Cities

- *What is sustainability?* Sustainability is a concept developed in the global political arena that attempts to achieve, simultaneously, the goals of an improved environment, a better economy, and a more just and participative society, rather than trading off anyone of these against the others. While its primary context is global, sustainability is seen to be meaningful and achievable only when it is practiced through local initiatives with global significance.
- *How does sustainability apply to cities?* Sustainability can be applied to cities through extending the metabolism approach to human settlements so that a city can be defined as becoming more sustainable if it is reducing its resource inputs (land, energy, water, and materials) and waste outputs (air, liquid, and solid waste) while simultaneously improving its livability (health, employment, income, housing, leisure activities, accessibility, public spaces, and community).
- *What are sustainability goals and indicators for a city?* Sustainability goals and indicators are ways to incorporate the many overlapping areas of sustainability into a city's consciousness about what it values. They should cover the natural environment, resources, wastes, and human livability, the latter of which embraces the critical economic dimensions of a city. Each city needs a process to define a comprehensive list of important sustainability indicators and, in particular, ones that set it apart from others, such as Seattle's returning salmon, or The Hague's number of breeding storks, or Copenhagen's number of public seats. It then needs to build an awareness of a process that seeks to improve these indicators each year.
- *How does a city make a Sustainability Plan?* Sustainability Plans, or Local Agenda 21 Plans (as required in Agenda 21 and agreed to by all nations), are community-based processes that (1) create a set of objectives that fulfill the sustainability agenda, (2) set out indicators that show how the progress toward sustainability can be measured, (3) assess how the city is performing on these criteria, and (4) provide policy options about how it can do better. The plans are updated annually.
- *How can Sustainability Plans help move a city forward?* A Sustainability Plan enables a city to focus on its global setting (increasingly required for its economic and social future), to create an integrated, community-centered approach to its future that is not usually possible within traditional professions, and to identify its local constraints and opportunities for innovation. The plan links a city into the global Agenda 21 / sustainability networks and thus provides an opportunity to motivate creative, local contributions to a global audience.

- *How does city size relate to sustainability?* There are many ways that larger cities can contribute to sustainability through their economies of scale and density, which help to reduce per capita levels of resources and wastes and improve livability. However, they need to be constantly strengthening these advantages because local capacity limits on air, water, and land are frequently stretched in larger cities. Nevertheless, the idea that small cities are more sustainable than large ones is not supported by the findings in this book; thus it is important that all cities, regardless of size, tackle the sustainability agenda.

2: The Problem of Automobile Dependence at the End of the Twentieth Century

- *How are cities shaped?* The urban form of cities is shaped primarily by transportation technology, but this works through economic and cultural priorities about infrastructure and where people like to live and work – the urban, suburban, and exurban choices.
- *What is automobile dependence?* Automobile dependence is when a city or area of a city assumes automobile use as the dominant imperative in its decisions on transportation, infrastructure, and land use. Other modes thus become increasingly peripheral, marginal, or nonexistent until there are no real options for passenger travel other than the automobile.
- *How does sustainability relate to automobile dependence?* Automobile dependence is the primary force driving cities to increase their use of land, energy, water, and other materials; their production of transportation-related air emissions (both greenhouse gases and local smog-related emissions), traffic noise, and stormwater pollution (due to the extent of asphalt in Auto Cities); and their economic problems due to the high capital costs of sprawl-related infrastructure, direct transportation costs, and indirect transportation costs (road accidents, pollution, etc.); along with the transportation-related loss of the public realm, safety, and community. It is not possible to solve sustainability in cities without addressing automobile dependence.
- *How has sustainability been addressed in other eras of city development?* The transition from the Walking City to the Transit City was due to the need to solve the problems of pollution and overcrowding resulting from the Industrial Revolution. It was achieved through a combination of new technology, new urban design and management strategies, and new visions for social change. As the Auto City has reached its zenith and created new problems of sustainability, a similarly creative combination of solutions is required.
- *Can Auto City problems be solved by incremental changes (largely engineering), or do they require more fundamental urban system changes?* Addressing the problems in a short-term technological way is necessary, but if that is all that is done, it will ultimately only exacerbate these problems since automobile use will continue to rise. Therefore, more long-term urban system changes are needed that can also accommodate technological change in a positive way.

- *What are the new economic forces confronting the Auto City?* New studies show that significant economic problems are associated with Auto Cities due to their excessive automobile use (inefficiencies from direct and indirect costs) and the amount of land lost and opportunity costs that result from the diversion of capital into non-productive suburban infrastructure.
- *Are globalization and information technology leading to greater or less automobile dependence?* The trend in global cities (information-based economies) is toward the need for face-to-face interactions for the creative aspects of economic functions, and these are best nurtured and developed in quality urban environments where the emphasis is on traffic-free space surrounded by a dense mix of different urban activities. Such environments are inherently much lower in automobile dependence. Thus automobile dependence can be reduced under these new economic parameters, which are tending to favor the social qualities of pedestrian- and transit-oriented land use.
- *What are the social views about automobile dependence and the continuing provision of Auto City infrastructure?* Despite the popularity of the automobile, most surveys show that people don't want priorities to emphasize Auto City infrastructure, such as freeways, but want greater development of transit systems, better conditions for walking and cycling, and a reduced need to travel in urban environments, which support the development of human community.
- *What kinds of scenarios face Auto Cities in an era of oil depletion?* It is possible to imagine scenarios in which oil dependence issues lead to fundamentally different choices that can mean Auto Cities either begin the process of reshaping themselves to be more sustainable or else enter a decline phase that is very hard to reverse.

3: The Pattern of Automobile Dependence and Global Cities

- *What are the patterns of automobile dependence in global cities?* U.S. and Australian cities are the most extensive in their dependence on the automobile, as shown by their transportation patterns, infrastructure and land use. Canadian cities are less automobile-dependent, with better transit and greater integration of land use. European cities are three to four times less automobile-dependent than U.S. cities in terms of automobile use, infrastructure, and land use intensity. Wealthy Asian cities (Singapore, Hong Kong, and Tokyo) are eight times less automobile-dependent than U.S. cities. However, the newly industrializing Asian cities (Bangkok, Jakarta, etc.) are showing a marked and rapidly growing automobile orientation in their transportation patterns and infrastructure, and although fringe land uses are developing greater auto orientation, their overall land use patterns are still dense and strongly favor transit and non-motorized modes. They are therefore classified as automobile-dominated rather than automobile-dependent.
- *How do transportation patterns relate to technology, infrastructure, economics, and urban form?* The fuel efficiency of motor vehicles cannot explain the large variation in gasoline use in the world's cities, but the extra efficiency and "transit leverage" of transit technology can explain it. The infrastructure variations in

terms of road supply, parking, transit service, and the relative speed between traffic and transit, are all closely related to the level of gasoline and automobile use. The price of gasoline, incomes, and the level of wealth (GRP) in a city do not relate strongly to automobile use. Land use patterns, on the other hand, are closely correlated with automobile use and the levels of transit use, walking, and cycling, confirming the structural characteristics of automobile dependence and the inevitability of addressing urban form in the sustainability agenda.

- *What are the trends in automobile use, transit, and density?* Automobile use is increasing in all but a few cities (Stockholm and Zurich), but there are large differences in rates of growth. U.S. cities grew the most despite predictions that suburbanization of work would slow down car use. Australian cities grew much less, indicating that the re-urbanization process may be influencing travel patterns. Transit use increased in all cities despite predictions of its demise globally. Spectacular increases in Europe continue to set the benchmark. Density patterns indicate an historic reversal is occurring globally, with increases or reversal of declines evident nearly everywhere. This may be related to the information-based economy. Inner city growth is much more evident than in previous periods except in U.S. cities, where density increases are mostly occurring in outer suburban “edge cities” that are heavily auto-dependent.
- *How do the direct and indirect economic costs of transportation vary in cities?* Automobile dependence as we have defined it is a combination of physical planning parameters. The new perspective that has emerged from the economic data presented in this book is that automobile dependence is not good for the economy of cities and that cities that are able to provide a balance of transportation options are more efficient on almost every economic indicator. This includes indicators covering external costs related to environmental and safety factors, but also the direct costs of transportation. The overall effect is that automobile-dependent Australian and U.S. cities use 12 to 13 percent of their city wealth on their passenger transportation systems; Canadian and European cities use 7 to 8 percent; wealthy Asian cities use 5 percent; and more-automobile-oriented, newly industrializing Asian cities use 15 percent of their city wealth on transportation. The implication for sustainability is that reducing automobile dependence is good for the economy of cities.
- *What does this suggest about the future of Auto Cities?* A case is made that there is no technological or economic inevitability underpinning automobile dependence. Indeed, it is suggested that the emerging processes of globalization and information-based employment could be highlighting the importance of face-to-face contact and therefore the need for reducing automobile dependence. The continuation of unsustainable automobile dependence is more than likely due to cultural factors, all of which can be overcome.

4: A Vision of Reduced Automobile Dependence

- *What are the myths about the inevitability of the Auto City?* We have identified ten myths concerning the inevitability of automobile dependence due to wealth, climate, the spatial extent of some nations, the age of cities, the need for physical

and mental health, the lure of rural living, the power of the road lobby and the land development lobby, and the lack of non-automobile-based options provided by the traffic engineering and town planning professions. All are potential problems in particular cities, but are open to change through cultural and political processes.

- *How can cities reduce their automobile dependence?* Theoretical approaches and case studies are presented of cities from around the world that have (1) changed their transportation infrastructure priorities to favor new transit or non-motorized modes and achieved reductions in automobile use, (2) traffic-calmed critical streets (and across broad urban regions), inducing reductions in traffic, as well as significantly improving the quality of the urban environment and hence all elements of urban sustainability, (3) integrated transportation and land use through urban villages that are more transit-oriented and pedestrian-friendly, (4) constrained urban sprawl through effective growth management programs such as green belts, and/or (5) introduced taxes on automobiles, thus better reflecting the true costs of this mode vis-a-vis non-auto modes, and enabling alternative infrastructure to be built.
- *Why is city planning so important to reducing automobile dependence?* Much of the attention of policy makers in the United States and Australia has been directed toward civilizing the automobile rather than reducing automobile dependence. However, greater efficiency can just lead to greater use, and this washes out much of the technological advance, as well as creating more traffic-related problems. Much of the academic literature has stressed the need to control automobile use through congestion pricing, but this has significant political and equity impacts unless it is part of an overall approach to reducing automobile dependence. Economic penalties will work if there are alternatives that are viable. Planning that shifts infrastructure priorities and addresses the underlying land use aspects of automobile dependence is thus seen to be more fundamental, while an isolated tough economic approach to automobiles remains largely in the realms of academic debate.
- *What is a future “Sustainable” City vision with reduced automobile dependence?* The future “Sustainable” City (replacing the Auto City) is envisioned as a multi-centered city linked by good-quality transit on radial and orbital lines. Within the centers, walking-oriented characteristics would be favored, and such new nodes would be located to provide work, shops, and local services within bicycling distance or a short, demand-responsive local transit trip of all present suburban areas. Such a city is seen to be consistent with the emerging telecommunication / services city, which is showing evidence everywhere that face-to-face contact is still critical for an urban economy.
- *How can this future “Sustainable” City be achieved in stages?* The stages are considered to be (1) revitalizing the central and inner cities, (2) focusing development on transit-oriented locations that already exist and are underutilized, (3) discouraging urban sprawl by growth management strategies, and (4) extending transit systems, particularly rail systems, and building associated urban villages to provide a sub-center for all suburbs.

- *What cities are already showing reduced automobile dependence?* The best examples of reducing automobile dependence are to be found in European cities, especially Stockholm, Copenhagen, Zurich, and Freiburg, with continuing success being shown by the wealthy Asian cities Singapore, Hong Kong, and Tokyo, and selected poorer cities, such as Curitiba in Brazil. In Canada, Toronto and Vancouver have shown some good signs, which are reflected in significantly better land use and transportation characteristics than in U.S. or Australian cities. In the United States, Boulder, Portland and Boston are showing that tackling automobile dependence can begin even in the world's most automobile-oriented nation, with a range of positive results, such as more compact housing, a more vital public realm, revitalization of central and inner areas, and better transit systems. However, it will take longer for such changes to be reflected in the overall statistics characterizing these cities. Signs of reversal are also evident in Australian cities, where growth in automobile use has been declining for a number of years in parallel with active re-urbanization of inner-city areas and new rail systems as in Perth.

5: *Greening the Automobile-Dependent City*

- *How do other aspects of sustainability, such as management of the water cycle, solid waste, urban agriculture, and greening, fit into the future "Sustainable" City concept?* These approaches to sustainability are all necessary to reduce the inflow of resources and outflow of wastes in a city. They are also important in creating a more economically efficient city and a more attractive, quality urban environment, which is essential for a lively community and a vital economy.
- *Why are local, community-scale options proving to be more sustainable?* Water, waste, agriculture, and green space management require knowledge of particular local urban environments and thus require local involvement in management. The latest technology for making more efficient use of water and providing more complete treatment of waste is developing at a small scale suitable for community management. Renewable energy technology is also better applied at a small scale, and new light rail technologies provide strong focal points for galvanizing community involvement in reshaping urban form and streetscapes.
- *Is there a conflict between greener cities and lower-energy cities?* There is a conflict only if there is no flexibility provided in the planning system for the provision of more compact, higher-density development to foster the creation of a multi-centered, mixed-use urban form. If no increases in density can be allowed, as some commentators (e.g., Troy, Stretton, Gordon, and Richardson) seem to be suggesting, then automobile dependence will continue. It is argued here that this will not only jeopardize low-energy goals, but will also undermine greener-city goals; local urban ecology goals seem to thrive where there is a symbiotic partnership with strong communities oriented to the sustainability agenda, and such communities rarely seem to form in automobile-dependent areas unless perhaps they are deliberate communities set up for that sole purpose.
- *Why is there conflict over density and transit in sustainability discussions and can this be resolved?* "Density" and "transit" seem to be mostly negative concepts in Anglo-Saxon traditions. This comes from industrial era cities where dense slums

and transit were associated with poverty and pollution. The British Town and Country Planning Association adage “Nothing is gained by overcrowding” is associated with auto dependence. This approach, which has dominated English town planning for much of the twentieth century, is now being contested, though it is still a powerful part of the urban culture in English-speaking cities. It is a major barrier to city sustainability if allowed to be the dominant driving force in urban design, since it prevents the successful development of pedestrian-scale urban villages and transit systems. The resolution seems to be occurring with the creation of low-density eco-villages in rural but not urban areas and the simultaneous provision of higher-density urban villages to overcome automobile dependence and density reductions in areas of local ecological servicing (waste recycling, permaculture, etc.).

- *What is local urban ecology, where is it happening and how does it relate to global urban sustainability?* Local urban ecology is the process that tries to bring together all of the aspects of sustainability in a single development, whether it is a house or a group of buildings or an industrial estate. It is an innovative, design-based exercise with few rules or norms. Examples are now appearing everywhere as the need for integrated demonstrations of sustainability becomes more and more a local agenda. The best examples appear to be occurring in Denmark where there are forty-five documented demonstrations in Copenhagen alone. They relate to global sustainability when they fulfill the goals of reducing resources and waste while improving livability. However, there are also examples of an approach that just creates, for instance, a more self-sufficient building, which, while achieving some improvements in urban ecology, actually increases automobile dependence and isolation, thus obliterating any claim to true sustainability. This shows the importance of community-based urban ecology (as in many rich examples of Danish ecological urban renewal).

6: Promoting Urban Change

- *How has urban professional praxis been shaped by modernism and the Auto City?* The urban professionals who have shaped our cities for the past fifty years have been strongly influenced by modernism, with its “one best way” and its clear separation of disciplines. This has given rise to simplistic transportation models with their self-fulfilling prophecies of congestion, freeway building, more congestion, and more freeway building; to planning systems totally acquiescent to “unavoidable” increases in automobile dependence; to rigid separation of urban functions by zoning; to uniform low-density architecture in suburbs and high-rise towers in CBDs; to streets that serve no other function than the moving of vehicles; to “big pipes in and big pipes out” approaches to water management; and to various expressions of “straightening out” nature in cities.
- *How is urban professional praxis now being challenged by postmodernism and sustainability?* Sustainability is part of the postmodern phenomenon that recognizes that the assumptions of modernism are now inadequate for solving the ecological and human development issues of our age. However, the sustainability agenda goes beyond the deconstruction of our society and begins to reconstruct it around the goals of ecological sensitivity and local, organic processes in communities. Urban professional praxis that fails to respond to

these new imperatives will become more and more irrelevant, a passenger on a rudderless, postmodern ship.

- *What is the organic city tradition?* The organic city tradition traces the values and approaches of ecological sensitivity and local organic processes in communities back through a number of nineteenth and twentieth century urban critics who could see the inherent failings of modernism, and links those views to fundamental values concerning community processes, natural processes, heritage, and artistic expression.
- *Can the organic city tradition be a guide for future professional praxis?* This approach does provide a guide for revamping professional praxis in line with sustainability through its (1) recognition of values associated with the environment, social justice, heritage, the public realm, the urban economy, and community; (2) delight in the diversity of expression of these values at a local level in terms of housing, transportation / urban form options, fuel types, an appropriate balance in infrastructure priorities, and cultural diversity; (3) crossing of boundaries in the physical and natural environment of cities, in disciplines, and in cultures; and (4) facilitation of organic community processes.
- *What are some detailed guidelines for sustainability in urban professional praxis?* Detailed guidelines are provided in such areas as sustainability in new development, the New Urbanism, economic impacts of urban options and better transit-land use integration. Collectively, these guidelines point to a need for a major rewriting of most of the technical planning manuals and regulations used so effectively for so many years to roll out the fabric of the Auto City. A new and diverse urban fabric, responsive to local and global needs for sustainability, will require new processes with the same stamp of authority afforded to their auto-oriented counterparts for more than half a century.

7: Ethics, Spirituality, and Community in the City

- *What are the ethical foundations for city sustainability from traditions of local ecology, human ecology, and urban ecology?* Three traditions are traced through the life and work of three people: Gilbert White, E.E. Schumacher, and Jane Jacobs, who are shown to be in the organic, communitarian tradition that is sensitive to local ecological and community values. They are seen to have played critical roles in the development of sustainability as it applies to cities.
- *What spiritual tradition do they come from?* These pioneers in the application of organic, ecological values are all from within the Western spiritual tradition, rather than from Eastern views. This strong Western spiritual tradition of care, stewardship, and justice is not often recognized in discussions on environmental ethics. That such influential writers and thinkers come from our own spiritual tradition is seen as important for the West, because although the framework may be consistent with views from other traditions, the ethical base for sustainability in cities is not foreign to Western thinking. This is empowering to communities throughout the Western world that most need to tackle the sustainability agenda, but that may have come to accept a jaundiced view of their own spiritual capacity to be part of constructive change.

- *How can individuals and cities express these traditions today – in particular, how do they relate to the Auto City?* The fundamental value that drives automobile dependence and unsustainability in cities is privatism, or isolationism; this is the same ancient value that was viewed from the very foundations of the Western spiritual tradition as the destroyer of cities. This value discards all community or environmental obligations in the constant drive to find privacy, self-fulfillment, and consumption. Modernist technology makes such a quest easier than ever before. However, the values that can be used as antidotes to isolationism / privatism are also alive and well. It is suggested that these include (1) developing a “sense of place” through a sense of history, a sense of social justice, and a sense of nature in local communities; (2) revealing the true character of automobile dependence in activist fights over infrastructure priorities and other planning issues; (3) being pro-urban rather than trying to escape the city; and (4) practicing hope rather than despair over sustainability issues.
- *What is the role of the community, in groups such as churches and community artists?* The community needs to be a community and to dramatize its values in new and creative ways. Examples are given from the United States, Europe, and Australia of communities that have expressed their organic / ecological values in creative ways to claim some symbolic victories for sustainability in cities.
- *Is there hope for sustainability in our cities?* Yes! The opportunities for cities that are dominated by the automobile to overcome this dependence are always there. They need to be grasped or else unsustainable patterns will become entrenched. However, successful case studies are being shown globally and the ability of civil society to dramatize their visions and link to such successes has never been so good.