

# Sustainable Urban Transport Management & its Strategies

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## Abstract

Rapid process of urbanism development has increased the demand for some infrastructures such as supplying potable water, electricity network and transportation facilities and etc. Non-efficiency of the existing system with parallel managements of urban traffic management has increased the gap between supply and demand of traffic facilities. A sustainable transport system requires some activities more important than air pollution control, traffic or fuel consumption reduction and the studies show that there is no unique solution for solving complicated transportation problems and solving such a problem needs a comprehensive, dynamic and reliable mechanism. Sustainable transport management considers the effects of transportation development on economic efficiency, environmental issues, resources consumption, land use and social justice and helps reduction of environmental effects, increase of transportation system efficiency as well as improvement of social life and aims to enhance efficiency, goods transportation, provide services with minimum access problems that cannot be realized without reorganization of strategies, policies and plans.

**Keywords:** Sustainable Urban Transport, Environment, Social Justice, Air Pollution.

## 1. Introduction

Immigration from rural areas to cities has begun since the twentieth century in line with rapid industrialization process especially in developing countries (45 percent of the world population lived in urban areas in 1995 and it is predicted that this figure gains to 60 to 65 until 2025).

Environmental issues and human health losses due to quick development of motorized transport and weak process of its legitimacy has seriously made many problems. Every year more than 750,000 persons, who are mostly pedestrians, are killed by car accidents. Moreover, about 500 thousand persons in developing countries suffer from early death due to air pollution resulting from ground transportation.

Stability may not be realized only by changing designing, usable patterns and vehicle management, and it demands some changes in our attitude towards identification and evaluation of possible strategies for solving transportation problems. (IP Oi-ching, 2004)

## 2. Sustainable Urban Transport

One of the most important elements of urban development is transportation which is essential for person and goods transportation; also realization of effective productivity in urban areas will be exclusively provided by meeting transportation requirements. In fact, sustainable urban transport is smooth movement of vehicles, people and commodities which requires for people's convenience and environment stability with the most desirable cost and effort. According to Canadian Institute of Transportation, sustainable transport system aims to make sure that if environmental, social and economic factors are taken into account in decision making of transportation activities. Furthermore, based on the report prepared by World Bank (1996), sustainable transport and its elements are as follows.

Economic and financial elements which include appropriateness of organizational structure measure and investment for transportation infrastructures.

Environmental and ecologic element which involves how to invest on transportation and select different transportation methods which effects on reduction of energy consumption and pollutant emission and social element which focuses on sufficiency of accessibility of transportation services for all people. Stability may realize by change of people's behavior; when all people are fully informed of negative effects of selection of their transportation method, they will voluntarily help to reduce natural resources consumption and transportation destructive effects. (Deike P.,1999 )

## 3. Different Dimensions of Sustainable Transport

Urban transportation issues are investigated from three main social, economic and environmental aspects. (Zietsman, J, Laurence, R, Rilett, 2003) the following is a brief explanation of each transportation aspect:

### 3.1. Transportation Social Aspects

- Social justice,
- low income people and urban transportation,
- women, and urban transportation
- Children and urban transportation
- Disabled people and urban transportation,
- Health, safety
- Noise pollution and urban transportation,
- Air pollution and urban transportation
- Citizens health, drivers' anger and nervousness
- Destruction of cultural heritages,
- Quality of life, society

And social security. (ITDP, 1999)

### 3.2. Transportation Environmental Aspects

- Ecologic stability,
  - Car manufacturing environmental effects,
  - Demand for fossil fuels,
  - Air pollution
  - Global warming or climatic changes,
  - Destruction of natural habitats and green areas
- (ITDP, 1999)

### **3.3. Transportation Economic Aspects**

Transportation investment should be cost effective and ensure long term stability of allocation of financial resources to transportation services. Urban transportation by private car is the most expensive strategies among different options of transportation. The investigations show that cities where transportation is mostly through private cars spend more share of their wealth for transportation in ratio to the cities with balanced transportation system. It seems that low price transportation mechanisms must be planned based on social justice, economic efficiency, ecologic stability, urban environment dynamicity and prosperity and enhancement of social life quality. (Deike P., 1999)

## **4. Urban Transport Sustainable Development Strategies**

### **4.1. Transport Demand Management**

There are too many potential strategies for solving transportation problems in transportation comprehensive management and planning; however, if all aspects are taken into consideration, transport demand management (TDM) will be considered as the best and most cost effective strategy. TDM involves various profits such as reduction of traffic, pollution, accident costs, non-motorized transport etc. and effective planning of land use is accessible. (ITDP, 1999)

### **4.2. Land Preparation**

Improper urban development is one of the basic reasons of most transportation problems of the world. Land preparation techniques are necessary for coordination of travel and means of transportation. Intelligent development is a concept which is used as development management and encounters with suburbanization and aims to implement land use strategies which increases population density in residential areas and consequently facilitates transportation. (ITDP, 1999)

### **4.3. Non-Motorized Transport**

Bicycling and walking are the sustainable methods of transportation because they do not produce any air or sound pollution and the required energy is directly supplied by the person. (Pucher J. and Dijkstra L., 2006) Moreover, it is completely economic and its cost is less than public transportation. (Litman T., 2002)

### **4.4. Using Bus Rapid Transit & Mass Rapid Transit**

Notwithstanding the type of technology, optimal use of public transport systems may stop irregular development of using private vehicle and reduce energy consumption and emission of greenhouse gases. The best option must be selected based on local conditions and existing priorities using a combination of various technologies. Light rail system is also another economic option. For the UNEP (ITDP, 1999)

### **4.5. Public Partnership, Training & Awareness**

Public partnership is one of the regular strategies for stability realization which improves long term status of a certain city or region. In some countries, public partnership should be considered in transportation designing and planning (Litman T.2006). Today, in some countries, public partnership in transportation designing and planning is attracted in form of nongovernmental organization (NGO) which has positive reflect in further cooperation of local people in implementation of plans.

Moreover, we should pass from our traditional fields and responsibilities and they should be replaced by a new training approach as a continuous process and key mean for realization of a sustainable future. (ITDP, 1999)

## 5. Conclusion

Global development of sustainable transport process is a subject which has been seen in national, regional and even local policymaking of the developed countries within the recent 10 years and is considered as the issues accepted for transportation. Complicated problems need using long term comprehensive strategies. Strategies may be instant, short term and long term. The present paper is the result of research and investigation of the policies and strategies of sustainable urban transport used in developed and under developing countries and it has been tried to consider acceptable generalities of official active organizations and institutions. Meanwhile, it is emphasized that there is no strategy or sets of strategies that can uniquely meet the requirements of urban traffic; solving such a problem requires a comprehensive, dynamic and reliable mechanism which should be designed and used based on the facilities and resources of each country or even each city, cultural, social, economic and ... issues using practical experiences of other countries or cities.

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