

# FINAL REPORT

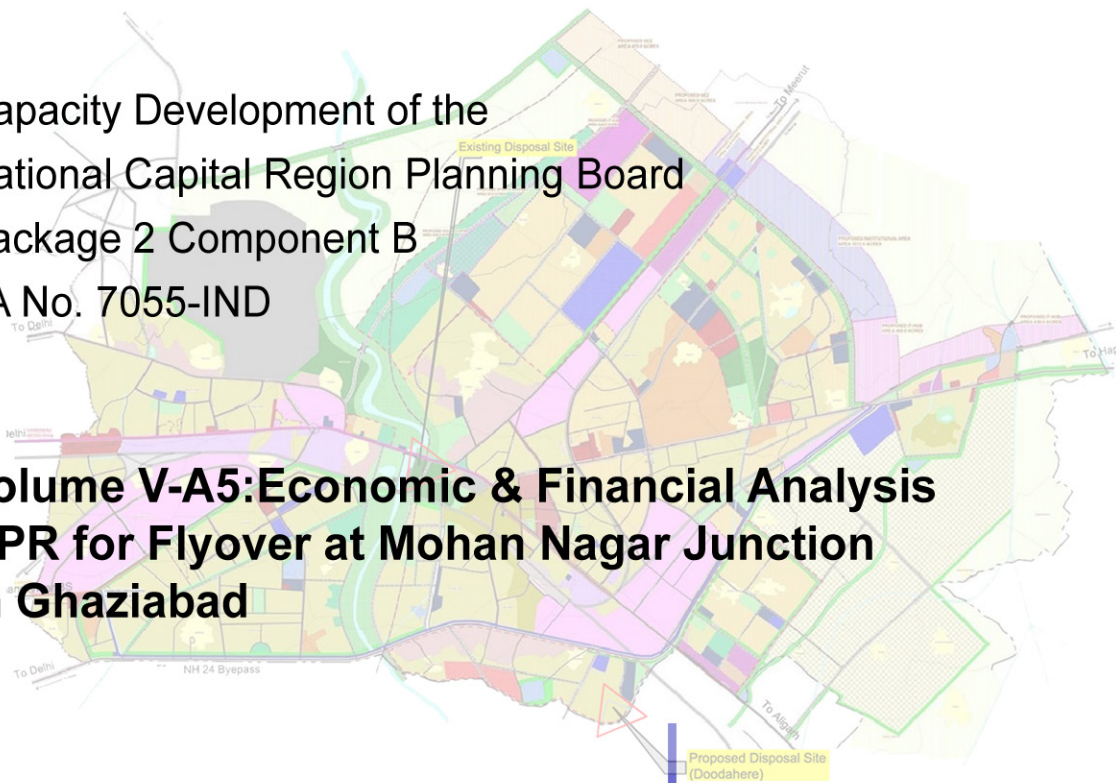
ADB



Asian Development Bank  
National Capital Region Planning Board

Capacity Development of the  
National Capital Region Planning Board  
Package 2 Component B  
TA No. 7055-IND

## Volume V-A5: Economic & Financial Analysis DPR for Flyover at Mohan Nagar Junction in Ghaziabad



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ASSOCIATES

July 2010

NCR Planning Board  
Asian Development Bank

# Capacity Development of the National Capital Region Planning Board (NCRPB) – Component B (TA No. 7055-IND)

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Ghaziabad

Economic & Financial Analysis

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## Abbreviations

ADB	:	Asian Development Bank
BOQ	:	Bill of Quantity
CAA	:	Constitutional Amendment Act
CAGR	:	Compound Annual Growth Rate
CDP	:	city development plan
CF	:	Conversion Factor
CNCR	:	Central National Capital Region
CPHEEO	:	Central Public Health and Environmental Engineering Organization
DSC	:	Design Supervision Consultant
EA,	:	Executing Agency
EIRR	:	Economic Internal Rate of Return
ENPV	:	Economic Net Present Value
EOCC	:	Economic Opportunity Cost of Capital
FR	:	Final Report
FY	:	Financial Year
FYP	:	Five Year Plan
GoI	:	Government of India
GoUP	:	Government of Uttar Pradesh
HHs	:	Households
HN	:	Hapur Nagar Palika
HPDA	:	Hapur Palkhua Development Authority
HUDCO	:	Housing and Urban Development Corporation
IA	:	Implementing Agency
IEC	:	Information, Education & Communication activities
JNNURM	:	Jawaharlal Nehru Urban Renewal Mission
LA	:	Land Acquisition
LPCD	:	Litres Per Capita per Day
MDG	:	Millennium Development Goals
NCR	:	National Capital Region
NCRPB,	:	National Capital Region Planning Board
NCT	:	National Capital Territory
NH	:	National Highway
O&M	:	Operation and Maintenance
OR	:	Operating Ratio
PDA	:	Patiala Urban Planning & Development Authority
PIU	:	Project Implementation Unit
Rs.	:	Indian Rupee
SCF	:	Standard Conversion Factor
SFC	:	State Finance Commission
SWM	:	Solid Waste Management
TPI	:	Third Party Inspection
UGD	:	Under Ground Drainage
ULB	:	Urban Local Bodies
UP	:	Uttar Pradesh

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## 1. ECONOMIC ANALYSIS

### A. Review of Macroeconomic Context

#### 1. City / Town Profile

1. Ghaziabad is one of the most important cities of UP sub-region of NCR and can easily be termed as Gateway of UP. It is located at about 22 km from NCT Delhi and is an important industrial and trading center in Delhi Metropolitan Area (DMA). The City is spread and developed on both the sides of River Hindan, an important tributary of River Yamuna. The city is bounded by the NCT Delhi in the west and NOIDA in south. This is an important town of U.P due to rapid growth of industrial, commercial activities.
2. The status of Ghaziabad was upgraded from Municipal Board to Municipal Corporation, known as Ghaziabad Nagar Nigam (GNN) on 31 August 1994 following 74th constitution Amendment Act 1992 and conformity legislation by state government. The Municipal administration has been decentralized in five zones and 80 administrative wards.
3. Area of Ghaziabad Nagar Nigam (GNN) was confined to the core area of the city i.e. only 63.94 sq km till 1991 with population of 5, 11,759 but by 2001, area increased to 171.43 sq km with census population as 9, 68,521.
4. The city is growing at a very high pace and the population base has increased from 0.5 to 1.0 million during 1991-2001. During the last twenty years the population concentration has been on the periphery of the municipal board boundary. The city is growing spatially. Private developers promoted by Public – Private Partnership policy (PPP) are now supporting the urban development. The quality and quantity of housing is improving and reflecting the contribution of the private sector. Estimated population of GNN and GDA in 2041 is 4.4 million and 6.1 million respectively.
5. *Major Economic Activity.* The economy of the town has been bi-functional – industries cum services since 1971. Industries form an important component of the economic base of the city. Ghaziabad is one of the largest industrial cities, next to Kanpur, in Uttar Pradesh. It is also an important centre for trade and commerce in western UP sub-region. Various products and equipments are supplied to the regional, national and international markets. The workforce participation rate and percentage workers in secondary sector are marginally declining but the size of work force in the city has maintained its increasing trend.
6. A number of famous major industries like Bharat Electronics Limited (a public sector unit of Central Government), UPTRON (a public sector unit of Uttar Pradesh Government), Dabur, Mohan Meakins, Gagan Vanaspati, Sri Ram Piston, Bhushan Steel and Weston Television are located in Ghaziabad. Sahaibabad industrial area and commercial activities are concentrated in the western part of the town. According to the statistics of the District

Industrial Centre, 106 units of medium and large industries employed 24,595 workers in 2001.

7. Number of small and medium industrial units was 13,720 in 2000 with 71,245 workers increased to 15,848 in 2002 with 87,832 workers. The main reason behind increase in small and medium industrial units in Ghaziabad is due to recent Hon'ble Supreme Court Order for shifting of polluting industries from NCT Delhi.
8. *Its Importance in the NCR.* It is an important city in NCR area, which is being developed to decongest National Capital Delhi by improving infrastructure in NCR towns with the aim of shifting some of the offices and establishments of Government of India. With all the required facilities and proximity to Delhi, Ghaziabad has become one of the fast developing city in NCR.
9. Ghaziabad Development Authority (GDA) in coordination with the National Capital Region Planning Board (NCRPB) is responsible for the planned development of Ghaziabad city. As per the Master Plan of Ghaziabad, 2021 the total development area of Ghaziabad is 8455 hectares, of which 4670 hectares is under residential use constituting 55.03 per cent of the developed land. This is followed by industrial use (20.16 per cent) and 6.13 per cent use under the roads, bus stands. The master plan proposes land use plan for the city with the intention of achieving balanced distribution of various land uses.
10. The NCR Regional Plan was approved on 9th July 2005. It is proposed that solid waste disposal and management should be planned for a minimum 20 years and at least controlled tipping should be adopted in the disposal of the solid waste. Areas should be identified in all the towns for sanitary landfill and all the towns above one lakh population should have arrangements to properly manage the waste disposal.

## 2. *Economic Policy*

11. *Implication on Town's growth.* The Millennium Development Goals (MDGs) (Goal No.7) enjoin upon the signatory nations requiring them "to halving the proportion of people without sustainable access to safe drinking water and basic sanitation by 2015" and 100 percent access by 2025. This implies extending coverage to households which are presently without improved sanitation, and providing proper sanitation facilities in public places to make cities open-defecation free
12. *National Urban Sanitation Policy.* Based on the recommendations of National Urban Sanitation Task Force in 2005, a National Urban Sanitation Policy has been approved by the Government of India in October 2008. The vision of the policy is that all Indian cities and towns become totally sanitized, healthy and livable and ensure and sustain good public health and environmental outcomes for all their citizens with a special focus on hygienic and affordable sanitation facilities for the urban poor and women with the following goals:

- Awareness Generation and Behavioral Change

- Open Defecation Free Cities
  - Integrated City Wide Sanitation
  - Sanitary and Safe Disposal: the environment
  - Proper Operation and Maintenance of all Sanitary Installations
13. Eleventh Five Year Plan of GoI with the support of states including UP have identified action program to achieve 100 per cent population coverage for sewerage, sewage treatment and low cost sanitation facilities in urban areas.
14. *National Urban Transport Policy*. Ministry of Urban Development, Government of India, has announced the much needed National Urban Transport Policy in 2008. The vision of the policy is that to make our cities the most livable in the world and enable them to become the “engines of economic growth” that power India’s development in the 21st century and to allow our cities to evolve into an urban form that is best suited for the unique geography of their locations and is best placed to support the main social and economic activities that take place in the city. Major strategies of the policy include:
- Integrating land use and transport planning
  - Equitable allocation of road space
  - Priority to the use of public transport
  - Quality and pricing of Public Transport
  - Technologies for Public Transport
  - Integrated public transport systems
  - Priority to non-motorized transport
  - Parking
  - Freight traffic
  - Capacity building
  - Use of cleaner technologies
  - Innovative financing mechanisms using land as a resource
  - Association of the private sector
15. The NCR Regional Plan 2021 defined Central NCR (CNCR) and area of NCR except CNCR i.e. outside CNCR and proposed 7 metro centres and 11 regional centres. Ghaziabad city (including Loni) has been proposed as a major metro centre within CNCR and population estimated is as follows: 1.9 million in 2011 and 30.19 million in (2021)
16. Ghaziabad Development Authority (GDA) is developing residential sectors with private sector participation along the highway corridors which will attract more related activities and will fasten the town growth.
17. Density norms suggested for residential purpose had increased to 200 persons per hectare in Regional Plan-2021 from 150 persons per hectare from earlier Plan. This will increase the residential density in the city in coming years.
18. Construction of expressways and four laning of the NH24 and NH 58 connecting

Ghaziabad had attracted major educational, institutional, tourism and industrial activities. These together will have more pressure on Ghaziabad and subsequently for urban civic infrastructure including solid waste management.

## B. Review of Sector Context

### 1. Present Status

19. The important national Highways passing through the Ghaziabad city are NH-58 which goes to Merrut, NH-24 which goes to Hapur and NH-91 which goes to Sikandrabad. Along with these highways, there is Hapur bypass passing through Ghaziabad connecting Madan Mohan Malviya marg and NH 91. The Y junction on NH 24 connecting NH 58 (near Mahamaya sports stadium) has become the most critical intersection in the city. The modal distribution of traffic at this junction is a mix of all types of vehicles with HTV/commercial vehicles more during night and early morning hours. The GT road carries large volume of traffic to an extent that it has exceeded its capacity by 50-60%.
20. Ghaziabad is connected with the city bus service, shared auto service which constitutes a major portion of the transport along with cycle carts and private vehicles. The city being an industrial area, a large number of truck traffic can be observed all over the city.
21. Rapid urbanization has lead to a sharp increase in travel demand. While the road layout in the city is well-planned, efforts to improve the condition of non-arterial roads should continue. Presently the mass transport within and around or from Delhi to Ghaziabad is mainly handled by bus and private owned transport. However, owing to the limited accessibility and congestion, there is a large increase in personalized modes of transport and IPT modes like auto rickshaw in Ghaziabad.
22. *Existing Inadequacy Level.* Despite the increasing importance of the town in the economic growth of the national capital region, the urban infrastructure is not adequate. Existing transport system in the city is observed with many deficiencies which include the following major ones:
  - Inadequate and poor condition of internal roads
  - Virtually non-existent intra-city public transport.
  - Mofussil Bus Stand with inadequate facilities
  - Inadequate pedestrian facilities
  - Absence of Truck Terminal parking areas.
  - Inadequate facilities for non-motorized modes of transport
23. Urban transport infrastructure in Ghaziabad, like other cities, is handled by multiple agencies including GNN. State PWD, Ministry of Road Transport & Highways, Government of India, UP State Road Transport Corporation, Ghaziabad Development Authority, traffic Police are the other major agencies involved in planning and implementation of transport infrastructure in the city along with the private operators.

Lack of coordination among these agencies to address the city transport problems is the major issue in the sector.

24. GNN is responsible for development and maintenance of urban roads and other related issues like parking, goods traffic facilities, pedestrian facilities, traffic signals etc. Majority of the existing urban transport problems identified earlier were attributed to the urban roads under GNN and this may be due to inadequate provisions for this sector. Unfortunately the available data from GNN could not explain the present expenditure level for the development and maintenance of these urban roads.
25. Therefore, the inadequacy in provision of transport is likely to be the major constraint to the potential economic growth in the National Capital Region. Reduction of disparities through targeting less developed areas was a core element of the Government of India's 10th Five Year Plan (2002-2007). The objective of the 11th Five Year Plan is 'faster and more inclusive growth,' citing the issues on inequitable share of growth, which was seen as increasing disparities among states, and regions within states, between urban and rural areas, and between various sections of the community. In order to realize the Five Year Plans, investment into transport sector in Ghaziabad city is necessary.

### **C. Justification for Government Intervention to Sector**

26. The basic urban services include water supply, sewerage, drainage, transport and solid waste management (SWM). All of them are the mandatory functions of urban local bodies (ULB) under the 74th Constitutional Amendment Act (CAA). Unfortunately, immediate transfer of functions from the states to ULB is highly impractical due to the inadequate technical and financial strength of the ULB. Consequently, many of the state governments take initiative on capital investment and operation of water supply and sewerage while delegating SWM to ULB, which require less technical and financial strength than water supply and sewerage. In some states, the state governments take initiative on capital investment on water supply and sewerage projects and on completion of the construction they will be handed over to the ULBs for operation and maintenance, similar to UP. In UP, generally UP Jal Nigam will develop the sewage/SWM project and will hand over to ULB for O&M and this will be applicable to Ghaziabad SWM scheme also. In transport, ULBs will look after the internal road network and related issues through outsourcing and the major arterial roads will be the responsibility of technically equipped state PWD or central government agencies.
27. In addition to being a constitutional obligation, provision of these services has economic rationales for government intervention for the following reasons: (i) many of the services (especially wastewater treatment, drainage, urban roads and solid waste management) are natural monopolies unsuited to unregulated private investment, and hence justify government intervention at least in regulation; (ii) environmental sanitation improvement (a) protects a public good such as a hygienic environment, and (b) prevents a negative situation arising from pollution; and (iii) poverty alleviation programs minimize the inefficiency in economic growth in the urban areas. The economic rationale for government intervention is therefore sound.

## D. Demand Analysis

28. Service delivery is not commensurate with existing traffic scenario in Ghaziabad and the strategy adopted for selection of urban transport and roads improvement sub-projects was to improve accessibility in Program towns so that residents would have better access to economic and social activities. Sub-projects identified would increase the supply of effective road space by removing impedances to traffic flow including road side drains, road strengthening, road widening, grade separators (flyovers), bus terminals, parking facilities and Road over Bridges (ROB) to provide better and uninterrupted connectivity.
29. Present sub-project component in Ghaziabad City considered for the present report comprises construction of a grade separator at Mohan Nagar Crossing. This intersection on NH 24 is one of the critical locations that carry a high volume of traffic. The speed survey conducted on this stretch of the highway also indicated a peak hour average speed of 19 kmph. The study has mandated a flyover to be built at this junction (NH24/Madan Mohan Malviya/Loni Road) by 2015. Since, the local officials also feel that a grade separation is required at this location on a priority basis; this project is selected from the Transport Master Plan prepared for preparing Detailed Project Report (DPR).
30. Based on the intersection volume count survey conducted in December 2008, about 28,000 vehicles were found using this intersection on an average daily subjecting to more delay due to frequent congestion and this is likely to aggravate further in future. Construction of a flyover with related improvements like pedestrian facilities and other traffic safety measures will benefit 28,000 vehicles daily which is further to increase at about 5 – 6 % every year. Benefits to these vehicles include i) reduced vehicle operation cost, ii) reduced delay time, iii) reduced in traffic accidents and iv) improvement to environment. Data sources considered were primary road inventory and traffic surveys carried out as part of the Program preparation, and available secondary data on the road network and previous traffic surveys.
31. Proposed DPR is selected from the recommendations were made at Master plan in the following stages.
- (i) Based on a comprehensive investigation of existing scenario and estimation of future requirements a transport master plan was prepared that had outlined the required transport infrastructure requirements to meet short, medium and long term traffic demand in Ghaziabad City.
  - (ii) As per the requirement of this study the present requirement is to identify four sample projects emerging out of the master plan proposals to be taken up for DPR. The four improvement proposals considered are:
    - A grade separator
    - Road widening on a corridor stretch
    - A multi-level parking facility

- A bus terminal
- (iii) The medium / long term proposals emerged out of the study were presented to the officials of NCR in Delhi, NCR cell in Ghaziabad, Ghaziabad Nagar Nigam, Ghaziabad Development Authority and others. The proposals to be taken up for DPR were extensively discussed between the Consultants and these officials. The schemes that are essential for the current scenario of Ghaziabad were finally identified by GDA and NCR.
32. The proposed grade separator at Mohan Nagar (Patel Chowk) was thus identified and selected for DPR preparation. Design parameters considered to the project design are listed below.
- The guidelines of Indian Road Congress (IRC) appropriate to intersection improvements, urban roads capacity evaluation, construction of grade separators etc.
  - As part of planning, design and project formulation process, the basic design parameters have been followed to suit the projected road capacity and the intersection flow particularly to accommodate the peak hour flow.
1. *Existing Transport System in Ghaziabad City*
33. Master Plan Report (MPR) of Ghaziabad Transport was prepared in April 2009 with the objective to design a suitable integrated urban transport infrastructure system, by assessing the resource requirement for next 20 years and suggesting suitable measures for improvement of system.
34. Based on discussions with the stakeholders including different government agencies, detailed reconnaissance survey, review of available secondary data and finally scientifically planned primary traffic surveys, the existing traffic problems in the city and its environment was assessed.
35. Primary traffic surveys carried out for assessment include:
- Road network inventory
  - Screen line traffic counts
  - Intersection Classified Volume Counts
  - Roadside Interview Surveys
  - Speed and delayed surveys
  - Parking surveys
  - Pedestrian Crossing Count Surveys
36. Transport system deficiencies observed in general in Ghaziabad city include:
- Inadequacy of roadways
  - Absence of intra-city public transport:

- Inadequate pedestrian facilities
  - Deficient Junctions:
  - Lack of Traffic Control Devices
  - Improper location of Bus Stops
  - Loading and unloading of goods at unauthorized places, obstructing the traffic and pedestrians alike
  - Absence of Truck Terminal
  - Inadequate facilities for non-motorized modes of transport
  - Intermixing of Regional and local traffic:
37. Projected traffic at major corridors and intersections indicate that the existing traffic system in the city will experience severe congestion and that will result in speed reduction drastically and will affect the service delivery considerably. This underlines the need for improvement intervention in the system considerably.
38. Of the 15 intersections where turning volume count survey was done, eight intersections have peak hour traffic of more than 5,000 PCUs (Passenger Car Unit) and this indicates most of the intersections in the city require improvement intervention to meet the present and the fast growing future turning traffic.
39. Results of the Road Side Interview Survey conducted at three locations on NH24, NH58 and NH91 indicated that:
- daily trips are more with 41% followed by alternate days and weekly trips with about 25% and 14% respectively.
  - trips are for business purpose averaging about 43% comparing with 23% of work, 18% social and recreation, 8% tourism, 7% of education and 19% other trips respectively.
40. Average journey speed observed from the major roads is indicated below:

**Table 1-1: Summary of Journey Speed Data (in KMPH)**

Description	NH 24	NH 58	NH 91	Hapur Bypass	Loni Bhopura	Ambedkar Marg
Average JS - peak Hour	41	38	41	20	27	23
Average JS - Off Peak Hour	58	41	59	25	45	36

41. Results of parking survey conducted at four critical locations in the city had indicated that the available parking space is less than the actual demand. It can be seen that near GDA complex, the demand is in excess of the available supply considerably. With regard to parking duration, about 80% of the vehicles were parked for less than 30 minutes and this indicates high parking turn out. Another 21% of vehicles were parked more than 30 minutes but less than three hours.

42. Results of the Base Line Survey conducted in Ghaziabad city in 2008 revealed the following opinions about the existing transport infrastructure services:
- 20% of the non-slum households and 47% percent of slum households were not satisfied about the road conditions;
  - 30% of the non-slum households and about 20% percent of slum households were not satisfied about the services of street lights;
  - 77% of the non-slum households and 65% percent of slum households feel that there is no proper drainage facilities along the roads;
  - 75% of the non-slum households and 94% percent of slum households were not satisfied about the available vehicular parking facilities;
  - 78% of the non-slum households and 84% percent of slum households felt that there is no adequate parking space for commercial vehicles

## 2. *Effective Demand for Urban Transport*

43. The socio-economic baseline survey<sup>1</sup> was aimed at understanding the perception of the public towards the existing urban civic infrastructure and their service levels including their opinion towards the improvement of these services and their willingness to pay for assessing the 'effective demand'. Though this survey had covered the 'willingness to pay' aspect, it was not given specific focus so as to amend the results to statistical framework.
44. The Base line Survey results had indicated
- Nearly 43 percent non-slum household spends between Rs 1000 and above and Rs 2000 per month as fuel and vehicle maintenance. More than 47.2 percent slum household spends less than Rs.200. Another 33 percent non-slum household spends between Rs.200 to 1000 per month as fuel and vehicle maintenance.
  - More than 90 percent of non-slum household spend between Rs.500-1,000 per month to go to their respective work place. In case of slum, more than 65 percent household spend more than an hour to reach to their work place with a monthly expenditure ranges between Rs.100-500.
  - Nearly 51 percent non-slum and 30.5 percent slum households are willing to pay upto Rs. 5 per hours for 2-wheeler parking.
  - Better frequencies, better comfort and better coverage are the type of improvements commuters expect from the public transport system;
  - Around 98 percent non-slum and cent percent slum households are willing to pay more than 5-10 percent if the frequencies of service level of public transport improve. For better comfort and coverage of services the same trend is prevalent.

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<sup>1</sup> conducted as part of the present project (2008) in Ghaziabad City (with 0.5% sample size with stratified sampling approach giving representation to all administrative wards and all notified slums)

45. These facts discussed above justify the need for the improved transport subprojects in the city and the proposed subprojects like parking facility, terminals for public transport, grade separator and improving road corridor backed up by effective demand.

#### **E. Identification of Project Rationale**

46. The present transport system has inadequate and less quality infrastructure including mostly bad road conditions, inadequate parking facilities and pedestrian facilities, not properly designed intersections, over utilized and congested road sections, inadequate terminal facilities for public transport, intermediate public transport vehicles and trucks, inadequate public transport service delivery etc.
47. Also the Transport Master Plan (TMP) prepared for the town has identified deficiencies and formulated recommendations to be implemented in phased manner that include (i) short term improvements, (ii) medium and long term improvements that include integrate terminals for public transport and trucks, improvement to identified critical intersections through grade separators etc, capacity augmentation to arterials roads through widening, dedicated multi storied parking facilities, development of new road links etc., to meet the requirements of horizon year demand.. Thus the main project rationale lies for the rehabilitation of the Transport system for Ghaziabad city in filling the demand – supply gap resulted from and the present subproject of construction of a Grade Separator at Mohan Nagar Crossing is selected from the Transport Master Plan in consultation with the stake holders of concerned Government Departments and agencies Ghaziabad City.
- Lack of coverage, and
  - Inefficient functioning of the existing system

#### **F. Identification of Project Alternatives**

48. For the selected subproject of Grade Separator at Mohan Nagar Crossing (Patel Chowk) for which detailed project report is prepared, alternative designs were assessed on three aspects, namely, cost-effectiveness, operation and maintenance capacity of the states governments and ULB, and safety to beneficiaries. The proposed design of the project incorporates that (i) service coverage to the full GNN area, (ii) selected optimum network with least cost options including equipments and material (iii) decision on rehabilitation of the existing system (iv) selection of new terminal sites with reference to Ghaziabad Development / Master Plan proposals (v) selected technologies meet geographical restrictions and can be operated and maintained by the asset owners with minor training, and (vii) materials and equipments are locally available and incur least cost during construction and maintenance, but are internationally accepted as health hazard free. These Assessments are discussed in the design section of this DPR.

## G. Identification and Comparison of Project Costs and Benefits

### 1. Economic Cost

49. From the cost estimate discussed in Section of this report, the 'base' project financial cost is estimated to Rs. 513 million. Considering the contingency and allowances of additional 12% (Physical contingency (3%), DSC+Third Party Inspection (TPI) - 3%, IEC activities 1%, o Incremental Administration (PIU) – 2%, Environmental mitigation 1%, Social intervention 1%, and Institutional development and capacity building activities 1%), the total project financial cost was worked out to Rs 642 million and this is phased during the two year construction period as follows:

- 2011-12 – 40%
- 2012-13 – 60%

50. Considering the standard procedures recommended for economic feasibility analysis, the above financial cost was converted into economic cost for the analysis. Details of economic cost analysis are presented in **Appendix 1-1**.

### 2. Project Benefits

51. Project beneficiaries will be those travelers for whom accessibility to economic and social activities will be improved through better road conditions and traffic flows brought about by the sub-projects. This improvement is achieved by reducing the effort or inconvenience of travel between the origin of the traveler and the destination offering these activities.

52. The subproject in Ghaziabad the Old NH 24, is the spinal cord of Ghaziabad city transport network and at present experiencing tremendous traffic congestion. Most of the roads are connected to this road and provide main access to Delhi, NOIDA, Loni, Meerut and Hapur and thereby has resulted in many junctions. As a result significant traffic merges, diverges and crosses the road at frequent intervals. Patel Chowk is a four road junction where the roads from Loni and Mohan Nagar join the Old NH 24 Road. At present the movement of traffic at the junction is controlled by signals supported by manual operation resulting inordinate delay for the vehicular traffic. The sub proposal is to construct a grade separator so as to allow the heavy through traffic with free flow and the remaining turning traffic at grade with less waiting time.

53. Subproject proposals will benefit the vehicular traffic on this road with less traffic congestion, less traffic conflict at junctions, increase the travel speed resulting in savings in vehicle operating cost (VOC) and travel time, accommodate the fast growing vehicular traffic, uninterrupted movement for the major through traffic through flyover, pedestrian safety including reduced road crossing time etc.

54. The economic benefits considered in the present analysis for the grade separator (flyover) subproject in transport component in Ghaziabad city include:
- (i) VOC savings for the traffic using improved Project roads
  - (ii) Value of Passenger Travel Time Savings
55. *Exclusions.* The following benefits of transport have not been quantified for want of adequate data and quantification techniques. These qualitative benefits along with the quantifiable benefits discussed above, the proposed transport system (construction of a grade separator) will tend to provide better living condition in the project city. Detailed discussion on the project benefits considered for the analysis is given in **Appendix 1-2**.
- (i) Savings in vehicular traffic accident resource cost;
  - (ii) Improvement in environment of the surrounding; and
  - (iv) Effects on tourism and tourist-related businesses.

## H. Economic Feasibility Analysis

### 1. Analysis Period

56. The analysis period of the project is taken as 24 years from the base year 2010 for different sections of the project road as follows:
- Base Year 2010
  - Construction period – 2011 to 2012
  - Project opened start year – 2013
  - End of the analysis period – 2032
57. Number of operating years after project improvement, considered for economic analysis – 20 years. Thus, 20 years of operation, in effect, from the operation start of the proposed project i.e. 2013, has been considered for economic evaluation for the project road.

### 2. Economic Feasibility Criteria

58. The cost – benefit analysis is carried out by using the discounted cash flow (DCF) technique to obtain the economic internal rate of return (EIRR) and economic net present value (ENPV) for the proposed investments and the likely quantified project benefits linked with the project during the defined project analysis period

### 3. Economic Opportunity Cost of Capital (EOCC)

59. Given the complexity of estimating country-specific economic opportunity cost of capital (EOCC), a discount rate of 12% in constant economic prices is generally used as a proxy for EOCC in the economic analysis of ADB-financed projects. The EIRR must be compared with the economic opportunity cost of capital, for interpretation purpose of project feasibility. Results of the analysis are presented in **Table 1-2**.

**Table 1-2:** Economic Cost-Benefit Analysis for Transport Component, Ghaziabad Flyover

Details	Present Value
	(Rs. million) a/
<b>Costs</b>	
Capital costs	
Transport (Grade Separator)	403
O&M costs	
Transport (Grade Separator)	30
Total costs	433
<b>Benefits</b>	
Transport (Grade Separator)	
- Travel Time Savings	1358
-VOC savings	-
Total benefits	1358
Economic Return Measures	
Net present value (Rs. Million)	925
<b>EIRR (%)</b>	<b>32.58%</b>

a/ In 2009-10 prices; discounted to 2009-10 at 12% real discount rate.

#### I. Sensitivity Analysis

60. Sensitivity analysis was carried out to their economic feasibility results for the following scenarios:
- Capital cost increase by 20%
  - O&M costs increased by 20%
  - Target beneficiaries reduced by 20%
  - Delay in accrual of benefit by 1 year
  - Combined adverse condition
61. Results of the sensitivity analysis for the proposed project are summarized in the Table below. Detailed calculations are given in **Appendix 1-3**.

**Table 1-3: Sensitivity Analysis for Transport Component - Grade Separator Subproject (EIRR)**

Details	EIRR	Switching Value c/
Main Evaluation (Base Case) a/	32.6%	
Capital Cost Overrun b/	28.3%	230.0%
O&M Cost Overrun d/	32.4%	3100.0%
Decrease in Project Benefits e/	27.3%	68.0%
One Year Delay in Implementation	32.5%	
All Four Tests Combined	23.38%	

a/ From **Table 1-2**.

b/ 20% increase in capital cost estimates.

c/ Calculated as the percentage change in a variable required for EIRR to reduce to 12%. For example the capital cost can increase by 230% or project benefits can reduce by 68% to get the minimum required level of EIRR of 12%

d/ 20% increase in O&M cost.

e/ 20% decrease in project benefits

62. Of the four sensitivity scenarios (cost overrun, O&M cost increase, reduced beneficiaries, delay in implementation) reduced beneficiaries is the most vulnerable to EIRR, followed cost overrun. Considering the more sensitiveness of these variables, following implementation arrangements need to be focused more so as minimize the project risk:
- Ensuring adequate project coverage of beneficiaries through advance commitment from HHs for individual access or making mandatory for all individual access through project design;
  - Timely implementation of the project through appropriate procurement method in which incentive for early completion may be included;
  - Adequate focus for LA related project components

## J. Conclusion

63. The main evaluation has indicated that the proposed transport sub project (construction of a Grade Separator) for Ghaziabad city was found to be economically viable, with the calculated EIRR values exceeding the economic opportunity cost of capital. The sensitivity analysis has demonstrated the robustness of this result, with the subproject component economically viable even when the combination of changed assumptions was tested.
64. Furthermore, for the proposed drainage subproject, the calculated EIRR value is considered minimum estimates of economic return, as there are a number of economic benefits of reduced pollution, a cleaner city and improved transport environment that have not been quantified.

## 2. FINANCIAL MANAGEMENT AND ANALYSIS OF PROJECTS

### A. Introduction

65. Financial analysis for subprojects generally consists of both (i) Financial Management Assessment and (ii) Financial Analysis and this is the specific requirements for the financial analysis to the projects funded by ADB. The minimum requirement for Financial Management Assessment and Analysis, are described in ADB's 'Financial Management and Analysis of Projects (the Guidelines)'.
66. Financial Management Assessment, the first part of analysis, concentrates on the assessment review of Executing Agency (EA) and Implementing Agency (IA) with respect to the subproject subjected to financial analysis. Assessment review will cover the areas like financing policies; accounting policies; project implementation plan; financing plan; disbursement procedures and fund-flow mechanisms and regulatory provisions.
67. Second part of the analysis is the 'Financial Analysis' for subprojects. This will mainly focus on the review of EA, IA and the proposed subproject with respect to the following components:
- Past and present financial condition
  - Cost Recovery and Profitability
  - Financial Improvement Action Plan
  - Affordability Analysis
  - Projected Financial Forecasts
  - Cost benefit analysis
  - Sensitivity Analysis
68. The proposed subproject of Grade Separator in Ghaziabad Naga Nigam is likely to be funded from ADB fund through NCRPB. However, for the present analysis, it is considered that the proposed subproject will be funded by NCRPB to the end-borrower (UP State PWD). Accordingly PWD with the guarantee of the Uttar Pradesh State will become both the Executing Agency (EA) as it will have the direct control of NCRPB Loan and the Implementing Agency (IA) as State PWD is the asset owner and responsible for the implementation and operation of the proposed subproject, utilizing the loan proceeds. Accordingly, PWD as EA and IA is considered for financial management assessment purpose.
69. Considering the focus of the present assignment 'to support the project preparation efforts of the implementing agencies by preparing demonstration feasibility studies and DPRs that include all due diligence documentations required for processing of the project in accordance with the best practices, including the proposed NCRPB's policies and

guidelines , the following requirement in carrying out the financial analysis emerge:

- the subprojects funded through ADB loan; and
  - the subprojects funded through NCRPB own fund,
70. In both cases, NCRPB only will be the lender to the end borrowers (ULBs or line departments / agencies) for the subprojects and hence only the end-borrower will be assessed.
71. With this background, the present financial feasibility analysis concentrates more on the project financial analysis as this is the area where the capacity of the IAs needs to be enhanced for both format of loans. Also the financial management assessment part of the analysis is covered to the level of data availability. On finalization of the projects for ADB funding (in which the present subprojects under review may or may not be a part), subsequent consultancies will improve this financial management assessment part of the financial analysis.

## **B. Financial Management Assessment**

### *1. Policy Context*

72. Subsequent to the 74th Constitution Amendment Act (CAA), 1992 (Refer **Appendix 2-1**) the Government of Uttar Pradesh (GoUP) embarked on a policy of decentralization of powers to local governments. Uttar Pradesh Local Self Government Laws (Amendment) Act, 1994 was drafted based on decentralization principles laid down in the 74th CAA, which came into force w.e.f. 31.05.1994. Impact of 73rd & 74th Amendments on ULBs in Uttar Pradesh State is summarized in **Appendix 2-3**.
73. Key features of the decentralization initiative comprised (i) transferring health related institutions (except medical colleges and regional specialty hospitals) to local governments; (ii) transferring all schools to Urban Local Bodies (ULBs); (iii) planning and implementing centrally sponsored poverty alleviation schemes through ULBs; (iv) planning social welfare schemes, implementing Integrated Child Development Scheme (ICDS), payment of various social security pensions, and creating centre for disabled care are ULB responsibilities; (v) planning and providing urban basic services, including water supply, sanitation, storm water drainage and urban roads (excluding those provided / maintained by the State Public Works Department); (vi) Ward Committees in all municipal corporations and municipalities which have a population of three lakhs or more; and (vii) increase of financial power for ULB Heads.
74. *Constitution of State Finance Commission (SFC)*. Consequent upto 73rd and 74th Amendments to the Constitution of India, and in exercise of the powers conferred by Article 243(1) & (X), the Governor vide Finance Departments Notification no. RG-1933/x-53-94 dated October 22, 1994 constituted the State Finance Commission (Panchayat Raj & Local Bodies). Two SFCs were constituted in UP and the UP

Government had mostly accepted their recommendations (more than 80 percent). Status of the recommendations of the SFCs on tax sharing to local bodies is summarized in **Table 2-1**. In Indian Federal structure, SFC created by 73rd and 74th CAA is the only channel to address issues of state-local fiscal relations. SFCs thus acquire unique place in fiscal decentralization and local finance issues.

**Table 2-1: SFC Recommendations on Tax Sharing – Uttar Pradesh**

Sl. No.	State	Recommended and accepted share of Local Bodies ( Urban & Rural)	
		First SFC	Second SFC
1	Uttar Pradesh	10 % of net own tax revenue receipts of state govt. (7 % for ULBs)	12.5 % of net proceeds of taxes, duties, tolls & fees, exclu. entertainment tax & land revenue (7.5 % for ULBs)

**Source:** Decentralization and Local Finance Issues - The Workings of State Finance Commissions in India, Dr. Ravikant Joshi

75. Some of the major recommendations from SFCs that affect the financial management of ULBs in UP include:
- (i) Conversion of certain category of loans sanctioned to the urban local bodies which was over due on 31st March as state grants
  - (ii) Rates of Non-Tax Revenue have been revised and as mentioned earlier the power to further revise these rates in future by framing or amending the bye laws has been delegated to urban local bodies.
  - (iii) To increase the own sources of tax revenue of urban local bodies the target has been fixed to fix the demand as per the estimated population of 1997, minimum per capita of Rs. 120 for municipal Corporation and Rs. 40 to 90 per capita in Nagar Palika Parishad (depending upon the population) and Rs. 20 per capita in Nagar Panchayats vide g.o. No. 3488/IX-9-97-55/97 dated October 22, 1997.
  - (iv) Imposition of all types of taxes enumerated in the Act, has been made compulsory vide g.o. No. 2371(1)/IX-91998 dated September 23, 1998.
  - (v) The recommendations in respect of profession tax have been accepted by most states as per the available information.
  - (vi) Participation of the community and the private sector, especially in the delivery of urban services is being emphasized. In Uttar Pradesh, decisions have been taken on providing civic services on contract basis and to promote citizen participation
  - (vii) The Finance Commissions of Uttar Pradesh have given importance to devolution of functions, functionaries and powers along with a transfer of funds.
76. The share of transfers from state governments in the revenues of municipalities was 31.7 per cent (2001/02). This is, however, the average; municipalities in several states are almost entirely transfer-dependent for running of local services. The dependence of urban local bodies was as high as 83.71 per cent in case of Jammu & Kashmir, 83.33 in case of Rajasthan and 74.48 in case of Uttar Pradesh<sup>2</sup>. This scenario is a result of the following

<sup>2</sup> Decentralization and Local Finance Issues - The Workings of State Finance Commissions in India, Dr. Ravikant Joshi

three factors –

- The inferior local taxes which have low elasticity and buoyancy;
- Poor administration of tax and other powers by local governments; and
- Absence of autonomy for local governments in respect of tax rate setting, rate revision and other spheres of their functioning.

77. *Five Year Plans*. Government of India (GoI) in its Tenth Five Year Plan (2002 -2007) emphasized the role of the ULBs:
- To be responsive and accountable to the community;
  - to develop cities with standards of service comparable to the best in that particular category;
  - to constantly improve their capabilities so as to equip themselves to undertake their tasks in resource-raising, service provision, and poverty alleviation
78. Tenth Plan had focused the reforms in land and housing policy, and of pricing of utilities, should be to augment the resources of the ULBs, provide for adequate maintenance of civic services, and undertake expansion of infrastructure to meet growing needs.
79. Apart from the State Finance Commissions, GoI has found providing support to ULBs through various schemes including AUWSP, IDSMT, JNNURM, Mega City Scheme, NCR PLAN, HUDCO loan assistance, Tax-Free Bonds scheme and external assistance from multilateral lending agencies like the Asian Development Bank (ADB), World Bank and bilateral agencies.
80. *Govt. of Uttar Pradesh (GoUP)*. Based on the lessons learnt through the 9th FYP, the 10th FYP (2002-07) for Uttar Pradesh is based upon local government's development plan and focuses on (i) reforms and improving organization efficiencies; (ii) increasing allocation in information technology, tourism infrastructure, poverty reduction and health; (iii) planning programs to facilitate employment generation; (iv) promoting private sector investment in economic development; (v) preparing sub-plans for poverty reduction with participation of women groups and focus on vulnerable sections of the society; (vi) evolving a plan for the disabled and women beneficiaries; (vii) strengthening decentralization and improving the planning process; (viii) continuing support to increased use of information technology in all facets of development; (ix) continuing support to tourism infrastructure development; (x) promoting the development of village and small industries; (xi) promoting the participation of private sector in providing education; and (xii) improving service delivery in key areas like health, revenue, education, etc.
81. Govt. of Uttar Pradesh had allotted Rs 102,066 Lakhs for the urban development during the Tenth Plan (2002-2007) which was about 2% of the total plan outlay. However, the actual plan outlay during the plan period was increased to Rs 143,142 Lakhs (**Table 2-2**). Also the annual budget for 2009-10 during the Eleventh Plan for urban development was increased to Rs 180,420 Lakhs (**Table 2-3**) in which water supply, sanitation and urban development were the focus areas. These together underline the importance given to the urban development by the GoUP, which includes the project city of Ghaziabad.

**Table 2-2:** Tenth Plan Allocation for Urban Development in Uttar Pradesh

Year	Annual Plan Allocation for Urban Development during the Tenth Five Year Plan	
	Rs. Lakhs	
2002-03	22,347	
2003-04	14,378	
2004-05	14,174	
2005-06	23,489	
2006-07	68,754	
<b>Total</b>	<b>143,142</b>	

Source: Govt. of UP

**Table 2-3:** Major head summary for the Budget Year 2009-2010 for Urban Development, Uttar Pradesh (Rs. Thousands)

Major Head and Description	Current year Budget (2009-10)			Composition (%)
	Plan	Non Plan	Total	
2015—Elections	-	83,836	83,836	0.46%
2052--Secretariat - General Services	542	62,350	62,892	0.35%
2053--District Administration	2	98,278	98,280	0.54%
2070--Other Administrative Services	-	5,171	5,171	0.03%
2215--Water Supply and Sanitation	1,220,000	-	1,220,000	6.76%
2217--Urban Development	2,755,324	1,036,092	3,791,416	21.01%
2230--Labour and Employment	125,404	-	125,404	0.70%
3054--Roads and Bridges	-	-	-	0.00%
3604--Compensation and Assignments to Local Bodies and Panchayati Raj	-	550	550	0.00%
4070--Capital Outlay on Other Administrative Services	1	-	1	0.00%
4215--Capital Outlay on Water Supply And Sanitation	1,480,003	-	1,480,003	8.20%
4217--Capital Outlay on Urban Development	9,024,502	150,000	9,174,502	50.85%
6215--Loans for Water Supply and Sanitation	2,000,000	-	2,000,000	11.09%
<b>Total</b>	<b>16,605,778</b>	<b>1,436,277</b>	<b>18,042,055</b>	<b>100.00%</b>

Source: [http://budget.up.nic.in/Estimates/maj\\_sumry.asp](http://budget.up.nic.in/Estimates/maj_sumry.asp)

## 2. National Capital Region Planning Board (NCRPB)

82. The National Capital Region Planning Board (NCRPB), constituted in 1985 under the provisions of NCRPB Act, 1985<sup>3</sup>, is a statutory body functioning under the Ministry of Urban Development, Government of India. NCRPB has a mandate to systematically

<sup>3</sup> THE NATIONAL CAPITAL REGION PLANNING BOARD ACT, 1985, No.2 OF 1985, 9th February, 1985, published by The Gazette of India on FEBRUARY 11, 1985. This Act provide for the constitution of a Planning Board for the preparation of a plan for the development of the National Capital Region and for co-ordinating and monitoring the implementation of such plan and for evolving harmonized policies for the control of land-uses and development of infrastructure in the National Capital Region so as to avoid any haphazard development of that region and for matters connected therewith or incidental thereto

develop the National Capital Region (NCR) of India which comprises of (i) National Capital Territory Delhi (constitutes 4.4 percent of NCR area); (ii) Haryana Sub-region (40.0 percent of NCR area); (iii) Rajasthan Sub-region (23.3 percent of NCR area); (iv) Uttar Pradesh Sub-region (32.3 percent of NCR area) and (v) Five Counter Magnet Areas (CMA) The project town Ghaziabad City also part of the NCR.

83. According to the NCRPB Act, 1985 major functions of the Board include: (i) Preparation of the Regional Plan and Functional Plans; (ii) Coordinate enforcement and implementation of the Regional Plan, Functional Plans, Sub-regional Plans, and Project Plans through the participating states and NCT; (iii) Ensure proper and systematic programming by the participating states and the NCT in project formulation, determination of priorities in NCR or Sub-regions and phasing of the development of NCR in accordance with the stages indicated in regional plan; and, (v) Arrange and oversee the financing of selected development project in the NCR through Central and State Plan funds and other sources of revenue.
84. NCRPB has prepared regional plan for NCR area with the perspective year 2021. Further, the Board also initiated preparation of functional plans to elaborate one or more elements of the Regional Plan. Accordingly the functional plan for water supply and transport is under preparation but plans for other infrastructure is yet to take off (**Appendix 2-2**).

### 3. *Ghaziabad Nagar Nigam*

- 73 The status of Ghaziabad was upgraded from Municipal Board to Municipal Corporation, known as Ghaziabad Nagar Nigam (GNN) on 31 August 1994 following 74th constitution Amendment Act 1992 and conformity legislation by state government. The Municipal administration has been decentralized in five zones and 80 administrative wards. City zone has 24 wards; Kabir Nagar has 17 wards; Vasundra zone has 11 wards; Mohan Nagar zone has 14 and Vijay Nagar Zone has 14 wards.
85. Urban development and service delivery in Ghaziabad Nagar Nigam (GNN) is the combined responsibility of a set of state level and city level institutions. These institutions and their key functions are listed in **Table 2-4** below segregated in terms of institutions functioning at the state level and city level.

**Table 2-4: Institutions and Their Functions**

<b>Institution</b>	<b>Key Function</b>
<i>I. State Level</i>	
UP Pollution Control Board (UPPCB)	Pollution control and monitoring especially river water quality and regulating industries
Public Works Department (PWD)	Construction of roads main roads and transport infrastructure including construction and maintenance of Government houses and Institutions
State Urban Development Authority (SUDA)	Apex policy-making and monitoring agency for the urban areas of the state. Responsible for providing overall guidance to the District Urban Development Authority (DUDA) for implementation of community development programs
Town and Country Planning Department (TCPD)	Preparation of Master Plans including infrastructure for the state (rural and urban)
UP Jal Nigam (JN)	Water supply and sewerage including design of water supply and sewerage networks. In the last two decades 'pollution control of rivers' has become one of their primary focus areas
UP Avas Vikas Parishad (AVP)	Nodal agency for housing in the state. Additionally involved in planning, designing, construction and development of almost all types of urban development projects in the state. Autonomous body generating its own resources through loans from financial institutions
<i>II. City Level</i>	
Ghaziabad Nagar Nigam (GNN)	Nodal agency for municipal service delivery and O&M. Its key functions include: <ul style="list-style-type: none"> <li>• Primary Collection of Solid Waste</li> <li>• Maintenance of Storm Water Drains</li> <li>• Maintenance of internal roads</li> <li>• Allotment of Trade Licenses under the Prevention of Food Adulteration Act</li> <li>• O&amp;M of internal sewers and community toilets</li> <li>• Management of ghats</li> <li>• Construction of Community Toilets</li> </ul>
Ghaziabad Development Authority (GDA)	Responsible for preparing spatial Master Plans for land use and development of new areas as well as provision of housing and necessary infrastructure
District Urban Development Authority (DUDA)	Implementing agency for plans prepared by SUDA. Responsible for the field work relating to community development – focusing on the development of slum communities, construction of community toilets, assistance in construction of individual household latrines, awareness generation etc.

86. In real sense, 74th Amendment is partially implemented in UP. GNN, Jal Nigam and various other government agencies are functioning in Ghaziabad and are playing different roles of a ULB under different capacities (and other cities of UP). This makes the municipal corporation inadequate resulting in limited power and weak municipal administration. These cities are dependent on the state legislature for decisions concerning their regulations and it is critical for the decision making process required at a local level. However, with regard to the issue of reforms, current status and future proposals the state government /ULB are in the process of initiating steps in this direction and the willingness of the governments to undertake the required reforms.

#### 4. *UP Public Works Department (UP PWD)*

87. UP State Public Works Department (UP PWD) is state owned department that has the mandate of developing and maintaining the road net work of the UP State comprising of different category of roads. As on 2008, 147,255 km length of road network is maintained by UP PWD. About Rs. 13,000 million is being spent annually for the upkeep of the road network and this exclude the plan expenditure spent on creation and replacement of road network asset. UP PWD is specialised technical agency with adequate expertise and suitable organizational network in executing road projects including projects funded by multi-lateral funding agencies. As the Executing Agency, UP PWD will implement the proposed subproject of flyover construction.

**Table 2-5: Road Network in Uttar Pradesh**

Sl. No	Classification of Roads	Length of Road (Km.)		
		Upto 31.3.2006	Upto 31.3.2007	Upto 31.3.2008
1	National Road	5,570.27	5,699.89	5,699.89
2	State Road	8,551.49	8,448.68	8,448.68
3	Main District Road	7,345.02	7,343.66	7,343.66
4	Other District Road	29,179.00	30,133.00	30,133.00
5	Village Road	82,459.00	87,768.00	95,630.00
	<b>Total</b>	<b>133,104.78</b>	<b>139,393.22</b>	<b>147,255.22</b>

**Source:** UP PWD

#### 5. *Private Sector Participation*

88. The current legal and political climate for the involvement of FI's or private parties for building urban infrastructure and or operating urban services in UP cities including Ghaziabad does not look very promising in its present form, as revealed from available CDP Reports. Many reforms, legislative changes and a greater commitment from the local body as well as the GoUP are required for attracting private investment and safeguarding investors' interest. However, three broad areas can be identified and explored for private investment for urban infrastructure, namely transportation services, parking (multilevel parking with commercial space) and solid waste management. Present subproject of flyover construction in Ghaziabad city under the traffic component may not be viable for implementation with private sector participation, as there is no scope for user fee charges.

#### 6. *User Charges*

89. Though UP PWD (the Executing Agency) may have powers to implement projects with levy of toll rates (user charges) in appropriate cases, the present subproject has not been considered for levy of user charges. This is mainly because of practical problems as levying toll on the heavily trafficked urban corridor will lead to many implementation issues.

7. *Financing Plan*

90. Total investment program will be shared between NCRPB and UP PWD through participating states in such a way that NCRPB share will be 75% and UP PWD will be the balance 25%. The terms of the loan will of
- 10 years tenure with two years moratorium and eight years repayment period
  - 9 percent interest rate
91. As per the existing arrangements, for UP state, the entire 75% loan component will be transferred to UP PWD with the guarantee support of states but without grant component from NCRPB and hence the total contribution by UP PWD will be 100% (25% own contribution + 75 % NCRPB loan). For 75% Loan component and 25% own equity component, UP PWD will be the responsibility. For implementation, UP PWD will be the Executing Agency for the Investment Program and responsible for overall strategic guidance, technical supervision and work quality and ensuring compliance with loan and PFR provisions and due diligence.

8. *Operation and Maintenance*

92. The present subproject of flyover construction will be the asset of UP PWD. Accordingly UP PWD will operate and maintain the improved flyover facilities in Ghaziabad with adequate fund provision and the required technical capability.

9. *Cost Recovery*

93. For the present subproject of flyover construction, levy of user charges is not visualized and hence cost recovery from this will not arise.

10. *Disbursement Procedures and Fund-Flow Mechanisms*

94. Loan disbursement is a key element in the project cycle. NCRPB expects that proposed disbursement procedures and fund-flow mechanisms will be suitable for the particular project. NCRPB procedures for withdrawal of loan proceeds are standardized to facilitate disbursements under most loans.
95. In the present case, it is assumed that the NCRPB Loan will be passed on, to the UP PWD with the UP State government guarantee. Thus, UP PWD will be the borrower from NCRPB with the UP State support. UP PWD will enter into supply and civil work contracts and issues and signs the payment checks through a suitable arrangement agreed with NCRPB. Created assets will be owned by UP PWD as it is constructed on UP PWD road. With regards to repayment of the interest and principle, UP PWD will pay to NCRPB and this will be governed by the NCRPB's terms and conditions agreeable in the disbursement procedures.

## 11. *Accounting Policy*

96. Long-, medium- and short-term planning should be the primary elements in financial management. Long- and medium-term plans are often referred to as corporate plans. Short-term financial plans are usually called budgets. NCRPB will seek assurance that satisfactory plans and budgets will be prepared in a regular, orderly and timely manner. Also, NCRPB will consider the acceptability of accounting policies, including standards of financial reporting and general accounting practices. In line with the existing market best practices followed for infrastructure financing, NCRPB expects these policies to be materially consistent with accepted national or international standards and practices.
97. Accordingly the potential agency UP State Public Works Department (UP PWD) that will be involved in the project loan was considered for review. As a state department of UP State, PWD accounting procedures are in accordance with the norms prescribed by the State Accounting Policy, monitored by Accountant General.
98. Based on the on-going lending practice, existing accounting policies and procedures followed by agencies in Uttar Pradesh including UP PWD is not the major hindrance for NCRPB for completing the project.

## 12. *Financial Regulations*

99. A sound accounting system is underpinned by financial regulations. These are usually designed to define the objectives of—and responsibilities within—the financial management system. In the interest of the funding agency, an acceptable financial regulations need to be in place.
100. For the present Flyover Subproject, the proposed project will be funded by National Capital Region Planning Board (NCRPB) through loan to UP PWD, UP PWD will be both Executing Agency (EA) and implementing agency (IA).
- Financial regulations for NCRPB, as part of the Ministry of Urban Development, Govt. of India, will be governed by the well defined regulatory system designed by Govt. of India.
  - UP PWD will be governed by the financial regulation provisions laid by Uttar Pradesh State Accountant General.
  - Both regulation procedures will cover all the required aspects to be considered under financial regulations review which are normally required under the ‘best practice’ followed in the market, though there may be variations in quality and quantity aspects in between them.

## C. Financial Analysis

### 1. Present Financial Condition

101. *UP State Public Works Department (UP PWD)*: Financial sustainability addresses the required as well as appropriate taxation and tariff reforms. As state government is the borrower for UP PWD, state government finances were reviewed. The past financials of UP State is given in **Table 2-6**. A snap shot of the past financial position of the state government from 2006-07 to 2008-09 reflects growth in both receipts as well as disbursements for Revenue Account. The compounded annual growth rate (CAGR) of revenue income from 2006-07 to 2008-09 is 18.99% and revenue expenditure is 15.91%. Thus, the rate of growth of revenue income is more than the growth of revenue expenditure, facilitating increase in revenue surplus from Rs. 4,900 crores in the year 2006-07 to Rs. 10,977 crores in the year 2008-09. The CAGR of capital receipts from 2007-08 to 2008-09 is -3.54%. The capital receipt growth is compared only for two years as there is an exceptional negative trend in the year 2007-08. The CAGR for capital expenditure for same two year period is 2.48%. It may be observed that the CAGR for capital expenditure is less than the capital receipt, which shows that the state is taking steps to reduce the capital account deficits.

**Table 2-6: Budget Flow - Uttar Pradesh State (2006-07 to 2008-09)**

Item	UTTAR PRADESH			
	2006-07	2007-08	2007-08	2008-09
	(Accounts)	(Budget Estimates)	(Revised Estimates)	(Budget Estimates)
1	2	3	4	5
REVENUE ACCOUNT				
TOTAL REVENUE RECEIPTS (I+II)	6,059,954	7,401,769	7,656,546	8,580,634
I. TAX REVENUE (A+B)	4,621,629	5,528,140	5,788,246	6,701,910
II. NON-TAX REVENUE (C+D)	1,438,324	1,873,630	1,868,302	1,878,725
TOTAL REVENUE EXPENDITURE (I+II+III)	5,569,890	6,787,138	6,755,073	7,482,867
I. DEVELOPMENTAL EXPENDITURE (A + B)	2,865,733	3,775,369	3,789,759	4,179,671
II. NON-DEVELOPMENTAL EXPENDITURE	2,429,932	2,649,128	2,602,674	2,940,451
III. Grants-in-Aid and Contributions	274,225	362,641	362,641	362,746
REVENUE DEFICIT	490,064	614,631	901,473	1,097,767
CAPITAL ACCOUNT				
TOTAL CAPITAL RECEIPTS (I to XIII)	61,797,413	31,990,709	21,475,245	22,234,419
I. External Debt #	–	–	–	–
II. Internal Debt (1 to 8)	1,133,202	2,457,095	908,983	2,392,998
III. Loans and Advances from the Centre (1 to 6)	37,948	51,265	50,265	50,265
IV. Recovery of Loans and Advances (1 to 12)	35,564	60,799	52,436	58,888
V. Inter-State Settlement	–	–	–	–
VI. Contingency Fund	64,479	1,000	994	1,000
VII. Small Savings, Provident Funds, etc. (1+2)	485,791	438,663	438,844	466,694
VIII. Reserve Funds (1 to 4)	307,380	360,917	360,932	472,360
IX. Deposits and Advances (1 to 4)	1,524,944	552,548	554,368	587,845

Item	UTTAR PRADESH			
	2006-07	2007-08	2007-08	2008-09
	(Accounts)	(Budget Estimates)	(Revised Estimates)	(Budget Estimates)
1	2	3	4	5
X. Suspense and Miscellaneous (1 to 4)	56,961,749	27,816,922	18,856,922	17,952,869
XI. Appropriation to Contingency Fund	–	–	–	–
XII. Miscellaneous Capital Receipts	–	–	–	–
XIII. Remittances	1,246,357	251,500	251,500	251,500
TOTAL CAPITAL DISBURSEMENTS (I to XII)	62,301,209	32,543,245	22,588,437	23,149,114
CAPITAL DEFICIT	-503,796	-552,536	-1,113,192	-914,695
Source: Reserve Bank of India				

102. The financial performance of the state government has also been analysed based on 12th Finance Commission, recommendations and compared with NCR states and the national average. The 12th Finance Commission, as part of restructuring of public finances, has recommended certain measures to improve the long term financial sustainability of Centre and state governments. The suggested indicators suggested by the 12th finance commission include the following:

- The Tax to GDP ratio should be improved to 17.6 % by 2009-10
- Debt to GDP ratio to be brought down to 75% by 2009-10
- Fiscal deficit to GDP should be less than 3%
- There should not be any revenue deficit by 2008-09
- Interest payment to revenue receipts to be brought down to 15% in case of state government

103. The above ratios were computed for all four NCR states namely Haryana, Delhi, Uttar Pradesh and Rajasthan and the comparison is shown in **Table 2-7**.

104. The analysis shows that Uttar Pradesh has yet to achieve most of the targets in 2008-09 except the fiscal deficit. Other parameters are mostly close to the targets. This is mainly due to the slowdown in the economy the deficit has increased in the year 2008-09. Even the Centre in its budget has relaxed the norms of gross fiscal deficit by 0.5% for 2008-09 and further 0.5% for 2009-10 to extend the fiscal stimulus to accelerate the growth in economy. Further to all other recommendations given by 12th finance commissions have been achieved by the state. The growth rate of gross state domestic product at nominal rates is about 7.16% and 6.46% in the year 2007-08 and 2008-09 respectively and generally less than to the national average. On the whole, Uttar Pradesh is striving to demonstrate better economic and fiscal management for the coming years.

**Table 2-7: Comparison of State Fiscal Indicators**

Parameter	Norms	Haryana		Delhi		Rajasthan		Uttar Pradesh		Consolidation of 27 states (w.r.t GDP)		National (w.r.t GDP)	
		FY08	FY09	FY08	FY09	FY08	FY09	FY08	FY09	FY08	FY09	FY08	FY09
Revenue deficit/GSDP	Zero by FY09	0.12%	2.04%	Surplus by 2.65%	Surplus by 3.69%	Surplus by 0.20%	Surplus by 0.89%	Surplus by 3.54%	Surplus by 4.05%	Surplus by 0.9%	Surplus by 0.1%	0.20%	4.40%
fiscal deficit/GSDP	<3%	3.46%	5.39%	5.12%	4.33%	Surplus by 0.15%	Surplus by 0.14%	0.83%	Surplus by 0.68%	1.50%	2.70%	4.20%	8.90%
Debt/GSDP	<75% by FY10	27.50%	28.61%	26.34%	23.24%	61.22%	63.43%	--	--	27.80%	27.10%	60.10%	58.90%
Interest payment/revenue receipts	<15%	11.88%	10.81%	16.49%	14.02%	19.65%	19.52%	18.31%	17.00%	2.10%	2.00%	24.60%	24.50%
Tax Income/GSDP	>17.6% by FY10	12.72%	14.41%	12.14%	11.47%	10.19%	10.96%	10.89%	11.93%	9.20%	9.40%	18.50%	18.10%
GSDP Growth at nominal rates		9.35%	8.02%	15.06%	12.48%	7.11%	5.48%	7.16%	6.46%	--	--	9.01%	6.70%

Source: Reserve Bank of India

## 2. Cost Recovery and Profitability

105. Where cost recovery and/or profitability are primary objectives, the financial consequences of policies, strategies, and practices relating to the entity's (IA) operations or trade should be set out, for instance: (i) policies on recovery of costs of its products and/or services, (ii) tariffs and charges levied, (iii) systems of establishing costs of products and/or services, (iv) inventory controls, and (v) possibility and extent of external regulation (e.g., by government).
106. *Existing Scenario.* UP PWD is responsible for the subproject including development, operation and maintenance. Due to practical problems and other reasons, levying of user charges is not visualized. Also UP PWD is being a state department, the subproject will be implemented through state budget support. As there is no revenue collection through user charges for the services they are providing, it is difficult to carryout sustainability analysis for UP PWD.

## 3. Cost Benefit Analysis

107. The projects for the purpose of financial analysis have been categorized as Service, Cost Recovery and Remunerative. The present project of flyover construction is a service category one and accordingly no feasibility analysis is carried out.
108. *Weighted Average Cost of Capital.* The financial viability of subprojects was assessed by comparing the subproject's financial internal rate of return (FIRR) with the financial opportunity cost of capital. As proxy for the financial opportunity cost of capital, the weighted average cost of capital (WACC) of the subprojects in real terms is used. The

FIRR is the discount rate that equalizes the present values of costs and revenues over the subproject life, while the WACC represents the cost incurred by the GNN with the support of the UP State government in raising the capital necessary to implement the subprojects. The WACC was estimated based on the central government's on lending policy.

**Table 2-8: Weighted Average Cost of Capital (%) - Uttar Pradesh & Haryana**

Item	NCRPB Lending /b	Govt. of India Grant /a	ULB Equity	WACC
Amount weighting	75%	0%	25%	
Nominal cost	9.00%	8.50%	10.00%	
Tax Rate	0	0	0	
Tax-Adjustable Nominal Cost	9.00%	8.50%	10.00%	
Inflation Rate	4.50%	4.50%	5.50%	
Real Cost	4.50%	4.00%	4.50%	
Minimum rate test [ 4.0%]d	4.00%	4.00%	4.50%	
Weighted Component of WACC	3.38%	0.00%	1.13%	4.50%
WACC = weighted average cost of capital, UP = Uttar Pradesh,				

a - Nominal cost of Government of India grant is estimated at 8.5%, based on the Government's long-term bond rate.

b - Indicative Lending Rates for Loans by NCRPB for urban infrastructure projects

c - Global Price escalation is based on - INTERNATIONAL COST ESCALATION FACTORS 2008–2012, World Bank, Table 1.1 The global outlook in summary. Global Development Finance 2008: The Role of International Banking, page 8.

d - Preparing and Appraising Investment Projects, Guidelines for the Financial Governance and Management of Investment Projects Financed by ADB (pp 26)

#### **D. Financial Analysis of Subprojects**

109. The projects for the purpose of financial analysis have been categorized as Service, Cost Recovery and Remunerative. The present project of flyover construction is a service category one and accordingly no feasibility analysis is carried out.
110. Also, as there is no commitment from UP PWD to introduce project specific user charges and / or tax, it is assumed that the proposed project will be supported from the existing budget support to UP PWD. As the project is to be funded from the budget source of revenue stream, subproject specific financial analysis was not carried out.

## APPENDICES

## Appendix 1-1

### Economic Cost

1. The economic costs of capital works and annual operation and maintenance are calculated from the financial cost estimates on the following basis:

- (i) Price contingencies are excluded but physical contingencies are included because they represent real consumption of resources;
- (ii) Import duties and taxes are excluded because they represent transfer payments. For this the shadow exchange rate factor worked out below was used;

**Table 1: Shadow exchange rate factor**

Details	2008-09	2007-08	2006-07	2005-06
	RE	Actual	Actual	Actual
National export (free on board) = Ex *	766,934	655,864	571,779	456,418
National import (CIF) = Im*	1,305,503	1,012,312	840,506	660,409
Customs Duties =Ct*	84,710	72,029	62,819	46,645
<b>AD-HOC STANDARD CONVERSION FACTOR</b> (CF = (Ex + Im)/( Ex + Im+Ct))	0.961	0.959	0.957	0.960
<b>Shadow exchange rate factor (Y):(Y=1/CF)</b>	1.04	1.04	1.04	1.04

\* - Source : Reserve Bank of India

RE - Revised Estimates

Note: Calculation Method based on the handout on Economic Analysis

- (iii) The existence of unemployment and under-employment for unskilled workers within the Indian economy means that the opportunity cost of unskilled labour can be considered to be lower than its wage rate – a conversion factor of 0.5 of the market wage rate for agriculture casual labour is used to estimate the shadow wage rate;

**Table 2: Shadow Wage-rate Factor (Y)**

Casual agriculture labor cost (Rs. per day)* ( L)	80
National minimum wage of unskilled worker (Rs. per day)** (M)	159
<b>Shadow Wage-rate Factor (Y); Y = L/M</b>	0.50

\*- Minimum Agricultural Labor wage fixed by many states incl. Tamil Nadu at Rs. 80 a day (for men working six hours) and Rs. 70 (for women working five hours)

\*\* Uttar Pradesh: Minimum Wages w.e.f. 01.04.2009 to 30.09.2009, Labor Department, Government of Uttar Pradesh.

- (iv) The market wage rate for skilled labour and the acquisition cost of land are considered to represent opportunity costs, as both factors are in demand;

- (v) All costs are valued using the domestic price numeraire, to enable an easier comparison with the information used to measure benefits (e.g. a significant component of benefit is the savings in resources, which would be used in the without project situation).

2. Estimated financial base cost without contingencies and allowances for the Ghaziabad Transport project (widening of 4.8 km length of NH 91 section in Ghaziabad City) is estimated Rs 513.486 million (excluding utility shifting, R&R and environment management expenditure) as shown in **Table 3**. Using the basis, the economic cost (resource cost) was estimated both for capital cost and operation & maintenance costs and presented in **Tables 4 to 5**. For estimating the economic cost from the financial cost, the following other assumptions were also considered:

#### A. Capital Cost

- Contingences and other allowances considered to the base cost (12%):
  - Design Supervision Consultancy (DSC)+ Third Party Inspection (TPI) - 3%,
  - Information, Education & Communication (IEC) activities 1%,
  - Incremental Administration (PIU) – 2%,
  - Physical contingency 3%,
  - Environmental mitigation 1%,
  - Social intervention 1%,
  - Institutional development and capacity building activities 1%
- Share of foreign cost to total project cost

#### **Share of foreign Cost (%)**

<b>Sector</b>	<b>Services</b>	<b>Materials</b>	<b>Total</b>
Water Supply	0.75%	2%	2.75%
Sewerage	0.75%	0%	0.75%
Drainage	0.75%	0%	0.75%
SWM	0.75%	0%	0.75%
Urban Transport	0.75%	0%	0.75%

- Tax and duties
  - Local cost – 12%
  - Foreign Cost – 4%
- Share of unskilled labor in Local Cost – 12%

#### B. Maintenance Cost

- Share of foreign cost to total project cost
  - Water supply – 0%
  - Sewer – 0%
  - Storm water Drainage – 0%
  - Solid Waste Management – 0%
  - Urban Transport – 0%
- Tax and duties

- Local cost – 12%
- Foreign Cost – 4%
- Share of unskilled labor in Local Cost – 15%

**Table 3:** Details of Base Financial Cost – Ghaziabad (Flyover Construction)

Item	2010-12 Rs. Million
Construction of a Flyover at Patel Chowk in Ghaziabad city	513.486
<b>Total</b>	<b>513.486</b>

Source: Consultant

**Table 4:** Details of Resource Cost Estimation – Capital Cost (Ghaziabad Transport Component - - Flyover construction)

Details	Financial Cost (Capital)		Resource Cost (Capital)	
		Rs Million	Rs Million	S P Factor
Base Cost		513.49		
Allowances	12%	61.62		
Foreign Cost				
- Base cost & allowance	1%	4.31	3.99	0.92
- Taxes & Duties	4%	0.17	-	-
		<b>4.48</b>	<b>3.99</b>	
Local Cost			-	
- Unskilled labour	12%	68.49	34.25	0.50
- Skilled labour & Others	88%	502.30	502.30	1.00
- Taxes & Duties	12%	66.44	-	-
		<b>637.23</b>	<b>536.54</b>	
<b>Total</b>		<b>641.71</b>	<b>540.53</b>	

Note:

1. Shadow Exchange Rate Factor was worked on the RBI data on national exports, imports and exports and using the Method based on the ADB Handout on Economic Analysis

**Table 5** Details of Resource Cost Estimation – O&M Cost (Ghaziabad Transport – Flyover Construction)

Details	Financial Cost		Resource Cost (Capital)		
	Rs Million (coll. & trans.)	Rs Million (Dist.& treat..)	Rs Million (coll. & trans.)	Rs Million (Dist.& treat..)	S P Factor
O&M Cost	6.42	-			
Foreign Cost	0%				
- Base cost	0.00	0.00	-	-	0.92
	-	-	-	-	
Local Cost	100%				
- Unskilled labour (25%)	1.60	0.00	0.80	-	0.50
- Skilled labour & Others (75%)	4.81	0.00	4.81	-	1.00
	<b>6.42</b>	-	<b>5.62</b>	-	
<b>Total</b>	<b>6.42</b>	-	<b>5.62</b>	-	

Source: Consultant

3. Considering 2009-10 as base year followed by three construction period and 20 years implementation period considered for the analysis, the cash outflow for economic cost was worked out and presented in **Table 6**.

**Table 6:** Details of Phasing and Expenditure Flow  
Economic Cost –Transport – Flyover Construction (Ghaziabad City, Uttar Pradesh)

*all values in Rs. Million*

Phasing	Year	Capital Cost	O & M Cost
	2009-10		
40.00%	2010-11	216.21	-
60.00%	2011-12	324.32	
0.00%	2012-13	-	5.62
	2013-14	-	5.62
	2014-15	-	5.62
	2015-16	-	5.62
	2016-17	-	5.62
	2017-18	-	5.62
	2018-19	-	5.62
	2019-20	-	5.62
	2020-21	-	5.62

	2021-22	-	5.62
	2022-23	-	5.62
	2023-24	-	5.62
	2024-25	-	5.62
	2025-26	-	5.62
	2026-27	-	5.62
	2027-28	-	5.62
	2028-29	-	5.62
	2029-30	-	5.62
	2030-31	-	5.62
	2031-32	-	5.62
	2032-33	-	5.62

Source: Consultant

## Appendix 1-2

### 1. Valuing Economic Benefits – Flyover Construction Project under Transport Component

1. The benefits arising from improved urban transport infrastructure results in improved service level delivery in urban transport travel requirements in the Project city / town. Benefits are achieved through more effective connectivity, better speed, less traffic related issues like congestion, accidents etc.
2. Project beneficiaries will be those travelers for whom accessibility to economic and social activities will be improved through better road conditions and traffic flows brought about by the sub-projects. This improvement is achieved by reducing the effort or inconvenience of travel between the origin of the traveler and the destination offering these activities.
3. The subproject in Ghaziabad the Old NH 24, is the spinal cord of Ghaziabad city transport network and at present experiencing tremendous traffic congestion. Most of the roads are connected to this road and provide main access to Delhi, NOIDA, Loni, Meerut and Hapur and thereby has resulted in many junctions. As a result significant traffic merges, diverges and crosses the road at frequent intervals. Patel Chowk is a four road junction where the roads from Loni and Mohan Nagar join the Old NH 24 Road. At present the movement of traffic at the junction is controlled by signals supported by manual operation resulting inordinate delay for the vehicular traffic The sub proposal is to construct a grade separator so as to allow the heavy through traffic with free flow and the remaining turning traffic at grade with less waiting time.
4. Subproject proposals will benefit the vehicular traffic on this road with less traffic congestion, less traffic conflict at junctions, increase the travel speed resulting in savings in vehicle operating cost (VOC) and travel time, accommodate the fast growing vehicular traffic, uninterrupted movement for the major through traffic through flyover, pedestrian safety including reduced road crossing time etc.
5. The economic benefits considered in the present analysis for the grade separator (flyover) subproject in transport component in Ghaziabad city include:
  - (i) Value of Passenger Travel Time Savings
6. Value of Passenger Travel Time Savings: Construction of flyover will result in reduction of the existing junction delay for all the vehicles and subsequently savings in travel time for the road users crossing this junction.
7. In the absence of detailed traffic modeling, assumptions were made regarding impact of improvements on road network performance, in terms of likely Program benefit including savings in travel time and related cost as well savings in vehicle operating cost (VOC). These assumptions and methodology followed include:

(i) Proposed improvement to selected Program roads in terms of surface quality will help reduce the vehicle operating cost for the vehicular traffic plying on these roads. Based on the reconnaissance survey made during field studies and proposed design parameters, the change in surface quality and the related VOC savings are estimated, considering the Indian Roads Congress (IRC) guidelines.

(ii) Average travel speed in peak and off-peak conditions is assumed to increase from the existing levels (this increase in speed/service level shall be achieved due to Project components by widening, strengthening, and segregation of pedestrian traffic by providing footpaths, etc, if any). Even though increased speed levels are expected more, only 20 percent is assumed on conservative side. The improvement in travel speed is used to estimate the savings in travel time and further costing the time saved.

(iii) Similarly, provision of flyovers and junction improvements will eliminate the existing frequent delay at junctions that will result in increase in travel speed and the resultant time savings to the commuters.

8. Travel time savings for the passengers held up at the junction, in terms of hours and its monetary value using the time unit rates for different vehicle users using the proposed flyover at Patel Chowk in Ghaziabad City, was estimated from the following data collected at field as well guidelines stipulated by Indian Roads Congress (IRC), and relevant study reports:

- Average vehicle occupancy – the number of passengers by vehicle type, plus paid driver and crew where applicable;
- Traffic category – traffic using the proposed flyover and the remaining traffic using the improved at-grade facility;
- Traffic composition – the percentage of each vehicle type in the traffic stream;
- Passenger composition – the percentage of each socio-economic category using each vehicle type and the percentage of passengers who are in the workforce;
- Savings in travel time – estimated based on the existing delay and the proposed delay at the proposed project site;
- Unit cost of travel time for different vehicle users – Based on a relevant study report, unit time cost at 2009 price level.

9. Road user cost unit rates including VOC and travel time for different vehicles used for the analysis is given in **Table 1**. Vehicle occupancy details and estimated vehicle hours time costs for different using vehicle occupancy and time cost unit rates are presented in **Tables 2 and 3**.

10. Considering the project design, the average daily junction traffic was segregated into:

- Traffic using the proposed flyover; and
- Traffic using the at-grade development below flyover

This was mainly to account the different level of project benefit in terms of time savings. Thus segregated base year peak hour traffic is presented in **Table 4**. Finally the estimated project benefit of travel savings during the analysis period is given in **Table 5**.

**Table 1:** Details of Road User Cost adopted for the Study

Vehicle Category	VOC (Rs. / Vehicle Km)		Travel Time (Rs. / Hour)	
	2008 <sup>1</sup>	2009 <sup>3</sup>	2008 <sup>2</sup>	2009 <sup>3</sup>
Car - New Technology (Maruti 800)	4.07	4.27	47.80	50.19
Bus	16.37	17.19	22.76	23.90
TW	1.40	1.47	31.87	33.46
Auto rickshaw	3.98	4.18	27.31	28.68
Share-Auto	4.49	4.71	27.31	28.68
Taxi	4.70	4.94	47.80	50.19
2-Axle Truck	14.77	15.51	13.54	14.22
LCV	10.96	11.51	9.65	10.13
Goods Tempo	4.61	4.84	4.83	5.07
Goods Auto	3.59	3.77	2.41	2.53

Source: Analysis

1. Approach for Economic and Operation Assessment for Identified Urban Roads and Transportation Sub-projects, Working Paper No. : WP-05, Comprehensive Transportation Study for Chennai Metropolitan Area, May 2008

2. Estimated using the RUCS Study, 2001 results (Rs 25,000/Tonne) for the year 2001 and escalated to 2008 with 5% annual growth.

3. Escalated to 2009 with 5% annual growth.

**Table 2:** Vehicle Occupancy (No. of passengers/vehicle)

<b>Bus</b>	
Bus	40
Minibus	15
<b>Private &amp; IPT</b>	
Car/Jeep/Van	3.5
Two Wheelers	1.5
Autorickshaws	2
<b>Goods Vehicles (crew)</b>	
Trucks	2
MAV	2
LCV	1

Source: Indian Roads Congress (IRC)

**Table 3 :** Value of Travel Time Savings

<b>Bus</b>	Rs./Vehicle Hour in 2009 prices
Bus	955.92
Minibus	430.13
<b>Private &amp; IPT</b>	

Car/Jeep/Van	175.67
Two Wheelers	50.20
Autorickshaws	57.35
<b>Goods Vehicles</b>	
Trucks	14.22
MAV	37.33
LCV	10.13

Source: Analysis

**Table 4:** Distribution of Peak Hour Turning Traffic - Patel Chowk in Ghaziabad (2009) – No. Of vehicles

Vehicle Category	Flyover Traffic			Non-Flyover Traffic	Total Traffic
	From Ghaziabad	To Ghaziabad	Total		
Standard Bus	17	10	27	85	112
Mini Bus	12	4	16	194	210
Van	123	24	147	63	210
Shared Auto	-	-	-	-	
Cars	290	46	336	421	757
Two Wheeler	233	47	280	464	744
Auto Rickshaw	150	14	164	215	379
Trucks	53	8	61	126	187
MAV	13	-	13	37	50
LCV	1	6	7	11	18
Tractors	3	4	7	23	30
Cycles	16	18	34	109	143
Carts	2	-	2	-	2
Cycle Rickshaw	20	23	43	111	154
<b>Total Vehicles</b>	<b>933</b>	<b>204</b>	<b>1,137</b>	<b>1,859</b>	<b>2,996</b>

Source: Consultants Survey, 2009

**Table 5:** Estimated Annual Travel Time Savings due to Construction of Flyover (Rs. In Million)

Year	Bus		Private & IPT			Goods Vehicles			Total Fast Vehicles
	Bus	Minibus	Car/Jeep/Van	Two Wheelers	Auto rickshaws	Trucks	MAV	LCV	
2012	112.89	30.97	18.94	1.64	1.32	0.15	0.10	0.01	166.01
2013	120.23	32.98	20.17	1.74	1.41	0.16	0.11	0.01	176.80
2014	128.04	35.13	21.48	1.86	1.50	0.17	0.11	0.01	188.29
2015	136.36	37.41	22.87	1.98	1.60	0.18	0.12	0.01	200.53
2016	145.23	39.84	24.36	2.11	1.70	0.19	0.13	0.01	213.57
2017	154.67	42.43	25.94	2.24	1.81	0.21	0.14	0.01	227.45
2018	164.72	45.19	27.63	2.39	1.93	0.22	0.15	0.01	242.23
2019	175.43	48.13	29.43	2.54	2.06	0.23	0.16	0.01	257.98

2020	186.83	51.26	31.34	2.71	2.19	0.25	0.17	0.01	274.75
2021	198.98	54.59	33.38	2.89	2.33	0.26	0.18	0.01	292.61
2022	211.91	58.14	35.54	3.07	2.48	0.28	0.19	0.01	311.63
2023	225.68	61.92	37.85	3.27	2.64	0.30	0.20	0.01	331.88
2024	240.35	65.94	40.32	3.49	2.82	0.32	0.21	0.01	353.45
2025	254.77	69.90	42.73	3.70	2.99	0.34	0.23	0.01	374.66
2026	270.06	74.09	45.30	3.92	3.16	0.36	0.24	0.01	397.14
2027	286.26	78.54	48.02	4.15	3.35	0.38	0.25	0.01	420.97
2028	303.44	83.25	50.90	4.40	3.56	0.40	0.27	0.01	446.23
2029	321.65	88.24	53.95	4.67	3.77	0.43	0.28	0.02	473.00
2030	340.94	93.54	57.19	4.95	4.00	0.45	0.30	0.02	501.38
2031	361.40	99.15	60.62	5.24	4.24	0.48	0.32	0.02	531.46
2032	383.08	105.10	64.26	5.56	4.49	0.51	0.34	0.02	563.35

Source: Analysis

11. Exclusions. The following benefits of transport component for flyover construction have not been quantified for want of adequate data and quantification techniques. These qualitative benefits along with the quantifiable benefits discusses above, the proposed flyover construction will tend to provide better living condition in the project town.

- (i) improvement in the environment of the project site;
- (ii) savings in VOC due to the reduction in traffic congestion at the junction;
- (iii) savings in traffic accidents cost due to better traffic management; and
- (iv) Effects on tourism and tourist-related businesses.

**Appendix 1-3**  
**Economic Cost-Benefit Analysis (Construction of Flyover)**

Year Ending March	Economic Cost			Economic Benefits		Net Cash Flow
	Roads - Capital Cost	Roads - O & M Cost	Total Cost	Savings in Travel Time Cost	Total Benefits	
2009-10	-	-	-	-	-	-
2010-11	216.21	-	216.21	-	-	(216.21)
2011-12	324.32	-	324.32	-	-	(324.32)
2012-13	-	5.62	5.62	166.01	166.01	160.40
2013-14	-	5.62	5.62	176.80	176.80	171.19
2014-15	-	5.62	5.62	188.29	188.29	182.68
2015-16	-	5.62	5.62	200.53	200.53	194.92
2016-17	-	5.62	5.62	213.57	213.57	207.95
2017-18	-	5.62	5.62	227.45	227.45	221.83
2018-19	-	5.62	5.62	242.23	242.23	236.62
2019-20	-	5.62	5.62	257.98	257.98	252.36
2020-21	-	5.62	5.62	274.75	274.75	269.13
2021-22	-	5.62	5.62	292.61	292.61	286.99
2022-23	-	5.62	5.62	311.63	311.63	306.01
2023-24	-	5.62	5.62	331.88	331.88	326.27
2024-25	-	5.62	5.62	353.45	353.45	347.84
2025-26	-	5.62	5.62	374.66	374.66	369.05
2026-27	-	5.62	5.62	397.14	397.14	391.53
2027-28	-	5.62	5.62	420.97	420.97	415.35
2028-29	-	5.62	5.62	446.23	446.23	440.61
2029-30	-	5.62	5.62	473.00	473.00	467.39
2030-31	-	5.62	5.62	501.38	501.38	495.77
2031-32	-	5.62	5.62	531.46	531.46	525.85
<b>Total</b>	<b>540.53</b>	<b>112.33</b>	<b>652.85</b>	<b>6,382.04</b>	<b>6,382.04</b>	<b>5,729.19</b>
<b>NPV at 12% Discount Rate (Rs. Million)</b>	<b>403.21</b>	<b>29.86</b>	<b>433.06</b>	<b>1,357.78</b>	<b>1,357.78</b>	<b>924.71</b>
<b>EIRR</b>						<b>32.58%</b>

Appendix I-3 : Sensitivity Analysis Construction of Flyover Ghaziabad

(Rs. Million)

Year	Base Case				20% increase in Capital Cost Scenario				20% increase in O&M Cost Scenario				20% decrease in Project Benefits Scenario				One Year delay in implementation				Combined effect			
	Total Economic Capital Cost	Total Economic O&M Cost	Total Economic Benefits	Net Economic Benefits	Total Economic Capital Cost	Total Economic O&M Cost	Total Economic Benefits	Net Economic Benefits	Total Economic Capital Cost	Total Economic O&M Cost	Total Economic Benefits	Net Economic Benefits	Total Economic Capital Cost	Total Economic O&M Cost	Total Economic Benefits	Net Economic Benefits	Total Economic Capital Cost	Total Economic O&M Cost	Total Economic Benefits	Net Economic Benefits	Total Economic Capital Cost	Total Economic O&M Cost	Total Economic Benefits	Net Economic Benefits
2009-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2010-11	216.21	-	-	(216.21)	259.45	-	-	(259.45)	216.21	-	-	(216.21)	216.21	-	-	(216.21)	-	-	-	-	-	-	-	-
2011-12	324.32	-	-	(324.32)	389.18	-	-	(389.18)	324.32	-	-	(324.32)	324.32	-	-	(324.32)	216.21	-	-	(216.21)	259.45	-	-	(259.45)
2012-13	-	5.62	166.01	160.40	-	5.62	166.01	160.40	-	6.74	166.01	159.27	-	5.62	132.81	127.19	324.32	-	-	(324.32)	389.18	-	-	(389.18)
2013-14	-	5.62	176.80	171.19	-	5.62	176.80	171.19	-	6.74	176.80	170.06	-	5.62	141.44	135.83	-	5.62	166.01	160.40	-	6.74	132.81	126.07
2014-15	-	5.62	188.29	182.68	-	5.62	188.29	182.68	-	6.74	188.29	181.55	-	5.62	150.64	145.02	-	5.62	176.80	171.19	-	6.74	141.44	134.70
2015-16	-	5.62	200.53	194.92	-	5.62	200.53	194.92	-	6.74	200.53	193.79	-	5.62	160.43	154.81	-	5.62	188.29	182.68	-	6.74	150.64	143.90
2016-17	-	5.62	213.57	207.95	-	5.62	213.57	207.95	-	6.74	213.57	206.83	-	5.62	170.85	165.24	-	5.62	200.53	194.92	-	6.74	160.43	153.69
2017-18	-	5.62	227.45	221.83	-	5.62	227.45	221.83	-	6.74	227.45	220.71	-	5.62	181.96	176.34	-	5.62	213.57	207.95	-	6.74	170.85	164.12
2018-19	-	5.62	242.23	236.62	-	5.62	242.23	236.62	-	6.74	242.23	235.49	-	5.62	193.79	188.17	-	5.62	227.45	221.83	-	6.74	181.96	175.22
2019-20	-	5.62	257.98	252.36	-	5.62	257.98	252.36	-	6.74	257.98	251.24	-	5.62	206.38	200.77	-	5.62	242.23	236.62	-	6.74	193.79	187.05
2020-21	-	5.62	274.75	269.13	-	5.62	274.75	269.13	-	6.74	274.75	268.01	-	5.62	219.80	214.18	-	5.62	257.98	252.36	-	6.74	206.38	199.64
2021-22	-	5.62	292.61	286.99	-	5.62	292.61	286.99	-	6.74	292.61	285.87	-	5.62	234.09	228.47	-	5.62	274.75	269.13	-	6.74	219.80	213.06
2022-23	-	5.62	311.63	306.01	-	5.62	311.63	306.01	-	6.74	311.63	304.89	-	5.62	249.30	243.68	-	5.62	292.61	286.99	-	6.74	234.09	227.35
2023-24	-	5.62	331.88	326.27	-	5.62	331.88	326.27	-	6.74	331.88	325.14	-	5.62	265.51	259.89	-	5.62	311.63	306.01	-	6.74	249.30	242.56
2024-25	-	5.62	353.45	347.84	-	5.62	353.45	347.84	-	6.74	353.45	346.71	-	5.62	282.76	277.15	-	5.62	331.88	326.27	-	6.74	265.51	258.77
2025-26	-	5.62	374.66	369.05	-	5.62	374.66	369.05	-	6.74	374.66	367.92	-	5.62	299.73	294.11	-	5.62	353.45	347.84	-	6.74	282.76	276.02
2026-27	-	5.62	397.14	391.53	-	5.62	397.14	391.53	-	6.74	397.14	390.40	-	5.62	317.71	312.10	-	5.62	374.66	369.05	-	6.74	299.73	292.99
2027-28	-	5.62	420.97	415.35	-	5.62	420.97	415.35	-	6.74	420.97	414.23	-	5.62	336.78	331.16	-	5.62	397.14	391.53	-	6.74	317.71	310.97
2028-29	-	5.62	446.23	440.61	-	5.62	446.23	440.61	-	6.74	446.23	439.49	-	5.62	356.98	351.37	-	5.62	420.97	415.35	-	6.74	336.78	330.04
2029-30	-	5.62	473.00	467.39	-	5.62	473.00	467.39	-	6.74	473.00	466.26	-	5.62	378.40	372.79	-	5.62	446.23	440.61	-	6.74	356.98	350.24
2030-31	-	5.62	501.38	495.77	-	5.62	501.38	495.77	-	6.74	501.38	494.64	-	5.62	401.11	395.49	-	5.62	473.00	467.39	-	6.74	378.40	371.66
2031-32	-	5.62	531.46	525.85	-	5.62	531.46	525.85	-	6.74	531.46	524.73	-	5.62	425.17	419.56	-	5.62	501.38	495.77	-	6.74	401.11	394.37
<b>Total</b>	<b>540.53</b>	<b>112.33</b>	<b>6382.04</b>	<b>5729.19</b>	<b>648.63</b>	<b>112.33</b>	<b>6382.04</b>	<b>5621.08</b>	<b>540.53</b>	<b>134.79</b>	<b>6382.04</b>	<b>5706.72</b>	<b>540.53</b>	<b>112.33</b>	<b>5105.63</b>	<b>4452.78</b>	<b>540.53</b>	<b>106.71</b>	<b>5850.58</b>	<b>5203.34</b>	<b>648.63</b>	<b>128.05</b>	<b>4680.46</b>	<b>3903.78</b>
<b>NPV @12% (Rs.)</b>	<b>451.59</b>	<b>33.44</b>	<b>1520.71</b>	<b>1035.68</b>	<b>541.91</b>	<b>33.44</b>	<b>1520.71</b>	<b>945.36</b>	<b>451.59</b>	<b>40.13</b>	<b>1520.71</b>	<b>1028.99</b>	<b>451.59</b>	<b>33.44</b>	<b>1216.57</b>	<b>731.54</b>	<b>403.21</b>	<b>29.44</b>	<b>1318.56</b>	<b>885.91</b>	<b>483.85</b>	<b>35.33</b>	<b>1054.85</b>	<b>535.67</b>
<b>EIRR (%)</b>				<b>32.58%</b>				<b>28.32%</b>				<b>32.44%</b>				<b>27.29%</b>				<b>32.50%</b>				<b>23.38%</b>

Source: Consultant

Sensitivity Analysis - Construction of Flyover

**THE CONSTITUTION (SEVENTY-FOURTH AMENDMENT) ACT, 1992**

**AN ACT**

Further to amend the Constitution of India

Be it enacted by Parliament in the Forty-third Year of the Republic of India as follows:-

1. (1) This Act may be called the Constitution (Seventy-fourth Amendment) Act, 1992
- (2) It shall come into force on such date as the Central Government may, by notification in the Official Gazette, appoint
2. After Part IX of the Constitution, the following Part shall be inserted, namely:-

**I. 'PART IXA'**

**THE MUNICIPALITIES**

**A.243P. In this Part, unless the context otherwise requires,-**

- (a) "Committee" means a Committee constituted under article 243S;
- (b) "district" means a district of a State;
- (c) "Metropolitan area" means an area having a population of ten lakhs or more comprised in one or more districts and consisting of two or more Municipalities or Panchayats or other contiguous areas, specified by the Governor by public notification to be a Metropolitan area for the purposes of this Part;
- (d) "Municipal area" means the territorial area of a Municipality as is notified by the Governor;
- (e) "Municipality" means an institution of self-government constituted under article 243Q;
- (f) "Panchayat" means a Panchayat constituted under article 243B;
- (a) "population" means the population as ascertained at the last preceding census of which the

relevant figures have been published.

243Q. (1) There shall be constituted in every State,-

(a) a Nagar Panchayat (by whatever name called) for a transitional area, that is to say, an area in transition from a rural area to an urban area;

(b) a Municipal Council for a smaller urban area; and

(c) a Municipal Corporation for a larger urban area,

in accordance with the provisions of this Part:

Provided that a Municipality under this clause may not be constituted in such urban area or part thereof as the Governor may, having regard to the size of the area and the municipal services being provided or proposed to be provided by an industrial establishment in that area and such other factors as he may deem fit, by public notification, specify to be an industrial township.

(2) In this article, “a transitional area” “a smaller urban area” or “a larger urban area” means such area as the Governor may, having regard to the population of the area, the density of the population therein the revenue generated for local administration, the percentage of employment in non-agricultural activities, the economic importance or such other factors as he may deem fit, specify by public notification for the purposes of this Part.

243R. (1) Save as provided in clause (2), all the seats in a Municipality shall be filled by persons chosen by direct election from the territorial constituencies in the Municipal area and for this purpose each Municipal area shall be divided into territorial constituencies to be known as wards.

(2) The Legislature of a State may, by law, provide,-

(a) for the representation in a Municipality of –

(i) persons having special knowledge or experience in Municipal administration;

(ii) the members of the House of the People and the members of the Legislative Assembly of the State representing constituencies which comprise wholly or partly the Municipal area;

(iii) the members of the Council of States and the members of the Legislative Council of the State registered as electors within the Municipal area;

(iv) the Chairpersons of the Committees constituted under clause (5) of article 243S.

Provided that the persons referred to in paragraph (i) shall not have the right to vote in the meetings of the Municipality;

(b) the manner of election of the Chairperson of a Municipality.

243S. (1) There shall be constituted Wards Committees, consisting of one or more wards, within the territorial area of a Municipality having a population of three lakhs or more.

(2) The Legislature of a State may, by law, make provision with respect to-

(a) the composition and the territorial area of a Wards Committee;

(b) the manner in which the seats in a Wards Committee shall be filled

(3) A member of a Municipality representing a ward within the territorial area of the Wards Committee shall be a member of that Committee.

(4) Where a Wards Committee consists of –

(a) one ward, the member representing that ward in the Municipality; or

(b) two or more wards, one of the members representing such wards in the Municipality elected by the Members of the Wards Committee,

shall be the Chairperson of that Committee.

(5) Nothing in this article shall be deemed to prevent the Legislature of a State from making any provision for the constitution of Committees in addition to the Wards Committees.

243T. (1) Seats shall be reserved for the Scheduled Castes and the Scheduled Tribes in every Municipality and the number of seats so reserved shall bear, as nearly as may be, the same proportion to the total number of seats to be filled by direct election in that Municipality as the population of the Scheduled Castes in the Municipal area or of the Scheduled Tribes in the Municipal area bears to the total population of that area and such seats may be allotted by rotation to different constituencies in a Municipality.

(2) Not less than one-third of the total number of seats reserved under clause (1) shall be reserved for women belonging to the Scheduled Castes or, as the case may be, the Scheduled Tribes.

(3) Not less than one-third (including the number of seats reserved for women belonging to the Scheduled Castes and the Scheduled Tribes) of the total number of seats to be filled by direct election in every Municipality shall be reserved for women and such seats may be allotted by rotation to different constituencies in a Municipality.

(4) The office of Chairpersons in the Municipalities shall be reserved for the Scheduled Castes, the Scheduled Tribes and women in such manner as the Legislature of a State may, by law, provide.

(5) The reservation of seats under clauses (1) and (2) and the reservation of office of

Chairpersons (other than the reservation for women) under clause (4) shall cease to have effect on the expiration of the period specified in article 334.

(6) Nothing in this Part shall prevent the Legislature of a State from making any provision for reservation of seats in any Municipality or office of Chairpersons in the Municipalities in favour of backward class of citizens.

243U. (1) Every Municipality, unless sooner dissolved under any law for the time being in force, shall continue for five years from the date appointed for its first meeting and no longer: Provided that a Municipality shall be given a reasonable opportunity of being heard before its dissolution.

(2) No amendment of any law for the time being in force shall have the effect of causing dissolution of a Municipality at any level, which is functioning immediately before such amendment, till the expiration of its duration specified in clause (1).

(3) An election to constitute a Municipality shall be completed,-

(a) before the expiry of its duration specified in clause (1);

(b) before the expiration of a period of six months from the date of its dissolution:

Provided that where the remainder of the period for which the dissolved Municipality would have continued is less than six months, it shall not be necessary to hold any election under this clause for constituting the Municipality for such period.

(4) A Municipality constituted upon the dissolution of Municipality before the expiration of its duration shall continue only for the remainder of the period for which the dissolved Municipality would have continued under clause (1) had it not been so dissolved.

243V. (1) A person shall be disqualified for being chosen as, and for being, a member of a Municipality-

(a) if he is so disqualified by or under any law for the time being in force for the purposes of elections to the Legislature of the State concerned:

Provided that no person shall be disqualified on the ground that he is less than twenty-five years of age, if he has attained the age of twenty-one years;

(b) if he is so disqualified by or under any law made by the Legislature of the State.

(2) If any question arises as to whether a member of a Municipality has become subject to any of the disqualifications mentioned in clause (1), the question shall be referred for the decision of such authority and in such manner as the Legislature of a State may, by law, provide.

243W. Subject to the provisions of this Constitution, the Legislature of State may, by law, endow-

(a) The Municipalities with such powers and authority as may be necessary to enable them to function as institutions of self-government and such law may contain provision for the devolution of powers and responsibilities upon Municipalities, subject to such conditions as may be specified therein, with respect to-

(i) the preparation of plans for economic development and social justice;  
(ii) the performance of functions and the implementation of schemes as may be entrusted to them including those in relation to the matter listed in the Twelfth Schedule;

(b) the committees with such powers and authority as may be necessary to enable them to carry out the responsibilities conferred upon them including those in relation to the matters listed in the Twelfth Schedule.

**B.243X. The Legislature of a State may, by law-**

(a) authorise a Municipality to levy, collect and appropriate such taxes, duties, tolls and fees in accordance with such procedure and subject to such limits;

(b) assign to a Municipality such taxes, duties, tolls and fees levied and collected by the State Government for such purposes and subject to such conditions and limits;

(c) provide for making such grants-in-aid to the Municipalities from the Consolidated Fund of the State; and

(d) provide for constitution of such funds for crediting all moneys received, respectively, by or on behalf of the Municipalities and also for the withdrawal of such moneys therefrom,

as may be specified in the law.

243Y. (1) The Finance Commission constituted under article 243-I shall also review the

financial position of the Municipalities and make recommendations to the Governor as to-

- (a) the principles which should govern-
  - (i) the distribution between the State and the Municipalities of the net proceeds of the taxes, duties, tolls and fees leviable by the State, which may be divided between them under this Part and the allocation between the Municipalities at all levels of their respective shares of such proceeds;
  - (ii) the determination of the taxes duties, tolls and fees which may be assigned to, or appropriated by, the Municipalities;
  - (iii) the grants-in-aid to the Municipalities from the Consolidated Fund of the State;
- (b) the measures needed to improve the financial position of the Municipalities;
- (c) any other matter referred to the Finance Commission by the Governor in the interests of sound finance of the Municipalities.

(2) The Governor shall cause every recommendation made by the Commission under this article together with an explanatory memorandum as to the action taken thereon to be laid before the Legislature of the State.

243Z. The Legislature of a State may, by law, make provisions with respect to the maintenance of accounts by the Municipalities and the audit of such accounts.

243ZA. (1) The superintendence, direction and control of the preparation of electoral rolls for, and the conduct of, all elections to the Municipalities shall be vested in the State Election Commission referred to in article 243K.

(2) Subject to the provisions of this Constitution, the Legislature of a State may, by law, make provision with respect to all matters relating to or in connection with, elections to the Municipalities.

243ZB. The provisions of this Part shall apply to the Union territories and shall, in their application to a Union territory, have effect as if the references to the Governor of a State were references to the Administrator of the Union Territory appointed under article 239 and references to the Legislature or the Legislative Assembly of a State were references in relation to a Union Territory having a Legislative Assembly, to that Legislative Assembly.

Provided that the President may, by public notification, direct that the provisions of this Part shall apply to any Union territory or part thereof subject to such exceptions and modifications as he may specify in the notification.

243ZC. (1) Nothing in this Part shall apply to the Scheduled Areas referred to in clause (1), and the tribal areas referred to in clause (2), of article 244.

(2) Nothing in this Part shall be construed to affect the functions and powers of the Darjeeling Gorkha Hill Council constituted under any law for the time being in force for the hill areas of the distinct of Darjeeling in the State of West Bengal.

(3) Notwithstanding anything in this Constitution, Parliament may, by law, extend the provisions of this Part to the Scheduled Areas and the tribal areas referred to in clause (1) subject to such exceptions and modifications as may be specified in such law, and no such law shall be deemed to be an amendment of this Constitution for the purposes of article 368.

243ZD. (1) There shall be constituted in every State at the district level a District Planning Committee to consolidate the plans prepared by the Panchayats and the Municipalities in the district and to prepare a draft development plan for the district as a whole.

(2) The Legislature of a State may by law, make provision with respect to-

(a) the composition of the District Planning Committees;

(b) the manner in which the seats in such Committees shall be filled:

Provided that not less than four-fifths of the total number of members of such Committee shall be elected by, and from amongst, the elected members of the Panchayat at the diacritic level and of the Municipalities in the district in proportion to the ratio between the population of the rural areas and of the urban areas in the district;

(c) the functions relating to district planning which may be assigned to such Committees;

(d) the manner in which the Chairpersons of such Committee shall be chosen.

(3) Every District Planning Committee shall, in preparing the draft development plan, -

(a) have regard to -

(i) matters of common interest between the Panchayats and the Municipalities including spatial planning, sharing of water and other physical and natural resources, the integrated development of infrastructure and environmental conservation;

- (ii) the extent and type of available resources whether financial or otherwise;
- (b) consult such institutions and organisations as the Governor may, by order, specify.

(4) The Chairpersons of every District Planning Committee shall forward the development plan, as recommended by such Committee, to the Government of the State.

243ZE.(1) There shall be constituted in every metropolitan area a Metropolitan Planning Committee to prepare a draft development plan for the Metropolitan area as a whole.

(2) The legislature of a State may, by law, make provision with respect to –

(a) the composition of the Metropolitan Planning Committees;

(b) the manner in which the seats in such Committees shall be filled:

Provided that not less than two-thirds of the members of such Committee shall be elected by, and from amongst the elected members of the municipalities and chairpersons of the Panchayats in the Metropolitan area in proportion to the ratio between the population of the Municipalities and of the Panchayats in that area;

(c) the representation in such Committees of the Government of India and the Government of the State and of such organisation and institutions as may be deemed necessary for carrying out of functions assigned to such Committees;

(d) the functions relating to planning and coordination for the metropolitan area which may be assigned to such Committees;

(e) the manner in which the Chairpersons of such Committees shall be chosen.

(3) Every Metropolitan Planning Committee shall, in preparing the draft development plan -

(a) have regard to –

(i) the plans prepared by the Municipalities and the Panchayats in the Metropolitan area;

(ii) matter of common interest between the Municipalities and the Panchayats, including coordinated spatial planning of the area, sharing of water and other physical and natural resources, the integrated development of infrastructure and environmental conservation;

(iii) the overall objectives and priorities set by the Government of India and the Government of the State;

(iv) the extent and nature of investments likely to be made in Metropolitan area by agencies of the Government of India and of the Government of the State and other available resources whether financial or otherwise;

(b) consult such institutions and organizations as the Governor may, by order, specify.

(4) The Chairperson of every Metropolitan Planning Committee shall forward the development plan, as recommended by such Committee, to the Government of the State.

243ZF. Notwithstanding anything in this Part, any provision of any law relating to Municipalities in force in a State immediately before the commencement of the Constitution (Seventy-fourth Amendment) act, 1992, which is inconsistent with the provisions of this Part, shall continue to be in force until amended or repealed by the competent Legislature or other competent authority or until the expiration of one year from such commencement, whichever is earlier:

Provided that all the Municipalities existing immediately before such commencement shall continue till the expiration of their duration, unless sooner dissolved by a resolution passed to that effect by the Legislative Assembly of that State or, in the case of a State having a Legislative Council, by each House of the Legislature of the State.

243ZG. Notwithstanding anything in this Constitution -

(a) the validity of any law relating to the delimitation of constituencies or the allotment of seats to such constituencies, made or purporting to be made under article 243ZA shall not be called in question in any court;

(b) no election to any Municipality shall be called in question except by an election petition presented to such authority and in such manner as is provided for by or under any law made by the Legislature of a State;

(3). In clause (3) of article 280 of the Constitution, sub clause (c) shall be lettered as sub-clause (d) and before sub-clause (d) as so relettered, the following sub-clause shall be inserted, namely:-

“(c) the measures needed to augment the Consolidated Fund of a State to supplement the resources of the Municipalities in the State on the basis of the recommendations made by the Finance Commission of the State;”.

(4) After the Eleventh Schedule to the Constitution, the following Schedule shall be added, namely:-

“TWELFTH SCHEDULE

(Article 243W)

1. Urban Planning including town planning
2. Regulation of land-use and construction of buildings.
3. Planning for economic and social developments
4. Roads and bridges.
5. Water supply for domestic, industrial and commercial purposes.
6. Public health, sanitation conservancy and solid waste management.
7. Fire services.
8. Urban forestry, protection of the environment and promotion of ecological aspects.
9. Safeguarding the interests of weaker sections of society, including the handicapped and mentally retarded.
10. Slum improvement and upgradation.
11. Urban poverty alleviation.
12. Provision of urban amenities and facilities such as parks, gardens, playgrounds.
13. Promotion of cultural, educational and aesthetic aspects.
14. Burials and burial grounds; cremations, cremation grounds and electric crematoriums.
15. Cattle pounds; prevention of cruelty to animals.
16. Vital statistics including registration of births and deaths.
17. Public amenities including street lighting, parking lots, bus stops and public conveniences.
18. Regulation of slaughter houses and tanneries”.

EXTRACT OF ARTICLE 243-I & 243-K FROM CLAUSE 2 OF THE CONSTITUTION  
(73<sup>RD</sup> AMENDMENT) ACT, 1992 WHICH ARE REFERRED TO IN THE CONSTITUTION

(74<sup>TH</sup> AMENDMENT ) ACT, 1992

243-I. (1) The Governor of a State shall, as soon as may be within one year from the commencement of the Constitution (Seventy-third Amendment) Act, 1992, and thereafter at the expiration of every fifth year, constitute a Finance Commission to review the financial position of the Panchayats and to make recommendations to the Governor as to :-

- (a) the principles which should govern-
- (i) the distribution between the State and the Panchayats of the net proceeds of the taxes, duties, tolls and fees leviable by the State, which may be divided between them under this Part and the allocation between the Panchayats at all levels of their respective shares of such proceeds;
  - (ii) the determination of the taxes, duties, tolls and fees which may be assigned to, or appropriated by, the Panchayats;
  - (iii) the grants-in-aid to the Panchayats from the Consolidated Fund of the State;
- (b) the measures needed to improve the financial position of the Panchayats;
- (c) any other matter referred to the Finance Commission by the Governor in the interests of sound finance of the Panchayats.

(2) The Legislature of a State may, by law, provide for the composition of the Commission, the qualifications which shall be requisite for appointment as members thereof and the manner in which they shall be selected.

(3) The Commission shall determine their procedure and shall have such powers in the performance of their functions as the Legislature of the State may, by law, confer on them.

(4) The Governor shall cause every recommendation made by the Commission under this article together with an explanatory memorandum as to the action taken thereon to be laid before the Legislature of the State.

243K(1) The Superintendence, direction and control of the preparation of electoral rolls for, and the conduct of, all elections to the Panchayats shall be vested in a State Election Commission consisting of a State Election Commissioner to be appointed by the Governor.

(2) Subject to the provisions of any law made by the Legislature of a State, the conditions of service and tenure of office of the State Election Commissioner shall be such as the Governor may by rule determine;

Provided that the State Election Commissioner shall not be removed from his office except in like manner and on the like grounds as judge of High Court and the conditions of service of the State Election Commissioner shall not be varied to his disadvantage after his appointment.

(3) The Governor of a State shall, when so requested by the State Election Commission, make available to the State Election Commission such staff as may be necessary for the discharge of the functions conferred on the State Election Commission by Clause (1).

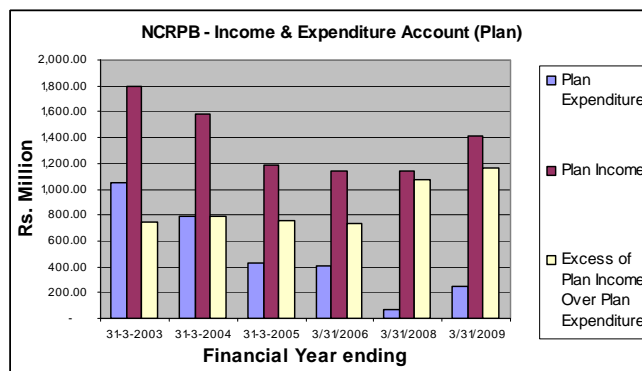
(4) Subject to the provisions of this Constitution, the Legislature of a State may, by law, make provision with respect to all matters relating to, or in connection with elections to the Panchayats.

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**National Capital Region Planning Board (NCRPB)**

1. The National Capital Region Planning Board (NCRPB), constituted in 1985 under the provisions of NCRPB Act, 1985<sup>1</sup>, is a statutory body functioning under the Ministry of Urban Development, Government of India. NCRPB has a mandate to systematically develop the National Capital Region (NCR) of India which comprises of (i) National Capital Territory Delhi (constitutes 4.4 percent of NCR area); (ii) Haryana Sub-region (40.0 percent of NCR area); (iii) Rajasthan Sub-region (23.3 percent of NCR area);(iv) Uttar Pradesh Sub-region (32.3 percent of NCR area) and (v) Five Counter Magnet Areas (CMA) The project town Ghaziabad City also part of the NCR.

2. According to the NCRPB Act, 1985 major functions of the Board include: (i)Preparation of the Regional Plan and Functional Plans; (ii) Coordinate enforcement and implementation of the Regional Plan, Functional Plans, Sub-regional Plans, and Project Plans through the participating states and NCT; (iii) Ensure proper and systematic programming by the participating states and the NCT in project formulation, determination of priorities in NCR or Sub-regions and phasing of the development of NCR in accordance with the stages indicated in regional plan; and, (v) Arrange and oversee the financing of selected development project in the NCR through Central and State Plan funds and other sources of revenue.



3. NCRPB has prepared regional plan for NCR area with the perspective year 2021. Further, the Board also initiated preparation of functional plans to elaborate one or more elements of the Regional Plan. Accordingly the functional plan for water supply and transport is under preparation but plans for other infrastructure is yet to take off.

4. NCRPB has been providing financial assistance to the participating state governments, ULBs, and other IAs in the NCR and in counter magnet towns. Till March 2008, NCRPB has financed 212 infrastructure projects involving total project outlays exceeding Rs. 139 billion. It has sanctioned loans amounting to Rs. 53 billion and disbursed Rs. 33.3 billion<sup>2</sup>. NCRPB gives significant emphasis for building water supply and sanitation infrastructure.

5. NCRPB Act 1985, Chapter VI discusses the provisions for finance, accounts and audit that regulate

<sup>1</sup> THE NATIONAL CAPITAL REGION PLANNING BOARD ACT, 1985, No.2 OF 1985, 9th February, 1985, published by The Gazette of India on FEBRUARY 11, 1985. This Act provide for the constitution of a Planning Board for the preparation of a plan for the development of the National Capital Region and for co-ordinating and monitoring the implementation of such plan and for evolving harmonized policies for the control of land-uses and development of infrastructure in the National Capital Region so as to avoid any haphazard development of that region and for matters connected therewith or incidental thereto

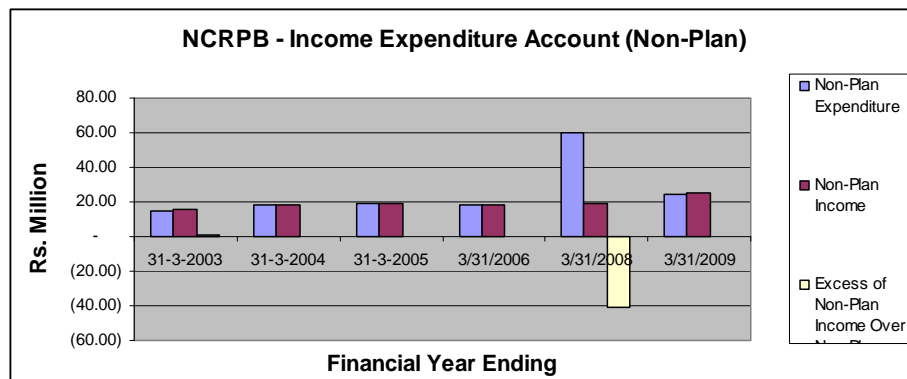
<sup>2</sup> Annual Report 2007-2008, NCRPB

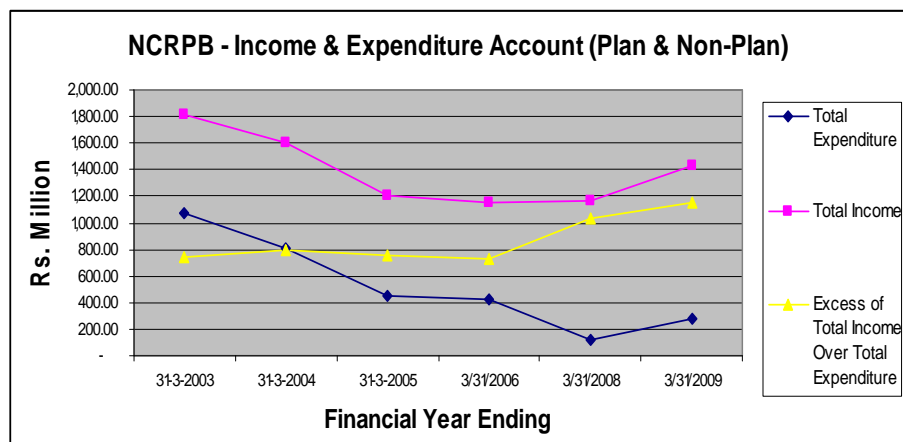
NCRPB accounting policies. It discusses about the financial sources, constitution of NCRPB Fund, requirement of annual budget, annual report etc, account and audit requirements, Annual auditors' report and report to be laid before Parliament.

6. The accounts of the NCRPB will be maintained and audited in such manner as may be prescribed in consultation with the Comptroller and Auditor-General of India and the Board will furnish, to the Central Government, before such date as may be prescribed, a copy of its audited accounts together with the auditors' report thereon. Annual auditors' report and report to be laid before Parliament.

7. NCRPB maintains annual accounts in the form of Income & Expenditure Account (Plan & Non-Plan), Balance Sheets and detailed Receipts & Payment Account with appropriate Schedules. Review of NCRPB Annual Accounts during the period FY 2002-03 to FY 2008-09 indicate the following: **(Table Error! No text of specified style in document.-1)**

- Income, expenditure and net revenue under Plan head form the major revenue source
- Plan income is observed with fluctuating trend over the analysis period.
- Plan expenditure found drastically reduced from Rs 1055 million in FY 2002-03 to Rs 252 million in FY 2008-09 which had resulted in increase trend of net plan income.
- Under Non-Plan head, both income and expenditure found to be more or less equal resulting no surplus during the analysis period.
- Under non-plan, salaries and office expenses are the major expenditure items and grant in-aids and interest receipts from provident fund are the major revenue item.





**Table Error! No text of specified style in document.-1: NCRPB – Summary of Income & Expenditure Account**

Details	Financial Year Ending					
	31/3/2003	31/3/2004	31/3/2005	3/31/2006	3/31/2008	3/31/2009
Plan Expenditure	1,055.55	790.47	432.30	403.89	63.83	252.48
Plan Income	1,796.15	1,584.47	1,190.45	1,136.77	1,141.03	1,411.11
Excess of Plan Income Over Plan Expenditure	740.60	794.00	758.14	732.88	1,077.20	1,158.63
Non-Plan Expenditure	15.14	17.94	18.96	18.32	59.99	24.62
Non-Plan Income	15.92	18.03	19.07	18.38	19.55	24.84
Excess of Non-Plan Income Over Non-Plan Expenditure	0.78	0.10	0.10	0.06	(40.44)	0.22
Total Expenditure	1,070.69	808.41	451.27	422.21	123.83	277.10
Total Income	1,812.07	1,602.50	1,209.51	1,155.15	1,160.58	1,435.95
Excess of Total Income Over Total Expenditure	741.38	794.10	758.25	732.94	1,036.75	1,158.85

Source: NCRPB Annual Reports & Annual Accounts

8. NCR Planning Board continued to provide financial assistance to the constituent States / NCT of Delhi and their implementing agencies in the form of loans upto a maximum of 75% of the estimated cost of Projects. The constituent States of NCR/ NCT of Delhi or its implementing agency contributed a minimum of 25% of the project cost as its counter-part share. During the recent years, NCRPB's lending activity had increased considerably and from the FY 2005-06 its annual loan dispersal had crossed Rs 300 crores. Rs 705 crores were distributed as loan to infrastructure development projects during the FY 2007-08 in which transport, power and water supply were the major sectors constituting 81% of the loan dispersal.

9. There recovery rate of interest and installment of principal amount from any State Government or its implementing agencies was found to be good over the years. except one from the Patiala Urban Planning & Development Authority (PDA), Govt. of Punjab in respect of sewerage scheme of Patiala Municipal Corporation

10. In order to meet the gap between budgetary support and actual fund requirement for providing financial assistance for the infrastructure development, the Board raises from the capital market by issuing unsecured redeemable non-convertible taxable bonds periodically. The bonds have also been listed at National Stock Exchange (NSE)-WDM segment.

## Appendix 2-3

### Impact of 73<sup>rd</sup> & 74<sup>th</sup> Amendments on ULBs in Uttar Pradesh

1. The two historic and much talked about 73<sup>rd</sup> and 74<sup>th</sup> amendments to the Constitution of India, envisaged a total change in the process of self-governance and planning. The objectives of the amendments were loud and clear: a better plan and its better implementation.
2. Consequent to the enactment of the 73<sup>rd</sup> Constitution Amendment Act Uttar Pradesh enacted appropriate legislations for setting up strong, viable local bodies. The Uttar Pradesh Local Self Government Laws (Amendment) Act 1994 was passed by the legislature of Uttar Pradesh to incorporate the mandatory provisions of the CAA 1992. The new laws came into force from 31.5.1994. -
3. Various aspects of Self Governance, under the Urban Local Bodies systems have been discussed below in greater detail.

#### Urban Local Bodies

4. Following the 74<sup>th</sup> Constitutional Amendment Act, 1992, the Government of Uttar Pradesh has taken steps to set up the democratic governance in urban local bodies have been accorded Constitutional Status, they have also been made democratic by way of providing representation of weaker sections of society and women. The functional domain of the ULBs has also been enlarged.

#### Conformity Legislations in State

5. The Uttar Pradesh Local Self Government Laws (Amendment ) Act, 1994 was passed by the legislature of Uttar Pradesh to incorporate the mandatory provisions of the CCA 1992. The new laws came into force from 31.05.1994, Some of the salient changes made in the municipal laws through the Amendment Act, 1994 have been highlighted below.
6. The U.P. Municipal Corporations Act, 1959 and U.P, Municipalities Act, 1966 have been amended and renamed as U.P. Nagar Nigam Act, 1959 and U.P. Nagar Palika Act 1916, while the United provinces Town Area Act, 1914 has been repealed.
7. Through these amendments following three categories of Urban Local Bodies have been created in the State:

Nagar Nigams (Municipal Corporations)	12
Nagar Palika Parishads (Municipal Boards)	194
Nagar Panchayats (Town Panchayats)	422

Total:	628
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### Expanding functional Domains of ULBs

8. As provided under XII th Schedule of the Constitution, following 12 functions have been added to the duties of the urban local bodies:

- ✚ Providing water supply for domestic, industrial and commercial purpose,
- ✚ Establishing maintaining and assisting maternity center and child welfare and birth control clinics and promoting control family welfare and small family norm,
- ✚ Regulating tanneries,
- ✚ Construction and maintenance of parking lots, bus stops and public convenience:
- ✚ promoting urban forestry and ecological aspects and protection of the environment.
- ✚ Safeguarding the interests of weaker sections of society including the handicapped and mentally retarded,
- ✚ Promoting cultural educational and aesthetic aspects
- ✚ Constructing and maintaining cattle ponds and preventing cruelty to animals,
- ✚ Slum improvement and upgradation,
- ✚ Urban poverty alleviation and facilities such as gardens, public parks and play grounds.

### Delegation of Rule Making Powers:

9. Powers regarding the framing and making the bye-laws has been delegated to the local bodies subject to the only condition that the bye-laws will take effect only after they have been confirmed by the State Government and published in the official gazette.

10. Previously State Government was empowered by the Act to make rules for Nagar Palika Parishads and Nagar Panchayats. These Powers have now been decentralized and delegated to the Divisional Commissioners, who are the Prescribed Authority for this purpose.

### Financial Autonomy

11. Financial powers of Nagar Ayukt in case of Nagar Nigams and President in case of Nagar Palika Parishads and Nagar Panchayats have been increased as under:

Type of ULBs	Authority	Financial Powers	
		Before 74 <sup>th</sup> Amendment	After 74 <sup>th</sup> Amendment
Nagar Nigams	Nagar Ayukt	Upto Rs.10,000	UptoRs. 1,00,000
Nagar Palika Parishads	President	UptoRs. 10,000	UptoRs.50,000
Nagar Panchayats	President	Upto Rs. 3000	Upto Rs. 15,000

## Devolution of State Revenues

12. The First State Finance Commission of U.P. has recommended that 7 percent of net tax receipts of the State Government should be transferred to ULBs. the respective shares of Nagar Nigams, Nagar Palika Parishads and Nagar Panchayats were 3.12%,3.12% and 0.76%. Inter-se distribution within each category was on the basis of population and area (1991) with respective weight of 80% and 20%. The State Government accepted this recommendations. With this, the flow of funds to ULBs has become regular and its distribution among ULBs has been rationalized and limited to objective criteria. In this context,the Second State Finance Commission of U.P.has recommended that 7.5 percent of net tax receipts of the State Government should be transferred to ULBs.The flow of funds to ULBs has substantially increased in recent years as shown in the table below.

Year	Funds developed (Rs.in crore)
1997-98	415.83
1998-99	504.22
1999-2000	537.89
2000-01	628.92
2001-02	682.31
2002-03	765.74
2003-04	825.00
2004-05	877.00

13. To improve the financial position of ULBs and compel them to take more internal resources imposition of all taxes enumerated in the Municipal Acts, has been made compulsory since September 1998. Ten percent of devolution share has been linked to the financial performance of ULBs. Previously, the State Government was empowered by the Act, to make rules regarding taxation and other purpose for Nagar Palika Parishad and Nagar Panchayat. These powers have been decentralized and delegated to the Divisional Commissioners, who are the Prescribed Authority for this purpose.

14. Property Tax constitutes the most important own source of revenue of ULBs. The First Finance Commission made several suggestions to reform the property tax system in the state. which were accepted by the State Government. An area based self-assessment system of property tax has been introduced in 11 Municipal Corporation Towns of the State in the first place to strengthen the financial position of the ULBs.

15. In spite of all these measures, the financial position of ULBs in the State continues to be precarious and they are often unable to meet expenditure on salaries and other essential services like power dues. As a result, the quality of urban services remains poor Urgent steps are therefore, called to revamp the financial situation of ULBs. The fiscal domain of these bodies needs to be expanded and they have to be persuaded to take steps to raise revenue from their own

resources. Assess of these bodies to institutional sources of funding and capital market has to be improved.

16. Thus the enactment of 73rd and 74th Constitutional Amendment Bills 1992 has paved the way for the creation of institutional structures for realizing the goals of self governance under the Panchayati Raj and Urban Local Bodies systems. It has accelerated the socio-economic development through democratic decentralization of governance within a participatory framework at the grassroot level.