

Study Tour

SESSION 2016-17 (ODD SEM)

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“Cities from south and west continue to do well overall,” said Urban Development Minister Venkaiah Naidu

1. Introduction

About Mysuru

The rapid and constant growth in urban population leads to a dramatic increase in urban solid waste generation, with a severe socio-economic and environmental impact. Due to lack of serious efforts by city authorities and the local residents, garbage and its management has become a tenacious problem. Selection of the system for the collection, transportation, recycling, treatment, and disposal can determine the number of recycling bins needed, the day people must place their garbage at the curb, the truck routes through residential streets, and the cost of waste services to households. It must be ensured that MSW management is environmentally safe and follows sustainable disposal

Mysore city in Karnataka retained the top position in Swachh Bharat Rankings for 2015 that were released by the Ministry of Urban Development. Compared to the 2014 rankings, Chandigarh has replaced Tiruchirappalli of Tamil Nadu in the second rank while **Dhanbad of Jharkhand** is reeling at the **73rd slot, the lowest rank**.



Figure 1-1 Solid waste Generation Source- (Mohan, 2016)

“Cities from south and west continue to do well overall,” said Urban Development Minister Venkaiah Naidu at the release ceremony of the rankings

The CSE survey was, however, limited to 14 cities. It tried to find out what actually makes these cities clean and how the best practices would act as a guide for future policy.

“What is absolutely clear to us as we researched for this report is that technology for waste disposal is not the problem. The

problem is two-fold. One, households and institutions are not responsible for management, through segregation or payment of the waste they generate. Two,

there is an absolute collapse of financial and institutional (human) capacity and so accountability in our municipal systems," said Sunita Narain, director general of the CSE.



Figure 1-2 Mysore retains cleanest city tag

Rationale for the Study Area

Mysore city is consecutively winning award of clean city of India, award winning intelligent public transport system and pioneer in heritage and city planning. City planning of Mysore city dates back to 1904 and has been one of the best cities to live in in many surveys. Therefore, Mysore city is selected for the survey and Local Area Planning exercise. This will also provide and insight of south Indian culture and tradition influencing city development.

Objectives

Objective of our study are as follows

- I. To learn Sustainability in Planning.

- II. Study Clean City Principles.
- III. Study Intelligent Transport Systems.
- IV. Prepare Local Area Plans for Selected zones of Mysore city.

City Profile

The Mysore City is located at 76°12' (East) longitude and 12°18' (North) latitude. It is the second largest city in the state of Karnataka. It was the capital of the former princely state of Mysore and is now a divisional headquarters having a population of about 9.95 lakhs, as per provisional population table of Mysore 2011. The region lies on the Deccan plateau, east of the hilly Malenadu region, which includes the eastern foothills of the Western Ghats range. Mysore region, also known as the Southern Karnataka Plateau, is made up of the low rolling granite hills from 600 to 900 meters elevation. Mysore is located about 140 km from Bangalore and well connected by rail and road to parts of the state and the country. The climate of the district is essentially tropical monsoon type, which is a product of the interplay of the two opposing air masses of the southwest and northeast monsoons. The minimum

temperature in winter is around 15°C and in summer, the maximum temperature is around 35°C.



Figure 1-3 Mysore City Key Map

Mysore gets most of its rains during the monsoon between June to September. The temperatures during the cold weather season (November to February) ranges from 16.1°C to 31.3°C. The hot weather season begins in the month of March and increases in its intensity towards the end of May. In this season, the temperature ranges from 19°C to 35°C. Land becomes very hot and there is a wide range of variations between day and night temperatures. The average annual rainfall for Mysore is 600 mm. The city has been divided into 65 municipal wards

2. Study Tour Working Schedule

Study Tour Working Schedule

Table 2.1 Working Schedule

25 August 2016	Thursday (Janmasthmi Holiday)	Depart from AUH/ Delhi	Overnight Travel by Train Karnataka Sampark Kranti
26 August 2016	Friday	Train Journey- Arrive Bangalore, Proceed to Mysore Overnight	
27 August 2016	Saturday	Mysore Reconnaissance Survey	
28 August 2016	Sunday	Landuse/ Household survey	
29 August 2016	Monday	Visit to Mysore University, Mysore Urban Development Authority, Lecture by Town Planners	
30 August 2016	Tuesday	Landuse/ Housing Survey/ Infrastructure Survey	
31 August 2016	Wednesday	Landuse/ Built Typology / Infrastructure Survey	
1 September 2016	Thursday	Landuse/ Household survey/ Secondary Data	
2 September 2016	Friday	Transport/ Heritage Survey/ Secondary Data	
3 September 2016	Saturday	Urban Design Study	
4 September 2016	Sunday	Landuse Survey	
5 September 2016	Monday (Ganesh Chaturti)	Local Festivity	
6 September 2016	Tuesday	Secondary Data Collection	
7 September 2016	Wednesday	Secondary Data Collection	
8 September 2016	Thursday	Visit to Surrounding Places	
9 September	Friday	Visit to Surrounding Places /Depart from Mysore	
10 September 2016	Saturday	Train- Mysore to H.Nizamuddin Swarna Jayanti Express	
11 September	Sunday	Arrive Nizamuddin	

List of Students*Table 2.2 List of Student*

SNOS	ROLL NUMBER	STUDENT NAME
1	A51234914001	KEVIRIETUO MEPFHUO
2	A51234914005	TIPPANI MANI KRISHNA
3	A51234914006	SANDESH SUBBA
4	A51234914007	SHAHRUKH KHAN
5	A51234914008	LAKSHMAN R
6	A51434914001	SINGH KIRAN ARJUN
7	A51434914002	NIDA AMIN
8	A51434914004	KUNA ANJI BABU
9	A51434914005	NIDHI KUMARI
10	A51434914006	YASH PRATAP SINGH
11	A51434914007	ATUL CHAUHAN
12	A51434914008	MRIDULA ROY
13	A51434914009	KARTIK SRIVASTAVA
14	A51434914010	WASIM AKRAM
15	A51434914011	SABHYA RAJ
16	A51434914012	S MOHANA VAMSI SHARAN
17	A51434914014	GANJI VIGNAN
18	A51434914015	ABHISHEK MAURYA
19	A51434914016	MATHOSETO PESEYIE
20	A51434914017	MAYANK SINGH
21	A51434914019	PIYUSH RATH
22	A51434914020	TINKESH PAL
23	A51434914021	VIVEK KUMAR
24		Ravi Rajput

3.Approach/Methodology

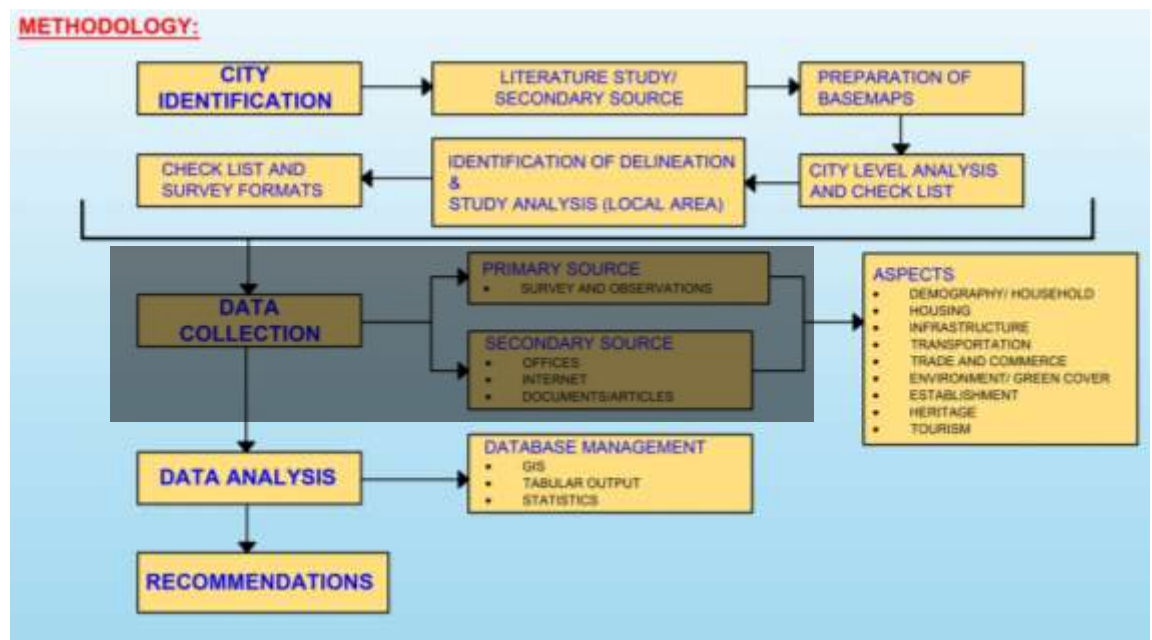


Figure 3-1Methodology of Study

4. Key Findings

Gurgaon

Gurgaon has stood 36th among 75 cities in the 2016 Swachh Bharat rankings released today. In 2015, Gurgaon stood 466th out of 476. This time, it has left Faridabad behind, which has been ranked 51st. According to a survey, Gurgaon has scored 39 points out of 50 in planning strategy in open defecation.

It has scored 50 out of 50 in communication and informatics and a commendable 302 out of 400 in door-to-door collection of waste and its transportation. However, like the last year, it's the waste processing and community toilets that have played a spoilsport.

Owing to the defunct Bandwari plant, Gurgaon has got 75 marks out of 200 for the processing of waste and around 80 out of 150 for community toilets. "Since last year, we have made community toilets, but owing to staff crunch and time taken in getting the approvals, there is still a lot to be done. We hope in one year, Gurgaon makes it to the top 20 cities," said TL Satya Prakash, DC. — TNS (Prakash, Feb 15, 2016)

4.1 Water Conservation and Management

Out of total geographical area of 44.23 lakh hectares, about 50% area is severely affected with the problems of soil erosion, alkalinity, salinity and water logging. The soil erosion occurs mainly due to water and wind. The soil erosion through water occurs mainly in the areas falling in Shivalik foothills and in Araveli ranges. It is estimated that about 5.50 lakh hectare area is affected with this problem, whereas about 12 lakh hectare area is affected with wind erosion which occurs mainly in South-Western part of the State. An area of 2.32 lakh hectare is affected with alkalinity of varying degree and 2.55 lakh hectare with salinity and water logging. (National Disaster Management Authority (NDMA), 2016)

Several Externally aided/Centrally Sponsored and State schemes are being implemented in the State. Under these schemes, Soil Conservation measures are taken up on watershed basis, which include construction of check dams, water harvesting structure, gully plugs, percolation embankments, diversion bunds, vegetative measures etc. The implementation of watershed development schemes helped in checking soil erosion resulting in increased land productivity. The harvesting of rain water helped in conserving the moisture in-situ and recharge the ground water. Water availability for human consumption, livestock and irrigation is also augmented. The underground water level which is fast depleting has been checked.

For judicious use of precious ground water, improved on farm water management practices are propagated. Sprinkler irrigation system is being promoted by providing subsidy incentive. In order to improve on farm water conveyance by reducing evaporation and seepage losses from field channel and to avoid labour intensive process of maintenance of open channels,

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underground pipelines system of water conveyance is being promoted by providing subsidy incentives.

General Environmental Management

During the last four decades the Industrial sector has quadrupled in size resulting in increased volume of emissions and discharges, generation of solid wastes both hazardous and non-hazardous. While much effort has been made to arrest the rate of emissions and treatment of effluents due to ready availability of technology and expertise, much needs to be done in the area of hazardous waste storage, treatment and disposal. The costs associated with improper disposal of hazardous wastes include; costs due to impact on health, economy and cost associated with restoration of the degraded environment. Adverse effects on the eco-system results due to improper disposal or dumping of hazardous wastes, when discharged on land, heavy metals and certain organic compounds are phyto-toxic at low concentration, adversely affecting the soil productivity. Exposure to hazardous wastes by direct contact from land, surface water and ground water can lead to diseases or chemical poisoning and in some cases death.

Recognizing, the need for environmentally sound management of the hazardous wastes, Government of India, Ministry of Environment and Forests (MoEF) has framed 'Hazardous Wastes (Management and Handling) Rules, 1989', and later transformed the same into 'Hazardous Waste (Management, Handling & Trans-boundary Movement) Rules, 2008 as under Environment (Protection) Act, 1986. This law mandate industry to undertake proper management and set up disposal facilities for hazardous wastes. MoEF has identified 36 categories of processes and related waste streams that generate Hazardous Wastes. HEMS encourages its members to review this listing and identify, if any, hazardous waste is generated at their site. Proper implementation of these rules will require identification, characterisation, inventorisation and monitoring of such hazardous wastes at the individual Industry Level.

One of the biggest environmental challenges faced by the State of Haryana and NCR was, very much similar to other Indian States, to ensure proper management of growing volumes of hazardous wastes generated, including its safe treatment and disposal. Industry was experiencing difficulties in complying with the legal requirements due to the lack of techno-economically viable Treatment Storage and Disposal Facilities (TSDF). Few industries have developed their treatment and storage facilities for captive use but this is not a sustainable solution for long term. HEMS recognized the problems associated with the safe treatment and disposal of hazardous wastes and has resolved to solve the environment problems by facilitation of development of a common TSDF facility for hazardous waste generated in the region. HEMS in co-operation and guidance from the experts from Ministry of Environment & Forests, New Delhi, Central Pollution Control Board, Haryana State Pollution Control Board and neighbouring State Pollution Control Board/Committees and financial assistance from Ministry of Commerce, GOI planned and developed Integrated Common Hazardous Waste Treatment Storage and Disposal Facility (ICHWTSDF) at Village Pali, District Faridabad and got commissioned the same in 2009.

(MANAGEMENT, 2016)

Road Transport and Traffic

Key Issues for Gurgaon

Millennium city - image of the city important, Adequate good quality transport system (Road System and Mass Transit), Unaesthetic components of transport system to be avoided, Institutional inadequacies

Junctions are the major causes of congestion

JUNCTION IMPROVEMENT S

Potential exists for their improvement

- geometric improvements
- traffic circulation
- traffic signals

Area-wide/corridor improvement plans, 25-30 problem junctions

CORRIDOR IMPROVEMENT S

Encroachments on carriageways, footpath and road margins

- reduce road capacity
- create side friction

Improve major corridors of movement

- remove encroachments and rehabilitate affected people
- organise parking
- provide road signages/markings
- revise traffic circulation
- improve road surface

120 km of major corridors, 50 km having severe traffic problems

Start with one corridor as pilot project

Involve stakeholders, public consultations

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ROAD MAINTENANCE

Poorly maintained roads reduce capacity

Causes

- inadequate pavement thickness
- inadequate drainage

Well-maintained roads – first impression of any city. A rigid maintenance and resurfacing programme necessary. Higher specifications for major roads (about 120 km). Higher budgets for road maintenance

Mysuru

MYSORE: Mysore city is well known across the world for its magnificent architecture marvels and strong historic background. Commonly referred to as 'City Of Palaces'. It is one of the most famous tourist places of India, attracting millions of tourists across the world every year.

Mysore has LPA (Local Planning Area) boundary which includes Mysore city and Nanjangud.

- LPA Area: 508 Sq.Km. (2011)
- Mysore city Area: 128.4 Sq.Km.
- LPA Population (Municipal Corporation, outgrowth and census town and villages): 10,24,143
- Number of households in LPA: 2,41,424.
- Mysore city Population: 8,87,446
- Mysore city Outgrowth Population: 27,488
- Urban/Metropolitan Population: 9,83,893
- Density of Mysore city: 476 People/ Sq.Km

Mysore served as the capital city of Kingdom of Mysore for nearly six centuries, from 1399 until 1974. The Kingdom was ruled by the Wodeyar dynasty except for a brief period in the late 18th century when Hyder Ali and Tipu Sultan were in power. Patrons of art and culture, the Wodeyars contributed significantly to the cultural growth of the city. The cultural ambience and achievements of Mysore earned it the sobriquet Cultural capital of Karnataka.

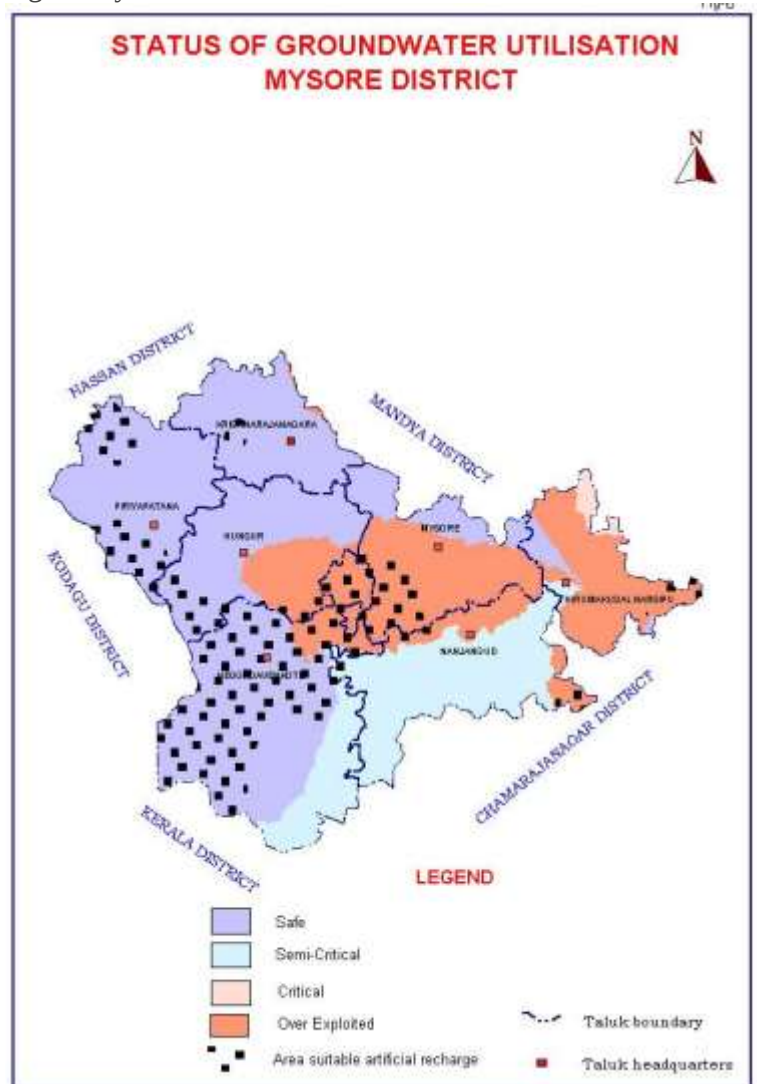
Mysore is noted for its palaces, including the Mysore Palace and for the festivities that take place during the Dasara festival when the city receives a large number of tourists. It lends its name to the Mysore style of painting, the sweet dish Mysore Pak the Mysore Peta (a traditional silk turban) and the garment known as the Mysore silk saree. Tourism is the major industry, while information technology has emerged as a major employer alongside the traditional industries. Mysore depends on rail and bus transport for inter-city connections. The city was the location of the first private radio station in India. Mysore houses Mysore University, which has produced several notable authors, particularly in the field of Kannada literature. Cricket is the most popular sport in the city.

Water Conservation and Management

As per our study in Mysuru the average stage of ground water development in the district is 63% indicating that there are areas where there is scope for further development. Categorisation of the areas is shown in Fig . It may be noted that all command areas are under safe category. Categorization as shown in the fig is only for noncommand

areas. While K. R. Nagar and Periyapatna taluks are safe for ground water development, whereas in Nanjangud no area is safe except canal command. Rest of the taluks are partly safe and partly over-exploited. But all the command areas falling in the district are safe for further development. The dugwells, which penetrate partially the weathered, fractured zones of the aquifers, may be deepened further for the better productivity. Construction of check dams and sub surface dykes at appropriate places across the nallahs and streams in the water-table depleting areas of Mysore, T. Narasipura, Hunsur, H.D. Kote and Nanjangud taluks may be envisaged. A comprehensive programme has to be formulated to harvest the rain water through roof top, check dams, surface tanks, bunds and subsurface dykes to use the resources directly from the structures, which in turn

will arrest the subsurface flows and augment the groundwater resources. Ground water usage should be encouraged in topographic lows and valley areas of low water level fluctuations with adequate soil conservation measures to prevent the soil erosions. Constant monitoring of ground water quality should be carried out in the Canal command areas to prevent the pollution and related problems. Determination of trace elements and organic compound should be done to help



in categorizing the quality of water. Ground water in canal command area is found under-developed therefore, it is strongly recommended to prepare an action plan to bring more area under conjunctive use of ground water and surface water irrigation. Conjunctive use of both Surface and Ground water practiced in the canal command area would improve the quality of ground water, prevent the water logging conditions and availability of canal water to the tail end areas. The ground water development should be allowed only areas, which are categorised as safe and semi-critical with caution. Mass awareness programmes should be conducted for public awareness about the limited availability of ground water resource. For domestic purposes dug wells are ideal structures in denudational uplands and older flood plains while in the rest of the area the water level is expected to be deep and may dry up in summer. For domestic purposes 2.5 m dia dug well down to 8-14 m will be ideal where as for irrigational purposes deeper dug wells with depth ranging from 14-18 m bgl with a dia of 5-6 m is recommended. The locations for bore wells are site specific and have to be pinpointed based on scientific investigations. In general the lineaments trending NE-SW and E-W are expected to be have higher yield. Sites for bore wells and dug wells should selecte with the technical advice from technical qualified persons. The bore well may be constructed down to 200 m with a dia of 152 to 165 mm. Since potential fracture zones are encountered with in a depth zone of 100 m, small capacity DTH Rig is sufficient for drilling borewells for domestic purposes of 152 mm diameter. For irrigation bore wells a depth of 200 m with a diameter of 152 to 165 mm is recommended. The thickness of weathered formation hardly exceeds 22 m and hence there is no problem for lowering the casing pipes. However, at places loose boulders are encountered just above the bedrock thereby creating problems for proper sitting of casing pipe. In cases where boulder problems are encountered reaming of the borehole with mud circulation before lowering the casing is recommended. Cement sealing provided in the annular space ensures longer life of the well. Farmers should be educated to grow less water intensive crops and adopt micro irrigation system. Government should provide subsidy such irrigation systems. Artificial recharge structures should be constructed in feasible areas for augmenting ground water resource and to improve ground water quality.

*Road Transport and Traffic***PROPOSALS:**

Expansion of roads in congested areas
 New sayyajirao rd.
 Sawday rd.
 Charmarajendra circle
 Hardine circle
 Relocating logistics and maintenance of auto parking
 Provision of parks
 Provision of street furniture
 Parking area on some roads
 Public toilets
 More trees

NEED FOR PROPOSALS:

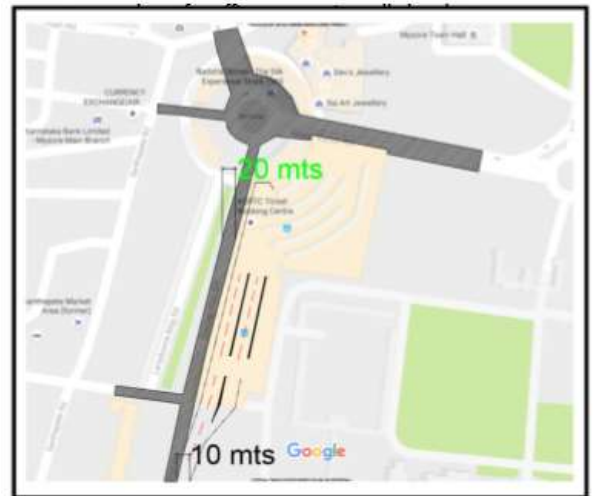
Zone-1 has almost all facilities but due to lot of floating population and increasing residents in the zone the facilities provided in the area has to be remodeled and has to be re-constructed.

Main problem is traffic congestion and lack of proper maintenance of the facilities. Foot paths are provided all along the roads in zone but not in operation due to street vendors who are creating a mess for pedestrians.

EXPANSION OF THE ROADS:

NEW SAYYAJI RAO ROAD connects to KR circle intersection acts as a heart of the city. The radial intersection is the connecting point to the major roads in the city with location of ITS bus station.

SADWAY ROAD passes through the zone connecting to the ring road to avoid over flow of traffic and to restrict the heavy vehicles coming into the CBD.



Existing scenario of Road: 20 mts

Proposed ROW: 30 mts

Existing scenario of Road: 15 mts ROW

Proposed ROW : 24 mts

**AUTO AND PARKING AREA:**

Open area left over by the government being used by the auto and taxi drivers creating mess in zone due to lack of facilities.

Learning Analysis

INFRASTRUCTURE:

1. There should be segregation of waste at the time of collection of waste.
2. The open dumps that are located in the industrial area should be removed.
3. Proper disposal of waste in industrial area.
4. Sewer lines and drains are still not properly connected to the main drain in most part of the zone.
5. Drainage system in the industrial area must be reconstructed.
6. Set up public toilets as there is no public toilets in the zone.

TRANSPORTATION:

1. Setting up electronic notice boards to inform traffic conditions beforehand so that drivers can avoid jams
2. Creating public awareness by putting up posters related to road safety.
3. Placing tactile pavings in bus stops to assist pedestrians who are blind or visually impaired.
4. Marking of zebra crossing in the main intersections
5. Repairing of roads in the industrial areas

6. Built sidewalks and provide space for on street parking.

ROAD COSTING:

Road type	Width	Total road length	price per sqmt	cost(tar)
Access street road	6m	2.8 km	Rs 270	Rs 4,536,000

Source: Article in Times Of India regarding roads in PMC jurisdiction

The total length of the road which needs to be repaired is 2.8 km. the width of the road is 6 meter and the price per sqm is Rs 270. The total cost is estimated at Rs 4,536,000 (four five lakhs thirty six thousand).

FUNDS:

It will be provided by Sustainable Urban Transport Project(SUTP) in collaboration with JNNURM. Supporting partners of SUTP ministry of Urban Development, Global Environment Facility, World Bank & Institute of Urban Transport currently, SUPT is providing funds for transport projects in Mysore.



Zebra crossing



Tactile pavement



Awareness posters



Damaged roads



OBSERVATION

- ☐ The area has following schools and these schools are owned by private organization.

- ☐ Central Academy, Eagle motor driving school etc.
- ☐ The most preferred school by the residence is central Academy.
- ☐ There are sufficient hospitals and clinics to help out the residence of the area to treat themselves.
- ☐ These hospitals are peace point hospital, life line hospital, children's hospital etc.
- ☐ There are no any community halls that are used as a multi-purpose halls.
- ☐ The population of the ZONE II is multi religious i.e. Hindu, Muslim, Kannad, Telgu Christian etc.
- ☐ Population residing experiences mixed culture of living of which Kannad culture of living is predominantly found.
- ☐ Amongst the population residing in ZONE II the number of population is maximum with-in the age group of 14 to 54 years.
- ☐ The garbage within the area is controlled by the private authorities hired by the Mysore city corporation.
- ☐ The collection of garbage is done every day in a week.
- ☐ There is no provision of public toilets within the area.
- ☐ Every house hold residing in the Mysore area owns minimum of a two wheelers and few of them four wheelers.
- ☐ The use of public transport is very low as everyone owns a two wheeler or a four wheeler.
- ☐ Heave traffic congestion is mostly found near the Durga temple junction (RMC circle).
- ☐ No parking facility is provided the people visiting the market place.
- ☐ The height of the building in the ZONE II area is generally ground floor, G+1, G+2 and G+3.

- ☐ According to primary survey there is maximum number of G+2 building.
- ☐ The buildings is mainly used as living purpose but in few buildings ground floor is used for shop and upper floor for living or for coaching centers.
- ☐ The sewage system of ZONE II area is well connected throughout the area.
- ☐ It is laid under the road.
- ☐ At every end of the road there is a manhole constructed.
- ☐ The water is supplied by jalsansthan.
- ☐ The supply of water in this area is for about four hours in a day which is causing a scarcity of water for usage.

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Faculty Involved

To replace a photo with your own, right-click it and then choose Change Picture.



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