

Infrastructure provisions in Trivandrum City, Kerala State, India

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INTRODUCTION

Infrastructure is the basic element for the development of any nation. The increase in demand of infrastructure services in the urban system is growing along with population growth. Geometric progression of population growth is observed in the Indian urban system, while the supply of infrastructure services is very meager. It has been observed that all Indian Metro Cities are suffering from inadequate infrastructure services on one hand, and the population is growing at an alarming rate on the other. Development cannot be expected without adequate infrastructure facilities. Having these in mind, the available infrastructure services in Trivandrum City is studied very carefully, and reported in this paper.

Trivandrum city has been developed around the Sree Padmanabha Swamy temple, patronized by the royal family. The name Trivandrum is the Anglicized form of Thiru Anantha puram, meaning the town of Thiru Anantha. Being the seat of family deity of the Venad kings, Trivandrum enjoyed many privileges. Later in the second half of the 18th century king Dhrama Raja shifted his capital from Padmanabhapuram to Trivandrum.

Trivandrum is located at 8° 25' N latitude and 76° 55' E longitudes, and is located at the south end of the Kerala State. It is surrounded by the Kanya Kumari District of Tamil Nadu in the South, Thirunelveli district of Tamil Nadu in the East, Kollam district of Kerala state in the North and the silvery coast of Arabian Sea in the west. The Trivandrum city is confined in Trivandrum District of Kerala State. It has total area of 296.17 sq. km, while the corporation covers only 74.93 sq. km.

PHYSICAL SETTINGS

It has heavy rainfall, high humidity, and a fairly uniform temperature through out the year. December to February the area experience a bright clear sky and the average temperature is ranging between 23.3°C and 30.6°C. The average rainfall of the district is 2112 mm/year, which is much lesser than the state average of 3232 mm/year.

Hills and valleys characterize the temperature of the District and it has slop from East to West. The three natural divisions of the State, which are low land, mid land and high land are also seen in this District. The low land and the mid land are thickly populated, where as the high land is characterized by Western Ghats. The major rivers, such as, karamana, Neyyar and Vamanapuram are originating from the highland and flows towards the Arabian Sea. There are six water lagoons confined in the district, such as, Akkulam Kayal. Anchutengu Kayal, Kadinnamkulam Kayal, Veli Akkulam Kayal, Edayar Lake and Vellayani Kayal.

GROWTH TRENDS

Trivandrum city is the administrative capital of the state and has many specialized institution serving the entire state and also function as the headquarters of Trivandrum District.

Physical development of the city lies along with the major transportation corridors, as in the case of other cities of Kerala. Being the administrative capital of Kerala, most of the major institutions and the secretariat are located in the city center. Major commercial centers of the city are located at chalai, palayam, and besides the M.G. road. Recreational centers, such as, the stadiums, zoo, museum, parks theatres and other cultural centers are located at the city. A vast development is witnessed in the recent years, and the city has been extending towards the suburban areas, such as, Veli, Sangumugham, Papanamcode and Kazha Kuttom. Further, developments are mainly confined towards the Northern part of the city. Several institutions, such as, Engineering College, University Campus at Kariavattom, Technopark, etc. is functioning as magnets, which attract further development. The rest of the city experiences lesser development compare to the Northern part of the city.

LAND USE

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The land use pattern in the city is different from other metropolitan cities of the state. The existing land use pattern in the Trivandrum Development Authority (TRIDA) area is dominated by the residential and agricultural activities. Land use under public activities is confined little higher in the Ulloor Panchayat (14.11 per cent), followed by Kazhakuttom (12.10 per cent). Parks and public open spaces occupy only 7.84 per cent of the city area. Kazhakuttom, Vattiyooravu, and vilappil panchayats have higher percentage of monsoon based crop area, which can be easily converted in to commercial and the residential land at any time.

LAND VALUE AND TOPOGRAPHY

Trivandrum has an undulating terrain beneath, which is a hard stratum, suitable for any type of construction activities. Land prices in the city have drastically increased in the recent years, and it has been doubled at present compared to the year 1993. Besides of National Highway 47, the land price varies from 2-4 lakhs per 40 m. sq. area. It has been observed that the city center has the highest land value up to 7-8 lakhs per 40 m. sq. area. In the suburbs, it is found that the value has hike up to 75-100 thousand per 40 m. sq. area.

Land being scarce commodity the left out open spaces, available in the city. Agricultural areas are being converted in to residential uses due to the peculiar landform of the city, which has hills and valleys. Till recently, most of the valleys were retained as paddy fields which acted as recitals of excess water in rainy seasons. This avoided flooding in the other areas of the city. Recently, there has been trend of filling up the paddy fields to use as residential plots. Though the existing paddy fields have been zoned as green belts, residential construction is allowed in variation to the development plan proposals.

POPULATION

Higher density of population is found in the city center and the coastal belts, i.e., 10000 persons per sq.km, whereas it is ranging from 2500-5000 per sq. km in the neighboring panchayat areas. Higher growth rate of population has also been observed in the neighboring Panchayats of the City.

LITERACY

In general, Kerala enjoys higher rate of literacy and the high literacy is found about 80 per cent in the city, but some coastal pockets where fishermen folk's dominants have only about 50 per cent literacy. It clearly indicates that these fishermen folks never given much attention to the education.

EMPLOYMENT

In the Corporation area, more than 75 per cent of the people engaged in non-agricultural activities, except the fishermen folks. In most of the panchayats more than 75 per cent of the population engage on nonagricultural activities except Kalliyoor, Pallichal, Vilappil and Vilavoorkal.

ECONOMY

In Trivandrum city, majority of its population depend on tertiary sector of the economy.

INDUSTRIES

The total area used for industrial purpose is 123.84 hectare of land, i.e., 1.60 per cent of the city area. Most of the available large and medium scale industries are located close to the two industrial locations, such as, Veli and Pappanamcode, and a number of electronic industries owned by Keltron and the Technopark also confined in this city.

INFRASTRUCTURE

In this present investigation, available infrastructure facilities in the city are reported in the sequel. They are:

HOUSING

Housing become one of the major problems in almost all the developing countries and India is also not an exceptional one. Though Kerala state has higher literacy rates, and better economic condition compare to some other states of India, still it not free from housing problems. There are about 26 percentage of the

total houses in Kerala are constructed by using grass, leaves, reeds or bamboo. The shortage of pucca or semi pucca houses estimated as 823060 as per the census 1991.

In Trivandrum Development Authority area, the number of residential houses are 2208788 and the number of households are 216211, of which 34.61 percent of houses have kutcha roof, 31.6 percent have semi pucca roof, and 28.54 percent have only pucca roof.

Trivandrum has more quantity of rental housing compare to other two Metropolitan Cities of Kerala State, i.e. (16.3 per cent of the total houses). This may be due to the fact that the city function as a capital of the state, and also large number of floating population, which come from, all over the state and neighboring district of other state of India.

TRANSPORTATION

The city is well connected to the region and other parts of the country by road, rail and air. The intra-city travel is mainly on road-based, while rail and air based modes cater to long distance.

ROAD NETWORK

The city has a partial ring and radial type of road network. The major radial roads are the National Highway - 47 (N.H.-47), Main Central Road (M.C. Road), Trivandrum- Shencotah Road (T.S.Road), and Kattakada Road Kovalam- Poovaru Road. These are the major arterials of the city. The other urban links have largely been developed as extensions to these inter city links. A well-defined hierarchy of roads is totally absent.

The topography of the city is characterized by highly undulating terrain. Since the road network follows this terrain, they have very steep grades in many places and poor geometry. The present network also suffers from lack of access control, pedestrian facilities and segregation of traffic. The intermixing of local and through traffic results in unsafe travel conditions and low speeds along the network. Also the centralized system of public transport movement creates problems of congestion along the main routes. Most of the junctions lack proper signaling system and are highly accident-prone.

The total road length of the city is 574.491 kms. The agencies responsible for maintenance of these roads are the State Public Works Department and the municipal corporation. The P.W.D. maintains 234.497 kms. (40.82 per cent) of road length and the rest is under the jurisdiction of the corporation

WATER TRANSPORT

A system of backwaters and canals connect Trivandrum, which lies in the Southern part of the State, and Hosdurg, which lies in the Northern part of the State. Though the waterways are the cheapest mode of transport, it is yet to be exploited. The Trivandrum Sherthalai canal passes through the Western part of the city.

WATER SUPPLY

The water supply distribution system in this city has historical importance. It was laid in the pre-independence period. It provides 24 hours supply with low pressure since the capacity is very less but the demand is much higher.

Distribution reservoirs are located at Peroorkada and Thirumala each having a capacity of 80 lakh litres and a 70-lakh litre capacity overhead tank exists at the observatory hills. The distribution system is also divided into the same 4 zones as the Central Water Service Scheme, i.e., Peroorkada, Central zone and low-level zone. The distribution system laid in almost all parts of the city was designed to benefit a population of 6.4 lakhs expected in 1991 (1991 population reached only 5.2 lakhs).

ELECTRICITY

The city has been experiencing deficiency in power supply and electricity is available to only 76% of the total households. There are 767 out of 1000 persons of the city lives in electrified houses. This is higher than the figure of other metropolitan cities of the state.

Despite governments policy of giving one light point connection free of cost to low income households still the city is witnessed that 233 households out of every thousand have no electric connection.

GARBAGE

Trivandrum city generates about 450 tones of garbage per day. At present, there is no organized system of collection and disposal of garbage from residence and a very few neighborhoods are served with community bins. Awareness is to bring about among the public to use proper methods of disposing garbage and about the hazards of logging of surface drains, stagnation of water, etc.

It has been found that there is more than 50 percent of Municipal wastes in Trivandrum city which is not collected, as a result, these wastes are accumulated in and besides in the roads, streets, etc. during the summer season. These wastes virtually create hazardous problems which include: (1) it arrests the smooth flow of vehicles, pedestrians, etc. in the city, (2) when a vehicle is passed through an accumulated garbage on the road, the entire atmosphere changed immediately, create bad smell, floating of dusts in the air which lead to air pollution, (3) air pollution leads to create various kinds of allergy, diseases, etc. (4) during the monsoon season, the garbage mixed with rain water and soaks the sewage, as a result, the entire road covered with full of garbage and dirty water, (5) hospital wastes which carry larger quantity of bacteria are stored in the open place, (6) inefficient management system are adopted in the city in relation to garbage collection and their usage's (7) proper storage system of waste is not available, (8) though more than 50 percent of the waste generated in the corporation area, the city is more less seemed to be a clean city because of nature's blessings. The city is situated in a slightly elevated place. It has a river and several streams, and it blessed by more rainfall. As a result, the rainwater washes the accumulated wastes in the city away.

SANITARY FACILITIES

There are only 838 persons out of every 1000 have toilet facility in the city. However, this is higher than 820 in Kochi and 761 in Kozhikode. Non-availability of toilets is a major issue in the city, which leads to poor environmental sanitation and unsatisfactory living conditions.

SEWERAGE

Individual connections from the building are taken into the sewers and leads to Kuriathy treatment plant, the treated sewerage is taken into the sewage form located at Valiyathura the plant was established during the princely period, still found satisfactorily.

COMMUNITY FACILITIES

Community facilities, such as Health, Education, Telecommunication, etc., are available throughout the city and in the suburban areas. There is a concentration of health facilities in the city though hospitals, dispensaries, clinics, etc., are mushrooming in the suburbs. Recreation grounds/open spaces are not given due importance in the periphery people and, therefore, they are absent in the suburban areas.

HEALTH

The city is known for the availability of sophisticated medical facilities. Medical College, Sree Chitra Medical Center, Regional Cancer Center etc., is the main hospitals and regional referral centers of medical care. Majority of the medical institutions/ hospitals are concentrated in the around the Medical College Hospitals, which is lying in the Central Business District Area of the city. Apart from allopathic, this city also has the Ayurveda College, Homeo College, Nature cure centers, Yoga and massage centers, Kalari centers, etc.

EDUCATION

The city has been blessed with good higher education facilities and research institutions. As a result, larger number of people from the neighboring district of Tamilnadu State and the surrounding areas migrated to the city for enjoying these facilities. As in the rest of the state, primary and secondary education institutions are situated all over the city, suburb and even in the rural areas. The public and the private sectors have taken an equal interest in the field of education.

RECREATION

The city has several open spaces and recreational facilities within the reachable limit. It has been observed that the city has about 165 acres of land, which is used, as recreational and open spaces. Besides these privately owned open spaces are also available in city, which are used by the selected persons.

TELECOMMUNICATION

Telecommunication system proves to be one of the most important network systems for the proper functioning of any city. Kerala state has a good communication network. Though the number of post offices in Kerala state during 1994-95 remained the same as that of the previous year, the state average of population served by one post office increased to 6138 persons as against 5774 persons during the proceeding year. Conforming to this, Trivandrum also has a good network of telecommunication connecting the entire district.

FIRE

The city has two fire stations, one nearer to the Central Business District at Chengalchoola, and the other is at Chackai.

CREMATION OR BURIAL GROUNDS

The city has two-cremation ground, one at Karamana and the other at Thycaud. Of which, later has electric cremation facility. Though the law prohibits cremation in house premises, such practices are still taking place. The city has many burial grounds attached to religious institutions, some in the Central Business District area. These also serve as green or open spaces for the city.

CONCLUSION

The Authors have studied the available infrastructure facilities in the city and reported in this paper. The Authors feel that adequate necessary steps should be evolved to promote the infrastructure facilities availability in the system, which will pave the way for the development of the city in particular, and the State in general, constructively.

REFERENCES

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