

## **1.0. GENERAL**

Cities play a vital role in promoting economic growth and prosperity of a nation. The development of cities largely depends upon their physical, social, and institutional infrastructure. Transport demand in most Indian cities has increased substantially, due to increases in population as a result of both natural increase and migration from rural areas and smaller towns. Availability of motorized transport increases household income, and increases in commercial and industrial activities further adds to transport demand. In many cases, demand has outstripped road capacity. Greater congestion and delays are prevalent in Indian cities and indicate the seriousness of transport problems. A high level of pollution is another undesirable feature of overloaded streets. The transport crisis also takes a human toll. Statistics indicate that accidents are a primary cause of accidental deaths in Indian cities. The main reasons for these problems are the prevailing imbalance in modal split, inadequate transport infrastructure, and its suboptimal use. Public transport systems in metropolitan cities have not been able to keep pace with the rapid and substantial increases in travel demand over the past few decades. Bus services in particular have deteriorated, and their relative output has been further reduced as passengers have turned to personalized modes and intermediate public transport.

Individual cities cannot afford to cater only to private cars and two-wheelers. There must be a general recognition that without public transport cities would be even less viable. There is a need to promote public transport instead of personal vehicles. This requires both an increase in quantity as well as quality of public transport and effective use of demand as well as supply-side management measures. People should also be encouraged to use non-motorized transport and investments may be made to make it safer. Cities are the major contributors to economic growth, and movements within cities are crucial for improved quality of life.

## **1.1. Transport and Socio Economic Activities**

Transport is a key component of growth and globalization. A country's economic status depends upon how well served country is by its roads, railways, airports, ports, pipelines and shipping. The rate at which a country's economy grows is very closely linked to the rate at which

transport sector grows. Transport has throughout history been a spur to expansion; better transport allows more trade and a greater spread of people. Economic growth has always been dependent on increasing the capacity and rationality of transport.

Modern society dictates a physical distinction between home and work, forcing people to transport themselves to places of work or study, as well as to temporarily relocate for other daily activities. Passenger transport is also the essence of tourism, a major part of recreational transport. Commerce requires the transport of people to conduct business, either to allow face-to-face communication for important decisions or to move specialists from their regular place of work to sites where they are needed.

### ***Accessibility***

In many cases, the objective of transport infrastructure investment is to improve the accessibility of a given region by reducing travel time or increasing the potential to travel. Accessibility can be measured as the quantity of economic or social activities that can be reached using the transport system. Improvement in accessibility will increase the market size for manufacturing, tourism and/or labor.

### ***Employment***

India is a country with huge unemployment problem. Transport is a sector which absorbs labour force in good measure. Regional employment is often an important government objective. The impacts of construction, operation and maintenance of transport infrastructure on employment include both created and relocated jobs. The impacts of construction could be assessed by methods which allow the direct, indirect and induced employment impacts of transport infrastructure projects to be assessed. Direct and indirect employment, linked to the operation and maintenance of transport infrastructure, is largely related to the level of traffic, which can also be assessed.

### ***Efficiency***

For industry in a given region, time and cost savings as well as gains in accessibility and reliability, arising from the transport infrastructure would allow productivity gains to be achieved by improving their production and distribution. Wider access to the market

will create both new business opportunities and increased competition, leading to further increase in profitability. The market will be redistributed to the advantage of those companies which are able to adapt to the new market. The same process could occur for the labour market. Thus, transport infrastructure project could be said to have an impact on private capital and labour productivity, and hence on overall economic growth.

## **1.2. Historical Development of Transport**

Nowadays, many people today take for granted the very means of travel available to them. Few stop to think of how life would be different had man never tamed that first wild horse, or shaped that very first wheel. Archaeologists believe that the very first step toward man-made transportation began in either Mesopotamia or Asia, sometime around 4000-3500 BC, with the invention of the wheel. By this point, man had long since domesticated the horse, and was using it to help him tilt the soil and plant crops. But the invention of the wheel would eventually make man's ability to transport his crops from one place to another less awkward, and gave birth to the idea of trade and exchange. The invention of the wheel would lead to the development of mass transportation, as man put his new invention to practical uses.

The next logical evolutionary step from the wheel was the invention of the cart and chariot. The two-wheel chariot found its birthplace in Samaria, and is believed to be the world's first form of wheeled transportation. Built around 3500 BC, this chariot increased the speed of travel over land, and eventually led to the four-wheeled cart, which took the burden of carrying supplies and equipment off of the shoulders of the common man.

As mankind overcame the boundaries of land travel, his curiosity about the world around him increased. To his aid, man had developed a means of traveling on water even before he had domesticated the horse. The origin of the dugout boat is one of history's great mysteries. Historians are unable to pinpoint when or where the very first water vessel was set afloat, and even speculate that it might have been purely an accident the first time. But, howsoever it happened, the addition of the boat changed the face of transportation. Boats allowed man to, for the first time ever, cross water bodies without getting wet.

Over time, the simple boat evolved to include a large square of cloth mounted on a central pole. This cloth, called a sail, would turn the boat into a sail-propelled ship. This new addition gave man the ability to use waterways as a means of swift travel from one place to

another, and even to travel against the rivers and sea current. However, the evolution of water travel didn't stop with the sail. Ships would eventually take on sleekness as they increased in size. Before long, they would add oars and rudders, and then deck covers. By Greek and Roman times, ships had grown clunky shipboard towers, as well, which developed, over time, into the medieval stern- and forecastles. By the late medieval era, these castles were built solid, as a part of the ship's basic structure. Then, by the Renaissance and the Age of Exploration which followed, ships had gained tiers of rigging and sails, becoming sleek and speedy.

Then, in the 1800s, ships began to shed their sails on the rivers once again. The advent of automation was changing transportation forever. The very first automation in ships was the cumbersome paddlewheel. Due to their bulky form and inability to turn easily, paddlewheel boats were confined to river travel, where they would experience calmer currents and need less maneuverability.