Ways Towards Future Mobility for Cities and Towns: A Conceptual Model of Ecology of Sustainable Future for Towns without Personal Cars

J. Oluwoye, Ph.D*, Ahmed Ouf, Ph.D

Department of Community and Regional Planning

Abstract— *In 1987, the world commission on environment and development described sustainable development as the "assembly of the needs of the present without compromising the capacity of future generations to fulfill their very own desires." From the above definition, you can actually see that sustainable development demands a creative manner that replaces unsustainable practices with new ones. consequently, towns and towns need to purpose to steer the way towards sustainable city improvement, and decision-makers want to understand that sustainable cities need to be creative and aesthetic. The motive of this paper is to develop a conceptual ecology model of a sustainable future that comprises ideas, tips, and strategies (PGS) for cities and towns without personal cars. The paper concludes that sustainable site visitors and transportation development require an incentive method that replaces unsustainable practices with new sustainable practices*

Keywords— *Future mobility, Cities, Towns, Sustainable future, Personal cars, Conceptual model, Ecology.*

I. INTRODUCTION

Sustainable development is a concept that has captured the imagination of scholars, politicians, professionals, and practitioners at all geographical scales. Our cities and towns face a wide variety of critical environmental problems (i.e. emissions from automobiles; health-threatening pollution; stratospheric ozone depletion). Furthermore, our cities and towns face enormous human problems in the form of widespread, persistent poverty and human misery. It should be noted that the world is not headed toward a sustainable future, but rather toward a variety of potential human and environmental disasters. The world commission on Environmental and Development, which the United Nations established in 1987 make recommendations under 'Our Common Future' the Commission concluded that "a new developmental path was required, one that sustained human progress not just in a few places for a few years, for the entire planet into the distant future". The question arises what is sustainable development? The Commission defined 'Sustainable development as a development that "meets the needs of the present without compromising the ability of future generations to meet their own needs'" (WCED 1987 p9). This is all well and fine definition, except for the fact that the crucial little word 'need' is left undefined or unspecified. From the above definitions, one can see that sustainable development demands a creative process that replaces unsustainable practices with new sustainable practices that require an understanding of the future pattern of needs.

In an attempt to make the concept of sustainable development more specific, the author gives a narrow definition focused on the liveable environment of sustainable development of Cities and Towns. This means that we have to shift from our present modes of transport towards modes that are less energy-consuming and less polluting. In order to meet the sustainable demands one needs to change our attitudes towards the use of Autocar in cities and towns for work trips and increase the use of public transport, without retarding economic growth and social development.

Purpose of the paper: The purpose of this paper is to develop a conceptual ecology model of a sustainable future that comprises ideas, tips, and strategies (PGS) for cities and towns without personal cars.

II. GENESIS AND EVOLUTION OF TRANSPORT IN URBAN SETTLEMENT

The urban settlement of today is an agglomeration of several components such as commercial, residential, recreational, and institutional land-use types. These are united by the transportation system. Transportation creates what is known as place utility. It does this by overcoming the impediment obstacles between the origin and destination.

The earliest highways influencing our present system were those laid down by the Romans during their occupation of Europe from 43 A.D. until the early 5th century. Roads constructed then were primarily for military purposes. In the early part of this century, there were very few transportation problems except in a few large cities such as Tokyo, London, and Paris where congestion had existed for more than a century. The great bulk of the population then lived in towns and villages or rarely more than 50,000 inhabitants and a diameter of about 2 or 3 kilometers which could be walked easily. There were little traffic problems as we know today.

The introduction and spread of wheeled vehicles such as bicycles, wheel carts, etc. in the first half of this century allowed the towns to expand 2 or 3 times their former size since people can cycle 3 or more times their walking distance per hour. However, the real revolution in urban transportation came during the interwar period with geometrical growth in private motoring. This brought about a considerable enlargement of the city area because of the speed of the private motor car. However, the peak hour problem and the resultant traffic hold-ups in the city soon started limiting the advantages of greater speed.

The growing number of vehicles led to the need for control of traffic. The universal nuisance of traffic is well-known all big cities all over the world. Congestion, parking problems, accidents, pedestrian crossings, noise, and environmental pollution feature recurrently. Traffic problems are complex dynamic ones to which enduring solutions must be found and applied. The nature of the problems can be categorized into various ways such as those that are direct transportation problems, such as congestion, lack of safety for users, inadequate parking spaces, inadequate environmental capacity, and poor and inefficient controlling measures. Other problems are those produced by transportation such as air pollution, noise pollution, poor appearance, and vibration. The environment is the problem that affects transportation itself such as population growth and dispersal, increase in automobile ownership, the timing of travel, etc.

In the discussion of the general evolution of transport, one cannot ignore the impact of the railroad. The problem caused by railroads appears to be a limited problem. It undoubtedly occurs in the vicinity of major surface transportation arteries, where adjoining the facility, particularly where the foundations of the building may be directly connected to the rail tunnels.

All the above highlights the need for effective transport planning and traffic management in the city. The inevitable increase in the number of vehicles before the end of this century may spell the doom of a city unless adequate preparation is made such as designing cities for less reliance on the car. Traffic problems, no matter how acute, will not deter people from the desire to own their own personal means of transport as private motor cars continue to be widely regarded as a status symbol and indeed a means of success or affluence, but the problems will persist.

Furthermore, throughout the history of urban settlement, streets, and squares provided a common outdoor space for people living adjacent to them and for trade and numerous other activities (Oluwoye 1985). In some countries, many of the networks had traffic functions, the speed and volume of this traffic were compatible with the functions of environmental areas and time had a different value than it has today. The relationship between the community and the environmental areas could consequently be essentially one of the carriers. The characteristic of the network could be to serve the environmental areas and not vice versa. Nevertheless, the variety and density of street activities in some ancient cities were such that some kind of restriction or 'management' became necessary. In the ancient city of Rome, Julius Caesar reserved streets for pedestrian purposes during daylight hours. During the Middle Ages congestion and conflict were tolerable. The Florentines of the 14th century, generally ahead of their times, still considered street widening to be an adequate remedy. After the French parliament petitioned the King to ban vehicles from the streets of Paris, the Dutch mathematician, Simon Steven, around 1600, advocated arcades that the rich and poor can move unimpeded by wagons and horses.

In the late 19th century and early 20th century with the widespread ownership and use of high-speed vehicles, the differentiation of streets according to function became common practice. Tipp and later Buchanan established the conceptual basis of functional road classification and introduced the notion of the precinct. Where the environment was dominant and the road traffic is kept to a volume such that it does not interfere with other activities. The Buchanan idea was that there must be areas of good environment-urban rooms - where people can live, work, shop, look about, and move around on foot in reasonable freedom from the hazards of motor traffic and there must be a complementary network of roads - urban corridors - for affecting the primary distribution of traffic - but the design would ensure that their traffic is related in character and volume to the environmental condition being sought. This idea was seen essentially in spatial terms, such as the emphasis on horizontal and vertical segregation of different transport modes.

By the end of the 19th century, planners increasingly differentiated streets according to their function. The first city planning textbooks, published in Germany in that period, developed different designs for "traffic" and for "residential" streets respectively. Open spaces for loading and parking of camels and donkeys have been received in the 20th-century mode by the most significant innovation of North American planning, the suburban shopping center.

This evolution in the planning and management of cities may be related to the changes in the built environment along them. Notwithstanding, planners have often claimed that cities and traffic are destructive influences on cities/towns' quality and the practice of subdivision design of cities/towns frequently reflects this potential for damage by maximizing the use of cul-de-sacs and minimizing the impacts of arterials through reverse frontages, landscape buffers, and an earthen berm.

From the above discussion, the author thinks that the environmentally sustainable development of cities and towns must be developed on a thorough and rational basis, such as bicycle planning.

III. ANALYSIS OF HISTORICAL DIMENSION AND ECOLOGY MODEL OF SUSTAINABLE FUTURE

In simple terms, creativity seems to have been based on a combination of economic and cultural factors. City's success in generating wealth since the industrial revolution was combined with a 'dogged provincialism' that ensured that wealth was reinvested locally. The dominance of affluent sectors of the community in the last two hundred years may have meant that pre-crisis conditions were not effectively vocalized or recorded.

Also, a number of changes in the social and economic structures of the city may have contributed to a decline in creativity in more recent history (years). During the 1960s and 70s, most cities traditional strengths in certain industries declined with the growth of foreign competition. In addition, many cities' companies became subsumed within larger national or multinational companies. The disappearance of locally owned shops and departmental stores in the 1960s and 1970s and early 1980 with some national chains taking their place. Thus, there was a decline in cities' and towns' capacities to generate wealth and a redirection of much of the wealth that was generated out of the other cities rather than being retained within the local economy. Physically, much of most city centers was influenced by reconstruction and development in these

years and was accompanied by a number of large peripheral developments.

The model proposed abstractly in figure 1 can be used as our vision of a sustainable future, the cities or towns without personal automobiles.
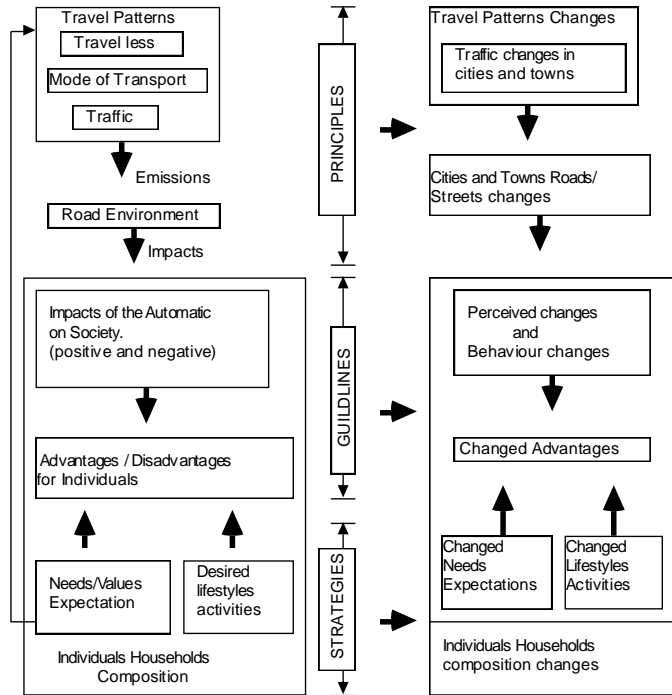

FIG: THE ECOLOGY MODEL OF SUSTAINABLE FUTURE FOR THE CITIES WITHOUT PERSONAL AUTOMOBILES MODEL.

The above figure is a flow diagram that describes the basic interactions and conflicts between travel patterns and individual households' composition over time, as mediated by the street environment. Rather than being a simple one-way traffic impact model, it describes how individual households' composition modifies impacts through adaptive responses.

IV. CONCLUSIONS

In conclusion, many cities in western societies are on the path towards traffic and transport sustainability as there appears to be a significant commitment to and vision required for sustainable traffic. Awareness of the history of cities is valuable in seeking ways towards a creative future. However in dealing with changing transportation, both global and local, one needs to be aware of the dynamic nature of development. For instance, what may have been relevant to creativity in the past may not be as relevant today. Also, what might have seemed sustainable in the past may not be sustainable in the future.

Sustainable traffic and transportation development requires an incentive process that replaces unsustainable practices with new sustainable practices. In order to lead the way toward sustainable urban traffic and transportation development, decision-makers need to understand that sustainable cities must be aesthetic cities. However, it would be difficult for creativity to break through the collective realities that represent conventional wisdom.

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