

KANPUR – ADDRESSING URBAN CHALLENGES

Prof. Rashmi Ashtt

Principal/Director, Sat Priya School of Architecture & Design, Rohtak

ABSTRACT

Theories of urbanization describe city as a living organism, which takes birth as Neopolis, grows into a Megapolis and ultimately dies as a Necropolis. The whole process takes its due course and transfers its growth impetus to the adjoining sub-areas, thus giving birth to another new city. But, this organic growth and death of cities can be regulated if handled in a planned manner. A city when starts growing at an unprecedented pace it requires attention of the authorities, development agencies, political parties and of course the common man. Kanpur has also emerged as a dynamic city of Uttar Pradesh and needs immediate attention so that it develops as a planned city. This will not only improve the infrastructure but also lead to a secured social life of the natives as well as the tourists. The social and physical needs of the city if addressed to in a planned manner will definitely raise the Quality of life(QOL index) of the people in Kanpur.

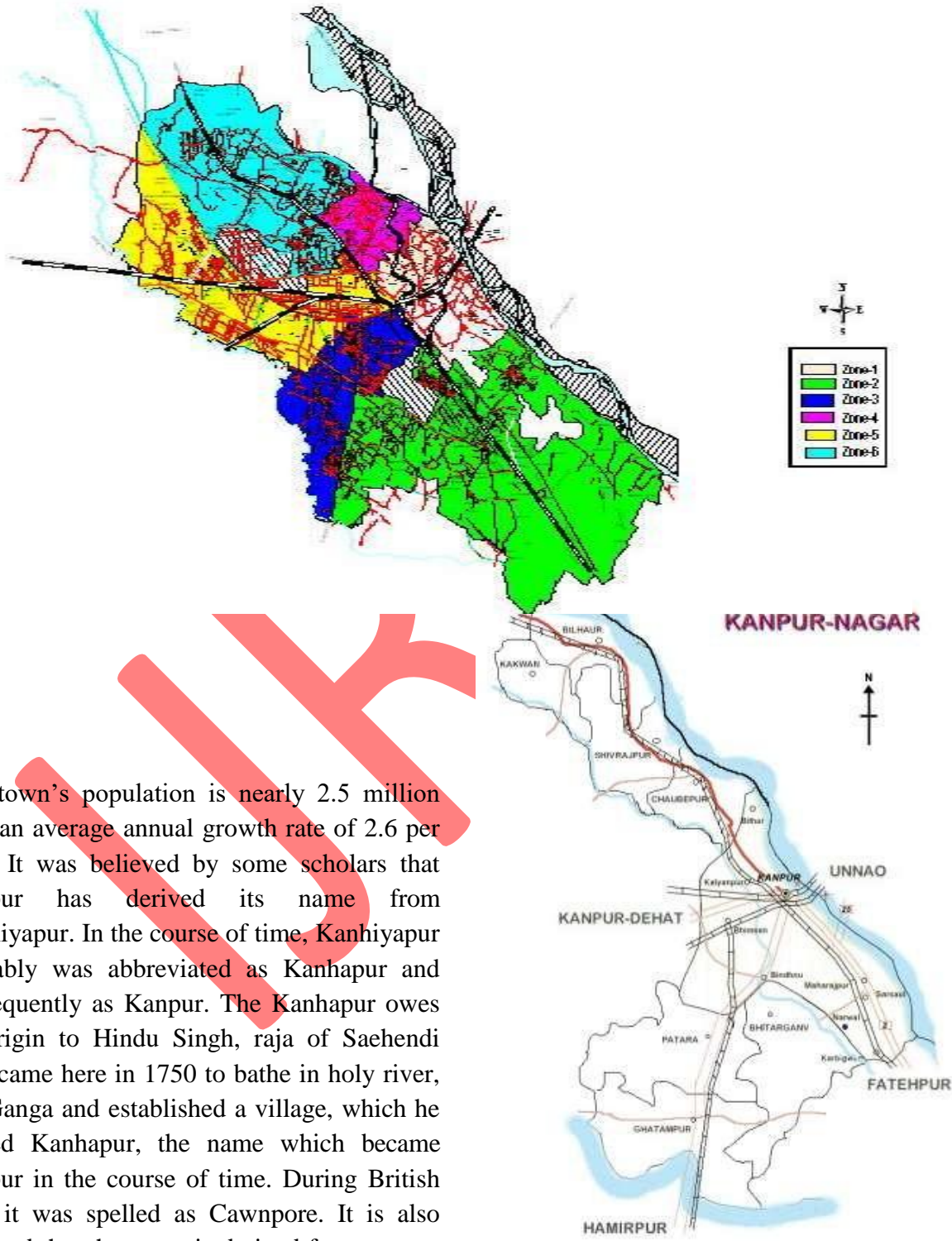
KANPUR – INTRODUCTION

Kanpur is a metropolitan city, sprawling over an area of 260 sq km. Kanpur is the biggest city of the State of Uttar Pradesh and is main centre of commercial and industrial and educational activities. According to the census 2001, Kanpur has a population of 25.51 lakhs. It is administratively divided into 6 zones and 110 wards with an average ward population range of 19000 to 26000.

CITY PROFILE

Kanpur city is situated on the southern bank of Ganga River and has been enjoying an important place in the history of modern India. Kanpur is the biggest city of the State of Uttar Pradesh and is main centre of commercial and industrial activities. The City formerly known as Manchester of the country is now also called the commercial capital of the state. It is known for its cotton and woolen textile and leather industries. Kanpur is one of the biggest producers of Textile and Leather products. Apart from leather and textile industry, the fertilizer, chemicals, two wheelers, soaps, Pan Masala, hosiery and engineering industries are also operating prominently in the city. Kanpur is situated on the most important national Highways no. 2 & 25 and on the main Delhi-Howrah railway trunk line. Kanpur is divided into two districts namely Kanpur-Nagar and Kanpur-Dehat. Kanpur comprises of 3 tehsil, 2 Municipal Board, 2 Nagar Panchayats and 10 statutory Towns.

Kanpur is also divisional headquarters of Kanpur commissionerary consisting of Kanpur-Nagar, Kanpur-Dehat, Etawah, Auraiya, Farrukhabad and Kannauj districts.



The town's population is nearly 2.5 million with an average annual growth rate of 2.6 per cent. It was believed by some scholars that Kanpur has derived its name from Kanhiyapur. In the course of time, Kanhiyapur probably was abbreviated as Kanhapur and subsequently as Kanpur. The Kanhapur owes its origin to Hindu Singh, raja of Saehendi who came here in 1750 to bathe in holy river, the Ganga and established a village, which he named Kanhapur, the name which became Kanpur in the course of time. During British rule, it was spelled as Cawnpore. It is also believed that the name is derived from

Kanpur and is associated with Karna, one of the heroes of Mahabharata. Duryodhana made Karna a king, seeing him as a fitting match to Arjuna, and gifted him this area; hence the name Kanpur, which later became Kanpur.

EVOLUTION OF KANPUR

Kanpur has traditionally been an industrial city. Prior to Independence, it was the second most industrialized city in India after Calcutta. It was called the 'Manchester of India' due to the existence of large number of cotton textile units. During British era, Kanpur was of strategic importance due to the important role which it has played during the great revolt of 1857. This led to the development of a large cantonment base at Kanpur. After independence, Kanpur continued to be an important city and large public sector companies made their existence in the city.

C.S.A.U Agriculture College



H.B.T.I Eng. College



I.I.T Kanpur



ITI, G.T. Road

REVIEW OF EXISTING LITERATURE

DEMOGRAPHIC CHARACTERISTICS

The average annual growth of population is 3.5 percent during the period 1991-2001 from the average annual growth rate of 2.6 percent in the previous decade (1981-91). One of the factors for this kind of growth can be higher number of in-migration to Kanpur City from other areas. As per the simple graph method, proposed population is 48 lakhs in 2031 which means that another Kanpur will be added in next 25 years. The average population density in Kanpur is 97.56 persons per hectare. The density in core area is six times higher than the outer area. Therefore, need is felt to decongest the inner core area to improve the quality of life.

ECONOMIC GROWTH

As far as economy is concerned, most of the old industries are sick. Mostly small and medium sector industries are flourishing. Tanneries appear to be thriving. There are not much of new age industries such as I.I.T. Kanpur is growing as a trade and commerce centre. Kanpur has an image of dying city. Power shortage and electricity cut for 10-12 hours per day on average being observed. There is no air connectivity between major stations. All this creates hindrance in the economic growth of the city. For the economic growth of the city, image building exercise is required. We have to make efforts so that ex IITians will commit to Kanpur. The infrastructure and means of communication needs to be improved so that trading activities can be boost. The need is also felt to facilitate marketing linkages for small scale industries.

URBAN PLANNING AND HOUSING DEVELOPMENT

Kanpur Development Authority is planning to develop additional 33700 ha for growth of city. In the master plan 2021, provision for inner and outer ring road, new terminals, vegetable and grain markets and development of new colonies in close proximity to commercial hub has been proposed. The preparation as well as approval of master plan has taken more than 7 years. Master plan should be speedily approved and implemented in the city. Steps should also be taken to move industry to conforming area and to ensure good connectivity to new markets and terminals. Most of the residents stay in one to two room tenements indicating large EWS/LIG population. Large number of residents uses their premises for work cum residence purpose. No new colony has been developed by private colonizers. An estimated 1.8 lakh additional houses are required by 2013. Huge requirement for additional housing is felt besides meeting existing shortage. Housing industry itself can stimulate economy of Kanpur. The strategy for planned development will be speedy development of planned townships, stimulating housing development through public –private partnership, improvement in quality of KDA/UPHB housing, reservation of 25 percent area for EWS housing to avoid formation of new slums, location and demand led construction of EWS housing, differential pricing in mixed land use areas and outsourcing approval of building plans and granting completion certificates.

KDA has proposed to develop 10,000 acres to accommodate 16 lakh by 2021. The new development will be in Gangotri Township which will be developed across Ganges and close to civil lines, Hi tech city over 5000 acre including 1800 acres by Sahara, 2500 acre for New Kanpur city towards Bithoor road and two housing projects of UPHB of 1350 acres and 1500 acres towards western side of Kanpur. The strategy is to green the parks with the involvement of RWAs, development of water bodies, green belts e.g. Kidwai Nagar, rain water harvesting (1.5 lakh liters already saved), introduction of CNG buses, developing the locations for weekly markets and shifting of cattle colonies as detailed by City development plan of Kanpur which is a product of research and inputs by the urban and regional planning experts .

BASIC SERVICES FOR THE URBAN POOR

According to census 2001, the slum population was 3.68 lakh i.e. 14.5 percent of total population in 390 slums. As per the survey conducted by D.U.D.A in 1997-98, the population was 4,19,859 and total households were 98,208 whereas slum population is about 5.0 lakh in 2006 as per K.N.N. estimate, which is twenty percent of total population. A large number of below poverty line (BPL) population (about 60%) also live -in slums. 66 percent population is below 35 years old. This section has rising aspirations which need to be addressed. Out of total slum population, 64% (2,69,427) are illiterate whereas only 35.8% (1,50,432) are literates, More than 40 percent are self employed.

Majority of households i.e. more than 51 percent live in Kutchha Houses made of grass, mud etc. and jhuggi jhopri's. Majority of house holds (55%) get water from public stand posts and only 19 percent have individual taps. Presently, access to sanitation services is markedly less than access to other (REF: *City development plan of Kanpur*)basic services. Majority of households use public toilets followed by households using individual flush. Even then open defecation is still at a large scale i.e. 25 percentage of the slum households openly defecate.

Slums are classified into two categories for planning purposes: slums which are requiring relocation and those which can be improved in-situ. There should be separate government policy for dealing with the slums located at different type of land i.e. private land (hata land), public land (KDA, KNN, Railway, Gram Samaj, Irrigation, Nazul land), combined land of 2-3 authorities (KDA, KNN and railway land) and those slums required or not required for development project. The Strategy to empower slum dwellers will be relocation of slums dwellers by adopting consultative process, encouraging the formation of micro credit organisations, construction of community toilets as per their need and with due consultation, allowing CDS to bid for O&M of community toilets, IEC activities for sensitizing on hygiene, SWM and sanitation, involvement of CDS in planning, implementation and monitoring of infrastructure projects to improve ownership, proper maintenance of community centres and further construction as per demand and motivating slum dwellers to use services like piped water, toilets and electricity and pay for their use.

URBAN TRANSPORT

The city is predominantly dependent upon private buses and tempos for the intra-city passenger travel. There are approximately 80 private buses and 980 auto rickshaws and tempos plying in the city. U.P.S.R.T.C has ordered for 108 new CNG buses to replace old fleet of buses. 1000 new CNG taxi permit has been given. The maximum numbers of vehicles registration are of two wheelers from 1999 to 2006 followed by cars. The overall traffic situation in Kanpur is chaotic, roads are overloaded. The railway line between Kanpur and Farrukhabad divides the city into north and south city and rail level crossing falls between main Kanpur city and south city due to which frequent traffic jam is seen all along the G.T. road and traffic movement is restricted. Mixed traffic results in low corridor speed. There are poor intersection geometrics and signaling system, inadequate parking facilities. There is no proper alighting and boarding facility.

The strategy required is segregation of traffic to improve speed, enforcement of discipline in tempos regarding boarding and alighting points, strict checking of polluting vehicles to reduce pollution, building consensus for removal of encroachments and undertaking a drive on inculcating traffic sense. The works proposed for integrated development of transport are integrated development of 116 Kms of roads including 53 Kms of PWD roads, flyovers at Bada Chauraha, Vijay Nagar Chauraha and Guthaia Crossing, ROBs at Jarib Chauki, kalyanpur, shyamnagar and Dadanagar, Bridge over Ganges to connect Gangotri township, Bus terminals at Jhakarkatti, Chunniganj and Azad Nagar and development of multi-storey parking for Birhana road, Naveen market, Murray company bridge and motijheel-swaroopnagar area. There is a dire need of introducing MRTS if the city is to be given a facelift of a metro city like it has happened in Delhi. It can work much better as it is on a linear pattern. This will involve low cost and maximum usage.

MUNICIPAL SERVICES

Water supply

The main source of surface water in the city is from the catchments of Ganga River and Pandu River. The total water supply requirement is 600 mld but only 385 mld of potable water is being supplied. The total supply from treatment plants is about 255 mld water (210 mld raw water from Bhaironghat pumping station and 45 mld from Lower Ganga Canal) and approximately 130 mld water is drawn from groundwater comprising of 80 mld from tube wells (about 135) and 50 mld from hand pumps (about 9830). The availability of water is adequate but distribution system needs improvement. Main issues are that numbers of connection is not increasing due to excess use of ground water, low pressure and unreliable service, low utilization due to old and leaky system, Inadequate funds for O&M. The need is felt to expand distribution as demand of 464 mld will rise to 860 mld by 2031. The emphasis will be on improving water supply distribution for the inner core in phase 1 (Rs 319 cr). This will comprise of replacing old and leaky pipes in inner core area, renovation of the zonal pumping stations and improving capacity, providing for inter-connection of

various water treatment plants to balance shortfall in capacities. Additional WTPs and feeder mains to connect to outer colonies will be considered in phase 2 (Rs 694 cr).

Sewerage

The source of sewer is mostly from domestic households but the waste generated from industries also flow into sewers. The present arrangements segregate industrial effluents from domestic sewerage for sewerage treatment plants. The industrial units in Panki and Dada Nagar industrial area also discharge industrial effluents, which finally flows in River Pandu through three Nalas, flowing north to South in South of Kanpur city. Current coverage of sewer system is around 60 percent and load is 360 mld. In 1997, total amount of waste water measured in drains and at the STPs was about 370 mld of which 160 mld was intercepted under GAP-1. At present inflow of treatment plants is 63 mld and only 17 percent of the total waste water generated. Main issues related to sewerage are mixing of storm water drains with sewage increases load on STPs, old sewers in inner core area unable to carry current load, damaged and leaky and unsatisfactory arrangements for treating tanneries and industrial effluents. The renovation of inner core sewers using trench less technologies, segregation of storm water and sewers to avoid choking of sewers, new colonies by UPHB will be undertaken in phase-I (Rs 297 crore). In phase-II (Rs 3799 crore), main and branch trunks will be covered outlying areas and construction of additional STP for increased population.

Storm Water Drains

Kanpur city is habituated between two rivers Ganges on north and Pandu River on south. There are 17 nalas discharging wastewater in Ganga over a stretch of 20 KM from Bithoor downstream to Jajmau. Out of all Nala, Sisamau Nala has the biggest catchments area of 1985 hectares. All the Nalas, discharging in Ganga River have been tapped except Sisamau. Under the GAP (Ganga Action Plan) Phase -II, Sisamau nala, the largest nala in Kanpur City, presently carrying a flow of around 138 mld will be diverted for treatment.

Solid Waste Management

At present waste generation in the city is around 1500 MT presently. Apart from solid waste generated by households, commercial establishments and institutions, Kanpur also has a number of industries and other businesses that generate different type of waste such as biomedical waste, sludge, buffing and other waste produced by tanneries in Jajmau area, industrial waste produced by textile, rubber and other industries. The main issues are outdated equipment causing unreliable service, inadequate bins, no segregation of waste and proper composting/SWM disposal arrangement, non-operative treatment facilities of tannery waste. The strategy would be introducing door to door collection of waste and user charge, improving reliability by maintaining old equipment, improving efficiency by transfer stations and providing tricycles, provide for a Treatment/composting plant, outsource an integrated SWM and conservancy service on PPP basis.

CITY VISION

Vision for city is : To make Kanpur a clean and healthy city with high quality infrastructure such as better roads, airport, and basic services so that it is recognized as a premier city of U.P. and an environment which attracts people and develops business. The government machinery should be efficient, effective, accountable and transparent by adopting customer oriented approach to improve confidence of entrepreneurs and encourage them to come forward for P-P-P schemes.

INSTITUTIONAL FRAMEWORK

In Kanpur, the main institutions are **Kanpur Nagar Nigam, Kanpur Jal Sansthan, U.P.Jal Nigam and Kanpur Development Authority.**

Kanpur Nagar Nigam (KNN) Kanpur Nagar Nigam is administered under the Uttar Pradesh Municipal Corporation Adhiniyam, 1959. The strength of the council is 110 in addition to the Mayor. The corporation is divided into six zones and each zone is headed by an Assistant Commissioner. The inner core area of Kanpur comprises of 67 wards out of total of 110 wards. The corporation is divided into two wings, viz. elected wing and the administrative wing. The administrative wing of the corporation is headed by a Municipal Commissioner appointed by state government and supported by two Add. Commissioners also appointed by the state government. The main sources of revenue of KNN are taxes (mainly property), license fees, rent of the municipal properties, interest, etc. The total receipt on revenue account including grants-in-aid has been estimated by KNN at Rs.193.25 crores and capital receipts are expected to be Rs.6.90 crores for the year 2006-07. Kanpur Nagar Nigam's financial health needs urgent improvement and there is need to improve both revenues and cut down on costs. Some of the measures which are proposed are given below.

Bringing Institutional Efficiency in Kanpur Nagar Nigam (KNN)

To bring the efficiency in the functioning of different institutions (KNN, KJS and KDA) and to generate the resource for contributing their share (30%),KNN will generate surpluses through the following:

- Reforms in property tax which will include bringing all the properties under Unit Area Method from annual rental value (ARV), surveying all properties to verify the area etc.
- Introduction of door to door collection of solid waste and introduction of user charge
- cost savings by way of reduction in fuel cost of solid waste collection vehicles by introducing new fuel efficient fleet and introducing transfer stations to reduce kms to be run
- savings in electricity cost by P-P-P of streetlights, and reducing administrative and general administration costs by abolishing some posts

- By reducing strength of white collar workers by introduction of e-governance and by outsourcing bill collection The impact of the various improvement measures at the end of five years is given below:

Kanpur Jal Sansthan (KJS)

The delivery of water and sewerage services in the city is the responsibility of Kanpur Jal Sansthan. This is a specialized institution. It earns revenues by way of water and sewerage tax and also by charging for water supplied. Currently there are no meters in the city and charges are on flat rate basis. Kanpur Jal Sansthan is also making a loss of about Rs 5 crores per annum and is also unable to pay its electricity bills of about Rs 11 cr p.a. (which are paid by GoUP from its grants to KNN). Because of poor pressure and unreliability of timings of water supply caused by frequent power failures, the numbers of connections are not increasing at the desired rate, though KJS has surplus capacity. Some of the measures like replacing old leaky pipes and improving storage etc. at the regional pumping stations, the performance of KJS will improve and it will be able to provide more connections.

Bringing Institutional Efficiency in Kanpur Jal Sansthan (KJS)

The KJS will improve its financial performance and generate surpluses by:

- introducing the improvement in its population coverage (connections) and introducing metering,
- Increased income by way of reduced leakages and hence giving additional connections in inner core
- Introduction of a user charge for treatment of waste water
- Savings in power and work force because of renovation of sewers etc.
- Improvement in water and sewerage tax because better coverage of properties by KNN

INFRASTRUCTURE RELATED PROJECTS PROPOSED TO BE UNDERTAKEN

Based on the analysis of infrastructure needs and the stakeholder analysis, several projects were identified. All projects can obviously not be taken up simultaneously. Hence a prioritization of projects has been done based on discussions with the stakeholders and with the various officials involved with the management of the city. The entire work to be carried out has been divided into two phases. The Phase-I comprises of projects planned in first five years i.e. 2006-2011. While phase- II covers the projects proposed to be undertaken in the next twenty five years. The prioritization of works to be carried out in Phase-I is given below:

Prioritisation of Projects

The following projects have been identified after holding intensive consultation with stakeholders:

1. Improving transport infrastructure including improving trunk Roads, so as to have an immediate impact of improvements on the citizens of Kanpur at large
2. Improving solid waste management both in the inner core and outer city
3. Redevelopment of inner core city including shifting of industries to conforming areas
4. Renovating old/broken water pipelines resulting in contaminated water
5. Repair / rehabilitation of broken sewerage / sewerage connected to drains
6. Redevelopment of slums according to Bombay Model
7. Improving basic services in Slums
8. Housing for the EWS

RESULTS

CAPITAL INVESTMENT PLAN

The entire work is divided into two sub-missions. Sub –mission-I comprising of Improvement of infrastructure and sub-mission-Ii comprising of ‘Improving Basic Services to the Poor’

Infrastructure Projects

1. Under the project on improving traffic management, improving the transport system and its infrastructure, the following activities will be taken up:

- Widening of roads including construction of footpaths, road furniture, deep drains, proper signalling, improving intersection design etc. with a view to improve circulation speed in the city corridor,
- Construction of Central Bus Station at Jhakarkati and Chunniganj and a bus terminal at Ajad Nagar in Phase-I.
- construction of flyovers at Bada Chouraha, Vijay Nagar Chouraha and Guthaia crossing as also construction of 5 Rail Over Bridges (ROBs) etc.,
- construction of over bridge on river Ganges to connect the proposed Gangotri township to be located across Ganges, with the central Kanpur area.
- Development of Parking Areas, parking lot/space on PPP basis, development of Heritage Area and preservation of Water Bodies. Under the solid waste management, purchase of cleaning equipment like dumpers, placer, special waste container van, tri-cycle and auto rickshaws and construction of modern dustbins has been taken in phase-1. It is proposed to introduce door to door collection and levy a user charge. In Phase-II the new areas of the city will also be covered with improved Solid Waste System. In the inner core area, following tasks will be undertaken
- Widening of congested roads in the inner core area, including construction of footpaths, road furniture, deep drains etc.
- shifting of industries from non-conforming areas to conforming area i.e. in industrial estates to be set up at Chakeri-1 and Chakeri-2, in Phase-I and develop an Industrial Estate at Bhouti Mandhana by pass in Phase-II.

- conversion of old and leaky pipelines covering 530 km of distribution system in the inner area with new high capacity pipelines. Renovation of the raw water pump house , rising mains, water treatment plant, renewal of CWMR reservoir, , renovation of Benajhavar water works and Bhairav Ghat intake well.
- Modernisation of sewers line by restoration/renovation of sewerage pumping station and sewer line using trench less technologies and construction of new sewage pumping station at Bhagwat Das Ghat.
- Modernization of open drains
- Construction of modern dustbins in place of 152 old and open dustbins and purchasing special container, dumper etc. for solid waste management.

4. Under the water supply component, emphasis is given for bringing improvement in water supply distribution for the inner core as described above. In Ph-II, additional WTPs and feeder mains to connect to outer colonies will be considered.

5. As far as improving the sewers are concerned, in addition to the tasks described above for the inner core area, the following additional tasks will be also be undertaken in first phase:

- segregation of storm water and sewers to avoid choking of sewers, completion of works under GAP-II, construction of decentralized STP in new colonies by UPHB
- The connecting main and branch trunks to cover outlying areas and construction of additional STP for increased population is proposed in phase-II.

6. Work will also be undertaken on improvement of Ghats and places of heritage. The social infrastructure such as improving parks, ladies hostel, improvement of community halls, developing green belts etc. will also be undertaken.

7. In the area of Kanpur Cantonment Board, several infrastructure improvement projects similar to the KNN area will be undertaken such as renovation of old sewers, improving roads, etc.

Improving Basic Services for the poor

Under the submission – 2 of JNNURM, the following activities will be undertaken:

- In-situ development of 390 slums by bringing improvement of roads and drains, hand pump, water supply, sewerage, street lighting and construction of 7461 houses
- EWS housing is proposed to be built for relocation of those slums which are on untenable sites such as falling near the river/footpath/ or site which is required for development works
- 5 slums to be developed on Bombay/Pune model with multi- storey housing and improved infrastructure.

FINANCIAL INVESTMENT

In order to meet the above plan for infrastructure improvement, the following investment plan is proposed; which comprises of investment proposed in the first phase of five years and the total plan over the next 30 years.

Grand Total (Sub-mission-I & Sub-mission II) 3789 12791

It can be seen that an investment of Rs.3789 crores is planned in Phase-I during the next five years, followed by an investment of Rs.8998 crores in Phase-II comprising of the next five years, thus bringing the total investment in Kanpur City of Rs 12791 crores over the next thirty years.

FINANCING PLAN

Under the provisions of JNNURM, for cities of the size of Kanpur 50% contribution will be made by GoI., provided the balance 50 percent is made up of contributions from GoUP to the extent of 20 percent and the City's contribution to the extent of 30 percent.

Hence the plan in phase -I is based on the city's capacity to raise its share of 30 percent.

Mobilization of city's share

The city's share comprises of

- Revenues to be mobilized by KNN in next five years, including savings from improved efficiencies enumerated earlier in the chapter on institutional efficiency
- Revenues to be mobilized by KJS in the next five years from improvement in its efficiencies and contribution from the GAP-II project
- Revenues by way of a betterment tax to be levied at the rate of 5% of the property tax (provided under law)
- Contribution by way of departmental budgets and revenues earned by the UPSIDC while developing and selling plots/sheds for relocation of non-conforming industries etc.
- Contribution by way of departmental budgets of PWD for roads improvement

It can be seen that the capacity of the city to raise resources is slightly higher than the plan and to that extent some additional projects for about Rs 280 crores.

SUGGESTED REFORMS(Conclusion)

Reforms should be carried out at the level of the Nagar Nigam and the other at the level of the State.

- a) *Efficient accounting systems*: Although KNN has computerized its accounts and is using the Tally software, its accounts are on 'cash basis'. KNN is awaiting directions from the state Govt. to change.

- b) *Budgeting for the poor*: KNN should introduce budgeting for the poor. Its budgets formulation should include such an exercise and these should be published and discussed with stakeholders.
- c) *Introduction of e-governance*: KNN should introduce process of commissioning an IT company for introduction of e-governance in KNN.
- d) *Reforms of property tax*: GIS mapping should be done to the extent of accuracy. This is likely to help stopping defaulters and increase the income to KNN substantially.
- e) *Levy of reasonable user charge for services rendere* : User charge is to be introduced for parking, solid waste collection, green belt use, community toilets etc. KJS is to introduce a user charge for treatment of waste water.
- f) *Provision of basic services to the poor*: Thrust on housing and in-situ development of slums should be planned. The Community Development Societies are to be empowered and encouraged to take up PPP jobs.
- g) *Earmarking of land for EWS housing in all housing projects* : It should be proposed and implemented to increase the reservation of land for EWS housing to 20-25% in all future housing projects with a view to provide basic services to the poor and to avoid formation of slums.
- h) *Increased PPP and outsourcing to improve efficiency*: in several areas like solid waste collection, O&M of parking lots, PPP for plants for conversion of plastics to hydrocarbons, Outsourcing of bill collection, O&M of parks thru RWA's etc.
- i) *Reforms by state on rent by-laws*: Although some improvements have been made in the rent bye-laws, they are still not conducive for the landlords to evict tenants or to revise old low rents to market rents. These amendments need to be made both for housing development and also for KNN to increase its rental income.
- j) High speed metro corridor should be introduced to make the city in to a world class city .This will further increase accessibility and mobility in the various parts of the city and increase economic and employment opportunities.

REFERENCE

1. Ministry of Housing and Urban Poverty alleviation, National Building Organization (NBO), Government of India, New Delhi.
2. Planning Commission, Towards Faster And More Inclusive Growth- An Approach to 11th five year plan,2006, Government of India, New Delhi.
3. Kalam,Dr APJ Abdul, 'PURA:A Road Map For Rural India', National Workshop on vision 2020 for a developed India: PURA, as growth centres.
4. UN Habitat, 'Urban World: Harmonious cities India and China in focus'.

5. Times of India(2009), 'City Housing projects will have to leave space for the Poor'.
6. Usha Mahavir,'Planning For Inclusive And Harmonious Cities', Spatio-economic development record,vol.16 no.6, Nov.-dec 2009.
7. Impact of MRTS Form , Master Planning Thesis, R.k. khanka,1998 .
8. Impact of MRTS on urban form and structure, Master of planning Thesis , Sandeep Goel ,2000.
9. Impact of mrts on adjacent land value and landuse patterns case study : Delhi ,Saumajit Roy ,Bachelor of planning Thesis ,2000, SPA.
10. IMAGE OF CITY ,Kevin Lynch. implementing Transit supportive design in plenty Corridor –Paul Reed ,1995.
11. Singapore Land Transport: Average Daily Public Transport Ridership, Land Transport Authority, July, 2008
12. A conceptual approach for an integrated development of urban public transport system. Ami shah (CTRANS), Dr. Parida (CTRANS IIT Roorkee), Dr. S.S. Jain.
13. Impact of motorised vehicles on Indian urban road infrastructure : A critical appraisal, Devarshi Chaurasia (MITGwalior), Dr. R.K. Pandit (MIT Gwalior), Alok Ranjan (NIT Jaipur)