



ENVIRONMENT IMPACT ANALYSIS AND SOCIAL EVALUATION FOR LONG TERM TRANSPORTATION IN HYDERABAD, TELANGANA

P. Chandra Shekhar

Research Scholar, JNTUH, Hyd

Dr. Talla Manorama Kumari

Assistant Professor, Civil Engg Dept, Moulana Azad National Urdu University, Gachibowli, Hyd

Prof. V. Venkateswara Reddy

Civil Engg Dept, JNTUH, Kukatpally, Hyd.

ABSTRACT

Environment and social evaluation can be carried out as part of the Long Term Transportation Strategy for the study area to understand the sustainability of the strategy and its likely implications on the environment and social conditions of the region. The evaluation has been carried out for the identified network development and for alternative scenarios. Good transport planning should be more than just engineering and should encompass other important considerations such as land use planning, energy efficiency, emission characteristics, traffic management, human behavior, economics, finance, public policy, governance, health, safety, gender, disability, affordability

KEYWORDS : Environment, Transportation, Sustainability etc.

1. INTRODUCTION

Environmental conditions in study area have to be understood in context of the growing urbanisation and industrialisation of the fringe areas coupled with slow pace of infrastructure development. The study area in general exhibits deterioration of environmental conditions in the core areas i.e., cluster 1 to 6 while rest of the clusters are following the trend of deterioration. The deterioration is closely followed by rapid urbanisation and lack of physical infrastructure.

The major environmental implications of the urbanisation as observed in the region has been increase in air pollution levels, increase in ground and surface water pollution, high noise levels, reduction of water bodies and declining levels of ground water. These are simultaneously associated with urban stress and increasing migration patterns. Hence it is important to understand the social conditions as well in order to appreciate the environmental conditions in the region in a coordinated manner.

2. STUDY AREA

Hyderabad City is situated in the river Musi and Krishna basin, which is a tributary of river Krishna, passes through the city and bifurcates it into Northern and Southern Hyderabad. It is situated between 78022'30" & 78032'30" east longitude & between 17018'30" & 17028'30" north latitude. The ground levels vary from 487 meters to 610 meters above mean sea level (B.Purushothama Reddy 2004).

3. RESULTS AND DISCUSSIONS

3.1 ENVIRONMENT CONSIDERATION IN TRANSPORTATION STRATEGIES

Environmental conditions in the study area are observed in the context of the project interventions and likely environmental implications instead of conducting an overall inventory of environmental conditions of the region. The main parameters considered to be impacted for these research project interventions are studied in detail and their existing condition is established. The parameters considered to have implications from the project are as below:

- Environmentally Sensitive Areas
- Water Bodies
- Forests
- Sanctuaries
- Air Pollution
- Water Pollution

- Energy Efficiency

3.2 ENVIRONMENTALLY SENSITIVE AREAS

The study area boundary is dotted with several water bodies, vegetated areas, forests, three national parks, and a deer park. The areas that are susceptible to major ecological changes are the Water Bodies that are scattered all through the area. While the major water bodies as Osman Sagar and Himayat Sagar are used as drinking water sources and reservoirs for storage for Hyderabad drinking needs, rest of the water bodies are used for local domestic needs or for sullage disposal. Some of the water bodies that are located close to industrial areas are receiving industrial effluents as well. Only few water bodies are preserved in their natural state with water that is suitable for domestic needs. In order to protect the water bodies in the catchment areas of drinking water sources, GoT has issued directives to notify the area surrounding the Osman Sagar and Himayat Sagar as Conservation areas with limited intervention for development. The area is dotted with several vegetated areas but with few forest patches notified as Reserve Forests. These are open forests with low vegetation cover except near few locations as near Vikarabad and its surroundings where moderately dense forests are found.

a) Air Pollution

Ambient air quality of the project area is deteriorating with the increase in population, traffic and industrial activities. The ambient air quality as monitored by the Pollution Control Board in about 10 locations in and around Hyderabad indicates high levels of particulate pollution.

An observation of the above table indicates that the RSPM levels at all locations are higher by 2 to 3 times the National Standards for annual average levels. Similarly the SPM levels are also higher by 2 to 3 times. The SO₂, NO₂, and Ammonia levels at all locations are lower than the NAAQS. NO₂ levels are approaching the national standards indicating increase in pollution from vehicular traffic which is to be controlled prior to their escalation.

b) Water Pollution

Water quality in the water bodies in and around Hyderabad have been deteriorating rapidly due to increase of human activity and discharge of sullage. These water bodies though are to a large extent polluted, they form a major part of the fresh water reserves in the area and are potential recharge areas for ground water.

c) Energy Efficiency

An assessment of the efficiency of transport system in terms of fuel consumption in the overall area would provide the inputs in assessing the energy efficiency in the sector. The traffic characteristics indicate a high percentage of private transport as opposed to the highly efficient MMTS or other public transport mechanisms. This inputs drives us to the fact that there is a large scope for improving energy efficiency in the study area with the improvement of public transport network. The improvement in transport network also leads to higher fuel efficiency and consequently higher energy efficiency.

d) Social Conditions

The major socio-economic conditions are discussed elsewhere in the paper and accordingly several strategies are being drawn up. There are few of the social conditions however, that need to be emphasised in order to analyse the implications of social conditions on environmental conditions as per the objective of this evaluation.

e) Demographic conditions

The study area comprising of several census units of urban and rural areas has a population of about 76.54 lakh as per 2001 census. The density of population in the overall area is estimated to be about 1070 persons/sqkm. The population density is highest in the Hyderabad Urban Area at 7078 Persons per sq km and decreases to 272 persons/sqkm in rural areas. The population distribution in HMA area indicates that about 78% of population lives in 14% of the area while remaining area comprises 22% of population. The average household size of population is identified to be 5.1 in the area.

f) Urbanisation

The rapid urbanisation are cause of concern that influences civic conditions of the region tremendously, while coupled with poorly regulated proliferation of the development is further greater cause of concern. The trend of urbanisation is understood in the light of implications. Upon close observation of detailed population in the region, it becomes evident that most of the rural settlements in the area are tending towards urbanisation.

g) Slum Conditions

It comprises about 35% cent of population under slums. The municipalities of Alwal, Qutubullapur and Rajendranagar have highest percentage of slum population at 60% of the respective municipalities. While Sangareddy has about 50% of population under slums. The household size of these slum areas is estimated to be 5.7.

4. ENVIRONMENTAL IMPACT ANALYSIS

Identification and evaluation of environmental impacts due to implementation for finalised network by way of proposed road, metro and rail link activities is based on available baseline information on the landuse. Generic management and preliminary mitigation measures to address the likely impacts due to new proposals on the environmental components are worked out.

It is likely that the infrastructure would have cumulative impacts affecting the regional quality of the environment. Though impact analysis is to be carried out at link / corridor level where feasible for the finalised network. Environmental management measures at this stage are devised at regional level and recommendations for their adoption at appropriate stage is to be incorporated where warranted at local level.

The level impacts have to be addressed through avoidance and mitigation measures to reduce the impacts in magnitude. While direct impacts of road projects can often be significantly reduced through environment practices.

5. CONCLUSIONS

An analysis of the environment and social impacts and benefits from the various network scenarios indicates potential benefits from the

project if undertaken with a careful consideration of improvement proposals. The compatible land uses of transport and communication, it is desirable to reduce impacts on other land uses. From the natural/ physical environment point of view, it could be strategized that the reduction of impacts on land use as conservation zones and avoidance of impacts on forests could benefit to a large extent to the environmental quality of the region.

Similarly, it could be strategized that reduction of land take from agriculture, residential and settlement portions will greatly benefit the study area and also reduce the resettlement impacts resulting from the project. Though the land take in residential and other settlement portions is less than 2% in all the three network options, the magnitude in terms of households to be resettled will be higher unless active steps of realigning malignant portions of the network towards other socially beginning landuses are adopted. While finalising the strategic network the above strategies were considered and the networks have been designed. A further assessment of the network to assess the residual impacts will need to be carried out and social and environmental implications which need to be established in the due course of the project progress.

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