

17. FINANCING OF INVESTMENT PLAN AND PROJECT PHASING

17.1 INTRODUCTION

For the development of any city, huge investment is required to undertake many multiyear projects. There would be different sectors needs to be expanded. The most important aspect is to prioritize the development of sector and accordingly the investment. The many stakeholders do the identification of these priorities. The next step after identification is the scheduling or phasing of development and investment plan. This would be mainly dependent on the availability of fiscal resources with the stakeholders. In the total investment, in addition to the new investment for any project the cost of operational and maintenance (O&M) is very important. Therefore, while planning for the new investment, the O&M cost should also be included in the total project cost. This would enhance the sustainability of the project and would add to fiscal resources availability for the development project. After fiscal availability, the technical capacity for the development of old areas as well as new expansions needs to be looked into. The scheduling to total plan and its investment should be done very carefully. The scheduling or phasing of development plan required as per the JNNURM period.

For scheduling of CDP of Kanpur, the main stakeholder, the Kanpur Nagar Nigam (KNN) has initiated the following steps:

1. It has discussed with many stakeholders the norms and standard of infrastructure presently existing and the availability of resources for renewal, replacement and improvement of old system as well as for development of new infrastructure for the added population in the long term requirement of the city and newly expanded areas of the city.
2. The identification of the priority sectors has also been discussed with all the stakeholders.

For the long-term financial strategy the KNN along with its stakeholders plans to mobilize resources through various sources such as:

- (A). Availability of resources in the present financial position of all the stakeholders;
- (B). Funds provided by State government in the form of grants to its line departments, are also important for the stakeholders;
- (C). Reform package to be under taken by the KNN for resource mobilization and expenditure compression. These include:
 - (i.) reform in existing system of property taxation, by completely shifting from the present ARV method of assessment to the new unit area method;
 - (ii.) complete assessment of all the properties;

- (iii.) reviewing the exiting exemptions granted to the property owners;
- (iv) computerization of data base at zonal offices and head office of KNN;
- (v.) right sizing of the staff and redeployment of surplus staff;
- (vi.) introduction of public-private partnership programmes;
- (vii.) introduction of community participation in maintenance of parks etc.;
- (D) Fund devolved by State Finance Commission to the KNN;
- (E) Fund transferred by the Central Finance Commission;
- (F) Revision of water and sewerage charges at specific interval by Kanpur Jal Sansthan;
- (G) Improvement in the collection performance of local taxes and charges;
- (H) Saving on the front of terminal benefits and liabilities of the out going employees based on VRS;

17.1.1 Scheduling or Phasing Principles

The old developed areas (inner old city of Kanpur) receiving priority over the new development area in long term;

Forward and backward (inter-linkages) linkages between inter and intra-service (for instance, investments on water supply shall be complemented by improvement in the existing sewerage/sanitation programmes;

Linkages between the supply and demand of services and the revenue generation;

Under the JNNURM, the capital investment plan and identification of public capital facilities is done to cater the demand of increasing population of city in the years 2011 and 2031. The investment plan would be scheduled / phased as per the requirement under these two periods.

In the city's management process and its sustainability of provision of the basic services, the capital investment plan is most important and crucial element.

The capital investment is required because of:

- (a) Five yearly phasing of assessment of city's growth and the requirement of infrastructure need of the increased population;
- (b) For new projects the Detailed Project Reports would be prepared;
- (c) Rescheduling of investment on old projects due to overrun of project cost/time factors;
- (d) Assigning of priority within the financial constraints of the available resources;

Therefore, the basic objectives of the capital plan would be:

Mobilization of capital resource that sustain the present population and added population of the city.

Since in the development of city, the community participation has assumed great importance, hence capital facilities of the city should be considered as community assets.

17.2 CAPITAL INVESTMENT PLAN AND FUTURE STRATEGIES

17.2.1 Identification of Priority Projects

The projects have been identified with the help of all the stakeholders and after many rounds of detailed discussion on availability of resources; phasing of investment plans; and the role and involvement of each stakeholder in the development plan for the present and future added population of Kanpur. The KNN has identified the projects based on efficient and optimal use of existing infrastructure facilities and the modernization of core and prioritized sector.

17.2.2 Priority Sector

- 1 Improving transport infrastructure including improving trunk Roads
- 2 Improving solid waste management both in the inner core and outer city
- 2 Redevelopment of inner core city including shifting of industries to conforming areas
- 3 Renovating old/broken water pipelines resulting in contaminated water
- 4 Repair / rehabilitation of broken sewerage / sewerage connected to drains
- 5 Redevelopment of slums according to Bombay Model
- 6 Improving basic services in Slums
- 7 Housing for the EWS

The projects-wise/sectors-wise investment plan prepared by the KNN with all the stakeholders is present in the Table 17.1.

Table 17.1: Project-wise Investment Plan (2006 -31)

(Rs crore)										
S. No.	Name of the Work in Plan	Name of the Planning Department	2006-07	2007-08	2008-09	2009-10	2010-11	Total Proposed cost Ph-I	Balance Phase-II (2011-2031)	Total (2006-2031)
1	Sub-Mission-I: Urban Infrastructure Renewal of inner (old) city									
1a.	Widening of roads, including drains and footpaths	KNN	50	55	61	59	77	303	0	303
1b.	Industrial/ Commercial confirming									

	Establishment of non area to convert								
	Confirming area UPSIDC	70	86	100	100	70	426	193	619
1c.	Old water supply pipe line / low in								
	Capacity pipe line to convert into high capacity pipe line JAL Nigam	77	69	61	62	51	319	225	544
1d.	Modernization in Sewerage line Jal Nigam	44	79	60	39	39	262	207	469
1e.	Modernization in Drainage Jal Nigam	1	2	2	1	0	6	0	6
1f.	Solid waste Management								
	Construction of modern dustbins & equipment KNN	9	4	1	1	1	15	0	15
	Inner City Sub Total	251	295	286	262	238	1332	625	1957
2	Water supply Jal Nigam	0	0	0	0	0	0	469	469
3a.	Sewerage Aawas Vikas	6	11	5	5	0	27	0	27
3b.	Sewerage Jal Nigam	1	2	1	0	0	4	3593	3597
4	Solid Waste Management Nagar Nigam Aawas Vikas	11	13	11	6	2	43	562	605
5	Construction and Repair Drains/ raining drains Jal Nigam Aawas Vikas	34	35	35	34	34	172	0	172
6	Urban Transport UP Parivahan Nigam	4	7	3	0	0	14	0	14
7a.	Improvement of roads under KNN	31	43	43	25	34	175	0	175
7b.	Widening and improvement of main corridor roads of city KDA	110	150	156	201	152	768	492	1260
7c.	Construction of ring road and expressway KDA	22	26	34	10	31	123	0	123
7d.	Construction of bridge over ganga KDA	5	20	25	25	25	100	0	100
7e.	Construction of ring road and Express highways KDA	0	0	0	0	0	0	469	469
8a.	Development of Parking Areas KNN	0.84	0.46	0.46	0.46	0.46	2.68		2.68
8b.	Parking space /plot (PPP basis) KDA	4	4	4	2	1	14	0	14
9	Development of social infrastructure KNN/Tourism/ Archeology	0	4	7	4	0	15	0	15
9a.	Preservation of water Bodies Irrigation/Bar rage const	2	4	5	2	3	15	0	15
9b.	Improving environment CSA	1	2	2	2	1	8	0	8
	Lake and green belt								
	Sub-total (KNN) Sub Total-I Kanpur Cantonment Board (KCB)	481	609	607	575	521	2793	5740	8538
1	Improving road infrastructure KCB	1	1	1	2	2	8	0	8
2	Reducing traffic congestion by Rail Bridge Corporation	0	5	10	5	0	20	0	20
3	Modernization of Solid waste KCB	0	0	0	0	0	1	0	1

4	Renovation of sewerage system	KJN	0	1	1	2	0	4	0	4
5	Development of social infrastructure	KCB	1	1	1	0	0	3	0	3
	Sub-Total-KCB		2	9	13	9	2	35	0	35
	Sub-Total KNN and KCB	Sub-total	483	618	621	584	523	2828	5740	8573
Submission-II		Basic Services for Urban Poor								
	a) Development of infrastructure as well as construction of EWS Housing in existing malin bastis.	DUDA	15	17	14	18	12	77	173	250
	b) construction of EWS houses for the poor in new colonies									
	i) in new colonies by DUDA or KDA/UPHB on behalf on DUDA	UP housing Board	1	1	5	8	9	24	250	274
	ii) by KDA		65	100	174	174	127	640	0	640
	iii) in new colonies by U.P.H.B and infrastructure development 6480 in 1st phase and 43,200 in 2nd		2	7	74	71	66	220	2835	3055
	Sub-Total (Sub-Mission-II)	Sub Total-II	83	125	267	271	213	960	3258	4218
	Grand Total (I+II)	Grand total	566	743	888	855	736	3789	8998	12791

As per the information provided by KNN and all the stakeholders for the provision of basic infrastructure/services to the existing city population and the future estimated population of KNN by the year 2031, the total capital investment requirement estimated at Rs 12791 crore. This is proposed to be phased in two phases, i.e. in Phase I, the requirement would be of Rs 3789 crore at the constant prices and the balance investment of Rs 8998 crore in Phase II.

The summary of sector-wise tentative investment requirements and sector-wise tentative investment for next 25 yrs is depicted in **Tables 17.2**. Some part of this investment is earmarked for the development of inner city revitalization, restoration of heritage structures relocation of industries and markets.

Table 17.2 - Sector-wise Tentative Investments (2006-2031)

S. No	Description	(Rs crore)	(%)
1	Re-Development of inner city	1957	15.29
2	Augmenting water supply	469	3.66
3	Extending sewerage	3624	28.33
4	Improving solid waste management	605	4.73
5	Construction/improvement of drains	172	1.34

6	Improving roads, RoBs, Flyovers, Urban Transport	1671	13.06
7	Development of parking lots	17	0.01
8	Water bodies/Ganga barrage	15	0.01
9	Development of social infrastructure	22	0.02
10	Basic Services for Urban Poor	4218	32.98
11	Kanpur Cantonment Board Dev.	35	0.27
	Total	12791	100.00

In the total identified projects the about 28.33% is proposed for extension of sewerage works. Another 3.66% is for augmenting water supplies. It includes conversion of old and low capacity water supply pipelines to new high capacity pipelines.

The second important sector is Re-development of inner city. About 15.29% of the total investment is proposed for this sector. The widening of narrow roads drains and pavement would be undertaken in the inner (old) city areas.

The next identified sector is about the improvement of roads, RoBs, Fly-overs, and the Urban Transport. On this sector it proposed to invest nearly 13.06 % of the total investment.

The improvement in municipal solid waste management has assumed significant importance, particular after the Supreme Court Judgment, which directs all the ULBs for improvement in solid waste management, about 4.96 % of the total investment is proposed for the improvement in his sector.

For the urban poor, the proposed amount works out to 32.98% of the total investment.

A very small proportion (0.27%), has also been earmarked for the proposed developmental activities in the area of the KCB.

Considering the priorities and the immediate requirements, the KNN along with its stakeholders, has worked out the phasing of capital investment. The sector-wise detailed investment total (for centre, state and local) and local share for each sector for the five years, i.e. 2006-07 to 2010-11 is presented in **Tables 17.3 (a) and 17.3(b)**. The investment on these prioritized sectors would be able to meet the requirements of the estimated population up-to the year 2010-11.

Table 17.3(a) : Project-wise Investment Plan (2006-11) Summary

								(Rs crore)	
S. No.	Name of the Work in Plan	Name of the Planning Department	2006-07	2007-08	2008-09	2009-10	2010-11	Total Proposed cost Ph-I	% share
	Sub-Mission-I: Urban Infrastructure								
1	Renewal of inner (old) city								
1a.	Widening of roads, including drains and footpaths	KNN	50	55	61	59	77	303	8.00
1b.	Industrial/ Commercial confirming								
	Establishment of non area to convert Confirming area	UPSIDC	70	86	100	100	70	426	11.25
1c.	Old water supply pipe line / low in								
	Capacity pipe line to convert into high capacity pipe line	JAL Nigam	77	69	61	62	51	319	8.42
1d.	Modernization in Sewerage line	Jal Nigam	44	79	60	39	39	262	6.92
1e.	Modernization in Drainage	Jal Nigam	1	2	2	1	0	6	0.16
1f.	Solid waste Management								
	Construction of modern dustbins		9	4	1	1	1	15	0.40
	Inner City Sub Total		251	295	286	262	238	1332	35.16
2	Water supply	Jal Nigam	0	0	0	0	0	0	0.00
3a.	Sewerage	Aawas Vikas	6	11	5	5	0	27	0.71
3b.	Sewerage	Jal Nigam	1	2	1	0	0	4	0.11
4	Solid Waste Management	Nagar Nigam Aawas Vikas	11	13	11	6	2	43	1.14
5	Construction and Repair Drains/ raining drains	Jal Nigam Aawas Vikas	34	35	35	34	34	172	4.53
6	Urban Transport	UP Parivahan Nigam	4	7	3	0	0	14	0.37
7a.	Improvement of roads under KNN	KNN	31	43	43	25	34	175	4.61
7b.	Widening and improvement of main corridor roads of city	KDA	110	150	156	201	152	768	20.28
7c.	Construction of fly overs and ROB's	KDA	22	26	34	10	31	123	3.24
7d.	Construction of bridge over ganga	KDA	5	20	25	25	25	100	2.64
	Construction of ring road and	NHAI							
7e.	Express highways								
8a.	Development of Parking Areas	KNN	1	0	0	0	0	3	0.07
8b.	Parking space /plot (PPP basis)	KDA	4	4	4	2	1	14	0.38
9	Development of Social Infrastructure	KNN, Tourism, Arch.	0	4	7	4	0	15	0.40
9a.	Preservation of water Bodies	Irrigation/Barrage, CSA	2	4	5	2	3	15	0.39
9b.	Improving environment and development of lake and green belts	KNN	1	2	2	2	1	8	0.21
	Sub-total (KNN)	Sub Total-I	481	609	607	575	521	2793	73.72
	Kanpur Cantonment Board (KCB)								

1	Improving road infrastructure	KCB	1	1	1	2	2	8	0.20
2	Reducing traffic congestion by Rail	Bridge Corporation	0	5	10	5	0	20	0.53
3	Modernization of Solid waste	KCB	0	0	0	0	0	1	0.03
4	Renovation of sewerage system	KJN	0	1	1	2	0	4	0.09
5	Development of social infrastructure	KCB	1	1	1	0	0	3	0.08
	Sub-Total-KCB		2	9	13	9	2	35	0.93
	Sub-Total KNN and KCB	Sub-total	483	618	621	584	523	2828	74.65
Submission-II		Basic Services for Urban Poor							
	a) Development of infrastructure as well as construction of EWS Housing in existing malin bastis.	DUDA	15	17	14	18	12	77	2.04
	b) construction of EWS houses for the poor in new colonies								
	i) in new colonies by DUDA or KDA/UPHB on behalf on DUDA	DUDA	1	1	5	8	9	24	0.63
	ii) by KDA	KDA	65	100	174	174	127	640	16.88
	iii)in new colonies by U.P.H.B and infrastructure development 6480 in 1st phase and 43,200 in 2nd phase	UP Housing Board	2	7	74	71	66	220	5.81
	Sub-Total (Sub-Mission-II)	Sub Total-II	83	125	267	271	213	960	25.35
	Grand Total (I+II)	Grand total	566	743	888	855	736	3789	100.00

Table 17.3 (b) : Sector-wise Cost of Project Allocation- City Share

Sub-mission: I Urban Infrastructure		(Rs Crores)						
Scheme	Department	2006-07	2007-08	2008-09	2009-10	2010-11	Total	(%)
1.Urban Renewal Redevelopment of Inner (Old) city								
(a) Widening of Roads (Roads, Drainage, Pavement)	KNN	15	17	18	18	23	91	7.98
(b) Shifting of Industries from non-confirming to confirming areas	UPSIDC	21	26	30	30	21	128	11.21
(C) Replacement of Old Pipe and low capacity pipe line to new and more capacity pipe line	Jal Nigam	23	21	18	19	15	96	8.39
(d) Renewal of Sewer lines		19	24	18	12	12	84	7.36
(e) Renewal of Drainage	Jal Nigam	0	1	1	0	0	2	0.16
(f) Solid Waste Disposal System	KNN	3	1	0	0	0	5	0.40
2. Water Supply	Jal Nigam							0.00
3.(a) Sewerage	Awas vikas	2	3	2	2	0	8	0.71
3(b) Sewerage	Jal Nigam	0	1	0	0	0	1	0.11
4 Solid Waste Management	KNN&HB	3	4	3	2	1	13	1.14

5 Repair & Improvement of Storm water drainage	JN&HB	10	11	10	10	10	52	4.52
6 Urban Transport	UPSRTC	1	2	1	0	0	4	0.37
7 (a) Road Construction (I)strengthening of roads	KNN	9	13	13	8	10	52	4.59
(b) Renewal of City corridor	KDA	33	45	47	60	46	231	20.21
(c) 3 flyovers, big crossing etc.	KDA	7	8	10	3	9	37	3.23
(d) Construction of Over Bridge on River Ganges	KDA	2	6	8	8	8	30	2.63
(e) construction of ring road and expressway	NHAI	0	0	0	0	0	0	0.00
8 (a) Development of (a)Parking Areas	KNN	0	0	0	0	0	1	0.07
(b) Parking Lot/Space Based on PPP	KDA	1	1	1	1	0	4	0.37
9. Development of Heritage area	KNN,Tou,Ar	0	1	2	1	0	5	0.40
9 (a) Preservation of water Bodies	Dept of Arch	1	1	1	1	1	3	0.26
(b) Development of a water Bodies	Dept of Irrigation	0	0	1	1	0	2	0.20
Sub-Total (KNN)	Total	150	183	182	172	156	842	73.81
Kanpur Cantonment Board (KCB)								
1. Improving road infrastructure	KCB	0	0	0	1	1	2	0.20
2. Reducing traffic congestion by Rail	Bridge Corporation	0	2	3	2	0	6	0.53
3. Modernization of Solid waste	KCB	0	0	0	0	0	0	0.03
4. Renovation of sewerage system	KJN	0	0	0	0	0	1	0.09
5. Development of social infrastructure	KCB	0	0	0	0	0	1	0.08
Sub-Total (KCB)	Sub-Total	1	3	4	3	1	11	0.93
Sub-Total (KNN and KCB)	Sub-Total	150	185	186	175	157	852	74.74
Sub –Mission :II Basic Services for Urban Poor								
a) Development of infrastructure as well as construction of EWS Housing in existing malin bastis.	DUDA	5	5	4	5	4	23	2.03
b) construction of EWS houses for the poor in new colonies								
i) in new colonies by DUDA or KDA/UPHB on behalf on DUDA	DUDA	0	0	2	2	3	7	0.63
ii) by KDA	KDA	20	30	52	52	38	192	16.82
iii)in new colonies by U.P.H.B and infrastructure development 6480 in 1st phase and 43,200 in 2nd	UP housing Board	1	2	22	21	20	66	5.78
Sub-Total (Sub-Mission-II)		25	38	80	81	64	288	25.26
Grand Total (Sub-mission-I & II)		175	223	266	257	221	1141	100.00

17.3 URBAN INFRASTRUCTURE DEVELOPMENT

Sub-mission -I

1. Urban Renewal Redevelopment of Inner (Old) city

Under Sub-mission-I, the followings works are proposed to be undertaken by various stakeholders

(a) Widening of Roads (Roads, Drainage, Pavement/Footpaths)

Under this head it is proposed that the KNN would undertake the widening of about 338.44 km roads. The construction of K.C drains and deep drains and footpath in the inner city areas would also be carried out by KNN. It is also proposed to add streetlights wherever not present. The total investment for these works is estimated at Rs 303 crore.

(b) Shifting of Industries from non-confirming to confirming areas

This scheme would be carried out by UPSIDC. Under this scheme shifting of industrial and commercial establishment from non-confirming area to confirming areas is proposed. For this purpose, the UPSIDC would construct the industrial areas at Chakeri-1, Chakeri-2 and at Bhauti-Mandhana bypass. On this project, an investment of Rs 426.18 crore is proposed.

(c) Replacement of old and low capacity pipeline to new and more capacity pipe line

For the completion of this scheme, an investment of Rs 319.10 crore is estimated. The UP Jal Nigam would undertake the work of raw water pump house raising; main water treatment plan; renovation of C.W.R. reservoir; distribution system of 530 km; renovation of Benajhawar water works; and Bhairav Ghat intake well.

(d) Renewal of Sewer lines

Under this project Jal Nigam would carry out the renovation work of sewerage pumping station and sewer lines, and construction of new sewage pumping station at Bhawatdas Ghat. An investment of Rs 262 crore is estimated for this work.

(e) Renewal of Drainage

Jal Nigam would also undertake the renewal of drainage in the inner areas of city. It would require an investment of Rs.6.22 crore.

(f) Solid Waste Disposal System

For the solid waste disposal system, an investment Rs. 16 crore is identified. The KNN would take the responsibility of scheme of solid waste disposal system. Under the proposed work the construction of modern garbage stations (Bins), 152 modern dustbins would be constructed to replace the old dustbins.

For the maintenance of cleanliness, it would purchase special container, dumper placer and material handling equipment etc.

2. Water Supply

The scheme of water supply is plan to be carried out by Jal Nigam. The capital cost of the project in phase is identified as nil. The capital investment plan for water supply is estimated on the basis of requirement and demand for the JNNURM period. The main thrust will be to improve the distribution in the inner area, and the balance works will be taken up in Phase-II only.

Issues

- With the new scheme in the inner area, the availability of the safe, equitable, reliable and adequate water supply would be assured;
- Reduction in transmission and distribution losses;
- Illegal water connection would be identified;
- Increase in revenue from collection charges

3. (a) Sewerage

As per the project feasibility report for sewerage work of inner old city areas, most of the exiting trunk sewers and branch sewers are overloaded and the existing carrying capacities are not sufficient to cater the future demand of increased population. These sewers need to be replaced by the larger pipelines in the congested areas. Therefore, it is proposed for new trunk sewers, replacement of existing ones, and construction of pumping station, rising of main and branch sewers, renovation of exiting branch sewers, treatment plant, and house connections. A capital investment of Rs 27 crore is identified for the project. The Jal Nigam and UP Housing and Development Council would jointly take the responsibility of this project. Similarly sewers in Cantonment Board Area laid as far back as 1940, will also be renovated and extended. A cost of Rs 3.5 crore has been provided for it. Laying of trunk sewer near COD will be carried out under GAP-II at a cost of Rs 4 crore.

3. (b) Solid Waste Management

For this project also, the Jal Nigam and UP Housing and Development Council would carry out responsibility. It is proposed to purchase cleaning equipments such as 13 dumper placers, 43 special waste containers, back hold loaders, 31730 tri-cycles, 40 auto rickshaws for the project. To improve disposal of plastic, a plant for converting plastics into hydrocarbons is proposed at a cost of Rs 12.5 crore. This will be done on PPP basis with 50% investment coming from private party. For the financial capital requirement, a total investment of Rs 42 crore is estimated. Solid waste equipment in the Kanpur Cantonment Board areas will also be modernized by spending Rs 1.05 crore.

Issues

- Recycling in SWM is suggested
- Decentralization of Solid waste disposal and treatment needed
- Plant for conversion of plastic waste into hydrocarbons on PPP basis
- Enhancing of Segregation by involvement of community participation
- Involvement of NGO for awareness

4. Repair and Improvement of Storm water drainage

The existing system of storm water drainage comprises 23 nalas, which carry most of the storm water to river Ganga and Pandu. These drains have also add to the pollution level in the city when the solid waste flushed away with the rainwater. The FPR suggested that the existing system of drainage is lacking in its utility because most of the dirt, debris, dung and are thrown in these drains, which blocks the drainage system in the city. For this project the responsibilities are assigned to Jal Nigam and Awas Vikas and KNN for repair and improvement in the drainage system. The capital investment of the order of Rs 172 crore is estimated to meet the financial requirement of the project.

5. Improving transport system

5. (a) Improving Urban Transport

The UP Parivahan Nigam is made responsible for the improvement of existing insufficient urban transport system in the city. It would carry out the construction of Central Bus Station, Jhakarkati and Chunniganj Bus station in Phase-I. The renewal of Azadnagar Bus Terminal is also proposed under the project. An amount of Rs 14.00 crore is estimated for the investment under this project.

UP road transport is also planning to induct CNG buses in the city bus routes to reduce pollution. 108 CNG buses are already on order and more will be ordered after gaining some experience.

Issues

- Promotion of public transport
- Replacement of shared auto rickshaws by good buses
- Private participation needs to be explored
- Usage of private cars to be discouraged to reduce congestion
- Computerization of traffic signaling for efficient traffic management

5. (b) Improving traffic management

Because of narrow trunk roads and heavy traffic, there is severe congestion and traffic speed is very slow. It is proposed to improve the road area by widening and modernizing the trunk roads including road furniture, footpaths and intersection design.

5. (c) Metro Rail (Mass Rapid Transport System-MRTS)

In every city and growing urban centers, the traffic become a major problem. In the city of Delhi Metro has gained popularity. After seeing its success, it was felt that metro rail facility should also be started in other large cities of the country. Considering that by 2031 Kanpur Metropolitan Area will cross a population of 50 lakhs and the pressure it will put on the existing transport system in the city, it is proposed to carry out a study and if feasible, introduce Metro Rail facility under JNNURM in phase –II. This would ease out the traffic problems of the present and future overloaded pressure of traffic on the roads of Kanpur city. However, in the absence of any feasibility study, no money has been earmarked in Phase-II for this activity.

The KNN, KDA and other departments are assigned the duty of carrying out the following works under this project.

- (i) Widening and improving of roads in inner city (KNN); investment Rs 293.39 crore;
- (ii) Renewal of City corridor 116.45 Kms- KDA; investment Rs 768.30 crore;
- (iii) 3 flyovers at Bada Chauraha, Vijay Nagar Chauraha and at G.T.Road near Railway Station. In addition five Rail Over Bridges are also proposed at Kalyanpur (crossing No. 13), Dadanagar (Crossing No. 240A), Zarib Chauki (Crossing No. 2), at Shyam Nagar (Crossing No. 77B) and at Gobindpuri. This work will be carried out by KDA/UP Bridge Corporation; investment Rs 123 crore; One Rail Over Bridge will also be constructed at Allahabad crossing (Murray & Co) in the Cantonment Board Area at a cost of Rs 20 crores.
- (iv) Construction of Over Bridge on River Ganges–KDA; investment Rs 100 crore by UP Bridge Corporation
- (vi) Development of –
 - (a) Parking Areas- by interlocking of tiles; KNN investment Rs 2.68crore
 - (b) Parking Lot/Space with automated, multi level parking, based on PPP- parking for 750 cars-KDA An expenditure of Rs 14 crore has been provided as 50% share of KDA.
- (vii) Improvement of social infrastructure is also planned in the city. This comprises of a working women's hostel of 60 rooms, six community halls, Rain Baseras (night shelter) at ten ghats, development of Ganesh Udyan in Phoolbagh area and development of the old British Cemetery as a heritage site. A total investment of Rs 15 crores is envisaged.
- (viii) Preservation of Water Bodies and development of Ghats, providing night shelters, lighting etc. including Bithoor Ghats. Development of 5 water bodies in UPHB colonies and development of water body by CSA is also envisaged.-Irrigation Dept; investment Rs 16 crore

- (ix) To improve environment, greening and development of lakes and green belts including development of 95 parks, development of nauka vihar with boating etc. a sum of Rs 8 crores has been earmarked.

The total investment for sub-mission-I is estimated at Rs 2828 crore.

Sub -Mission: II Basic Services for Urban Poor

Under the JNNURM the improvement of slums is most important aspect of development for the urban poor. There is a need to improve the economic conditions of slum dwellers in the city of Kanpur. Under this mission, the following projects are proposed to be undertaken by the stakeholders (DUDA and UP Housing Development Council).

For improving basic services to the urban poor, an investment of Rs 77.10 crore is identified for improving water supply, sewerage, sanitation and paving of roads. Improving of houses in slums will also be undertaken

Five slums have also been selected for in-situ development on the Pune/Bombay model, where new multistory development will be done and the layout and amenities of the slums will be substantially improved, at the same time releasing about 50% land area for other developments, thus making this a financially feasible proposition. If the experiment is successful, more slums will be selected for such development in phase-II.

For resettlement and improving the living conditions, it is proposed to carry out extensive construction of EWS housing. KDA will construct 25450 houses and develop the connectivity of the area for urban poor including infrastructure development. An investment of Rs 639.50 crore estimated.

The construction of 6480 EWS houses by UPHB in new colonies would require an investment of Rs 219.93 crore.

For the sub-mission II, a total investment of Rs 960.41 crore has been estimated in Phase-I.

The details of investments at all the three levels (centre, state and local) along with the work plan, proposed work and the present status of all the projects are given in detail in **Table 17.4**.

17.4 KANPUR CDP - FINANCIAL OPERATING PLAN (FOP)

Financing of any project is a crucial task. As the phasing of project work is done, accordingly, there is need to have plan for financial requirement for completion of the project. Financial Operating Plan is a multi year concept. It has to be phased out as per the availability of fiscal resources with the local governments (stakeholders). Accordingly, the Financial Operating Plan for the

city of Kanpur scheduled/phased out for the period of five years, from 2006-07 to 2010-11, in phase-1. The remaining period of JNNURM would be covered under phased 2.

The main objective of the FOP is to generate the resources for the assessment of investment sustainability or sustaining capacity of the KNN (and the stakeholders). The total project cost would be financed by three sources. (I) The GoI would be contributing 50% of the JNNURM cost. (II) The state share would be 20%. (III) The remaining 30% share of the project cost required to be generated by the KNN and the various stakeholders. Therefore, the KNN is required to generate 30% of the project cost through internal resources (see **Table 17.4** for more details of the project and work plan). The summary of the total fund (Centre, State and Local) requirement is depicted in **Table 17.4 (a)** and the department-wise details are expressed in **Table 17.4(b)**.

17.4.1 Assumptions for the generation of Funds by KNN, KJS and KDA

As mentioned, the stakeholders (KNN, KJS and KDA) have to generate the resource to contribute their share in the total contribution by the stakeholders. The assumptions for the generation of resources of fund are presented in **Table 17.5**. The KNN would generate surpluses through reforms in property tax, and the cost savings by way of reduction in fuel cost, savings in electricity cost by P-P-P of streetlights, and the manpower costs by good governance (e-governance).

The KJS would generate its surpluses by introducing the improvement in its coverage, metering, savings in power and work force because of renovation of sewers etc. The KJS and KDA would also contribute by way of providing the subsidized land for the houses for the urban poor. Many line departments, which are also play the role of stakeholders, would get budgetary support from their head quarters (GoUP)

17.4.2 Sources of Funds for 30% contribution of City

Based on the above-mentioned assumptions these stakeholders would generate their 30% contribution by way of generating the surpluses. The **Table 17.6** gives the details of sources of funds for 30% contribution of city amounting to Rs 1168.91 crore. This comprises of (a) Surpluses generated by the institutions such as KNN and KJS and (b) contribution from the departmental budgets of Kanpur city for capital works.

The KNN would be able to generate the surplus amounting to Rs 373.77 crore. The surplus contribution from the KJS would be of the order of Rs 142.36 crore. The KCB contribution works out to Rs 10.57 crore. Additional yield from introduction of a 'Betterment Tax' would be around RS 11.93 crore. In all the total institutional contribution works out to RS 538.63 crore.

The contribution from departmental budgets is expected to be 630.18 crores, mainly from the UPSIDC for relocation of industries from non-conforming areas into new industrial estates, from PWD department for improvement of

their portion of roads in the city and from UPSRTC for construction of bus stations/terminals.

17.4.3 Surplus generation by KNN for contribution to JNNURM

The generation of surplus contribution by KNN as provided by its officials is shown in **Table 17.7**. It indicates that the KNN would be mobilizing additional revenues amounting to Rs 353.58 crore. It would generate its major surplus from SFC grants, increase in property tax, and introduction of user charges.

On cost saving side, it is likely to initiate certain measures through which it would be able to reduce the cost on various accounts. These include reduction of fuel cost, improvement in fuel efficiency, reduction in maintenance cost, savings in work force cost etc. It would be able to save an amount of Rs 20.18 crore. In total, it would generate a surplus amount of RS 373.77 crore.

17.4.4 Generation of surplus by the Kanpur Cantonment Board for its contribution to JNNURM

It is proposed that Kanpur Cantonment Board would contribute Rs 10.45 crores over the five years of Phase-I from its development funds.

17.4.5 Surplus generation by KJS for contribution to JNNURM

The **Table 17.8** gives details about the surplus generation by KJS. As shown in table, it indicates that the reduction in leakage by 10% would generate an amount of Rs 25.52 crore. The KJS would be generating by way of own revenue to the tune of Rs 7.50 crore. The imposition of user charges by KJS would yield an amount of Rs 54 crore. Additional revenue from new water connection would be contributing Rs 6 crore. In total, the KJS would be able to contribute surplus revenue of Rs 93.02 crore.

17.4.6 Generation of Resources for meeting the O&M cost of new assets created under JNNURM

It is suggested that a revolving fund for meeting the O&M cost of new assets should be created. Every stakeholder should contribute in the corpus fund. The year-wise percentage contribution from various stakeholders for the period of six years is shown in **Table 17.9**. The interest earned on this fund would be able to meet the cost of operation and maintenance on the newly created assets.

Table 17.9: Generation of resources for meeting O&M cost for the new assets to be created under JNNURM

(Year-wise % to be contributed by the Institutions in the revolving fund)

S.N.	Institution	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6
1	Roads-KNN	0	1	2	2.5	4	5
2	Roads-PWD	0	1	2	4	5	5
3	SWM	3	3	3	3	5	7
4	Water	1	1	2	2	3	4
5	Sewerage	0	1	1	2	2	3

15.4.7 Capacity Building under JNNURM

In the development of any city, the role of all the stakeholders is very significant. The administrative machinery, which is responsible for the execution of the projects, has to be sensitized with the dynamics of development and the expectations of the citizens. Capacity building through intensive and comprehensive training programmes at all the levels of officers would help in enhancement of the performance. It would add to the knowledge and skills of the staff engaged in the mission. The capacity building through effective training programmes would help in achieving the objectives of modernization of through process and the re-orientation of administrative system. This would help in enhancement of skills for the better performance and understating of professional requirements. In sum, the capacity building is considered as the most effective tool for the achievement of goals of the mission. The Centre and State governments need to ensure for the adequate provision of such requirements of capacity building.

It is proposed that 5% of the project costs mentioned above would be used for training, capacity building and systems development. Such capacity building details will form a part of the DPRs to be prepared for each project.

15.4.8 Highlights of Phase-I

In Phase-I, it is proposed to undertake the works amounting to Rs 3896.03 crore. Out of this, about Rs 1168.81 crore would be contributed the KNN (city share), which is 30% share. The GoI's share of 50% works out to Rs 1948.01 crore. The remaining balance of 20% of the total investment of Phase-I would be supported by GoUP, which is about Rs 779.21 crore. The total investment proposed and projects to be undertaken in phase-I work out Rs 3896.03 crore.

15.4.9 Highlights of Phase-II

The total investment in phase-II is proposed to the tune of Rs 8592.93 crore. Of this the 50% share of GoI works out to Rs 4296.47 crore. The state contribution estimated at Rs 1718.59 crore (20% share). The KNN (city share 30%) is estimated at Rs 2577.88 crore.

15.4.10 Concluding Summary

The FOP as discussed above is indicative of the near sustainability of the projects under JNNURM framework. The presence of fifty percent share in the form of JNNURM grants by the Centre and twenty percent from the State and the remaining balance of local contribution would support in successful completion of the task under JNNURM by various stakeholders of the City of Kanpur.

Table 17.10 Source of funds for funding of the JNNURM program

		Total Proposed cost under JNNURM		(Rs crore)
S.N.	Contribution	Phase -I	Phase -II	Total
1	Centre	1948	4499	6395
2	State	779	1800	2558
3	KNN(city)	1169	2699	3837
	Total	3896	8998	12791

