
Report of the Working Group on Financing Urban Infrastructure

12th Five-year plan

*Steering committee on Urban Development &
Management*

October 2011

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ABBREVIATIONS

AAI	Airport Authority of India
ADB	Asian Development Bank
AUDA	Ahmedabad Urban Development Authority
BATF	Bangalore Agenda Task Force
BBMP	Bruhat Bengaluru Mahanagara Palike
BOOT	Build-Operate-Own-Transfer
BOT	Built-Operate-Transfer
CBD	Central Business District
CBO	Community Based Organisation
CEPT	Centre for Environmental Planning and Technology
CFC	Central Finance Commission
CMA	Commissionerate of Municipal Administration
CMU	Change Management Unit
COP	Committee on Privatization
DAME	Delhi Airport Metro Express
DEA	Department of Economic Affairs
DIAL	Delhi International Airport Limited
DMRC	Delhi Metro Rail Corporation
DUAC	Delhi Urban Arts Commission
EPC	Engineering-Procurement-Construction
EWS	Economically Weaker Section
FSI	Floor Space Index
GDP	Gross Domestic Product
GIDC	Gujarat Industrial Development Corporation
GNTCD	Government of National Capital Territory of Delhi
Gol	Government of India
GoK	Government of Karnataka
GoMP	Government of Madhya Pradesh
GoTN	Government of Tamil Nadu
HPEC	High Powered Expert Committee

HUDA	Haryana Urban Development Authority
IAP	Internal Arbitration Panel
ICTSL	Indore City Transport Services Limited
IDA	Indore Development Authority
iDeCK	Infrastructure Development Corporation (Karnataka) Limited
IFC	International Finance Corporation
IMC	Indore Municipal Corporation
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
JOWAM	Johannesburg Water Management Company
JW	Johannesburg Water
KPCB	Karnataka Pollution Control Board
KUIDFC	Karnataka Urban Infrastructure Development Finance Corporation
KUWASIP	Karnataka Urban Water Sector Improvement Project
KUWSDB	Karnataka Urban Water Supply and Drainage Board
LIG	Low Income Group
LPCD	Liters Per Capita per Day
MCD	Municipal Corporation of Delhi
MLD	Million Liters per Day
MMRDA	Mumbai Metropolitan Regional Development Authority
MPHB	Madhya Pradesh Housing Board
MoHUPA	Ministry of Housing and Urban Poverty Alleviation
MoS	Ministry of Shipping
MSW	Municipal Solid Waste
MT	Metric Ton
MWSS	Metropolitan Water Works and Sewerage System
NDMC	New Delhi Municipal Council
NGO	Non Governmental Organisation
NIJNNURM	New Improved Jawaharlal Nehru National Urban Renewal Mission
NRW	Non-Revenue Water
NSSO	National Sample Survey Organisation
O&M	Operation and Maintenance
PMC	Project Management Consultant

PPP	Public Private Partnership
PSU	Public Sector Undertaking
RAY	Rajiv Awas Yojana
RfP	Request for Proposal
RLDA	Rail Land Development Authority
RoW	Right of Way
RTA	Road and Transport Authority
RWA	Resident Welfare Association
SFC	State Finance Commission
SHU	Share Holder Unit
STP	Sewage Treatment Plant
SWM	Solid Waste Management
TA	Technical Assistance
TNUIFSL	Tamil Nadu Urban Infrastructure Financial Services Limited
TNUDF	Tamil Nadu Urban Development Fund
TUFIDCO	Tamil Nadu Urban Finance and Infrastructure Development Corporation
UfW	Unaccounted-for-Water
UGS	Under Ground Sewerage System
ULB	Urban Local Body
VfM	Value for Money
VGf	Viability Gap Funding
WCA	Water Crisis Act
WB	World Bank
WSP	Water and Sanitation Program

1. Working Group on Financing Urban Infrastructure

1.1 About the Working Group

1.1.1 Urbanization has emerged as a key policy and governance challenge in India in recent years. While urban development accelerates the process of economic growth, it can also make growth more inclusive too. Since faster economic growth and inclusive growth are likely to be the objectives of 12th Plan, urban development management can be a key vehicle for achieving this objective. For formulation of the Twelfth Five Year Plan (2012-2017), it was decided to constitute a Steering Committee on Urban Development Management under the Chairmanship of Shri Arun Maira, Member, Planning Commission. The Steering Committee has constituted a Working on Financing Urban Infrastructure, with the following Terms of Reference:

- To recommend the approach and strategy for augmenting non-budgetary resource mobilisation for financing India's urbanization agenda.
- To suggest measures to attract private capital for financing urbanization
- To recommend necessary changes in policy and regulatory frameworks to strengthen the role of the market in delivery of urban services
- To suggest changes in policy and regulatory framework for monetisation of land to finance urbanization.
- To review regulatory framework and suggest policy measures relating to land use and real estate development in urban centres to ensure flow of private capital for providing urban infrastructure and affordable housing.
- To determine the financing requirement of guided urbanization in the 12th Plan.

1.2 Approach of the Working Group

1.2.1 In carrying out the tasks assigned to it under the Terms of Reference, the following approach was adopted by the Working Group:

- Review of the reports of previous committees/experts to understand the financing requirements

- Determining the extent to which the unfunded gap can be met with non-budgetary resources using PPPs
- Understanding the experience of monetizing land using case analysis: evidence and lessons learnt
- Analysis of alternate scenarios and possible outcomes based on investment levels

1.3 Composition of the Working Group

Dr.Rajiv Lall, MD&CEO, Infrastructure Development Finance Company Ltd.	Chairperson
Prof. Sebastian Morris, Indian Institute of Management, Ahmedabad	Member
Ms.Naini Jayaseelan, Sr.Advisor, Planning Commission	Member
Ms. Aruna Sundararajan, Joint Secretary (RAY), Ministry of Housing and Urban Poverty Alleviation	Member
Shri. Saurabh Garg, Secretary (UD), Government of Orissa	Member
Ms.S.Aparna, Secretary (Economic Affairs), Government of Gujarat	Member
Shri. P.K.Srivatsava, Chief Vigilance Officer, Rail India Techo Economic Services Ltd (RITES).	Member
Shri. Alok Srivatsava, Secretary (UD), Government of Madhya Pradesh	Member
Shri. Chandramouli Shukla, CEO, Indore Development Authority	Member
Shri.Cherian Thomas, Infrastructure Development Finance Company Ltd	Member
Shri.Palash Srivatsava, Infrastructure Development Finance Company Ltd	Member
Shri.S.R.Ramanujan, Director, Samatva Infrastructure Advisors	Member
Ms.Sudha Krishnan, Joint Secretary and Financial Advisor, Ministry of Urban Development	Member Convener

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1.4 Issues in Urban Financing

1.4.1 The urban sector has historically suffered neglect over the years, with policy and resources directed mainly towards the rural sector, until the launch of JNNURM. This neglect has now created a huge infrastructure challenge of not only having to cater for new population but also having to ramp up capacity to address the

backlog of the past. With constraints of capacity at the ULB level and unclear devolution of functions and funds even after the 74th Constitutional Amendment Act, the urban sector faces a huge infrastructure financing challenge. Given the major risks involved, private sector has also largely stayed away from urban infrastructure projects, until very recently.

- 1.4.2 Plan outlays have also historically focused on the rural sector. The outlay for the XI Plan in the rural sector was Rs. 5.5 lakh crore while the same for the Ministries of Urban Development and Housing and Urban Poverty Alleviation was Rs. 68080 crore (2006-07 prices).
- 1.4.3 With nearly 70 per cent of the GDP contributed by the urban areas, and the recent population projections of India moving towards a figure of 40 per cent urbanization in the coming decades, there is a clear need to focus attention towards the urban sector. This would not only be important to sustain India's economic growth story, but be critical for inclusive growth, given the strong positive effects that a prosperous urban sector has on the rural hinterlands.
- 1.4.4 India does not have to look very far for successful government intervention in channelizing urbanization for economic growth. China invested, on average, 2.7 per cent of its GDP over a 7 year period from 2000 towards urban infrastructure. At 0.7 per cent of GDP in 2011, India's spending in urban infrastructure is miniscule. To put the figure in perspective, the Government of India spends 1.25 per cent of GDP in subsidies on fertilizers and petroleum products.
- 1.4.5 With the financing of India's urban infrastructure being closely inter-twinned with its complex web of institutions and governance challenges, achieving immediate success will be a tall order. The Working Group sees the initial years of the 12th Plan as a preparatory stage for careful realignment of the financing framework and capacity building initiatives towards preparing ULBs for managing the challenges of urbanization.

2. Estimate of Funding Requirements

- 2.1 A number of reports have been prepared in the recent past on the funding requirements for urban infrastructure. The India Infrastructure Report (1996) of the Rakesh Mohan Committee had estimated Rs. 56,000 crore at 1995-96 prices over a 10-year period for the four urban sectors of water supply, sewerage, solid waste management and urban roads. More recently, the 'Report on Indian Urban Infrastructure and Services' (2011) of the High Powered Expert Committee of the Government of India (HPEC) and 'India's Urban Awakening' (2010) report by global management consultants McKinsey and Company, have independently estimated the requirement for urban infrastructure services.
- 2.2 Based on a review of the available reports, discussions with subject matter experts and the Ministry of Urban Development and studying the assumptions used in working out the HPEC investment estimates, the Working Group has decided to adopt the HPEC investment estimates as the basis for determining the financing requirements for urban infrastructure.
- 2.3 Accordingly, the estimated urban investment requirement for the 20-year period from 2012-13 to 2031-32, as projected by the HPEC, is Rs. 39.2 lakh crore, the breakup of which is set out in Table 1 below.

Table 1: Investment estimates by HPEC

	HPEC (for the period 2012-2031)
Water Supply	320908
Sewerage	242688
SWM	48582
Storm Water Drains	191031
Urban Roads	1728941
Mass Transit	449426
Street Lighting	18580
Traffic Support Infrastructure	97985
Renewal and redevelopment	408955
Other sectors	309815
Total	3918670

- 2.4 The estimates for urban infrastructure in the core 8 services of water supply, sewerage, solid waste management, storm water drains, urban roads, urban transport, street lighting and traffic support infrastructure amount to Rs. 31 lakh crore over the 20-year period. In addition to the above, the HPEC had also estimated capacity building costs of Rs. 1 lakh crore, renewal and redevelopment costs of Rs. 4.1 lakh crore and other sector expenditure of Rs 3.1 lakh crore over the 20-year period. The total expenditure of urban infrastructure is thus estimated to be Rs. 39.2 lakh crore over 20 years.
- 2.5 HPEC has also estimated Rs. 19.9 lakh crore towards the operation and maintenance under consideration over the 20-year period, of which Rs. 18.1 lakh crore is for the 8 core sectors.
- 2.6 The costs presented above do not include those for affordable housing which have been detailed out separately in Appendix C. The total investment requirement for low income housing is estimated at Rs.8.5 lakh crore to cover the existing housing shortage and the future affordable housing requirement upto the end of the 12th Plan Period. These estimates have not been used in the overall financing framework of ULBs.
- 2.7 The estimates also do not factor in the new data from the Census 2011 which has projected the urban population at 377 million for 2011, against the estimate of 368 million by HPEC for the same year. In addition, the following factors which have not been accounted for are likely to increase the cost of financing urban infrastructure:
- land costs
 - cost escalations and time overruns
- 2.8 Given the multiplicity of factors involved in estimating urban infrastructure estimates, it may not be possible to fully capture all parameters. The Working Group is of the view that the estimates used in this Report, while likely to be an

underestimate, broadly represents the spending requirements for ULBs, and provides a reasonable basis for suggesting policy recommendations on financing urban infrastructure.

3. Scenario Analysis

3.1 The Working Group has adopted the financing framework used by the HPEC in arriving at the financing landscape of the ULBs. Using the HPEC investment estimates as the base, and applying the HPEC's financing framework, the Working Group has considered three scenarios in the financing of urban infrastructure investment requirements, with specific focus on the next Plan period. Given the long gestation period for urban projects, any investment plan has to consider not just the immediate requirements, but a long term investment plan to meet the desired service level standards.

3.2 The following three scenarios are presented in this Report:

- Scenario 1: Investment targets covered in 20 years using HPEC phasing plan
- Scenario 2: Investment targets covered in 20 years with backlog covered in 15 years
- Scenario 3: Investment targets covered in 20 years with backlog covered in 10 years

3.3 In all the three scenarios presented, it is to be noted that, the annual and cumulative current expenditures are different as a result of the phasing of the investment requirements. The cumulative current expenditure for the 20 year period is highest in scenario 3, where the investments are front loaded in the first 10 years to cover the backlog in services.

3.4 The detailed assumptions underlying the financing framework are spelt out under the respective sections in the Appendix.

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- 3.5 Along with the scenarios showing the unfunded deficit in each of the cases, this section also spells out possible outcomes of not meeting the respective investment targets.

Scenario 1: Investment targets covered in 20 years using HPEC phasing plan

- 3.6 Table 2 sets out the ULB financing framework if the investments are to be spread out over 20 years as per the HPEC phasing plan.

- 3.7 HPEC financing framework was modified to reflect the mix of instruments that has been used. Estimates for revenue shared taxes have been taken from HPEC report but phased out over 5 years to factor in implementation time lag resulting in some revenues continuing to accrue to parastatals. The Working Group assumed that only 50 per cent of the projected revenue shared taxes will be devolved by the states in the first year of the 12th Plan; 67 per cent in 2nd year; 75 per cent 3rd year; and 100 per cent from the year 4 onwards.

Table 2: Investments over 20 years using HPEC phasing plan

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Total Revenue	1.19	1.23	1.26	1.32	1.34	1.36	1.39	1.41	1.44	1.46
Own Revenue	0.74	0.83	0.89	1.03	1.05	1.07	1.10	1.12	1.15	1.17
Exclusive Taxes	0.33	0.33	0.34	0.34	0.35	0.35	0.36	0.36	0.37	0.37
Revenue-shared Taxes	0.23	0.31	0.36	0.49	0.50	0.51	0.53	0.54	0.56	0.57
Non-Tax Revenue	0.19	0.19	0.20	0.20	0.21	0.21	0.22	0.22	0.23	0.23
Other Revenue	0.46	0.41	0.37	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Transfers from SFC	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Grants-in-aid from State Governments	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Transfers from CFC	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Grants-in-aid from Gol	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Revenues of entities other than ULBs	0.17	0.12	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Revenue Expenditure	0.90	0.90	0.90	0.90	0.91	0.91	0.92	0.93	0.95	0.96
Annuity Payments	0.00	0.00	0.01	0.02	0.04	0.06	0.10	0.13	0.16	0.20
Debt Repayment	0.02	0.04	0.07	0.09	0.11	0.11	0.11	0.11	0.11	0.11
Revenue reductions on the account of PPP	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.02
Investible surplus of ULBs	0.27	0.29	0.28	0.30	0.28	0.26	0.24	0.22	0.20	0.17
Capital Expenditure	0.75	0.79	0.85	0.90	0.96	0.99	1.03	1.06	1.10	1.14
Deficit(-)/Surplus(+)	-0.47	-0.50	-0.56	-0.60	-0.68	-0.73	-0.79	-0.85	-0.91	-0.97
PPP	0.02	0.03	0.05	0.07	0.09	0.10	0.10	0.10	0.11	0.11
Annuity	0.04	0.08	0.12	0.17	0.23	0.24	0.25	0.26	0.26	0.27
Borrowing	0.09	0.09	0.09	0.09	0.09	0.00	0.00	0.00	0.00	0.00
Land based Instruments	0.07	0.07	0.12	0.16	0.17	0.17	0.18	0.19	0.19	0.20
Unfunded Deficit(-)	-0.26	-0.23	-0.18	-0.11	-0.10	-0.22	-0.26	-0.30	-0.34	-0.39

* Capacity building and renewal and redevelopment costs included under Capital Expenditure.

Table 2: Investments over 20 years using HPEC phasing plan (contd.)

	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32
Total Revenue	1.49	1.51	1.54	1.57	1.60	1.63	1.66	1.69	1.72	1.76
Own Revenue	1.20	1.22	1.25	1.28	1.31	1.34	1.37	1.40	1.43	1.47
Exclusive Taxes	0.38	0.38	0.39	0.39	0.40	0.40	0.41	0.41	0.42	0.42
Revenue-shared Taxes	0.59	0.60	0.62	0.64	0.66	0.68	0.70	0.72	0.74	0.77
Non-Tax Revenue	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28
Other Revenue	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Transfers from SFC	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Grants-in-aid from State Governments	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Transfers from CFC	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Grants-in-aid from Gol	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Revenues of entities other than ULBs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Revenue Expenditure	0.97	0.98	0.99	1.00	1.01	1.01	1.02	1.02	1.02	1.02
Annuity Payments	0.23	0.26	0.29	0.31	0.34	0.36	0.38	0.37	0.36	0.35
Debt Repayment	0.09	0.07	0.04	0.02	0.00	0.11	0.11	0.11	0.11	0.11
Revenue reductions on the account of PPP	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Investible surplus of ULBs	0.18	0.18	0.19	0.21	0.23	0.12	0.13	0.16	0.20	0.25
Capital Expenditure	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Deficit(-)/Surplus(+)	-0.97	-0.96	-0.95	-0.93	-0.91	-1.02	-1.01	-0.98	-0.93	-0.89
PPP	0.11	0.11	0.11	0.11	0.11	0.06	0.06	0.05	0.05	0.05
Annuity	0.27	0.27	0.27	0.27	0.27	0.15	0.14	0.13	0.12	0.12
Borrowing	0.00	0.00	0.00	0.00	0.00	0.46	0.00	0.00	0.00	0.00
Land based Instruments	0.20	0.21	0.21	0.21	0.22	0.15	0.15	0.14	0.13	0.13
Unfunded Deficit(-)	-0.38	-0.37	-0.35	-0.33	-0.31	-0.19	-0.67	-0.65	-0.63	-0.60

- 3.8 In this scenario, a capital investment of Rs. 3.95 lakh crore is envisaged over the next Plan period.
- 3.9 A mix of instruments have been used in arriving at the financing framework. Even with the use of PPP including annuity models, borrowing and land based instruments, ULBs will still face a deficit, an average of 0.18 per cent of GDP over the 12th Plan Period.
- 3.10 Under Scenario 1, given that all other financing instruments have been considered, this unfunded deficit would have to be covered by the Government of India in the form of the next phase of JNNURM, henceforth referred to as NIJNNURM. This would amount to Rs. 78274 crore as NIJNNURM for the next Plan Period, or an average of Rs. 15654 crore per annum for the next 5 years.

Scenario 2: Investment targets covered in 20 years with backlog covered in 15 years

- 3.11 Table 3 below presents a modified phasing plan to that of the HPEC, considering an aggressive attempt at covering the service backlog in 15 years and the total investment targets covered in 20-years.

Table 3: Investments over 20 years with backlog covered in 15 years

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Total Revenue	1.19	1.23	1.26	1.32	1.34	1.36	1.39	1.41	1.44	1.46
Own Revenue	0.74	0.83	0.89	1.03	1.05	1.07	1.10	1.12	1.15	1.17
Exclusive Taxes	0.33	0.33	0.34	0.34	0.35	0.35	0.36	0.36	0.37	0.37
Revenue-shared Taxes	0.23	0.31	0.36	0.49	0.50	0.51	0.53	0.54	0.56	0.57
Non-Tax Revenue	0.19	0.19	0.20	0.20	0.21	0.21	0.22	0.22	0.23	0.23
Other Revenue	0.46	0.41	0.37	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Transfers from SFC	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Grants-in-aid from State Governments	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Transfers from CFC	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Grants-in-aid from Gol	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Revenues of entities other than ULBs	0.17	0.12	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Revenue Expenditure	0.90	0.90	0.91	0.93	0.96	0.98	1.01	1.03	1.06	1.09
Annuity Payments	0.00	0.00	0.01	0.02	0.04	0.06	0.10	0.13	0.16	0.20
Debt Repayment	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03
Reduction in Revenues on the account of PPP	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.02
Investible surplus of ULBs	0.29	0.32	0.32	0.34	0.31	0.28	0.24	0.20	0.17	0.13
Capital Expenditure	0.78	0.87	0.97	1.08	1.21	1.25	1.30	1.35	1.40	1.45
Deficit(-)/Surplus(+)	-0.50	-0.55	-0.66	-0.75	-0.90	-0.97	-1.06	-1.14	-1.23	-1.32
PPP	0.02	0.03	0.05	0.07	0.09	0.10	0.10	0.10	0.11	0.11
Annuity	0.04	0.08	0.12	0.17	0.23	0.24	0.25	0.26	0.26	0.27
Borrowing	0.03	0.03	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00
Land based Instruments	0.07	0.07	0.12	0.16	0.17	0.17	0.18	0.19	0.19	0.20
Unfunded Deficit(-)	-0.35	-0.35	-0.34	-0.33	-0.38	-0.47	-0.53	-0.60	-0.67	-0.74

Table 3: Investments over 20 years with backlog covered in 15 years (contd.)

	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32
Total Revenue	1.49	1.51	1.54	1.57	1.60	1.63	1.66	1.69	1.72	1.76
Own Revenue	1.20	1.22	1.25	1.28	1.31	1.34	1.37	1.40	1.43	1.47
Exclusive Taxes	0.38	0.38	0.39	0.39	0.40	0.40	0.41	0.41	0.42	0.42
Revenue-shared Taxes	0.59	0.60	0.62	0.64	0.66	0.68	0.70	0.72	0.74	0.77
Non-Tax Revenue	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28
Other Revenue	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Transfers from SFC	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Grants-in-aid from State Governments	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Transfers from CFC	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Grants-in-aid from Gol	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Revenues of entities other than ULBs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Revenue Expenditure	1.11	1.13	1.15	1.17	1.18	1.15	1.11	1.07	1.03	0.99
Annuity Payments	0.23	0.26	0.29	0.31	0.34	0.36	0.38	0.37	0.36	0.35
Debt Repayment	0.02	0.02	0.01	0.01	0.00	0.03	0.03	0.03	0.03	0.03
Reduction in Revenues on the account of PPP	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Investible surplus of ULBs	0.10	0.08	0.07	0.06	0.05	0.07	0.12	0.19	0.27	0.36
Capital Expenditure	1.48	1.50	1.53	1.56	1.59	0.81	0.75	0.70	0.66	0.62
Deficit(-)/Surplus(+)	-1.37	-1.42	-1.46	-1.50	-1.54	-0.74	-0.64	-0.51	-0.38	-0.25
PPP	0.11	0.11	0.11	0.11	0.11	0.06	0.06	0.05	0.05	0.05
Annuity	0.27	0.27	0.27	0.27	0.27	0.15	0.14	0.13	0.12	0.12
Borrowing	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00
Land based Instruments	0.20	0.21	0.21	0.21	0.22	0.15	0.15	0.14	0.13	0.13
Unfunded Deficit(-)	-0.79	-0.83	-0.87	-0.91	-0.94	-0.25	-0.29	-0.19	-0.08	0.03

- 3.12 In this scenario, a capital investment of Rs. 4.6 lakh crore is envisaged over the next Plan period.
- 3.13 After the use of the various financing instruments, ULBs will still face a deficit, an average of 0.35 per cent of GDP over the 12th Plan Period.
- 3.14 Under Scenario 2, given that all other financing instruments have been considered, this unfunded deficit would have to be covered by the Government of India in the form of the NIJNNURM. This would amount to about Rs. 1.62 lakh crore as NIJNNURM for the next Plan Period, or an average of Rs. 32,408 crore per annum for the next 5 years.

Scenario 3: Investment targets covered in 20 years with backlog covered in 10 years

- 3.15 Table 4 below presents the scenario where the investments are made over the next 20 years with backlog covered in 10 years.

Table 4: Investment targets covered in 20 years with backlog covered in 10 years

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Total Revenue	1.19	1.23	1.26	1.32	1.34	1.36	1.39	1.41	1.44	1.46
Own Revenue	0.74	0.83	0.89	1.03	1.05	1.07	1.10	1.12	1.15	1.17
Exclusive Taxes	0.33	0.33	0.34	0.34	0.35	0.35	0.36	0.36	0.37	0.37
Revenue-shared Taxes	0.23	0.31	0.36	0.49	0.50	0.51	0.53	0.54	0.56	0.57
Non-Tax Revenue	0.19	0.19	0.20	0.20	0.21	0.21	0.22	0.22	0.23	0.23
Other Revenue	0.46	0.41	0.37	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Transfers from SFC	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Grants-in-aid from State Governments	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Transfers from CFC	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Grants-in-aid from Gol	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Revenues of entities other than ULBs	0.17	0.12	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Revenue Expenditure	0.91	0.93	0.96	1.01	1.08	1.15	1.24	1.34	1.45	1.57
Annuity Payments	0.00	0.00	0.01	0.02	0.04	0.06	0.10	0.13	0.16	0.20
Debt Repayment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Reduction in Revenues on the account of PPP	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.02
Investible surplus of ULBs	0.28	0.31	0.29	0.28	0.22	0.14	0.04	-0.07	-0.19	-0.32
Capital Expenditure	0.84	1.02	1.22	1.47	1.77	1.97	2.19	2.43	2.70	3.00
Deficit(-)/Surplus(+)	-0.56	-0.71	-0.93	-1.19	-1.55	-1.83	-2.15	-2.50	-2.90	-3.33
PPP	0.02	0.03	0.05	0.07	0.09	0.10	0.10	0.10	0.11	0.11
Annuity	0.04	0.08	0.12	0.17	0.23	0.24	0.25	0.26	0.26	0.27
Borrowing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Land based Instruments	0.07	0.07	0.12	0.16	0.17	0.17	0.18	0.19	0.19	0.20
Unfunded Deficit(-)	-0.44	-0.53	-0.65	-0.79	-1.07	-1.33	-1.63	-1.96	-2.33	-2.74

Table 4: Investment targets covered in 20 years with backlog covered in 10 years (contd.)

	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32
Total Revenue	1.49	1.51	1.54	1.57	1.60	1.63	1.66	1.69	1.72	1.76
Own Revenue	1.20	1.22	1.25	1.28	1.31	1.34	1.37	1.40	1.43	1.47
Exclusive Taxes	0.38	0.38	0.39	0.39	0.40	0.40	0.41	0.41	0.42	0.42
Revenue-shared Taxes	0.59	0.60	0.62	0.64	0.66	0.68	0.70	0.72	0.74	0.77
Non-Tax Revenue	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28
Other Revenue	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Transfers from SFC	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Grants-in-aid from State Governments	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Transfers from CFC	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Grants-in-aid from Gol	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Revenues of entities other than ULBs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Revenue Expenditure	1.49	1.41	1.34	1.27	1.20	1.16	1.11	1.07	1.02	0.98
Annuity Payments	0.23	0.26	0.29	0.31	0.34	0.36	0.38	0.37	0.36	0.35
Debt Repayment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Reduction in Revenues on the account of PPP	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Investible surplus of ULBs	-0.25	-0.18	-0.11	-0.04	0.04	0.09	0.14	0.23	0.31	0.40
Capital Expenditure	0.69	0.65	0.61	0.57	0.53	0.81	0.75	0.70	0.66	0.62
Deficit(-)/Surplus(+)	-0.94	-0.82	-0.71	-0.61	-0.50	-0.72	-0.61	-0.48	-0.35	-0.21
PPP	0.11	0.11	0.11	0.11	0.11	0.06	0.06	0.05	0.05	0.05
Annuity	0.27	0.27	0.27	0.27	0.27	0.15	0.14	0.13	0.12	0.12
Borrowing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Land based Instruments	0.20	0.21	0.21	0.21	0.22	0.15	0.15	0.14	0.13	0.13
Unfunded Deficit(-)	-0.35	-0.23	-0.12	-0.01	0.10	-0.35	-0.27	-0.15	-0.04	0.08

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- 3.16 In Scenario 3, a capital investment of Rs. 6.0 lakh crore is envisaged over the next Plan period.
- 3.17 After the use of the various financing instruments, ULBs will still face a deficit, an average of 0.70 per cent of GDP over the 12th Plan Period.
- 3.18 The unfunded deficit would have to be covered by the Government of India in the form of the NIJNNURM. This would amount to about Rs. 3.3 lakh crore as NIJNNURM for the next Plan Period, or an average of Rs. 66225 crore per annum for the next 5 years.
- 3.19 The three scenarios presented above lay out the possible investment route that could be considered for the 12th Plan.
- 3.20 Scenario 1 takes cognizance the severe capacity constraints at the ULB level and current absorptive capacity of the ULBs. Scenario 2 takes a slightly more aggressive approach with front loading of investments in the initial years. Scenario 3 attempts to use public exchequer as the prime lever for investments, and a fast tracking of investments to clear requirements of both the backlog and the future population.
- 3.21 In each of the 3 scenarios, it is clear that the Government of India will have to play a lead role in managing the unfunded deficit. The financing framework also calls for reforms to be undertaken by state governments and ULBs to increase their revenue potential. The proposed revenue sharing arrangement, which provides a predictable, timely fiscal devolution from the state to the ULBs is crucial for enabling newer financing instruments. Failure to increase revenue streams and use some of the newer financing instruments like PPP, debt and land-based instruments will put additional burden on the Government of India to fund the deficit. This makes it imperative for NIJNNURM to factor in reforms and capacity building measures that ensure that a sustainable financing framework

for ULBs is achieved, and also ensure that such monies do not crowd out PPPs and debt instruments.

- 3.22 What is emerging from these three scenarios is that the resource mobilization from instruments like PPP, borrowing and land based instruments need to scaled up to fund this magnitude of investment requirements. Under each of the scenarios presented, the share of non-conventional resources that need to be/are likely to be mobilized is different as a result of the capital investment phasing under each of the scenarios. This would require a concerted effort from all tiers of the government.

Potential impact of under investments

- 3.23 The Working Group has attempted to draw out possible impact on the economy in the event of the proposed investment patterns not being realized. The analysis set out in this section has been done purely with the objective of broadly understanding the potential consequences of under investment in the urban sector. The three scenarios presented above – Scenario 1 (HPEC), Scenario 2 (15-year backlog coverage) and Scenario 3 (10-year backlog coverage) have been used for understanding the impact.
- 3.24 The two parameters of Public Health and Access to Public Transport have been used to determine the impact. The proxy indicator for these parameters is coverage/access.
- 3.25 Under the HPEC scenario, full coverage in urban services is achieved by 2031, while under the 15 year backlog coverage scenario full coverage is achieved by 2027; and in 10 year backlog coverage it is achieved by 2021.
- 3.26 The below table summarises the impact of the investment scenarios on service coverage of water supply, sewerage and urban transport.

Population coverage by 2021 (Million)

	Scenario 1 (HPEC)	Scenario 2 (backlog covered in 15 yrs)	Scenario 1 (backlog covered in 10 yrs)
Water Supply	327	374	464
Sewerage	263	357	464
Urban Transport*	95	126	200

**urban transport estimates are only for Metropolitan Cities and hence coverage is also calculated for these classes of cities.*

- 3.27 Fast tracking the investments in water supply and sewerage can potentially yield savings to the economy by increasing productivity of human resources and building human capital; where-as investments in urban transport increases the mobility of the labor thereby mitigating the negative externalities of the agglomeration economies.
- 3.28 Transport planning in developed countries normally leads city planning. It is imperative for Indian cities to use transportation not just to lead city development initiatives, but also as an instrument to enhance productivity. The increasing land costs and challenges of acquiring land make the case even stronger.
- 3.29 As can be seen from the possible outcomes above, any further neglect of the urban sector can have multi-fold negative implications for the economy, not all of which can be quantifiable. The HPEC alludes to the possibility of not achieving sustainable economic growth of 8-9 per cent if under investments in the urban sector continue.
- 3.30 The investment pattern adopted must take into account the absorptive capacity of ULBs to undertake projects. Equally important is the ability of both the public exchequer and other instruments to finance the order of magnitude

of the investment requirements. A fine balance has to be struck between the two, with sufficient cushion to ensure that productivity losses to the economy are minimized.

4. Summary Recommendations

This section sets out the key messages from the deliberations of the Working Group in the use of various financing instruments for urban infrastructure creation.

Government Funding

- 4.1 Guiding the nature of urbanization would require substantial financial contribution by the Government of India. This is critical not just given the huge deficit on account of the neglect of the sector, but given the vital role that cities and towns play in the economic growth of the country. The investments in urban infrastructure have to be backed by adequate capacity at all levels of government to conceptualize, develop and maintain physical assets.
- 4.2 The 3 scenarios above indicate Rs. 78274 crore (Scenario 1), Rs. 1.62 lakh crore (Scenario 2) and Rs. 3.3 lakh crore (Scenario 3) from the Government of India over the next 5 years. The Working Group is of the view that given the urgent need to manage the challenges of urbanization, there is a need to fast track the pace of investment in the urban sector. The scenarios are contingent upon the ability of state governments and ULBs to undertake reforms and create an enabling environment for the use of instruments like PPP, debt and land-based financing.
- 4.3 A significant share of the revenue would come from a constitutionally mandated revenue sharing arrangement as recommended by the HPEC and adopted by the Working Group. Such a predictable and timely fiscal transfer will strengthen the revenue base of the ULBs and increase accountability in the delivery of functions as envisaged in the 74th Constitutional Amendment Act. It will also serve

as an important lever for ULBs to tap other sources of financing. Government of India need to put in place a systematic mechanism to ensure this devolution – by providing incentives to the states and cities through NIJNNURM

- 4.4 Fundamental to the financing framework is the need for ULBs to increase their own sources of revenue. The framework presented in above 3 scenarios indicates that a serious effort is needed from the ULBs to increase their own tax and non-tax revenue (a growth rate of 9 per cent per annum in exclusive taxes and 10 per cent per annum in non-tax revenue of ULBs would demand systemic changes in the way in which the present ULBs operate and function). Failure to do so will put at risk the ability to use other financing instruments like PPPs or borrowings. A weak revenue scenario, with borrowing or PPPs getting ruled out, will put further strain on the Government of India to support the state governments and ULBs in urban infrastructure financing. Accordingly, the design of the NIJNNURM should be such that it creates an environment for ULBs to increase revenues through better service delivery, which will push up user charges and other revenue streams.
- 4.5 The Government of India would have to step in provide the necessary fiscal support to manage the process of urbanization in the country, by drawing on the lessons of JNNURM. The financial support from the Government of India should be channelized as a trigger for ULBs to start generating revenue from other sources.
- 4.6 Even with the use of PPP and land based instruments, ULBs would still require significant support from the Government of India to be able to meet its expenditure requirements. The Working Group is of the view that NIJNNURM and other Gol funds should be used as the 'gap filling' instrument to be able to adequately finance urban infrastructure.
- 4.7 Given the fact that only the last 5 years have received serious attention on the urban sector, and that over 40 per cent of India's population are going to reside in cities and towns, public exchequer has to lead the way in financing urban infrastructure in the initial years, as has been the experience in many countries across the world.

Private Capital for Urban Infrastructure Financing

PPP

- 4.8 The Working Group estimates that about 13-23 per cent of the total investment requirement (across the 3 scenarios) over the next Plan period can potentially come through PPPs including annuity models. This would roughly translate to about 250-300 PPP projects in the urban sector each year. For this to happen, a pipeline of about 600-800 PPP projects must be in place. Although the target of increasing PPP contribution by 10 times is aggressive, the Group feels this must be pursued. This would require a number of initiatives to be put in place across all tiers of government.
- 4.9 Given that PPPs constitute only a small part of the urban infrastructure investment, a sequenced approach (details of which are set out in the Appendix A) in the use of various types of PPP option could help mainstream PPPs in the urban sector. The hierarchy of preferences for the various PPP implementation options could be specified as a guide for state governments and ULBs under NIJNNURM. A model set of output standards for different types of projects across the various urban sub-sectors and for different classes of cities and towns would help state governments and ULBs in configuring projects and bring in a level of standardization in service levels across ULBs. This would also help in benchmarking performance across cities over the longer term. The hierarchy in decreasing order of preference is presented below:
- a. Free standing projects incorporating user fees or demonstrating savings in costs.
 - b. Projects linked to user fees but with viability gap support (one time, front-loaded or annuitized, as the context may require) from the government.
 - c. Payment for performance contracts based on a unitary charge, but with a minimum usage assurance by the government.
 - d. Periodical payment (annuity payment) contracts linked to measurable performance standards.

- e. Fixed price, fixed time EPC contracts with a 3-5 year operations and maintenance (O&M) commitment incorporated.
 - f. Unit rate construction contracts as a last option, but with built-in O&M commitment.
- 4.10 Given the large investments in urban roads, there could be substantial benefits from using PPP frameworks in this area.
- 4.11 The design of NIJNNURM could be so structured as to enable projects/urban sub-sectors to be implemented under PPP (like in the case of national highways and major ports where PPPs would be the default mode of implementation and conventional construction pursued only if PPP options cannot be pursued for inherent structural reasons or lack of willing investors for the project). Funds from NIJNNURM could also be used for the purpose of annuity models; this would need policy changes since such payments may straddle 2-3 Plan periods (or even more) depending on the period of the contract.
- 4.12 A transition plan – identifying areas of quick wins from the various PPP types would need to be prepared as part of NIJNNURM. While some of the projects have so far been in larger cities, it would be necessary to identify pilot projects in Class II and above towns as well that could use PPP structures. For these, incentives in the form of higher levels of VGF or central government funding may be needed in the initial years to kick start the process.
- 4.13 A robust value for money (VfM) framework acceptable to various stakeholders within the government that would be used to benchmark costs quoted by the private sector for management of urban services should immediately be put in place, given the increasing role of the private sector in urban infrastructure creation.
- 4.14 For project development and funding mechanisms at the state level, state financial intermediaries (perhaps on the lines of KUIDFC in Karnataka) should be

created to coordinate the process of project implementation across ULBs in each state. These entities could also serve to build the municipal bond markets in the urban sector. As set out in the financing framework, with the introduction of the revenue shared taxes and NIJNNURM along with reforms to increase revenues, it should be possible for ULBs to generate surpluses to leverage funds, provided appropriate measures like credit rating, accounting standards etc are implemented by ULBs.

- 4.15 The Working Group endorses the recommendation of HPEC of setting up of a Reforms and Performance Management Cell. This recommendation should be quickly implemented and such an entity can contribute substantially to the process of dissemination of information, best practices and success with ULBs across the country. Such an entity could also be the agency for implementing national capacity building programmes in various aspects of urban service delivery and management.
- 4.16 A combination of single urban regulators for metro-cities and regional regulators for clusters of cities could be considered
- 4.17 At the ULB level it would be necessary to incentivise the creation and maintenance of a database of urban utilities, which would need to be regularly updated, funds for which could be provided under NIJNNURM.

Borrowing

- 4.18 The financing framework presented by the Working Group indicates a significant surplus on the consolidated Profit and Loss (P&L) statement of ULBs, which provides room for borrowing from markets for urban infrastructure creation. However, this surplus indicated would essentially be available to a small number of urban local bodies with investible surpluses (may be 80-100 large ULBs in the next five years), rendering the overall prospect for borrowing a challenging one.

Land based financing

- 4.19 Land is a key driver for urbanization both as a factor and as a resource that can be monetized. A strong and dedicated effort is needed from the all tiers of government to exploit this resource to build urban infrastructure. An institutional framework to deal with the issues related to land needs to be put in place urgently to be able to unlock land value in a significant way. The elasticity of this resource is such that with a systematic approach we would be able to fund a large part of the huge deficits presented above. The Working Group has suggested, below, ways in which the land based financing instruments can be tapped more efficiently.
- 4.20 Land value transition as a piece of raw land transits to developed status is complex. Master Plan and its Administration (scale & timing) determine the outcome of land valuation. The case analysis presented in the Appendix B of the Indore Development Authority indicates that value of a plot of land can appreciate by about 10 times by its inclusion in the Master Plan area. It then appreciates only about 2.5 times after the addition of requisite infrastructure. It is important to streamline this transition as part of the process of urban reforms and bring in the value from efficiency gains to the financing of urban infrastructure.
- 4.21 it is important to put in place a model process for aggregating land for urbanisation. Some features of such a model process could include:
- Land use as determined by Master Plans could be followed as a norm. Any change or modification could be occasioned by exception accompanied with a due process
 - Need for initial funding to kick-start the roll-out of an ambitious urbanization process. Some towns may find that such a need is met by pre-allotment moneys which are raised, and in some cities redensification proceeds may provide the requisite funds, however, there may be a need to create a corpus to prime-up the urbanization process

- The control of the corpus of funds from monetization would need a clear delineation of the roles and responsibilities of Urban Development Authorities and ULBs in the land management process.
- Streamlining various interfaces including a) the transfer of assets from Urban Development Authorities to ULBs for O&M, and b) persuade DAs/ULBs to provide urban services to settlements in the vicinity of the town but not so designated as urban.

This exercise could be carried out as part of the reforms under NIJNNURM.

4.22 It is necessary to put in place a template for land management which clearly specifies, among others:

- Preparation of Master Plan in a standardized manner on a regular basis
- Ensuring land patterns as per approved Master Plans
- Sequencing of the land development process to generate resources for infrastructure creation
- Delineate the roles and responsibilities of Urban Development Authorities and ULBs in the land management process

4.23 Government land asset management is poor in the country. There is a need to inventorize such land so that the same could be traded against infrastructure assets. UK land registry provides a good example of such a practice.

4.24 While charging for additional FSI is acknowledged as a key instrument for capturing value appreciation on account of infrastructure addition in a developed urban context, previous attempts at realizing the same have not been very effective. Development Authorities have had no means to enforce these charges against building expansions beyond permitted FSIs. Urban local bodies while being more effective (by use of coercive actions like withdrawal of water supply to enforce recovery of dues) have lacked professional planning skills for the determination of these charges. It is recommended therefore that the densification authorizations should be in the context of an area level comprehensive redensification scheme with charges against additional FSI &

land-use conversions determined professionally, much in the same fashion as is being done in Japan or other south-east Asian countries.

- 4.25 Current levels of development charges collected by development authorities are very meager and do not cover the cost of infrastructure for development. A segmented approach with higher levels of charges could be considered. Also, there is a need for a mechanism by which a part of the charges are transferred to ULBs for supporting O&M activities.
- 4.26 Vacant land tax could be an important source of financing. While common internationally, especially in Latin America countries which levy about 3 per cent tax on the capital value of properties, vacant land tax is sparingly used in India. This instrument can also contribute to promoting housing if the tax rate on built-up land is lower than on vacant premises.

Appendix A: Role of Private Capital in Financing Urban Infrastructure

1.1. Investment through Public Private Partnerships (PPPs): Progress so far

1.1.1 Definition

The term PPPs is often used by urban local bodies (ULBs) to include various forms of outsourcing, including service contracts. It is therefore necessary to include only those projects that meet the requirements of what constitutes a PPP, based on a standard/ authoritative definition. The Department of Economic Affairs (DEA) defines a PPP as *“an arrangement between government or statutory entity or government owned entity on one side and a private sector entity on the other, for the provision of public assets and/or related services for public benefit, through investments being made by and/or management undertaken by the private sector entity for a specified period of time, where there is a substantial risk sharing with the private sector and the private sector receives performance linked payments that conform (or are benchmarked) to specified, pre-determined and measurable performance standards”*. Using this definition as the basis, we could then identify the private investments made so far in the urban sector as well as examine the scope for private investments during the 12th Plan period.

1.1.2 Current Landscape

Despite various initiatives taken by the central and many state governments, the level of private investment in the urban sector through PPPs has been much lower than in the other infrastructure sectors like power, telecommunications and transport.

- 1.1.1 A 2010-11 study conducted by the Ministry of Urban Development highlights recent momentum in the use of PPPs as an instrument in building city infrastructure. Of a total of 49 projects undertaken in PPP model from 2005 onwards under JNNURM at a project cost of Rs. 5458 crore, about 19.5 per cent (Rs. 1066 crore) have involved capital investment by the private sector. Among the states, Tamil Nadu led with private investment of Rs. 279 crore in 4 projects; followed by Maharashtra with Rs 243 crore in 7 projects and Gujarat with Rs. 161 crore in 6 projects.
- 1.1.2 Table A.1 below summarizes the achievements in urban PPP during JNNURM from the study:

Table A.1: Achievements in PPP during JNNURM

	Number of Projects	Private investment (in Rs Cr)	Project Cost (in Rs Cr)	Share of Private Investment
Solid Waste	24	691	1474	47%
Water Supply	8	191	666	29%
Sewage	11	61	164	37%
Urban Transport	6	123	1730	7%
Total	49	1066	5458	19.5%

- 1.1.3 Other sources perused include data from the DEA website of PPP projects which indicates 79 projects in the urban sector at about Rs. 15,000 crore. Similarly, a 2010 Report of the Sub-Committee of the High Powered Committee on PPP by the Ministry of Urban Development estimates about Rs. 28,000 crore from private investment in 44 projects either in progress or under consideration.
- 1.1.4 One of the biggest challenges in determining the PPP landscape is the availability of up to date information on PPP activity in the urban sector. Given the variances in capturing urban PPP projects, the Working Group calls for a consolidated single source managed by the Ministry of Urban Development that

captures and analyses various aspects of PPP projects including value, sector, type and geography.

1.1.5 In spite of the differences, it is evident that there has been progress towards attracting private players and the scope and potential for private participation in urban infrastructure does exist, including in some of the smaller cities where JNNURM has been able to attract private participation.

1.1.6 MoUD has put in place a number of initiatives towards the promotion of PPPs, including:

- Toolkit for analysis of Urban Infrastructure Projects for Public-Private-Partnerships under JNNURM
- Toolkit for Accessing Institutional Finance under the Municipal Finance Improvement Programme of the Ministry
- Credit Rating of Mission Cities
- Pooled Finance Development Fund Scheme

1.1.7 The JNNURM initiatives have created a new wave of private involvement in the urban sectors. The experiences have also brought to light the challenges involved in implementing PPP projects at the ULB level. The lack of institutional capacity and reforms at the ULB level have prevented the accelerated use of PPPs for urban infrastructure. Coupled with the inadequate information on the status of urban services and existing infrastructure, allocation of risks, responsibilities and performance targets within PPP frameworks have been difficult to set. The situation is further constrained by the inability to adequately price for urban services, especially in the water and sewerage sectors. Only a handful of states have put in place any form of legal framework at the state and ULB level to promote PPPs.

1.1.8 Over the last decade there have been various models that have been used in areas such as water supply and distribution, solid waste management, urban transport – bus services and rail systems, parking and transport infrastructure like multi-level car parks, bus terminals and bus shelters. The experience has been mixed, with some successes and several notable failures. Many projects are still in

early stages of implementation – which is why there has still not been a large scale move to these frameworks unlike in the roads and ports sectors. One lesson that has clearly emerged is that very few of these projects are financially free standing and sustainable on the basis of user fees alone. A high degree of financial support from the government is required in most instances. Broadly the PPPs in the urban sector can be classified into the following types:

1. Projects (generally BOT Concessions) that are free standing, usually based on levy of user fees (or paid out of savings in costs – street lighting projects, for instance), sometimes combined with a real estate sweetener or viability gap funding (VGF).
2. Revenue linked to a performance based unitary charge (tipping fee or access charge based) with a minimum throughput assurance (use or pay).
3. Revenue linked to a performance based periodical payment (annuity payment).
4. Models where there is little or no investment by the private sector, but are designed to bring in efficiency improvements to the system – for instance management contracts.

1.1.9 A summary of these models that could be used for various sectors, based on their intrinsic structure and the experiences of the last decade have been set out in the following table.

Table A.2: Summary of PPP Models

Management Contracts	Annuity Payment Contracts	Unitary Charge Contracts	User Fee Based with VGF	Free Standing/ User Fee Based (including those with real estate)/
Water Distribution	Sewerage network	Bulk water supply Sewerage treatment Secondary/tertiary		Bulk water supply and distribution to industrial areas

treatment				
MSW collection and transportation		MSW Treatment		
MSW disposal (landfill)		Integrated MSW project		
Urban roads		Storm water drains		Multi-level Car Parks
E-Services		Parks and gardens	E-Services	Bus services/ BRTS/ Rail based Systems
				Bus services/ BRTS/ Rail based Systems
				Street lighting
				E-Services

1.1.10 Some of the projects that have been implemented with a reasonable degree of success are discussed below. A summary of these cases is set out in Appendix D.

- a. Water distribution under a management contract – The private partner is paid a fee for services during construction and subsequent operations of the system. The government incurs the capital expenditure within an agreed budget and under supervision of the private partner who would play the role of a project management consultant (PMC). The payment of fees to the PMC is linked to adherence to the budget and the specified quality standards. The PMC is then required to supervise the operations and management (O&M) of the distribution network for a fixed period, and achieve certain specified O&M targets. This structure was first used for pilot areas (around one-tenth of the population) in the towns of Hubli, Dharwad, Gulbarga and Belgaum in North Karnataka and successfully completed five years of operations, after which the contract was renewed. Private sector involvement has resulted in significant loss reduction and lower per capita consumption - 110 litres per day (lpd) as against the envisaged level of 135

- lpd in these areas. The government now proposes to scale up the engagement to cover the entire water distribution system in these towns. Similar structures have been used in Khandwa and Nagpur, where the distribution systems for the entire towns have been entrusted to private partners under management contracts.
- b. Solid waste collection and transportation contracts in Delhi (by the Municipal Corporation of Delhi for half the city and the New Delhi Municipal Council) and an integrated SWM project in the town of Rajkot.
 - c. The airport rail link project in Delhi where the private partner manages the train services (DMRC set up the fixed infrastructure – tracks, signalling systems and terminals), re-development of the inter-state bus terminal in Amritsar, multi-level car parks in Delhi and concessions for city bus operations in Indore are examples of free-standing projects in the area of urban transport systems and transport infrastructure.
 - d. Street lighting in Vijayawada and the eSeva projects in Andhra Pradesh are examples of urban services and amenities that have been improved under PPP frameworks.
- 1.1.11 Some of the key enablers for the success of these first generation urban PPP projects have been set out below. Conversely, the failures of the past have been largely due to the lack or absence of these enablers:
- a. Enlightened political leadership and commitment, with a keen desire to improve service standards, widen the resource base and seek participation of stakeholders in project formulation and implementation.
 - b. Adequate preparation of projects, including detailed financial analysis and an achievable plan for land acquisition and shifting of utilities.
 - c. Equitable contractual structures that seek to allocate risks to the party best suited to manage them.
 - d. Where payment for services is envisaged - demonstration by the ULB of the ability to pay by using suitable ring fenced mechanisms or dedicated sources of funding such as cesses.

- e. Use of transparent bidding processes and objective bid evaluation criteria, giving the needed comfort and confidence to private investors.

1.1.12 At present though, PPPs constitute only a small part of the urban infrastructure investment. Given the gargantuan requirement of funds for the urban sector and the general paucity of funds with urban local bodies and state governments, it is critical that PPPs are quickly mainstreamed into the project implementation process, particularly for free-standing projects and where funds are available in a sustainable manner using payment for performance frameworks. Even in projects where significant efficiency gains could be achieved (for instance in water distribution) and where value for money can be demonstrated, PPPs can help achieve more effective use of the scarce resources available with ULBs.

1.1.13 A sequenced approach could help achieve this objective. For instance in water distribution it would be possible to achieve higher efficiencies (loss reduction and lower consumption, which would also translate into financial benefits for the ULB) and increased success in billing and collection of user fees. Over time, together with rationalization of tariffs, the ULB could move to user-fee based contracts, which would reduce the financial pressure on the ULB to that extent.

1.1.14 Even where projects are implemented by the ULB itself using conventional construction contracts (urban roads, for instance), it would be useful to move to EPC contracts incorporating fixed-price, fixed-time commitments and medium term (3 to 5 year) maintenance commitments. Gradually this could move to annuity-based contracts, paid for through existing maintenance budgets, perhaps, supplemented by revenues from congestion pricing. Since a large part of the project urban infrastructure investment would be for roads infrastructure, there could be substantial benefits from using PPP frameworks in this area.

1.1.15 There is clearly a need to continuously experiment with newer PPP structures for the urban sector. For instance one could use hybrid approaches combining user-

fee and performance-linked payment structures. Where these are financed by multi-lateral loans, the payments could be front ended, rather than equated, matching the cash flow requirements of the projects. This would also mean that ULBs could use PPPs where the cost recovery is only partial and compensate the private sector either by a fixed payment – upfront viability gap payment, unitary charge or annuities.

1.1.16 Funds from the newer JNNURM could be used for this purpose; this would however need policy changes since such payments may straddle 2-3 plan periods (or even more) depending on the period of the contract. There would also be a need to evolve some basic ground rules for larger scale use of PPPs – for instance rationalization of user fees, based on the specific context, but moving firmly in the direction of full cost recovery (with adequate safety nets for the poor – perhaps through direct payment of subsidies in a transparent manner), metering, billing and collection for services provided from all users, levy of dedicated cesses, creation of ring-fenced funds and so on. This may require a broader consultation across the political spectrum so that political consensus is achieved on a long term strategy, reducing the threat of future roll backs.

1.2 Estimates of Urban PPP potential

1.2.1 The following types of PPPs, also highlighted above, have been considered for the purpose of determining the urban PPP potential:

- Take or Pay
- User charge based
- User charge + VGF
- Performance based annuity

1.2.2 The following assumptions have been applied to arrive at the PPP potential:

- the 8 core sectors used in the HPEC estimates have been considered

- only Class I cities (1 lakh and above) have been considered for PPP investments
- For Class IA, 20 per cent in Year 1, 30 per cent in Year 2, 40 per cent in Year 3, 50 per cent in Year 4 and 60 per cent thereafter of all urban infrastructure projects that are amenable to PPPs. In the case of Class IB and IC, 10 per cent in Year 1, 20 per cent in Year 2, 30 per cent in Year 3, 40 per cent in Year 4 and 50 per cent thereafter of all urban infrastructure projects that are amenable to PPPs.
- The same assumptions have been used for annuity projects.
- The annuity computation also factors in the debt servicing component, computed as 20 per cent of the first year annuity amounts will be serviced in Year 3, and 20 per cent of 1st year and 20 per cent of second year in Year 4.
- It is assumed that capital investments from PPP will be the same in all the scenarios (The potential resources from PPP are worked out based on scenario 2. These are applied across the other scenarios).

1.2.3 Currently, roughly 2 per cent of all urban infrastructure projects (about 50 projects) are being under taken in PPP mode. The Working Group's proposal of about 13-23 per cent (across scenarios) to be done through PPPs, while appearing to be ambitious and reflecting a substantial increase in private sector participation, must be treated as a target that ULBs must work towards. Without such targets and a clear roadmap for achieving these targets, it will be difficult to break away from the current landscape of largely public exchequer led spending on urban infrastructure.

1.2.4 While about 13-23 per cent from PPP may be less compared to other infrastructure sectors which are able to attract private capital of about 40-50 per cent of the total requirement, with the multiple challenges of managing projects as well as the political economy, the urban sector would require sufficient cushion to be able to absorb changes to the manner in which infrastructure is planned, financed, built and managed.

1.2.5 Historically, the urban sector has largely been financed by the public exchequer, with momentum for private participation only having picked up in the last few years with the thrust provided by JNNURM. The next Plan period should focus on the twin objectives of sustaining the momentum gained of using private players and at the same time devoting sufficient energy towards enhancing capacities of ULBs to be able to manage PPP projects. Towards this end, the Working Group views 13-23 per cent of the total investment coming from the private sector as an ambitious yet achievable target.

1.3 Regulatory and Enabling Environment Considerations

1.3.1 In order to incentivise the larger scale use of PPPs it would be useful to link the utilization of Central government funding to the effort of developing projects as PPPs. For instance in national highways and major ports, PPPs would be the default mode of implementation and conventional construction pursued only if PPP options cannot be pursued for inherent structural reasons or lack of willing investors for the project. This may require policy changes in the design of any new JNNURM scheme during the 12th Plan period.

1.3.2 It may also be useful to specify the hierarchy of preferences for the various PPP implementation options as a guide for state governments and ULBs. This has been set out below in decreasing order of preference:

- g. Free standing projects incorporating user fees or demonstrating savings in costs.
- h. Projects linked to user fees but with viability gap support (one time, front-loaded or annuitized, as the context may require) from the government.
- i. Payment for performance contracts based on a unitary charge, but with a minimum usage assurance by the government.
- j. Periodical payment (annuity payment) contracts linked to measurable performance standards.

- k. Fixed price, fixed time EPC contracts with a 3-5 year operations and maintenance (O&M) commitment incorporated.
 - l. Unit rate construction contracts as a last option, but with built-in O&M commitment.
- 1.3.3 A model set of output standards for different types of projects across the various urban sub-sectors and for different classes of cities and towns would help state governments and ULBs in configuring projects and bring in a level of standardization in service levels across ULBs. This would also help in benchmarking performance across cities over the longer term.
- 1.3.4 Where central government funds would be used as a source for payment of VGF, unitary charge based performance payments or annuities, a certain degree of balancing – using these funds in the initial years of the project and the state government/ ULB funds in the latter years of the project would help minimise spill over to the subsequent plan period. However, since many projects would need funds that straddle two or more Plan periods, a suitable mechanism would need to be put in place to earmark these funds for use over the term of the project as required. Suitable changes in policy may be needed for this purpose – since this is an issue that would cut across various sectors where such types of PPPs are used, the benefits will accrue to several other sectors as well.
- 1.3.5 A transition plan – identifying areas of quick wins from the various PPP types would need to be prepared as part of the new JNNURM scheme. While some of the projects have so far been in larger cities, it would be necessary to identify pilot projects in Class II and above towns as well that could use PPP structures. For these, incentives in the form of higher levels of VGF or central government funding may be needed in the initial years to kick start the process.
- 1.3.6 For projects to succeed it would be necessary to put in place a right kind of institutional mechanism to support, coordinate and monitor the progress in implementation. The HPEC report recommends the setting up of a Reforms and

Performance Management Cell for this purpose. This recommendation should be quickly implemented and such an entity can contribute substantially to the process of dissemination of information, best practices and success with ULBs across the country. Such an entity could also be the agency for implementing national capacity building programmes in various aspects of urban service delivery and management going beyond the current 65 cities to cover all ULBs within a reasonable time period.

- 1.3.7 Since only a few urban projects are likely to be financially free-standing, public funds of the required order would need to be provided at all levels. For this, it would be necessary to put in place a robust value for money (VfM) framework acceptable to various stakeholders within the government that would be used to benchmark costs quoted by the private sector for management of urban services.
- 1.3.8 Further, since most ULBs (barring perhaps the large metro cities) would not have the specialized skills and knowledge required to implement the increasingly technically complex urban projects and more so PPPs, it may be necessary to set up a single point project development and funding mechanism at the state level, (perhaps on the lines of KUIDFC in Karnataka) to coordinate the process of project implementation across ULBs in each state.
- 1.3.9 There have been several discussions in the past for appropriate independent regulation in the urban sector. Rather than set up separate regulators for each sector (which may be practically infeasible), it would be useful to set up one or more urban utility regulators in each states covering a range of urban services. The number of regulators would need to be arrived at taking into account the size and physical characteristics of each state and the level of urbanization within. A combination of single urban regulators for metro-cities and regional regulators for clusters of cities may well be the solution.

1.3.10 At the ULB level it would be necessary to incentivise the creation and maintenance of a database of urban utilities, which would need to be regularly updated. Adequate funds could be provided under the new JNNURM for this purpose.

1.3.11 It is assumed that the ULBs would be able to borrow as much as their investible surplus in the respective years, assumptions as below:

- Maturity of the debt: 10 years
- No of installments: 1 per year
- Interest rate: 10 per cent per annum
- DSCR: 1.5
- It is assumed that the ULBs would be able to borrow double the lowest revenue surplus (annual) available during the Twelfth Plan Period in Scenario 1 and Scenario 2. This would mean by 2016-17 ULBs would have mobilized maximum debt from the market and in the same year the ULBs would also be paying maximum recourse (debt repayment) on the borrowing. ULBs will not be able to further borrow against the surplus during the 13th and 14th Plans, as they will have to mobilize their own resources for debt repayment. The ULBs would be able to borrow again in the first year of the 15th plan, by which time they would be able to repay the debt taken during the 12th Plan. It is assumed that ULBs would be able to borrow double the lowest revenue surplus in a single year in the 15th Plan, with enhanced ULBs creditworthiness/ marketworthiness and maturity of the debt market for municipal borrowing. In Scenario3 ULBs won't be able to borrow as there is no surplus available on the current account of ULBs.

Appendix B: Land based Instruments

2.1 Current Landscape

- 2.1.1 Land based financing has been categorized into 4 categories by G Peterson in his book *Unlocking land values*: land lease/ sales, density authorisation, land asset management and developer exactions. Land sale/lease has been the norm in the country with state agencies effecting the transition from agriculture to non-agricultural land for various developments in the urban areas. Density authorisation has been difficult in India as the incidence of the exaction does not have the requisite opportunity for collection. Land asset management has not been effective in our context as the valuation of land assets is neither determined nor updated in any manner. Developer exactions in India have largely been low and have failed to provide for enough for the development and operations of supporting infrastructure. In this context, it is relevant to examine what are the issues affecting the monetization of land for urbanization and seek directions to address the same using case analyses.
- 2.1.2 Evidence suggests that land especially in and around urban areas can be tapped for generating resources for supporting urbanization. Sales from MMRDA land auctions in just one complex (Bandra-Kurla complex) in January 2006 was a staggering Rs.23.0 billion, which was two times more than the total infrastructure investment made by the Mumbai Municipal Corporation, during 2004-05 (which was only Rs.10.4 billion) and four times more than MMRDA's own infrastructure investment in 2004-05 which was a mere Rs.5.4 billion. Some land transactions in recent time have been making news as much for the value they have generated as for the controversies that surround them. If land value is to be tapped for financing urbanization many issues need to be sorted out. While there are changes in the offing with the proposed draft Land Acquisition Act, there are a host of regulatory and process challenges that may need detailed attention.

- 2.1.3 There are more than 150 Development Authorities, of them 35 area Metropolitan Development Authorities, and 28 Housing Boards in the country. They have been mandated with the implementation of the Master Plan as formulated by the State Town and Country Planning Departments from time to time. For the purpose, they raise resources by the sale/ lease of Land. They can also collect development charges and some fees for various approvals that they have been charged with.
- 2.1.4 The information on the activities of Development Authorities who are primarily responsible for raising revenue through land based instruments has been limited and very few studies have covered the subject of land monetization. The Report on Monetizing Land done for the 13th Finance Commission by Kala Seetharam Sridhar (*Land as a Municipal Financing Option: A Pilot Study from India*) has presented a case for financing urbanization using land based instruments. As per the study, about 15 per cent of ULB revenues have in the 10 years (1998-99 to 2007-08) come from the sale / lease of land by Development Authorities in the cities of Kolkata, Bangalore and Ahmedabad.
- 2.1.5 The Working Group has therefore used a case analysis approach to develop insights into the issues affecting the monetization of land in India.
- 2.1.6 The Working group has worked out the contribution from land based instruments on a normative basis ascribing a value to fresh serviced land which is added to the urban land pool every year. If a charge of Rs. 10 per sft of built up land is charged over and above the recovery of basic infrastructure costs, it would contribute Rs. 4403 Cr p.a. which is 0.07% of GDP. This works out to be 10% of total ULB expenditure. Accordingly, the revenues from land based instruments are assumed to be 5 per cent of total expenditure in first two years of 12th Plan period and 8 per cent in 3rd year of 12th Plan; and subsequently 10 per cent. It is also assumed that the revenues from land based instruments will be the same across the scenarios (taking Scenario 2 as the base).

2.1 Land lease/ sales

Green-field development of land for urbanization is taken up by the Development Authority in the country. Land is usually acquired under the Land Acquisition Act by the District Collector, this is transferred to the Development Authority on payment of a consideration equivalent to the cost of acquisition, which is usually a time consuming process. Cities in Gujarat and Indore in Madhya Pradesh have innovated with procurement of land for development on a sharing/ pooling basis. This usually takes less time and is more equitable to the original land-owners. After the procurement of land has been substantial, the Development Authority develops the land by creating infrastructure in consonance with a Master Plan duly prepared and notified by Town and Country Planning Department of the state government.

Case Study I: Gujarat's Participative Policy for Landowners in Industrial Estates

- In the participative policy, besides paying the landowners the market price of their land, GIDC will share with them the price at which it allots the developed land to the industrial units. Thus the landowners will continue to receive a share in the resources generated from the land of the industrial estate.
- Under this policy, GIDC will acquire 80-90 per cent of the land with the consent of the landowners. The market price to be offered will be determined by CEPT University, ensuring neutrality and professionalism in price determination.
- The land falling within 300 metres of the outer limit of the 'gamtal' will not be acquired for the estate, but will be left for future expansion of the 'gamtal', to let the landowner get the benefit of residential and commercial development of their land.
- When GIDC transfer the developed plots to industry, it will pay to the landowners 10 per cent difference between its allotment price to industry and the price at which it has purchased the land from them.
- The landowners will also be given developed commercial plot in the Industrial Estate built on their land to the extent of 1% (one per cent) of the land acquired at a token price of Rs.1 per square metre, ensuring the landowner continue to

share the fruits of industrialization even after the transfer of the land by GIDC to industry.

- Such landowner will be entitled to one time financial assistance equivalent to 750 days minimum agricultural wages for loss of livelihood (Rs.75,000).
- A landholder who becomes a marginal farmer as a result of land acquisition will be entitled to one time financial assistance equivalent to 500 days minimum agricultural wages (Rs.50,000).
- As per a Gujarat Government policy which allows a landowner whose entire land has been acquired under Land Acquisition Act to be considered as a landowner for up to two years after the acquisition, giving the landowner to purchase alternative land elsewhere within two years.
- GIDC has, in its new policy, announced an ambitious scheme for capacity building and skill enhancement with a view to enable local people getting ample of employment opportunities.
- GIDC will, at its cost, sponsor one person between the age of 18 and 45 in each family of landowner for training in ITI in a course for up to 2 years. The trainee will get stipend and expenses for the entire course, which is estimated to be about Rs.70,000 per trainee.
- GIDC will also endeavor to obtain employment for one member of each landowner family who sell their land for industries.
- GIDC will partner all the landowners who sell their land at the market price determined by CEPT University and share with them the resources generated from the estate.
- GIDC will also share the proceeds with the Village Panchayats. 3% of the difference between GIDC's allotment price of the estate and the price at which it has purchased land from the landowners will be deposited in a separate bank account of the Village Panchayat. This amount will be utilized for pro-public projects in the villages.

Case Study II: Scheme No 114 of the Indore Development Authority

2.1.10 The Working Group studied the case of development of Scheme no 114 of the Indore Development Authority (IDA) to understand the value that accrues and is available for exaction by the Development Authority.

2.1.11 IDA's progress within a period of 5 years from 2003 to 2008 has been very impressive selling more than 6000 plots with land assets growing from 22,106 ha to 37,236 ha and collections from sale / lease growing from Rs. 2.59 crore to Rs. 7.57 crore. Further, IDA has obtained 4000 acres of land on sharing / pooling basis directly from farmers along the Super corridor, in a record time of less than 5 years. Currently, IDA is developing about 500 acres of land every year at an average cost of development of Rs. 3,000/- per sqm.

Scheme No 114, Indore Development Authority

Location

- The scheme No 114-I is situated 8 kms to the North of Indore on Agra Bombay Road.

Scheme Background

- Residential Scheme declared on 5.09.1984 by IDA U/S 50(1) Madhya Pradesh Gram Tatha Nagar Nivesh Adhiniyam, 1973.
- Total Area: 102.110 Ha.
- Planned Area: 91.518 Ha (Other area has been exempted or approved as Co-operative Society and some area is under Court Stay)

Land Use

- The Net Residential Plot Area was 33.363 Ha (53.18%) of the Net Planning Area. The Residential Plots range from 32sqm to 315 Sqm.

Value transition

- Agriculture land value (per sqm): Rs. 20/- (1984)
Rs. 7000/- (2011) within Master Plan Area
Rs. 800/- (2011) outside Master Plan Area
- Average value of compensation against acquisition (1984-1992) per sqm:
30 /- ORIGINAL Rs. 200/- AFTER REFERENCE
- Development cost intimated by IDA (1986) per sqm:
Rs. 220/-
- Land Value at commencement of disposal (2002) per sqm:
Rs. 650/-
- Land Value at peak disposal (2005-06) per sqm:
Rs. 8000/- to 10000/-
- Land Value at current disposal (95% of scheme allotted) per sqm:
Rs. 20000/-

Land Assembly

- Land was assembled by means of Land Acquisition Act 1894. Land was acquired for 91.113 Ha excluding the area exempted from the scheme and area under court stay. Of the total, 17.894 Ha was Nazul Land (government land situated in the area of a municipality) and remaining 73.219 Ha was under Private Ownership.
- Compensation paid for the acquisition of the land was @ of 7.5 lacs/Ha. Taking total cost of Acquisition to 683 Lakhs. Land was awarded to Indore Development Authority in Dec 1992.
- But after decision of court in reference cases the acquisition cost was enhanced to 200 /- per sqmt i.e 20 lakhs per Hectare

Land Development

- Land Development was started in Jan 1995.
- The Total Development cost of the Scheme was Rs 12.5/sqft on the Gross Land, which was to the tune of 844 Lacs inclusive of the diversion charges and other administrative charges (e.g. cost incurred in litigations and other procedures). Total Cost of the Scheme was 1527 Lakhs, which was Rs 37.55/sqft for the Net Plotted Land.
- Development is done by IDA itself with Tendering procedure on Contract basis allocated to private contractors.

Disposal

- The plots are disposed as per Vyayan Viniyam 1987. A mandatory 15% reservation of the developed Plots is for EWS as per State Housing Policy 1995.
- The land allocation is as follows:

Plot Size	%
EWS (Blw. 40Sqm)	34.86
LIG (40-80Sqm)	5.67
MIG (80-120Sqm)	30.99
HIG (Abv. 120Sqm)	28.48
Total	100%

Post Disposal

- IDA to hand over the scheme to IMC for maintenance after once sizable amount of plots had been developed. IDA has no role in Control of Development and enforcement of Building Bye-Laws which vests with IMC.

- IDA levied maintenance charges of 2% of the Premium, which was added to the price.
- If the allottee kept the plot vacant for more than 2 years from date of allotment he needed to take extension for 2 years with nominal charges failing which the allotment stands cancelled. Additional penalty is taken from allottees who keep vacant the plot for more than 4 years, which is in the form of Rs 500-1000 per year.

Lessons Learnt on Land Lease/Sale

- Master Plan and its Administration (scale & timing) determine the outcome of land valuation. The value of a plot of land appreciates considerably by its inclusion in the Master Plan area. Master plan, the most accepted and legally valid planning instrument, needs to be prepared in a standardized fashion with consistency and unflinching regularity. Master Plans need to go beyond the spatial planning and include socio-economic, ecological and other relevant aspects. The scope of the Plan needs to plan for the city in its regional setting and the agency that is responsible for Master Planning should have a regional focus. Land use planning needs to be hierarchical with various regional and local agencies contributing to it.
- Land value in a developed urban context is substantial and can be tapped for financing urbanization. This value is determined by the interplay of a number of factors, the timing and sequence of each of which produces widely different value realizations. Assembly of land is a time consuming exercise with eventual development also taking anywhere between 1-7 years in the case of Indore. In Haryana, HUDA Constituted in 1977; has developed 30 Urban estates in different towns; totaling 277 Sq Km. averaging 8.14 Sq Km per year. Ahmedabad Urban Development Authority (AUDA) has demonstrated a capacity of executing 122 Sq Km in 33 years at an average of 3.69 Sq Km per year. The details are mentioned in the table below:

Duration	number of schemes	area developed
1978 to 1999	18	2300 ha (23 sq km)
1999 to till date	50	5028 ha (50 sq km)
Under preparation	47	4890 ha (~49 sq km)

- However, urbanization is set to grow and at a pace which may be difficult to keep abreast with. It has been assumed that the pace of urbanization would require about 500 sq km of additional land per year for about 100 high growing urban centers, averaging about 5 sq km per annum per town. To provide for this growth, it is important to put in place a model process for aggregating land for urbanization. Some features of such a model process could include:
 - Preparation of Master Plan in a standardized manner on a regular basis
 - Ensuring land patterns as per approved Master Plans
 - Sequencing of the land development process to generate resources for infrastructure creation
 - Delineate the roles and responsibilities of Urban Development Authorities and ULBs in the land management process

In addition, a well articulated pricing policy for acquisition/ pooling, streamlined dispute resolution mechanism, streamlined diversion process, rationalized delimitation of urban areas, may be some of the other measures that may be required to come up with a model process for procurement and development of land for urbanization.

- Value realization through land lease by Auction is the preferred mode. Leasing leads to a realization of a fixed sum upfront and a regular annual charge in addition to the premium which may be quoted at the time of the auction. The revenues accruing from such leasing can be utilized for the development of more land in accordance with the Master Plan.

2.2 Densification Authorizations

Value capture builds on the principle that the benefits of urban infrastructure investment are capitalized into land values. Because public investment creates the increase in land values, many land economists argue that government should share in the capital gain to help pay for its investment. Public authorities have used a variety of instruments to capture the gains in land value created by infrastructure investment. Charges against additional FSI and betterment levies, which impose a one-time tax on

gains in land value, are one such instrument. Such levies in India have not been very effective largely due to a lack of a defined incidence which would prompt the beneficiaries to come to the Development Authorities for an approval / clearance. Thus even where such levies have been imposed they have not been effectively collected. The case is different in the case of Municipal bodies in Gujarat, Andhra Pradesh or Tamil Nadu which exercise their right to withdraw water supply or other services in case of a default in the payment of such charges.

Planned Redensification / redevelopment of an existing area of low density is a measure of capturing value so created on account of the development of infrastructure and concomitant appreciation of real estate in such areas in an organized manner. While such experiments have been taken up in most parts of the country, Madhya Pradesh has formalized this in the form of a Redensification Scheme issued in 2005. The Link Working Group has studied the Development of Central Business District in South TT Nagar of Bhopal under the Redensification Scheme as a case to understand the value capture that has been possible on account of the development.

Case Study 3: New CBD at Bhopal

Case Study on Development of New CBD at Bhopal

Background

MP Housing Board (MPHB) had identified 32 acres of land in the heart of the city of Bhopal for redevelopment under the Re-densification Scheme of the Government of Madhya Pradesh (GoMP). There were government houses, schools, other amenities and infrastructure etc. situated on this land. The project involved integrated development – commercial and residential - of this land in public private partnership.

The site is situated in South TT Nagar locality of Bhopal abutting the road from New Market to Mata Mandir on the west and Link Road 1 on the north.

Project Proposal



Initially, redevelopment of this land was approved by the Empowered Committee of GoMP in the following manner:

- portion of land that touches the road from New Market to Mata Mandir on

the west side and Link Road on the north side, measuring 11.77 Acre was to be developed for commercial activities.

- portion of land behind the land identified for commercial activity measuring 9.7 Acre was to be developed as multistoried complexes for residential purposes.

Out of the remaining land, 1.3 Acre was to be used for semi public activities and 9.20 Acre for internal development – roads, utilities, parks, green areas.

A layout plan for redevelopment of 32 Acre as per the above has been prepared by MPH B.

As per the decision of the Empowered committee, out of 32 Acre of land at the site, only 15 Acre of land was taken up for redevelopment under the scope of this Agreement. The development of this 15 Acre was to be largely for commercial purposes.

However, while preparing plans for redevelopment of this 15 Acre land, the layout of the entire 32 Acre was prepared and reviewed so that the redevelopment on the balance 17 Acre of land would be in harmony with the development over this 15 Acre.

Redensification scheme

The Redensification Scheme was formulated by the Housing and Environment Department; Government of Madhya Pradesh in 2005 MPH B was designated as the Executing Agency to implement the project. An Empowered Committee headed by the Chief Secretary was constituted to make decisions with respect to clearances and approvals under the scheme.

Model for Development

The land of 15 Acre was bid out on 30 years lease to be renewed every 30 years for perpetuity without payment of any lease premium.

Master Plan changes

There was need to unlock the commercial potential at few sites in the cities through re-densification. There were ageing government houses, schools, other amenities and infrastructure etc. situated on this land. Some of which were occupied. The project involved integrated development- commercial and residential - of this land in PPP. Under the Scheme, the Project has been allotted a global FSI of 2.5 for development. The Empowered Committee (EC) conveyed its consent on the commercial and commensurate residential use of the Project to the Town and Country Planning Office

for obtaining approval in the Land Use Plan. EC agreed to the shifting of the Primary and Middle School as proposed by MPH. Developer was free to sub-lease the developed property

Concession Terms

Development Agreement was structured on *Concession cum Lease* basis. An initial Concession Period facilitated the Developer to enter the site to construct common infrastructure and to take the necessary approvals upon payment of initial amount. The lease shall become operational only when the total amount bid has been deposited with Government of Madhya Pradesh

Valuation and reserve price

In 2005, MPH auctioned a land parcel ~ 5.9 acres in MP Nagar The highest bidder - Dainik Bhaskar - paid a price of Rs. 65 crore for the site In addition, since the said plot was not part of the re-densification scheme, the selected bidder was also required to pay an annual lease rental equivalent to 7.5% of the sale value of the project

Area	5.9	Acres
Sale Price	65	Rs crore
Land Cost	11	Rs crore per acre
Lease Rent	7.5%	of Sale Value
	0.83	Rs crore per acre
NPV of Lease Rentals*	3.30	Rs crore per acre
Effective Land Cost	14.30	Rs crore per acre

*Based on an equity cost of capital of 25%; Time period -30 years

Based on guideline rates issued by the District Collector in 2005, the reserve price was estimated to be Rs. 67 crore, however, given the above illustration, the empowered committee pegged the reserve price for the redevelopment at Rs. 225 crore

Value realization

MPHB transferred the site of the Project – 15 Acre - vacated and provided possession of the site free of encumbrances to the private sector partner for a bid price of Rs. 338 Crores in April 2008.

2.3 Lessons Learnt on Densification Authorization

It is evident from the case that densification authorizations are better taken up in an organized manner and as per a Master Plan. Our cities need to be enabled for adequate densification. Redevelopment, reconstruction and readjustment cases internationally have shown that:

- Urban redevelopment policies can check the sprawl
- Results in a transit supportive urban form
- Enhancement of efficient utilization of building lots by using extra FAR
- Development right could be transferred to densify the older areas with ageing built stock
- Redensification needs dedicated effort, pooling mechanisms, robust planning process, infrastructure upgradation and sharing of value.

2.4.1 Land asset management

2.1.7 In India, Union Government Departments and Organizations have been the largest owner of landed property in the country. These lands were mostly acquired / allotted, when these areas were under-developed and there were minimal land requirements from other industries and developmental activities. However, most of these land parcels are in a position to command hefty premia as on date, with land prices having shot up due to the enhanced pace of development. These land parcels also face the threat of illegal occupation, land grabbing, encroachments and permanent alienation. There is, thus, a need to have a transparent and rational framework for management and allocation of Government lands, including through sale, leases and public private partnerships (PPPs).

2.1.8 Many Union Government Departments and Union Public Sector Undertakings (CPSUs) have framed their own policies with the approval of the competent authority with regard to transfer or alienation of land. There are few CPSUs like NTC, etc., which sold off their surplus land to raise additional funds. Delhi Metro Rail Corporation (DMRC) and the Ministry of Civil Aviation / Airport Authority of India (AAI) also have or are in the process of developing policies to better exploit their land resources. Indian Railways have also established the Rail Land Development Authority (RLDA) as a statutory authority for development of

vacant railway land for commercial use for the purpose of generating revenue through non-tariff measures. Ministry of Shipping (MoS) have their own approved land allotment policy with respect to land owned by port trusts.

Land asset management recognizes that the balance sheets of many public entities already are top-heavy with urban land and property assets. At the same time the cities in which the property is located suffer acute infrastructure shortages. Under these conditions it makes sense for public authorities to exchange land assets for infrastructure assets. They can do this by selling or leasing publicly owned land and using the proceeds to finance infrastructure investment. There is a large quantum of land available with CPSUs and other government agencies in urban areas which can be traded in such a manner. However, this needs to be done with caution, also given the lack of a comprehensive database on the availability of land.

A comprehensive registry of urban land at all levels of government is needed as a first step towards putting land based instruments to good use. Standardization of valuation processes would be key to monetizing land in a city/urban area.

2.4.2 Developer exactions

Developer exactions require developers to go beyond installing infrastructure facilities at their own site. They oblige a developer to finance part or all of the costs of external infrastructure needed to deliver public services to the site. Thus developers are required to build subdivision roads and also help pay for major access highways to the area. They may be required to help pay for the trunk lines that deliver water and for wastewater removal and treatment systems. In India, this has taken the form of development charges. While the development authority constructs the infrastructure, it collects these charges from the developers/ end consumers. Often these charges are very low and do not cover the cost of the infrastructure required to develop the area.

The main issues that affect the recovery of infrastructure expense through the levy of various charges are listed hereunder:

- Need to move to a normative calculation of Development charges to hasten the process of Urbanization (currently project to project basis requiring time)
- Capture adequate share of value for infrastructure development and operation

- Rationalize the timing and sequence of charges and levies
- Automating the transition from development to O&M is desirable for continued delivery of effective urban services
- Collection of multiple charges for the same incidence / event (say, conversion from agricultural to residential) may be simplified by having a one point banking interface

Appendix C: Affordable Housing

3.1 Introduction

The long neglected urban India persists with an estimated 25 percent of the urban population subsists below poverty line and majority of them reside in slums and squatters. According to Ministry of Housing and Poverty Alleviation (MHUPA) India has a short fall of 24.71 million and expected to reach 26.5 million by 2012. Most of the housing shortage is for EWS and LIG Sections which does not seem to be getting translated into economic demand due to lower affordability by the poor (99% of the housing shortage of 24.7 million as at the end of the 10th Plan pertains to the Economically Weaker Sections (EWS) and Low Income Groups (LIG) sectors). The ever increasing demand for housing and consequent development of slums drags down the productivity of the city and its potential contribution to economic growth.

3.2 Estimates of Investment Requirements for Affordable Housing

This section presents the national level investment estimates for the affordable housing. The methodology adopted for the estimation exercise is described below:

1. *Projection of the housing shortages.*

- a. Population projections made by the High Powered Expert Committee were used to arrive at the number of urban households (a household size of 5 is assumed)
- b. The methodology of the Technical Group on Estimation of Housing Shortage for the 11th Five Year Plan, constituted by the Ministry of Housing and Urban Poverty Alleviation, was adopted to arrive at the housing shortages for the 12th Plan Period.
- c. The Technical Group has projected a shortage of 26.53 million housing units at the end of the 11th plan, i.e. in the year 2011-12. This shortage was taken as the base year shortage at the beginning of the 12th plan. Out of this shortage, the congestion factor contributes to 12.67 million of households and need for fresh housing contributes to 16.29 units.

- i. Based on the projected urban population in the year (HPEC, 2011) and a household size of 5, the projected number of households for the year 2016-17 is 84.4 million.
- ii. Pucca housing is assumed to grow at 2.4 per cent per annum annually (basis for this) from the base year. Semi-Pucca and Kutcha housing are assumed to grow at 1.87 and 3.2 per cent per annum annually (assumed to be in the same ratio of 2012 as reported by the Technical Group of 11th plan, not clear, are the growth rates the same as assumed in the 11th plan).

2. Projection of the slum housing for RAY

- a. The above estimates summarise the overall housing shortage in urban areas. Considering the huge backlogs of urban infrastructure as well as housing, separate estimates for housing have been prepared.
- b. Slum population projections made by the Pronob Sen Committee were used to arrive at the number of urban slum households at the end of the 12th Plan Period (a household size of 5 is assumed).
- c. Using NSSO (2008-09) data, type of housing in the slums was calculated.
 - i. According to 65th round of NSSO (2008-09), pucca housing in slum areas is about 57 per cent, semi pucca is about 29 per cent, serviceable Kutcha is about 10 per cent and unserviceable Kutcha is about 3 per cent. These ratios were applied to arrive at the proportion of slum housing in each of these categories for 2011-12.
 - ii. All the semi pucca and kutcha housing are considered for new housing
 - iii. In addition, the problem of congestion within pucca houses will also need to be addressed. The 58th Round of NSSO data shows that in the slums as many as 44 per cent of the homes, with at least one married couple, did not have separate room for the married couple. The same percentage has been applied on the 2011-12 slum housing stock to estimate the number of pucca houses with problems of congestion.

3. Unit cost assumptions for Affordable Housing

- For the estimation purposes, unit cost of Rs. 3.5 lakh has been considered for housing and Rs. 1.2 lakh for infrastructure.
- For upgrading infrastructure in existing slums, a cost of Rs 70000 per household has been assumed, based on the estimates prepared by HPEC (2011).
- The overall investment requirement for affordable housing consist of the following elements
 - Cost of constructing fresh housing units @Rs 3.5 lakh
- Cost of providing infrastructure for fresh housing units @Rs 1.2 lakh per household
- Cost of upgrading infrastructure in existing slums @70000 Rs per household
- Cost of addressing congestion in slums as well as in non slum areas @Rs 60,000 per housing unit

4. Unit cost assumptions for RAY

- For the estimation purposes, unit cost of Rs. 3.5 lakh has been considered for housing and Rs. 1.2 lakh for infrastructure.
- For upgrading infrastructure in existing slums, a cost of Rs 70000 per household has been assumed, based on the estimates prepared by HPEC (2011).
- The overall investment requirement for affordable housing consist of the following elements
 - Cost of constructing fresh housing units @Rs 3.5 lakh
- Cost of providing infrastructure for fresh housing units @Rs 1.2 lakh per household
- Cost of upgrading infrastructure in existing slums @70000 Rs per household
- Cost of addressing congestion in slums as well as in non slum areas @Rs 60,000 per housing unit

Summary Tables

Table 1: Investment estimates for Affordable Housing

	Slum areas	Non slum areas	Total	Unit Cost	Total Cost
<i>Units</i>	<i>Million</i>	<i>Million</i>	<i>Million</i>	<i>Rs</i>	<i>Rs crore</i>
Need for fresh housing units	10.61	5.68	16.29	350000	570150
Incremental housing to address congestion	4.78	7.89	12.67	60000	76020
Provision of infrastructure for new housing units	10.61	5.68	10.61	120000	127320
Up gradation of infrastructure in existing slums	10.85	0.00	10.85	70000	75950
Housing Cost (New+ up gradation)					646170
Infrastructure Cost					203270
Grand Total					849440

Table 2: Investment estimates for Affordable Housing

	Slum areas	Non slum areas	Total Cost
<i>Units</i>	<i>Rs crore</i>	<i>Rs crore</i>	<i>Rs crore</i>
Need for fresh housing units	371350	198800	570150
Incremental housing to address congestion	28680	47340	76020
Provision of infrastructure for new housing	127320	0	127320

units			
Up gradation of infrastructure in existing slums	75950	0	75950
Housing Cost (New + up gradation)			646170
Infrastructure Cost			203270
Grand Total			849440

Table 3: Investment estimates for RAY

	RAY 1	RAY 2	RAY 3	Total	Unit Cost	Total Cost
	250 cities	Class I cities (excluding cities covered under RAY 1)	Rest of the cities (1000 cities-RAY 1 cities-RAY 2 cities)			
<i>Units</i>	<i>Million</i>	<i>Million</i>	<i>Million</i>	<i>Million</i>	<i>Rs</i>	<i>Rs crore</i>
Cities covered	250	444	378			
Need for fresh housing units	6.19	1.86	NA	8.04	350000	281538
Incremental housing to address congestion	2.79	0.84	NA	3.62	60000	21739
Provision of infrastructure for new housing units	6.19	1.86	NA	8.04	120000	96527
Up gradation of infrastructure in existing slums	6.34	1.90	1.64	9.87	70000	69093

<i>Total Housing Cost (New housing + incremental housing)</i>	303277
<i>Total Infrastructure Cost</i>	165621
Grand Total	468897

Table 4: Investment Estimates for 12th Plan (50% of the Total Requirements)

	RAY 1	RAY 2	RAY 3	
	250 cities	Class I cities (excluding cities covered under RAY 1)	Rest of the cities (1000 cities-RAY 1 cities-RAY 2 cities)	Total (Rs crore)
Housing	116663	34976	0.00	151638
Infrastructure	59304	17780	5726	82810
		Total		234449

Table 5: Financing of RAY for the 12th Plan (Scenario-1)

	RAY 1	RAY 2	RAY 3
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	<i>250 cities</i>	<i>Class I cities (excluding cities covered under RAY 1)</i>	<i>Rest of the cities (1000 cities-RAY 1 cities-RAY 2 cities)</i>	<i>Total (Rs crore)</i>
<i>Support to Housing from Gol</i>				
RAY Subsidy (@ Rs 75000 per new housing and @35000 up gradation)	28085	8420	0	36505
Interest Subsidy (5 per cent)	14615	4382	0	18997
Subvention to cover the operational cost of the loan (4 per cent of the loan amount)	3543	1062	0	4605
Credit Guarantee Corpus (5% NPA and 90% Risk Cover)	3986	1195	0	5181
<i>Support to Infrastructure from Gol (@50 per cent of Infrastructure costs)</i>				
Support to Infrastructure from Gol	29652	8890	2863	41405
Total Government of India Support	79882	23949	2863	106694

Table 6: Financing of RAY for the 12th Plan - Scenario 2

	RAY 1	RAY 2	RAY 3	Total
	<i>250 cities</i>	<i>Class I cities (excluding cities covered under RAY 1)</i>	<i>Rest of the cities (1000 cities-RAY 1 cities-RAY 2 cities)</i>	<i>(Rs crore)</i>
<i>Support to Housing from Gol</i>				
RAY Subsidy (@ 50% of new housing cost and @35000 up gradation)	59028	17697	0	76725
Interest Subsidy (5 per cent)	9510	2851	0	12361
Subvention to cover the operational cost of the loan (4 per cent of the loan amount)	2305	691	0	2997
Credit Guarantee Corpus (5% NPA and 90% Risk Cover)	2594	778	0	3371

Support to Infrastructure from Gol (@50 per cent of Infrastructure costs)

Support to Infrastructure from Gol	29652	8890	2863	41405
Total Government of India Support	103089	30906	2863	136859

Table 7: Financing for the 12th Plan

	<i>RAY (scenario 1)</i>	<i>RAY (scenario 2)</i>	<i>non slum areas</i>
<i>Rs crore</i>			
<i>Support to Housing from Gol</i>			
Housing Subsidy	36505	76725	35108
Interest Subsidy (5 per cent)	18997	12361	13194
Subvention to cover the operational cost of the loan (4 per	4605	2997	3519

cent)

Credit Guarantee Corpus (5% NPA and 90% Risk Cover)	5181	3371	3958
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Support to Infrastructure from Gol(@50 per cent of Infrastructure costs)

Support to Infrastructure from Gol	41405	41405	0
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Total Gol Support	106694	136859	55779
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Appendix D: Cases studies on Urban PPPs

1. 24x7 WATER SUPPLY IN 3 CITIES OF KARNATAKA

CASE OVERVIEW

Country: India

Centre/State/ULB: 29 select wards in three pilot cities of Gulbarga, Belgaum and Hubli-Dharwad, Karnataka

Sector: Urban Basic Services **Sub-Sector:** Water Supply

Award Date: April 2005

Type of concession: Performance based management contract. Project preparation (Stage I) and contracting out of construction (Stage II) within a period of 1 year 9 months followed by operation and maintenance (O&M) for 2 years

Stakeholders:



Contracting Authority Karnataka Urban Water Supply and Drainage Board (KUWSDB)

Authority Karnataka Urban Infrastructure Development Finance Company Limited (KUIDFC)

Municipal administrations of Gulbarga, Belgaum and Hubli-Dharwad



Concessionaire Joint Venture between Compagnie Generale Des Eaux (CGE) and Seureca



Oversight Concessioneing Authority through a technical auditor – Fichtner

Arrangement Consulting Engineers India Private Limited



Present Status of Project: Initial stages were delayed and O&M began in mid 2008

PROJECT TIMELINE



2000 *World Bank project (technical and financial assistance) for water supply and sewerage in northern districts of Karnataka, with KUIDFC as the nodal agency*

2002 *Initiation of the Karnataka Urban Water Sector Improvement Project (KUWASIP)*

2003-04 *Conduct of a two stage competitive bidding process*

2005 *Selection of Concessionaire and commencement of preparatory stage by the Concessionaire*

2008 *Completion of stages I and II and commencement of O&M stage*

PPP CONTEXT

ENABLING ENVIRONMENT

Constitution of the KUIDFC in 1993 as a public company with the mandate to assist Urban Local Bodies (ULBs) in the State for planning, financing and developing urban infrastructure. KUIDFC acts as the State nodal agency for anchoring externally aided projects in infrastructure.

Commencement of World Bank (WB) project (financial and technical assistance) in 2000, for addressing institutional/infrastructural deficiencies in the neglected northern districts of Karnataka – including a Water Supply and Sanitation Component. The project envisaged development of management contracts, wherein private operators would undertake planning, design and management of services in various ULBs in these districts. KUIDFC was the nodal agency for the project.

Initiation of the Karnataka Urban Water Sector Improvement Project (KUWASIP) by KUIDFC in 2002 under the WB programme, and decision to demonstrate 24X7 supply through a pilot project (Phase I) in three cities of Gulbarga, Belgaum and Hubli-Dharwad. The project was aligned with the strategies enunciated by the Urban Drinking Water and Sanitation Policy (2002) of the Government of Karnataka.

Amendment of the Karnataka Municipal Corporations Act in January 2005, making provisions for private sector participation in municipal water supply and allowing deputation of ULB employees to private companies in case of PPP projects.

SECTORAL CONTEXT

Coverage of water supply (average) in the 3 pilot cities was as low as 50%. Per capita consumption in Gulbarga was 46 litres/capita/day (LPCD) and that in the other 2 cities about 123 LPCD, as against the accepted standard of 135 LPCD.

Service reliability was low with average supply in the range of 2-6 hours of water supply once in 3-5 days

The system was also plagued with revenue losses due to lack of consumption-based billing, collection inefficiencies and dilapidation of existing supply systems leading to high operating costs.

PROJECT DEVELOPMENT

PROJECT CONCEPTUALIZATION

KUWASIP was to be piloted in select wards of 3 cities of Gulbarga, Belgaum and Hubli-Dharwad in Phase I and subsequently scaled up in Phase II to cover these cities entirely and include other cities.

Water sector PPPs typically present risks such as lack of adequate/accurate information regarding the existing systems leading to inaccurate investment and revenue forecasts. In order to de-risk the project for the private sector, the project was envisaged as a management contract – involving the private party from the preparatory stage itself and engaging their services for planning, contracting out of capital works and operation and maintenance (O&M) - without passing on the investment or revenue risk. Assets remained with the ULBs, Concessionaire was not responsible for investments or

tariff fixation, and even during the O&M phase, the Concessionaire was to carry out operations through ULB staff deputed for the project period.

Role of the private sector was to demonstrate feasibility of 24X7 services in the pilot zones through the following stages:

Stage I: Conducting background studies, establish conditions and needs and developing an optimum 'Improvement plan'.

Stage II: Procurement of contractors for carrying out works as envisaged within the 'Improvement plan' and management of such contracts

Stage III: Conducting O&M of the new system

Capital Expenditure (Capex) permissible in Phase II was capped at Rs.42 Crore by the Concessioning authority based on internal estimates of KUWSDB and actual availability of funds, setting a limit within which the Concessionaire was to suggest strategic improvements so as to achieve specific output targets.

PROJECT DEVELOPMENT

The project structure was formulated by KUIDFC, with assistance from the WB and detailed project development was conducted through a Transaction Advisor¹. A tariff design study for continuous water supply was carried out in the pilot cities and the tariff structure was reformed, replacing the prevalent system of flat rates with a consumption-based telescopic system.

A rigorous process of sensitization of users to the new tariff regime was undertaken through 'mock bills', which were served alongside the flat rate bills for a period of 6 months. Stakeholder workshops were also organized, attended by WB staff and senior officers from the Government of Karnataka and the KUIDFC

PROCUREMENT PROCEDURE

Procurement was based on a global competitive bid under the guidelines of the World Bank. A two stage bidding process (qualification followed by selection) was followed, with the lowest quote for O&M fee as the bid parameter. The project was awarded in February 2005 to a Joint Venture between Compagnie Generale Des Eaux and Seureca (both subsidiaries of Veolia Water) based on their quote of Rs.28 Crore (of

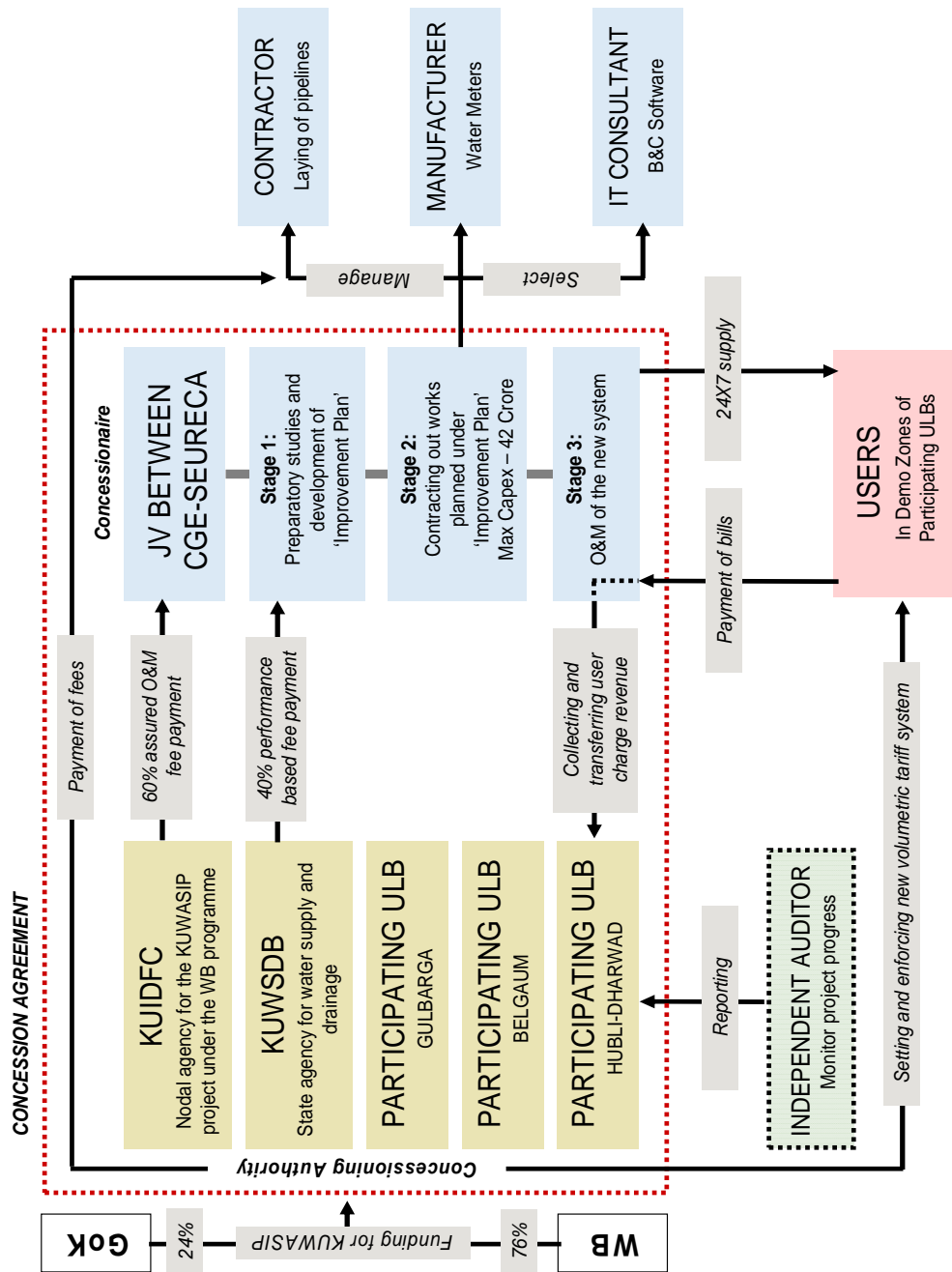
¹ Infrastructure Development Corporation (Karnataka) Limited (iDeCK)

which Rs.22.4 Crore was fixed remuneration and Rs.5.6 Crore was the maximum allowable bonus).

CONTRACTUAL ARRANGEMENTS

PROPOSED CONTRACTUAL STRUCTURE

A single contract was signed for all three ULBs.



OPERATOR OUTPUT OBLIGATIONS

Implementation was structured into three stages of which the first two (preparation and construction) were to be completed within a period of 1 year and 9 months, followed by the third stage of O&M for a period of 2 years

Preparatory Stage Undertaking all necessary surveys including topography study, door to door customer survey, demand estimation, network information and need identification. Preparation of an Improvement Plan for achieving the following targets (Capex not exceeding Rs.42 Crore):

- Provision of continuous (24X7) water supply at adequate pressure
- Reduction of systemic water losses
- Metering and meter reading of all consumers
- Development of Billing and Collection (B&C) Software
- Development of customer database and provision of Customer Services

Construction Stage Procurement of contractors for undertaking following works envisaged under the Improvement Plan and management of such works:

- Selection of contractor for laying of pipelines and monitoring of the work
- Selection of manufacturer for Water meters and procurement of meters
- Selection of an IT consultant for development of B&C software and its installation

O&M Stage Undertake O&M of the system and meet the following targets:

Ensuring 24X7 supply at adequate pressure to all connected properties and stand posts

Emergency stoppages – not to exceed 12 hours and no more than 4 instances in a year

Metering, meter reading and monthly billing of all consumers using B&C Software

Collection of user charges from consumers

Reduction of systemic water losses to 20 litres/connection/day within 2 years

Address new connection requests and customer complaints within a specified period

Repairing leaks appearing on the surface within 24 hours

OBLIGATIONS OF THE CONCESSIONING AUTHORITY

The Concessioning Authority was responsible for all Capital and Operating Expenditure (Opex), timely hand over of infrastructure to the Concessionaire, deputation of ULB staff to the Operator and setting tariffs.

REGULATORY AND MONITORING ARRANGEMENTS

The project was monitored as per contract by KUWSDB and KUIDFC, through a technical auditor, M/s Fichtner Consulting Engineers India Private Limited, appointed for the purpose

PROJECT FINANCIALS

The Concessioning Authority was responsible for all Capex (not exceeding Rs.42 Crore) and Opex. The project was funded partly by the WB (76%) and partly through State Government grants (24%). Revenue from user charges accrued directly to the ULBs (though collection was to be done by the Concessionaire)

The Concessionaire received payments in the form of O&M fees on a 'Performance based deferred payment system'. According to the system 60% of the fixed

remuneration of Rs.22.4 Crore was paid as a guaranteed sum in 15 quarters and the remaining 40% was linked to achievement of project milestones.

PROJECT RISKS AND ALLOCATION

Investment Risk Borne by the Concessing Authority since it was responsible for all Capital and Operating Expenditure. However Capex was capped at Rs.42 Crore by the Concessing Authority



Operating Risk All design, construction, and operating risks were borne by the Concessionaire.



Performance risk Borne by the Concessionaire since 40% of the O&M fees were directly linked to achievement of specified outcomes. Penalties (maximum of 10%) were also included in the contract.

DISPUTES RESOLUTION MECHANISM

All disputes were to be resolved amicably through direct discussion between the parties involved. In the event of non resolution, the dispute was to be settled through arbitration processes as prescribed under the Arbitration and Conciliation Act, 1996.

PARTNERSHIP IN PRACTICE

With the successful implementation of the 24X7 in the demonstration zones, KUIDFC is now planning to upscale the system to cover all the remaining areas in the three ULBs on a PPP basis.

PROJECT OUTCOMES

SERVICE OUTPUTS

The project has achieved 24X7 water supply at adequate pressure for all connected households in the pilot areas. 24,400 connections have been established covering a population of about 1.79 lakhs. Public stand posts have been eliminated, with a few exceptions where their use is restricted to non-drinking purposes

Bulk supply and per capita consumption levels have improved in all 3 pilot cities:

City	Bulk Supply in MLD		Service Level (LPCD)	
	<i>Before</i>	<i>After</i>	<i>Before</i>	<i>After</i>
	<i>Initiative</i>	<i>Initiative</i>	<i>Initiative</i>	<i>Initiative</i>
Belgaum	57	84	123	182
Gulbarga	25	55	46	101
Hubli-Dharwad	111	113	123	125

Water pressure has improved from 0-5m (inconsistent) to 6-22m. Increased pressure has eliminated the need for water pumps (in case of 2 storey houses) and storage, leading to cost savings for households.

OPERATIONS

Water losses due to leakage have been reduced from as high as 50% in non-project zones to less than 10% within the demo zones. 100% metering has been completed and volumetric billing has led to reduction in water usage and wastage as was prevalent in the flat rate regime. This has led to substantial water savings for the KUWSDB and the surplus is now rerouted to other deficient areas.

Many unauthorized connections have been authorized, and there is an increased demand from landlords for obtaining a separate connection for their tenants.

Revenue for the ULBs through user charges has improved substantially with almost 90% convergence achieved between the quantity of water supplied and billed as of 2009.

USER INTERFACE

Customer interface has improved substantially with reduction in response times and almost 100% redressal of complaints through a 24X7 customer service centre. A robust customer database has also been created and integrated with the B&C software.

URBAN POOR

The tariff structure imposed under the project includes pro-poor considerations such as (i) no deposit for availing new connections in case of houses less than 600sq.ft in area (ii) minimum lifeline supply of 8000 litres per household and (iii) provision of water free-of-charge through public kiosks through involvement of NGOs and CBOs.

PROJECT SHORTCOMINGS

The project was delayed (by more than a year) in Stage II which involved contracting out works as envisaged under the Improvement plan, primarily due to the detailed procurement specifications laid down by the World Bank

The Project suffered initially due to public non acceptance. However this was addressed by KUIDFC and the World Bank, by undertaking systematic Information, Education and Communication activities (IEC).

LEGAL/CONTRACTUAL ISSUES

Following the delay in procurement processes during Stage II, the period of the concession had to be suitably extended to accommodate the delay. No other issues have emerged during project implementation.

LESSONS LEARNT

The case represents one of the more successful water sector PPPs in the country. A major reason for the success was the innovative risk allocation, wherein investment/revenue risks for the private sector were eliminated – thereby incentivizing private participation, and focusing more on the efficiencies brought in by the private sector as a management and O&M agency rather than the financing aspect of PPPs.

Remuneration mechanism can play an important role in ensuring project outcomes. In this case the performance based deferred payment system ensured that the PPP partner carried the system design and management risk, thereby ensuring quality of services rendered.

Proper project development also plays a crucial role in ensuring desired outcomes. In this case the adoption of a consumption based tariff system (standard for all users in the pilot zones) to complement the proposed continuous supply system not only makes the system financially sustainable for the ULB in the long run but will also curb wastage of

water (further reducing system costs). Standardization will also help avoid the kind of tariff anomalies and inconsistencies encountered in the Buenos Aires Water Concessions (refer 4.2 of case study on Buenos Aires Water and Sewerage Concessions).

The role of proper IEC in achieving project outcomes cannot be understated. In this case the acceptance of the project by citizens and their willingness to pay as per the new tariff system was largely the result of extensive stakeholder discussions conducted by WB, Government of Karnataka and KUIDFC officials.

2. UNDERGROUND SEWERAGE SYSTEM ALANDUR

CASE OVERVIEW

Country: India

ULB: Alandur, Chennai Metropolitan Area in Tamil Nadu

Sector: Urban Basic Services **Sub-Sector:** Sewerage

Award Date: 2000

Type and Period of concession: Composite Engineering-Procurement-Construction (EPC) and Build-Operate-Transfer (BOT) Contract for 14 years

Stakeholders:

Contracting Alandur Municipality

Authority Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL)
as nodal agency

Concessionaire Joint Venture (JV) between IVRCL Infrastructure and Projects Limited
and Blacke Durr & Wabag Technologies Limited

Oversight Through ULB on a weekly basis and through officials such as
Arrangement Commissioner of Municipal Administration, Chief Executive of
TNUIFSL etc on a monthly basis

M/s Consulting Engineering Services Limited was appointed as
Project Management Consultant (PMC) for detailed supervision and
quality control

Present Status of Project: Construction was completed in March 2005 and project has
been operationalised.

PROJECT TIMELINE:

1996	<i>Conceptualization of the project by the Chairman of Alandur Municipality</i>
1997	<i>Government of Tamil Nadu (GoTN) scheme for upgrading sewerage in 12 cities including Alandur Approval of the Alandur project (as proposed by the municipality) and handing over project development to TNUIFSL</i>
1998	<i>Government Order No. 69 permitting ULBs to undertake PPPs for service provision Resolution of Alandur Municipality to collect advance one time connection fees and monthly user charges for sewerage</i>
1999	<i>Collection of one time advance connection fees from users Two stage bidding process for selection of Concessionaire</i>
2000	<i>Award of the concession to a JV between IVRCL Infrastructure and Projects Limited and Blacke Durr & Wabag Technologies Limited</i>
2005	<i>Completion of construction of the underground sewerage system and a part of the Sewage Treatment Plant (STP)</i>

PPP CONTEXT

ENABLING ENVIRONMENT

The Government of Tamil Nadu (GoTN) prepared a scheme in 1997 for undertaking improvement of sewerage in 12 cities, in order to address its appalling condition in the State – only 1/5th of the urban population in the State had access to formal sewerage and the remaining had to depend on septic tanks or other night soil disposal methods.

Alandur was one of the identified cities and this expedited the sanctioning process when the Alandur Sewerage Project was submitted by the municipality for approval. GoTN issued Order No 69 in May 1998, allowing ULBs to deliver services through PPPs, subject to conditions such as use of competitive bids, no retrenchment of existing staff and regulation of cost of delivery (should not increase unduly due to private interests).

SECTORAL CONTEXT

At the time of the sewerage concession, Alandur Municipality was comprised of 19,800 households, and 98% of the households had water-based sanitation facilities – latrines had septic tanks or holding tanks.

The municipality collected sewage periodically in tankers and disposed it in low lying areas outside the municipal limits. Sullage and sewage overflow from household septic tanks was let out into the open storm water drains, accumulating eventually in a stagnant pond on the south-eastern corner of the town.

Both of these disposal systems led to extremely unhygienic conditions (mosquito infestation and spread of diseases) and to contamination of ground water in the area.

PROJECT DEVELOPMENT

PROJECT CONCEPTUALIZATION

The project envisaged two components: the underground sewerage system (UGS) and a STP and was initially intended to be achieved through a regular EPC contract. The following considerations prompted the use of a PPP arrangement:

Previous instances of Sewage Treatment Plants (STPs) operated by public agencies had run into problems due to inefficiency of the staff and relative lack of experience of handling the technology involved.

Allocating both components on a Build-Operate-Transfer basis would have increased the investment risk for the private operator substantially and led to possible discouragement of bidders. However, it was important to execute both components through the same agency (whether as a BOT or otherwise), so as to ensure that the UGS and STP were developed/integrated simultaneously.

A mixed contract could be developed, wherein part of the investment risk was allocated to the Concessionaire, reducing the overall costs and resultant debt liabilities of the Alandur Municipality.

The project was thus innovatively structured into two components:

A regular EPC contract for construction of the underground sewerage system, with a maintenance obligation for the contractor of 5 years (upfront investment to be borne by Alandur Municipality)

BOT contract for finance, construction and long term operation & maintenance (O&M) of a Sewage Treatment Plant (STP) for 14 years (annuity-like payment by ULB).

The Municipality paid the Concessionaire (BOT component) on the basis of per unit of sewage treated, and in order to further de-risk the project committed to a 'take-or-pay' arrangement, obligating the Municipality to deliver a minimum quantum of sewage or pay for it. It should however be noted that this obligation was tied-back to the Concessionaire's liability under the EPC component to complete a certain proportion of the UGS within a given time. Upfront capital costs for undertaking such a large project (annual municipal budget of Alandur was only about 7% of the expected project costs during project preparation) were met (at least partially) through beneficiary contributions in terms of connection fees collected at the outset of the project.

The final system was to be designed to serve an ultimate population of 300,000 persons in 2027 – receiving an intermediate flow of 12 million litres per day (MLD) in 2012 and an ultimate flow of 24 MLD by 2027.

PROJECT DEVELOPMENT

The Chairman of Alandur municipality, Mr. R S Bharati initiated the project in 1996, obtained the approval of the council and submitted the project to the Commissionerate of Municipal Administration (CMA) for approval. CMA and GoTN approved the project (refer 1.1) and appointed TNUIFSL as the nodal agency for developing the project, considering the lack of capacity at the ULB level to develop a project of this magnitude.

TNUIFSL conducted background studies in 1997-98 through M/s Consulting Engineering Services Limited, including engineering studies, project design, location of facilities, user willingness to pay etc.

TNUIFSL structured the funding mechanism through soft loans from the Tamil Nadu Urban Finance and Infrastructure Development Corporation (TUFIDCO) and from the TNUIFSL under the World Bank initiated Tamil Nadu Urban Development Fund (TNUDF), grants from GoTN and beneficiary contribution in the form of user deposits.

The contractual structure was formulated by TNUIFSL along with their Transaction Advisor², who also managed the bid process. The final contract was approved by the World Bank (part of the loans were from the World Bank funded TNUDF).

At the request of TNUIFSL, Alandur Municipality vide resolution dated 28 July, 1998 resolved to collect advance one time connection charges and levy monthly user charges after completion of the project.

In order to encourage one time connection fee payment, the municipality issued public notices in September 1999. Meetings were also conducted to allay public fears regarding privatization and a special account was created for administering the funds of the project in order to ensure transparency. The fund was to be monitored through a monitoring committee comprised of the Mayor, Chairman of Alandur Municipality and 3 representatives from Resident Welfare Associations (RWAs).

PROCUREMENT PROCEDURE

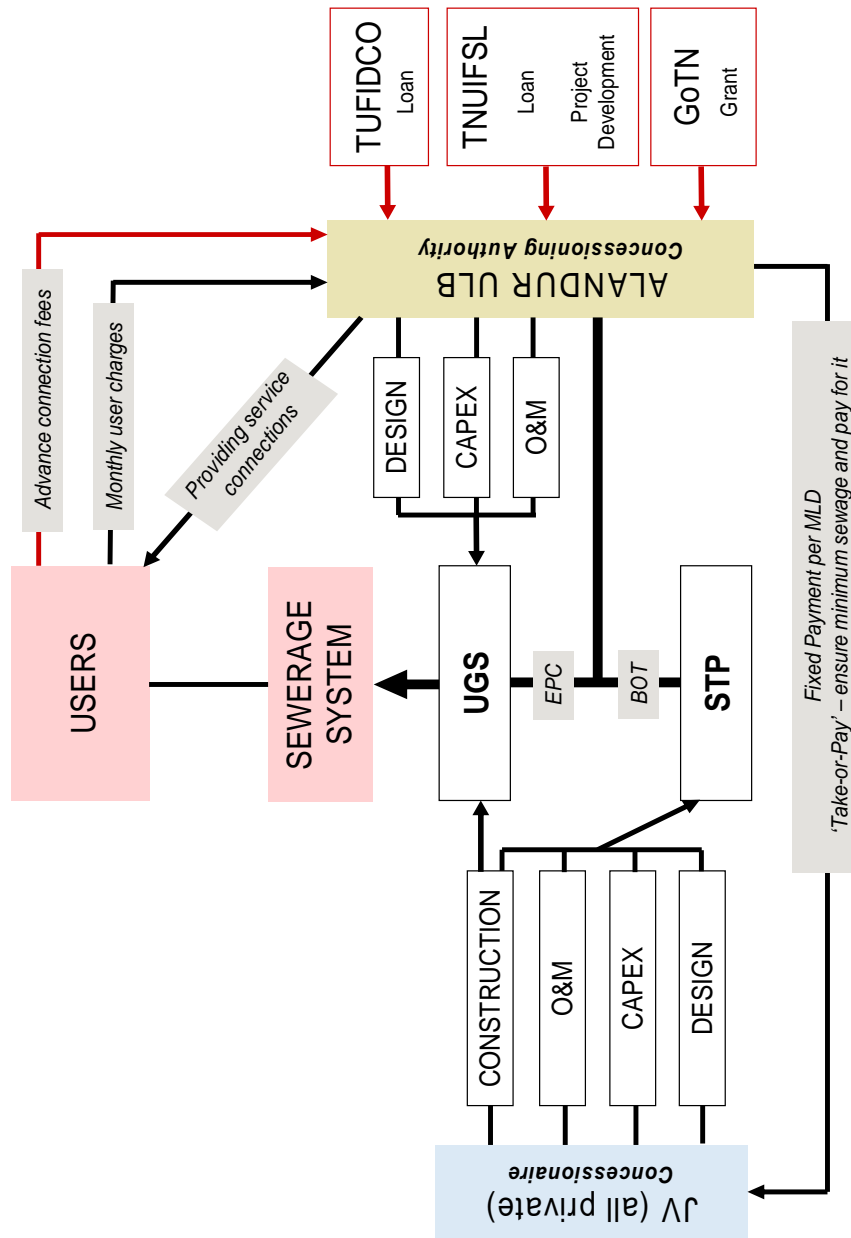
Procurement of Concessionaire for the project was based on a competitive bid. Tender submission for technical proposals ended in October 1999 and that for financial proposals ended in December 1999. The contract – composite contract including both the EPC and BOT components for a total period of 14 years - was awarded to a JV between IVRCL Infrastructure and Projects Limited and Blacke Durr & Wabag Technologies Limited, based on a cumulative score of two bid parameters: fixed price for construction of sewerage network and lease period for operating the STP. Within the consortium, IVRCL was entrusted the responsibility of carrying out construction works for both the UGS and the STP and Wabag was entrusted with the task of conducting

² M/s Kirloskar Consultants Limited

electro-mechanical works. Wabag was also responsible for O&M of the STP throughout the lease period.

CONTRACTUAL ARRANGEMENTS

PROPOSED CONTRACTUAL STRUCTURE



OPERATOR OUTPUT OBLIGATIONS

The obligations of the Concessionaire were as follows:

As part of EPC Component (5 years) Construct all main sewer lines, 50 km of branch sewer lines and commission and test all sewers, pumping stations, pump sets and pumping mains with a period of 3 years (March 2000 to March 2003).
Construct the remaining 50 km of branch sewer lines within the next 1 year and undertake O&M of the entire system for a defect liability period of 1 year thereafter (March 2003 to March 2005).

As part of BOT Component (14 years lease) Finance and construct the first part of the STP (12 MLD capacity – half of 24 MLD total as specified within contract) and integrate the facility with the newly laid UGS system within a period of 3 years (March 2000 to March 2003 to coincide with the construction of first phase of UGS).

Period for this phase includes Finance and Construct the remaining 12 MLD facility when the inflow of sewage reached 9.6 MLD or 1 and a half years prior to completion of lease period whichever came earlier.

period for EPC phase Conduct O&M of the entire STP facility for the entire lease period of 14 years in accordance with treatment norms and specifications set out by the Tamil Nadu Pollution Control Board (TNPCB).

OBLIGATIONS OF THE CONCESSIONING AUTHORITY

Obligations of the Concessioning Authority included:

Provision of design (completed before bidding) for the UGS system

Operation of the UGS system so as to ensure a minimum inflow of sewage to the STP as agreed within the contract (minimum inflow commitments increased every year and was specified in the contract)

Obtaining and handing over land free of encumbrances to the Concessionaire for the STP.

REGULATORY AND MONITORING ARRANGEMENTS

M/s Consulting Engineering Services Limited was appointed as Project Management Consultant (PMC) with funding from a grant fund from TUFIDCO for detailed supervision and quality control.

Alandur municipality undertook review of progress on a weekly basis in addition to a monthly review by officials such as the Commissioner of Municipal Administration, and Chief executive of TNUIFSL.

PROJECT FINANCIALS

Investments by the Concessionaire (except land acquisition) were restricted to the BOT component of the contract. The Concessionaire was to be remunerated on a per MLD basis by the Alandur Municipality. The Municipality was obligated to deliver a minimum quantum of sewage or pay for it, subject to the system working through its ‘take-or-pay’ commitment. Treatment of sewage above the minimum specified was paid extra on the fixed per MLD basis.

The minimum guaranteed sewage inflow gradually increased (annually) and the price per MLD decreased as the volume of flow increased. Values in year 1, year 7 and the last year of the lease are as given below:

Year	Minimum Guaranteed flow of sewage (MLD)	Price per MLD (INR)
1	5.97	4932
7	8.52	3772

Revenue from monthly user charges accrued directly to the Alandur Municipality and the municipality had to escrow a proportion of such revenues for debt servicing of TUFIDCO and TNUIFSL debts. Following user charge structure was adopted:

No	Domestic Connections			Commercial and Industrial connections				
	Plinth (sq.ft)	Area	Monthly (INR)	Tariff	Plinth (sq.ft)	Area	Monthly (INR)	Tariff
1	Less than 500		60		Less than 500		200	
2	500 - 1500		80		500 - 1500		400	
3	1500 - 3000		100		1500 - 3000		600	
4	More than 3000		120		More than 3000		1000	

PROJECT RISKS AND ALLOCATION

Investment Risk Borne by the Concessioneing Authority through fixed payments for construction of the UGS system and through minimum guaranteed payment in the case of the BOT component. Additional guarantees were provided by the GoTN and TNUIFSL in case of Alandur municipality not being able to pay as per commitment.

Design Risk Design risk for the system was borne by the Municipality since the system had to be constructed as per design specifications evolved

before the bidding process



Construction Risk The Concessioneing Authority bore the risk of land acquisition and timely handover to the Concessionaire for the STP.

All other time and cost overruns were borne by the Concessionaire



Performance Risk The Concessionaire bore all risks for maintenance and operations (in case of STP) and had to ensure specified performance, for the municipality to honour its 'take-or-pay' commitment

DISPUTES RESOLUTION MECHANISM

All disputes were to be resolved amicably through direct discussion between the parties involved. In the event of non resolution the dispute was to be settled through arbitration processes as prescribed under the Arbitration and Conciliation Act, 1996.

PARTNERSHIP IN PRACTICE

PROJECT OUTCOMES

The project has been successful in developing a comprehensive sewerage solution for the municipality and has been able to achieve most of its targets.

The project has provided the city with a cost-effective and affordable sanitation solution, since the graded tariff system has allowed even poor residents to obtain connections. 43% of the contributions to the user deposits came from slum dwellers seeking connections.

The STP has been operationalised and is running as per norms resulting in indirect environmental and health benefits for the city.

PROJECT SHORTCOMINGS

While the project execution has been proceeding smoothly, the Alandur Municipality has not been able to keep pace as envisaged in the form of delays in providing service connections to users. This would affect the committed sewage inflow to the STP resulting in redundant public expenditure due to the 'take-or-pay' commitment.

The ULB has also been facing problems regarding public unwillingness to pay monthly user charges, even though the arrangement was well publicized and endorsed by the users earlier.

LEGAL/CONTRACTUAL ISSUES

Most contractual issues emerging in the form of delays in completion due to delays in TNPCB approvals and inadequate provision of service connections to users by the Alandur Municipality have been resolved through discussions and negotiation.

LESSONS LEARNT

Alandur Sewerage Project was the first for its kind in the sector undertaken on a PPP basis. The STP developed under the project is also the first STP to be built through a BOT arrangement.

The success of the PPP essentially lies in its innovative structuring. The composite contract structure (mixed EPC and BOT) allowed sharing of the investment risks - encouraging private participation on one hand and reducing the financial burden for the ULB on the other. The project was also able to bring in necessary efficiency and technological skill for handling of the STP facility.

The project was path breaking in its participatory interface between the ULB and the community, collecting a substantial part of the upfront investment requirements from advance beneficiary contribution. Proper IEC and development of transparent and credible structures such as the separate project account monitored through a committee with representations from not only the ULB but also the political wing and the citizens played a crucial role in ensuring the success of the beneficiary contribution drives. In fact the beneficiary deposits were almost double than was expected initially (80 million instead of 40 million) reducing the loan component from TNUIFSL by half.

3. MANILA WATER AND SEWERAGE CONCESSIONS

CASE OVERVIEW

Country: Philippines

ULB: Metro Manila (Region) – comprising 12 cities and 5 municipalities

Sector: Urban Basic Services **Sub-Sector:** Water Supply and Sewerage

Award Date: August 1997 (including financial closure)

Type and Period of concession: Operations and Maintenance (O&M) concession (two separate agreements) for 25 years

Stakeholders:

[Redacted]

Contracting Authority Public Utility for Metro Manila: Metropolitan Water Works and Sewerage System (MWSS)

[Redacted]

Concessionaire The city was divided into two service areas. West zone was awarded to Maynilad Water Services Inc. (Maynilad), and the East Zone to Manila Water Company Inc. (Manila Water).

[Redacted]

Oversight Arrangement Special body constituted for the project period - MWSS Regulatory Office (MWSS-RO)

[Redacted]

Present Status of Project: Manila Water continues to be the Concessionaire for the East Zone and Maynilad for the West Zone. Maynilad went through a change of ownership in 2007.

PROJECT TIMELINE:

[Redacted]

1994 *Advisory Technical Assistance (TA) by ADB and creation of the MWSS Privatization Committee, mandated to guide the privatization process*

[Redacted]

- 1995** *Enactment of the Water Crisis Act (WCA), empowering the President to privatize water utilities in the country*
- 1996** *Increase in water tariff and reduction in staff of public utility prior to the bidding process*
- 1997** *Award of the concession to two separate Concessionaires for the East and West service areas through an international competitive bid*
Asian Financial Crisis – Heavy Forex losses to Concessionaires
- 2001** *Contractual amendment introducing mechanisms for facilitating recovery of losses incurred by Concessionaires*
- 2002** *Filing of termination suit by West Zone Concessionaire to the International Arbitration Panel (IAP), asserting MWSS failure to meet its obligations*
- 2003** *Counter petition by MWSS*
IAP ruling - forbidding termination of the contract
- 2005** *Listing of the East Zone Concessionaire (Manila Water) on the Philippines Stock Exchange*
- 2007** *Reconstitution of the West Zone Concessionaire (Maynilad) through a public bid*

PPP CONTEXT

ENABLING ENVIRONMENT

In order to forestall economic bankruptcy and address the international debt burden, several initiatives were undertaken in the Philippines in the 1990s, for reducing public expenditure and monopoly and encouraging private investments in infrastructure. Chief amongst these (and which set the background for the Manila Water concessions) were:

Constitution of a Committee on Privatization (COP) mandated to privatize State owned enterprises

Enactment of the Foreign Investments Act of 1991

Enactment of the Build-Operate-Transfer Law of 1993

Creation of an MWSS Privatization Committee (1994) for guiding the privatization process

Enactment of the Water Crisis Act (WCA) of 1995, empowering the President to privatize water utilities in the country

SECTORAL CONTEXT

As of 1997, the coverage of water supply networks in the Metro Manila region (approximately 11 million population) was about 59% and that of sewerage as low as 8%.

The prevalent system suffered from rampant leakages, faulty and inadequate metering, and illegal connections leading to as much as 58% of Non-Revenue Water (NRW). Revenue loss was further compounded due to inefficient billing and collection, despite relatively high personnel to connections ratio of 9.8/1000.

The sector also lacked adequate investments, and the MWSS was heavily indebted on account of decades of inefficiency and provision of price subsidy to consumers.

PROJECT DEVELOPMENT

PROJECT CONCEPTUALIZATION

Engagement with the private sector was expected to plug existing gaps in investments, and quality/coverage of services within a specific time frame and without overburdening consumers with high user charges by bringing in requisite efficiency in revenue collection and minimizing losses. An Area concession model (O&M concession) was chosen, transferring all operational and investment responsibilities to the Concessionaire without transferring ownership of assets.

PROJECT DEVELOPMENT

President Ramos was the key political driving force behind the MWSS privatization (empowered by the WCA), overseeing proceedings up till the financial closure in August 1997.

Advisory Technical Assistance (TA) provided by the Asian Development Bank (ADB) in 1994 formed the background for the privatization process and led to the constitution of the MWSS Privatization Committee.

The committee conducted background research and proposed a model based on study visits of England, France and Argentina for reviewing their water privatization models. International Finance Corporation (IFC) was appointed as the Transaction Advisor and advised the Government on policy/legal matters, sectoral requirements and contractual structure. The structure was approved at various levels including the COP, a Special Advisory Committee to the President (created for the duration of project development) and finally the President himself.

In order to encourage bidders the existing water tariff was increased by 38% (award was based on lowest tariff proposed) and MWSS labour force was reduced by 30%, since it was binding on the Concessionaires to absorb the existing staff as part of the contract.

PROCUREMENT PROCEDURE

The service area was divided into two zones – the Eastern and Western regions – each of which was to be allotted in the form of 25 year O&M concessions to separate bidders. It should be noted that base conditions for the two concessions were different:

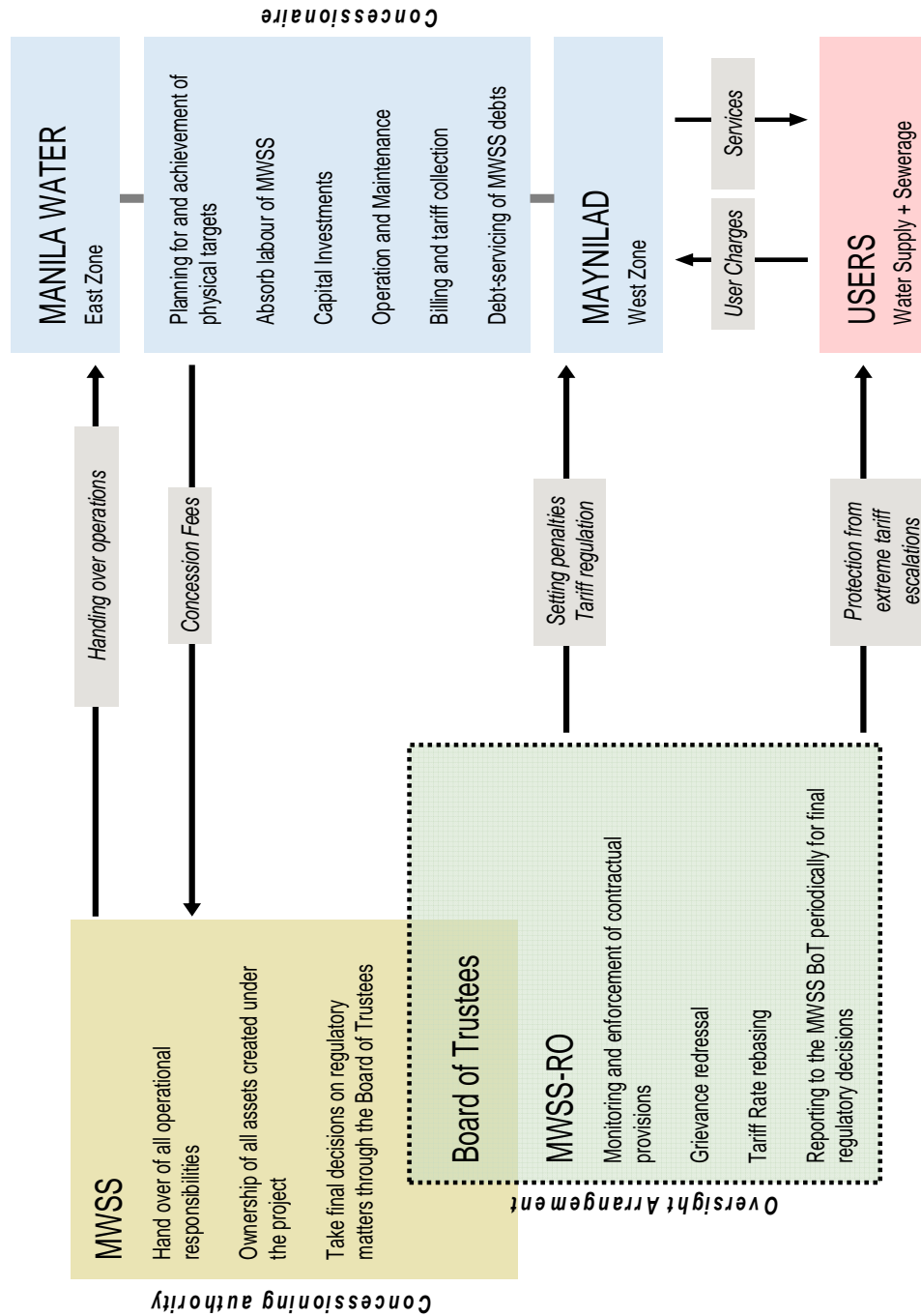
(i) The MWSS debt liability was split in a 9:1 ratio (refer 3.5 for details) between the West and East Zones making the West Zone Concessionaire responsible for a major proportion of the debt.

(ii) The West zone contained infrastructure in a much worse state, and a large un-connected and low-income population. In comparison, the Manila Water zone had a much more viable situation.

The concessions were awarded through an international competitive bid, based on the lowest quotes for tariffs (bid parameter). The West zone was awarded to Maynilad Water Services Inc. (Maynilad), a consortium between Benpres (Philippines) and the Lyonnaise des Eaux (France), who committed a 74% reduction in prevalent tariffs for the East Zone. The East Zone was awarded to Manila Water Company Inc. (Manila Water), a consortium between Ayala (Philippines) and International Water (U.K./U.S.), who committed a 44% reduction in prevalent tariffs for the West Zone.

CONTRACTUAL ARRANGEMENTS

PROPOSED CONTRACTUAL STRUCTURE



OPERATOR OUTPUT OBLIGATIONS

The Concessionaire was responsible for all operations and creation of new infrastructure to meet output specifications provided in the contract. The contract specified targets

for coverage, water pressure, reliability and quality, reduction in NRW, renewal and expansion of the sewerage system and customer service. Key outputs included:

- Increasing water supply coverage from the then current - 67% (for both service areas) to 96% by 2006
- Increasing supply reliability to 24 hours and achieving water pressure of 16 psi
- Improving sewerage coverage in the East Zone from 13% to 55% and in the West Zone from 7% to 66%.

OBLIGATIONS OF THE CONCESSIONING AUTHORITY

Obligations of the Concessioning Authority included peaceful and timely transfer of all operations, assets and human resource to the Operator.

REGULATORY AND MONITORING ARRANGEMENTS

A separate regulatory body was created within MWSS, called MWSS Regulatory Office (MWSS-RO). The body was responsible for enforcing the provisions of the contract, setting appropriate penalties for non-compliance, implementing rate revisions, and dealing with complaints.

PROJECT FINANCIALS

The contractual commitments of the Concessionaires were output based and not investment based. The Concessionaire was responsible for all capital/operational investments required to meet these targets.

The Concessionaires were to reimburse the Government for the transaction cost and pay concession fees to the MWSS. The concession fee included components for servicing the existing debts of MWSS and meeting a part of the operational costs of the MWSS (its BoT and remaining staff) and the MWSS-RO. Debt servicing liability was split in a 9:1 ratio between Maynilad and Manila Water.

All investments were to be recovered through user charges (tariffs), which accrued entirely to the Concessionaires. The tariff included all operating and capital costs, cost of borrowing, foreign exchange variations, and concession fee payments. Procedures for periodic tariff revision (to be carried out by the MWSS-RO) were also stipulated within the concession agreement.

The Concessionaire was granted an income tax holiday (6 years), preferential tariffs on import of capital equipment, tax benefits on locally produced equipment and exemptions from local and franchise taxes.

PROJECT RISKS AND ALLOCATION

Investment Risk Associated with forecasting demand for services (since revenue was tariff based), was borne by the operator and the contract did not provide any guarantees to that effect. The tariff was also regulated by the MWSS-RO.

Performance risk Borne by the operator through mechanisms for penalties for non-compliance with contractual commitments and through annually renewable performance bonds.

Currency risk Currency risk was a crucial component of the contract, since the MWSS debt (borne by the Concessionaire) was US\$ denominated. The Forex risk was split between the Concessionaires and consumers, introducing tariff adjustment mechanisms to reflect Forex fluctuations thereby passing the risk to consumers, while shielding consumers from extreme escalations by spreading collections over the 25 year span of the project.

Force Majeure The MWSS was obliged to compensate the Concessionaire for investments made up till the date of termination, in case of early termination due to changes in policy.

DISPUTES RESOLUTION MECHANISM

An appeals panel was set up for minor disputes; with the regulator, the Concessionaire and the appeal chairman each appointing one member on the panel. In the event of major disputes, the matter could be referred to the Internal Arbitration Panel (IAP).

PARTNERSHIP IN PRACTICE

Two unforeseen events occurring at the outset, threatened the success of the privatization initiative. First, water availability reduced by 30% due to an unprecedented draught and second, the Philippine Peso devalued during the Asian Financial Crisis (1997); almost doubling the MWSS's dollar denominated debt-burden and increasing the Concessionaires' liabilities twofold. Despite measures by the Government to keep the concessions afloat, the two Concessionaires followed completely different trajectories – while Maynilad filed for bankruptcy in 2003, was handed over to MWSS in the interim and went through a change of ownership in 2007; Manila Water was financially successful and is a listed company on the Philippines Stock Exchange. Immediately upon reconstitution Maynilad repaid its outstanding debts (January 2008) and initiated several steps to improve its service coverage and reliability, and reduce NRW - targeting major outcomes by 2012.

PROJECT OUTCOMES

SERVICE OUTPUTS

The serviced population increased from 7.5 to 9.5 million and supply network (length of pipelines) improved from 4500 to 6300 km for both concessions in the first four years of the contract

The percentage of consumers with 24 hour service reliability in the East zone increased from 26 to 98% by 2006. This factor improved in the West zone after re-organization of Maynilad, with 60% of consumers availing the facility by 2008.

Sewerage networks have improved in both service areas, through rehabilitation of existing facilities and construction of new facilities for treatment of waste water.

OPERATIONS

Operational efficiency in terms of worker productivity improved for both concessions, and NRW in the successful East zone concession reduced from 39% to 24% by 2007.

URBAN POOR

Both the Concessionaires launched separate programmes for bringing hard-to-reach urban poor localities within the service network. About 1.5 million poor households have been brought under the service network through Manila Water schemes and about 0.5 million through Maynilad schemes.

PROJECT SHORTCOMINGS

Despite increases in coverage and other aspects of service delivery indicated in the previous section, output targets up till 2009 for water supply and sewerage in both service areas remain unachieved.

Since the awards were based on lowest quote for tariffs, the project was expected to significantly reduce the cost burden on consumers. However, as indicated in the following table Manila Water rates increased by 540% and Maynilad rates by 325% by 2006.

Year	Average Base Tariff (PHP per cubic metre)	
	Manila Water	Maynilad
Pre-Privatization	8.56	8.56
Post-Privatization		
1997/98	2.32	4.96
2000	2.76	6.13
2002	4.51	11.39
2003	10.06	11.39
2004	10.40	11.39
2006	14.94	21.12

Maynilad failed to pay concession fees (towards MWSS debt-service) to the MWSS between 2001 and 2007. This increased the debt burden of MWSS since it had to borrow on several occasions in order to address its maturing debt liabilities.

In the course of implementation it was realised that the pre-bid data provided by the Concessions Authority was incorrect leading to anomalies in the investment forecasts of the Concessionaires. On the other hand tariff quotes of the Concessionaires (bid parameter) were later criticized as being too low and unrealistic, resulting in a series of tariff hikes during the course of implementation.

LEGAL/CONTRACTUAL ISSUES

A contractual amendment was enacted in 2001 to address the unforeseen increase in the MWSS debt-servicing liabilities of the Concessionaires during the financial crisis. The Original contract, while loading such losses on the consumers, shielded them from extreme escalations in the short term by spreading such collections over the project duration. This provision was amended, enabling the Concessionaires to recover losses within 15 months instead of 22 years, passing the Forex risk entirely to the consumers.

The amendment reduced several output commitments so as to enable the Concessionaires to meet targets.

The amendment also reduced the autonomy of the MWSS-RO, and deemed that the RO would report to the MWSS Board of Trustees, who in turn took final decisions on all regulatory matters. The regulatory body was thus subservient to the decisions and interests of the contracting party. This was further compounded through repeated political intervention throughout the implementation period (in several cases overruling the decisions of the MWSS-RO).

Despite the contractual amendment and substantial increases in tariffs, Maynilad filed for termination of contract to the IAP in December 2002, blaming the government for the firm's inability to sustain operations in the West Zone, followed by a counter petition by MWSS in 2003. The IAP ruled in 2003 that neither party could terminate the contract and directed Maynilad to compensate MWSS for unpaid concession fees (refer 4.2). Maynilad formally declared bankruptcy in November 2003 and Benpres (lead consortium member) relinquished its shares in Maynilad to MWSS in lieu of the unpaid compensation fees in 2005. This led to the eventual change of ownership of Maynilad through a public bid in 2007.

DIFFERENCE IN PERFORMANCE: MANILA WATER AND MAYNILAD

As mentioned in 2.3 there were differences in the two contracts in the sharing of the debt liability as well as in the nature of the concession areas leading to differences in the initial conditions of the two Concessionaires. Some of the key reasons that may have led to the differential performance of the two Concessionaires are as follows:

Manila Water (East Zone)

Maynilad (West Zone)



a Sharing of debt liability:

Debt service liability of MWSS debt was shared in a 9:1 ratio between Maynilad and Manila Water

<p>Manila Water carried only 10% of the debt liability</p>	<p>Maynilad carried 90% liability and hence experienced a large hike in its debt liabilities (debt being dollar denominated) during the Asian Financial Crisis</p>
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b Third-party sub-contracting:

The concession did not enforce the use of competitive bidding processes for sub-contracting works to third parties.

<p>However, with the exception of a single contract, all procurement (third party) was through open competitive bids significantly lowering the price of services obtained through third parties.</p>	<p>In the case of Maynilad most sub contracts were related-party contracts awarded to associates of the International firm involved in the consortium, leading to higher procurement costs and heavy Forex losses.</p>
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c Internal financial management (during the financial crisis)

Manila Water focussed on domestic lenders for capital expenditure, obtaining small loans from multiple banks. While this affected capital investments in the initial years leading to restricted performance, the company was able to protect itself from immediate financial risk and subsequently take aggressive steps to achieve its targets. The company also focussed on crucial targets such as reduction of NRW which were central to improving company revenues.

Maynilad on the other hand opted for large loans from international lending agencies. While this helped the company to make large capital investments, it also increased the Forex burden during the financial crisis. Investments were also not directed properly (for instance towards plugging revenue losses due to NRW) with the result that the NRW increased from 64% to 69% between 1997 and 2003, reducing the potential revenue for the company.

LESSONS LEARNT

Need for robust sectoral needs and investment analysis prior to the bidding process, so as to allow all parties in a PPP structure to make informed assumptions and set accurate output forecasts. In this case lack of accurate information from the Concessioneing Authority and unrealistic bids from the Concessionaires led to tariff escalations during implementation – hampering the initial objective of the project.

Need for proper risk allocation even during contractual amendments as this could seriously impact the expected outcomes of projects. In the Manila Case, the amendment resulted in transferring the Currency risk, initially allocated on a long term shared basis, entirely from the Concessionaires to the public.

Need for ensuring transparency in third party contracting, so as to avoid unearned gains for operators and unwarranted escalation of project costs. In this case the eventual financial failure of Maynilad could be attributed, at least in part, to the lack of such transparency

Need for ensuring autonomy of regulatory bodies/arrangements in order to eliminate regulatory bias and protect project interests. In the Manila case though the original

contract envisaged a neutral regulatory arrangement, subsequent amendments did not uphold the strategic importance of such an arrangement, leading to eventual disputes and compromising project outcomes.

On the positive side the experience also highlights the possibility of bringing hitherto excluded urban poor communities within the service network through PPP arrangements, on account of issues of efficiency and economic returns involved within the process

Despite its shortcomings the project also highlights the substantial efficiency gains that can be achieved through PPP arrangements. For instance, coverage for the two service areas increased by 30% in the first five years, a significant improvement considering that MWSS would have achieved this in 30 years based on their historical performance.

4. 'JOHANNESBURG WATER' MANAGEMENT CONCESSION

CASE OVERVIEW

Country: South Africa

ULB: Greater Johannesburg

Sector: Urban Basic Services **Sub-Sector:** Water Supply and Sewerage

Award Date: 2001

Type and Period of concession: Management Contract for 5 years

Stakeholders:



Contracting Authority Johannesburg Water (JW), Public company setup as the Water Service Provider for Greater Johannesburg



Concessionaire Johannesburg Water Management Company (JOWAM)



Oversight Arrangement Independent Auditors contracted by JW to monitor performance of JOWAM

Indirect Regulation through Change Management Unit (CMU) and Shareholder Unit (SHU) set up to monitor the service delivery and financial performance respectively of JW



Present Status of Project: The project was completed successfully in 2006 and operations were handed over to JW staff.

PROJECT TIMELINE:



1999 *Establishment of an Advisory Board of Specialists to help setup JW and to assist with the contract design and selection process for a private partner to manage the utility*



2000 *Constitution of JW as an autonomous Water Service Provider Company to be fully owned by the Municipal Administration of Greater Johannesburg*



2001 *Award of a five year management contract to JOWAM for managing JW*



2006 *Successful completion of the management contract*



PPP CONTEXT

ENABLING ENVIRONMENT

In the late 1990s Johannesburg undertook several administrative reforms in order to consolidate numerous separate administrations and restructure the city’s approach to service provision. The following reforms undertaken during the period formed the background for the ‘Johannesburg Water’ Management Contract:

Adoption of the iGoli 2002 plan, which categorized all municipal functions into Utilities, Agencies and Corporate Departments (UACs), all entirely owned by the City Administration (CA) but set up as independent companies, accountable to the City Council through stipulated service delivery targets.

Creation of a Contract Management Unit (CMU) as an oversight body to monitor and evaluate performance of UACs and creation of a separate Shareholder Unit (SHU) to monitor the financial performance of the units.

Consolidation of seven separate water utilities serving different jurisdictions in the city into one autonomous company, Johannesburg Water (JW). In 2000, agreements were signed between the City of Johannesburg and the new company, transferring the city's water infrastructure assets and 2500 employees to the company and setting the service targets to be achieved.

SECTORAL CONTEXT

The following was the status of water supply and sanitation in Greater Johannesburg (3.2 million population approximately) during the inception of JW.

Inadequate coverage of water and sanitation facilities - at an aggregate level 9% lacked access to adequate water supply and 15% to adequate sanitation. The prevalent system also suffered from severe distributional inequities and the shortfall was very high in the informal settlements.

Very high Unaccounted-for-Water (UfW), estimated at 43% and a high incidence of non payment by users leading to heavy revenue losses.

Unacceptable levels of environmental non-compliance, especially at sludge handling facilities

Poor customer interface and customer relations management

Lack of capacity within the newly formed company - JW, to handle critical technical functions; an issue compounded by lack of robust sectoral data for effective management and monitoring

This formed the backdrop for initiating a management contract for operating the company in its nascent stage.

PROJECT DEVELOPMENT

PROJECT CONCEPTUALIZATION

As a part of the administrative reform process, there was an urgent need to infuse the newly formed UACs with an efficient work culture. In the case of JW, there was a need

to increase the internal capacity of the staff, improve operational and financial performance and consolidate the integration of seven separate water utilities into a single efficiently managed autonomous unit. In order to achieve this it was opted to initiate a five year management contract, wherein the private party was expected to provide management expertise and support to the JW in critical areas and to transfer human resource competence to JW staff within the contract period.

PROJECT DEVELOPMENT

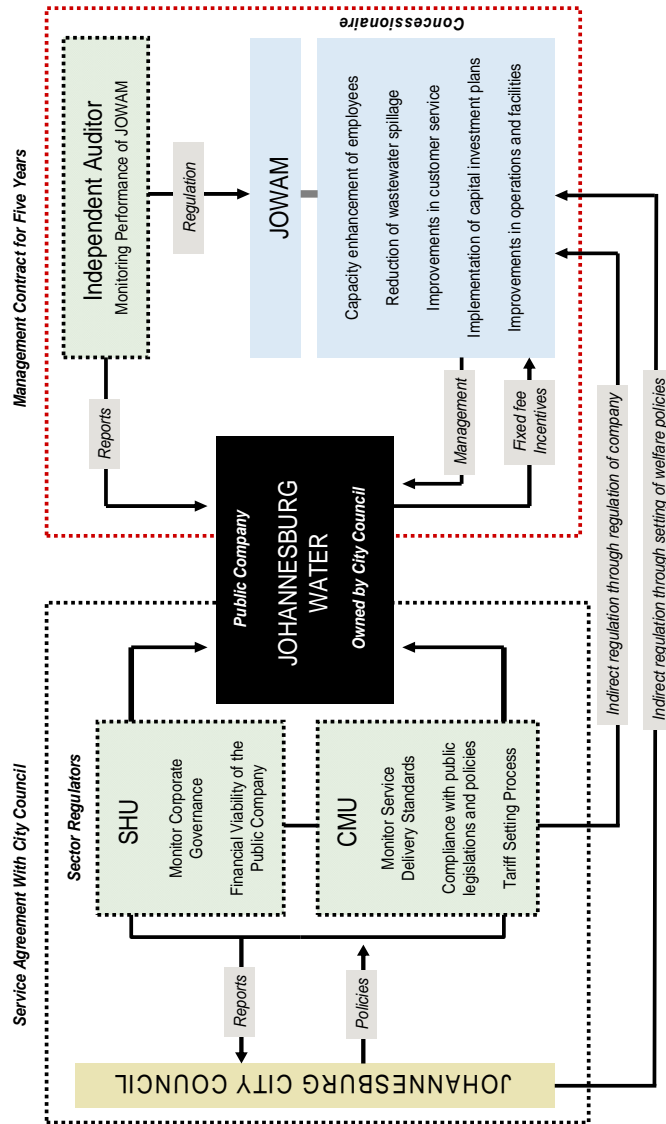
The Municipal Administration established an Advisory Board of Specialists in 1999 to help setup JW. The Board also assisted with the contract design and selection process for appointing a private partner to manage the new company.

PROCUREMENT PROCEDURE

In 2001, the management contract was awarded to the Johannesburg Water Management Company (JOWAM) through an international competitive bid. JOWAM was a Joint Venture between Ondeo (a water subsidy of Suez), Northumbrian Water and Water and Sanitation Services South Africa (a subsidiary of Ondeo). The award was based on their lowest bid for subsidy support from the Municipal Administration and lowest quote for incentive based payment (fixed proportion of annual revenues of JW). JOWAM also had a strong technical proposal including a strategy for building internal capacities and gradually reducing its staff over the contract period.

CONTRACTUAL ARRANGEMENTS

PROPOSED CONTRACTUAL STRUCTURE



OPERATOR OUTPUT OBLIGATIONS

The indicators for monitoring of JOWAM's performance were set out in the management contract. These included annual targets (reset every year in consultation with JOWAM) for:

Capacity Enhancement of JW employees and human resource development

Reduction in waste water spillage and overflow

Improvements in customer service and complaint redressal

Implementation of annual capital investment plans

Improvements in operations and facilities

JOWAM was expected to deploy 13 professionals (including at executive management levels) and phase them out over the period of the contract, after ensuring adequate skill transfer to JW staff. Operational decisions of JOWAM had to comply with policy decisions of the City Administration (single shareholder of JW).

REGULATORY AND MONITORING ARRANGEMENTS

The performance of JOWAM was directly linked to the performance of the managed entity (Johannesburg Water). Thus while JOWAM's performance was directly monitored by the JW Board through an Independent Auditor, in reality its performance was also regulated through the regulatory arrangements operating upon JW.

These included (i) the Change Management Unit (CMU) created in 2001 to monitor service delivery standards, compliance with local government and National legislation, and the tariff setting process of JW and (ii) the Shareholder Unit (SHU) created in 2003 to monitor corporate governance and financial viability of JW. Both the CMU and the SHU directly reported to the City Administration (CA) of Greater Johannesburg.

PROJECT FINANCIALS

The contractual commitments of JOWAM were restricted to management of JW and did not include any financial investments.

Compensation was structured through a fixed management fee which was to be paid by JW to JOWAM on a monthly basis, irrespective of the performance of JOWAM.

In addition to this JOWAM was entitled to two types of incentive payments. 'Incentive A' was determined by performance against the five parameters described in 3.2 earlier. 'Incentive B' referred to the fixed percentage (0.18% as per JOWAM bid) of the annual revenues of JW which were to accrue to JOWAM.

PROJECT RISKS AND ALLOCATION

Revenue Risk The contract safeguarded JOWAM from revenue risks through a guarantee of fixed monthly management fees



Performance Risk Borne by JOWAM since the incentive based payments were directly linked to operator performance and improvement of financial performance of JW



Policy Risk Though not formally allocated as per contract, policy risk was borne by JOWAM since its performance was susceptible to policy decisions of the City Administration (CA), which was the single shareholder of the managed company, JW. No compensation was envisaged in case of changes in policy of the CA or default at their end in complying with their separate agreement with JW.

DISPUTES RESOLUTION MECHANISM

All disputes emanating from the contract were to be resolved through the CMU and the SHU.

PARTNERSHIP IN PRACTICE

In the five years of the contract period JOWAM successfully achieved its contractual targets including transfer of skills to the JW employees before withdrawing from the utility.

PROJECT OUTCOMES

OPERATIONS

Quality of water improved due to regular monitoring and testing (500 samples per month) resulting in 99% bacteriological compliance.

Treatment of Wastewater improved from 940 million to 1.01 billion litres per day and compliance with effluent standards increased from 82 to 98%. Wastewater overflow at treatment sites also improved from 646 to 138 spills per year by 2005.

UfW reduced from 43 to 35% and the percentage of water meters read by authorities increased from 50 to 94% by 2006. As a consequence revenue collection increased from 56% to over 105% (including arrears)

Other improvements included power and chemical savings, reduction in staff overtime and absenteeism.

FINANCIAL MANAGEMENT

Asset management improved through development of an asset register and a maintenance plan

Approximately 98% of the capital budgets were realized into actual expenditure and the company's credit rating improved from 'BBB+' at the start of the contract to 'A'.

JW, which was bankrupt at the start of the management contract, registered profits for the first time in 2005-06 (final year of the management contract)

USER INTERFACE

Citizen interface and grievance redressal improved, with 90% of all calls being answered in 30 seconds through the call centre set up for the purpose.

Response time also improved with 80% of network repairs getting completed within 48 hours of notice and 80% of blocked sewers attended within 24 hours.

TRANSFER OF SKILLS

Transfer of skills to JW employees and the gradual phasing out of JOWAM staff was achieved successfully as reported by CMU. This was achieved through active involvement of JW employees in all projects, delegation of responsibilities and periodic training and mentoring.

PROJECT SHORTCOMINGS

The management contract fulfilled its contractual targets to a large extent. However, since the CA played the dual role of being a public agency and the single shareholder of JW, this led to conflicts between the subsidy policies of the Administration and the efficiency objectives of the management agency.

LEGAL/CONTRACTUAL ISSUES

While the management contract largely fulfilled contractual expectations, the results were restricted on account of non compliance by the CA with certain transfer terms that were part of the its agreement with JW (during the constitution of JW). The agreement provided for transfer of all billing functions to JW. In effect however, only the top 14,000 consumers were transferred, giving JW control over only 30% of its revenues. It was only after three years of operation that 60% consumers were transferred to the company. The resultant lack of control of JW over a large proportion of its revenue base restricted the capacity of the management agency, JOWAM to address commercial losses and erroneous business processes in a comprehensive manner.

LESSONS LEARNT

The experience highlights the possibility of engaging the private sector for strengthening the capacities of public utilities (particularly newly constituted public companies where there is a need to inculcate an efficient work culture), and using management contracts as catalysts for developing efficient public companies.

Importance of ensuring the autonomy of management consultants in order to achieve expected efficiency gains from management contracts. In this case the extent of improvements was heavily restricted due to dependence of the management agency on both (i) the compliance of the CA with its commitments (separate agreement) to the managed company and (ii) the policy regime of the CA.

Need for ensuring phasing out of management consultants and transfer of adequate skills and capacities to the managed company so as to sustain the efficiencies produced through management contracts beyond the period of the project.

5. MUNICIPAL SOLID WASTE COLLECTION AND TRANSPORTATION
 – NEW DELHI MUNICIPAL COUNCIL

CASE OVERVIEW

Country: India

ULB: 12 Select Circles of the New Delhi Municipal Council (NDMC), Delhi

Sector: Urban Basic Services **Sub-Sector:** Solid Waste Management (SWM)

Award Date: September 2006

Type of concession: Build-Operate-Transfer (BOT) Concession for a period of 8 years

Stakeholders:

[Redacted]

Contracting New Delhi Municipal Council (NDMC)

Authority

[Redacted]

Concessionaire M/s Ramky Energy and Environment Limited

[Redacted]

Oversight Concessions Authority and Independent Agency - M/s SENES

Arrangement Consultants India Pvt. Ltd – for detailed project monitoring

[Redacted]

Present Status of Project: The project is operational and is meeting expected outcomes.

PROJECT TIMELINE:

[Redacted]

1996 *Supreme Court judgement issuing several directives to the Municipal Corporation of Delhi (MCD) and NDMC for proper conduct of Solid Waste Management*

[Redacted]

1998 *Supreme Court judgement reprimanding NDMC and MCD for non compliance with earlier directives, and setting up the Asim Burmon Committee, whose recommendations were used to formulate the*

Municipal Solid Waste (Management and Handling) Rules 2000

2004 *Appointment of a transaction advisor and conduct of technical and feasibility studies*

2005 *Competitive bidding process with lowest quote for tipping fee as the bid parameter*

2006 *Award of the contract to M/s Ramky Energy and Environment Limited*

PPP CONTEXT

The following formed the background for the NDMC Waste Management Concession: The Supreme Court of India made a series of judgements (in the *Dr. B L Wadehra versus Union of India* case, 1996 and the case of the *writ petition filed by Almitra H Patel*, 1998) - upholding the right of citizens of Delhi to live in a clean city, emphasizing the statutory obligation of NDMC and the MCD towards waste management and issuing directives towards efficient management of wastes in the city.

As part of the proceedings in the Almitra Patel case, the Supreme Court set up a Committee in 1996 under the chairmanship of Mr. Asim Burmon to make recommendations towards SWM in urban areas. Based on the recommendations, the Ministry of Environment and Forests notified the Municipal Solid Waste (Management and Handling) Rules, 2000. These rules are time bound, hold the Urban Local Bodies (ULBs) accountable and prescribe penalties for non-compliance and non-performance.

The existing system of waste management through NDMC staff was fraught with issues such as high manpower and operation costs, inefficiencies in collection and transportation, technologically archaic equipment and installations, mixing of wastes reducing efficacy of land fills and treatment plants etc.

Analysis of the system suggested that a large proportion of the cost incurred was on account of collection and transportation – Rs.556 (54%) out of an average cost of Rs.1029 per metric ton (MT). Analysis also indicated that costs could be significantly lower if such functions were carried out by a private operator.

PROJECT DEVELOPMENT

PROJECT CONCEPTUALIZATION

In order to overcome capacity and financial constraints and to develop an efficient SWM system, the NDMC opted to engage the private sector for managing labour intensive tasks of collection and transportation of wastes. This was envisaged as part of a larger strategy, where better segregation would be practised at source, collected at the household level through rag pickers organized through NGOs, and collected, further segregated and transported separately to existing landfill and treatment sites by the operator. The project was expected to facilitate better collection/transportation at lower costs and increase the efficiency of post processing of wastes.

PROJECT DEVELOPMENT

The NDMC established an Advisory Committee for facilitating the decision making process, ensuring stakeholder participation, facilitating approvals and co-coordinating with various associated departments. The Committee was headed by the Chairman of NDMC and comprised of the Project Director, various technical advisors and a representative of the Health Department (Anchor Department).

Technical studies were conducted through a Transaction Advisor³ to review the gaps in existing mechanisms and ascertain the quantum of wastes to be handled by the private agency in addition to feasibility and value for money analysis.

PROCUREMENT PROCEDURE

The contract was awarded in the form of an 8 year concession for 12 selected circles within NDMC through a competitive bidding process in 2006. Pre-qualification criteria included (other than financial profile of company) the experience of bidders in any of the following criteria:

Collection-transportation of at least 20000 tonnes/annum or annual billings of at least Rs.10 million from collection-transportation of any kind of wastes for each of the last 2 financial years

³ Infrastructure Development Finance Company Limited (IDFC)

Handling of a fleet of at least 20 goods vehicles for each of the last 2 financial years

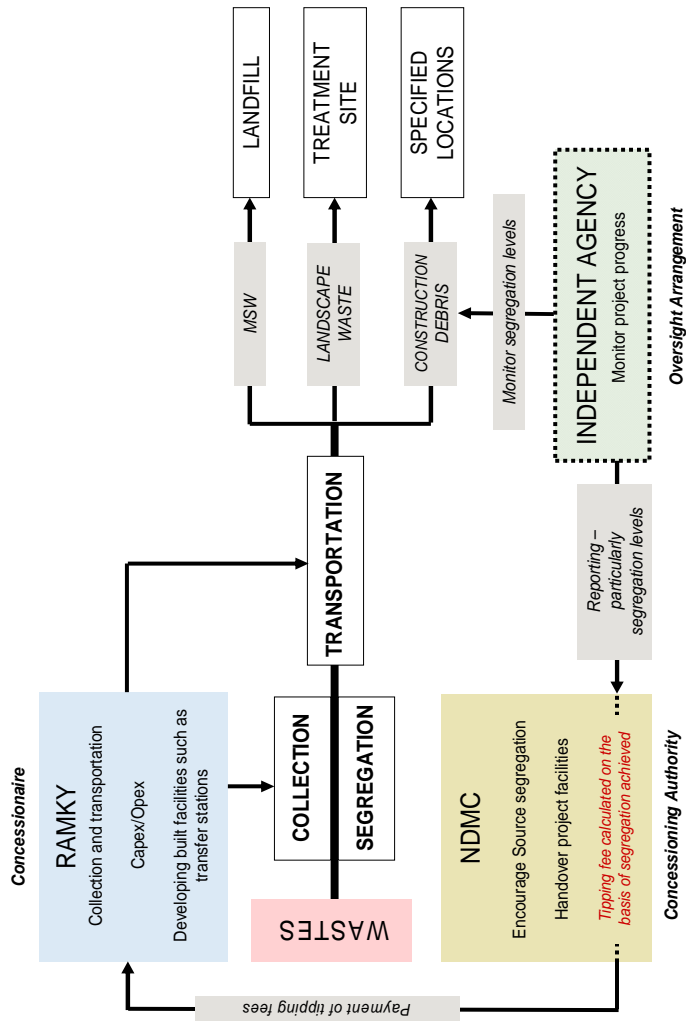
Transportation of at least 1 Lakh tonnes per annum of minerals, metals and materials such as iron ore, steel, coal, sand for each of the last 2 financial years

Development of at least one core sector project with a project cost of at least Rs.150 million for government agencies in the last 5 financial years

The award – based on the lowest quote for tipping fee payable by NDMC (bid parameter) – was made to M/s Ramky Energy and Environment Limited based on their quote of Rs.468 per MT as the tipping fee.

CONTRACTUAL ARRANGEMENTS

PROPOSED CONTRACTUAL STRUCTURE



OPERATOR OUTPUT OBLIGATIONS

The contract detailed the scope of services to be provided by the Operator as follows:

Provision of new facilities such as street corner bins, garbage stations and equipment and vehicles

Collection of Municipal Solid Waste (MSW) and Landscape Waste (LW) from street corner bins and garbage stations and provision of sorting facilities for segregating bio-degradable and non-degradable components of MSW

Transportation of MSW to Treatment or Landfill facility and LW to Treatment facility and ensuring that construction debris is not mixed with the MSW

Deployment of requisite manpower for carrying out various functions, and providing them with uniforms and safety equipment

Adherence to segregation benchmarks and transportation of degradable and non-degradable wastes in separate colour coded vehicles

Provision of a Workshop facility outside the NDMC area for servicing and maintenance of vehicles

Operation and Maintenance of all project facilities in accordance with requirements as notified by the Independent Engineer.

Conduct of awareness campaigns in collaboration with NDMC to sensitize citizens to practice source segregation of wastes

Development of a Complaint Handling Cell and establishment of standard protocol for grievance redressal

Handover vacant and peaceful possession of project facilities (excluding equipment and vehicles) free of cost and in good operating condition at the end of the Concession period.

OBLIGATIONS OF THE CONCESSIONING AUTHORITY

Obligations of NDMC as per contract included peaceful and timely handover of all related project facilities free of all encumbrances within 15 days and granting and facilitating timely approvals required by the Concessionaire for carrying out his obligations.

REGULATORY AND MONITORING ARRANGEMENTS

M/s SENES Consultants India Pvt. Ltd was appointed as an independent monitoring agency for the project. Responsibilities of the agency included:

Monitoring of performance under project and approving (where required as per contract) the design, implementation and maintenance of facilities

Reporting to both the parties involved on various physical, technical and financial aspects of the project based on field visits and inspections

Verification of weighing equipment and testing of MSW at treatment/landfill facility to measure segregation levels

Review matters related to safety and environmental management and assisting the parties in amicable settlement of disputes

PROJECT FINANCIALS

All investments (including built facilities such as transfer stations and obtaining land for the purpose) were to be made by the Concessionaire.

The Concessionaire was to recover his investments through tipping fees, payable monthly by the NDMC on a tonnage basis. While a base fee was fixed as per contract, the tipping fee was calculated through a prescribed formula using factors such as actual segregation achieved and penalty for non-compliance with segregation benchmarks. An escalation rate for the tipping fee was also incorporated within the contract.

The Concessionaire was entitled to further recovery of investments through the sale of recyclable and other material collected.

Revenue from all advertisements (except at NDMC dhalaos which were contracted on a BOT basis prior to this contract) was to be shared on a 3:1 basis between the Concessionaire and NDMC.

PROJECT RISKS AND ALLOCATION

Construction Risk Including time and cost overruns due to contractor default, was borne by the operator. Only certain approvals and risks due to unforeseen conditions were shared between the Concessionaire and NDMC.

Overruns due to delays in handover by NDMC, including removal of encumbrances obstructing free access to sites, was borne by NDMC.



Operating Risk Including design of the system, procurement, operation and maintenance of equipment, management of nuisance such as birds/animals at dhalaos, ensuring segregation of wastes at dhalaos before transportation etc. were borne by the Operator.

Allied factors such as closure/shifting of prevalent landfill site which could affect operations were borne by NDMC



Revenue Risk Borne by the Concessionaire since tipping fee was based on tonnage and segregation levels achieved and the NDMC did not guarantee complete source segregation or a minimum quantum of waste supply.



Performance Risk Borne by the operator through a performance guarantee for a period of 18 months from the date appointed as per contract. The tipping fee also took into consideration performance of the operator in terms of level of segregation achieved.



Force Majeure The Concessionaire was protected against **Political Force Majeure** such as changes in laws regarding segregation, and other regulations affecting operations.

DISPUTES RESOLUTION MECHANISM

All disputes were to be resolved amicably through direct discussion between the parties involved (with the help of the independent oversight body where needed). In the event of non-resolution the dispute was to be settled through arbitration processes as prescribed under the Arbitration and Conciliation Act, 1996.

PARTNERSHIP IN PRACTICE

Notwithstanding initial delays during the bid process, the project has been successful in meeting general expected outcomes. Segregation benchmarks have however not been achieved, largely because of inadequate monitoring at the primary stage of the waste collection chain. Such segregation was initially envisaged through a mix of source segregation by residents and segregation through ragpickers (co-ordinated through NGOs). This has however not been achieved.

LESSONS LEARNT

Importance of structuring operator obligations in a way that monitoring is in-built into the structure and quality services are ensured. In this case the linking of tipping fee with other obligations such as maintenance of a certain level of segregation of waste acts as a monitoring device.

While the project has largely been successfully implemented, the expected levels of segregation have not been achieved. It was expected that a larger city level strategy where community groups would practice source segregation and undertake primary collection could be implemented. The efficiency of the private partner to deliver segregated wastes was contingent upon the efficiency of such a primary system. It was also thought that the private partner would work actively with the community groups and stakeholders like rag pickers to ensure that the waste segregation targets are achieved. However, lack of adequate efforts to operationalise and incentivise such systems, have led to non-achievement of segregation benchmarks. It is also clear that NDMC also has a critical role to play in this process and cannot leave it entirely to the private partner.

6. SANITARY LANDFILL AT MAVALLIPURA BANGALORE

CASE OVERVIEW

Country: India

ULB: Bangalore, Karnataka

Sector: Urban Basic Services **Sub-Sector:** Solid Waste Management

Award Date: August 2004

Type and Period of concession: Build-Operate-Transfer contract for 20 years followed by post closure monitoring for 15 years

Stakeholders:



Contracting Authority Bruhat Bengaluru Mahanagara Palike (BBMP)



Concessionaire M/s Ramky Enviro Engineers Limited



Oversight Arrangement Through the Concessioneering Authority and through the Independent Engineer appointed for regular monitoring.



Present Status of Project: The project is operational presently.

PPP CONTEXT

The Ministry of Environment and Forests notified the Municipal Solid Waste (Management and Handling) Rules in 2000. These rules are time bound, hold the Urban Local Bodies (ULBs) accountable and prescribe penalties for non-compliance and non-

performance; triggering among other things the need for improved waste disposal practices such as scientific disposal and sanitary land filling.

Total generation of Municipal Solid Waste (MSW) in Bangalore at the time of commissioning of the project was about 2500 tons per day (including compostable and recyclable wastes). The city did not have a properly designed system for disposal and the wastes generated were disposed off at open dumping facilities on the outskirts of the city. This led to issues such as unhygienic conditions, pollution of ground water due to percolation of pollutants from the garbage into the earth, nuisance due to scavenging birds etc. There was clearly a need to implement a scientific disposal system for the city.

PROJECT DEVELOPMENT

PROJECT CONCEPTUALIZATION

The project envisaged a simple procedure for handling MSW generated in the city – rendering the wastes ‘inert’ followed by sanitary landfill of the inert residual matter. The landfill project was proposed for a capacity of 1000 tons per day spread over two sites. The first project (subject of this case) was for a 100 acres site at Mavallipura to handle 400 tons of MSW per day. Engagement with a private partner was expected to bring the required technical capacity and experience to the project, and the Concessionaire was to be responsible for design, construction, operation and long term maintenance (20 years when the site would be operational and 15 years after closure of the site due to saturation) of the land fill. BBMP undertook the task of delivering the wastes to the site. Since no direct revenues (except possible sale of composts and recyclables) were to accrue from the project, it was decided to pay the Concessionaire on a ‘tipping fee per ton’ basis.

PROJECT DEVELOPMENT

Between 2001 and 2004, the Government of Karnataka (GoK) through the BBMP, the Transaction Advisor⁴ and the Bangalore Agenda Task Force (BATF), which comprised of a team of experts in MSW management, undertook activities for setting up scientific

⁴ Infrastructure Development Corporation (Karnataka) Limited (IDeCK)

land fills for the waste generated within the City. About 111 acres of land spread across nine sites within the Bangalore district was available for the purpose (allotted in 2000 by the Revenue Department, GoK).

BBMP conducted several background studies for the project through the Transaction Advisor including feasibility study, location analysis, capacity and expected duration for saturation of chosen site, quantum of wastes to be handled by the private player etc.

Preliminary investigations of feasibility of allotted lands for the purpose of developing landfills revealed that 7 out of the 9 sites could not be used due to various environmental and social (proximity to existing habitation and public resistance) reasons. The final sites were decided after conducting detailed Environmental Impact Assessment, commitments from the BBMP to relocate certain existing functions outside the mandatory 500m buffer zone (as per MSW 2000 Rules) and after additional acquisition of land since the allotted lands at the chosen sites was inadequate.

Detailed layout and drawings were prepared by the public agency for the land fill site and the use of the designs was optional for the Concessionaire. In any case the responsibility for the design was borne by the Concessionaire.

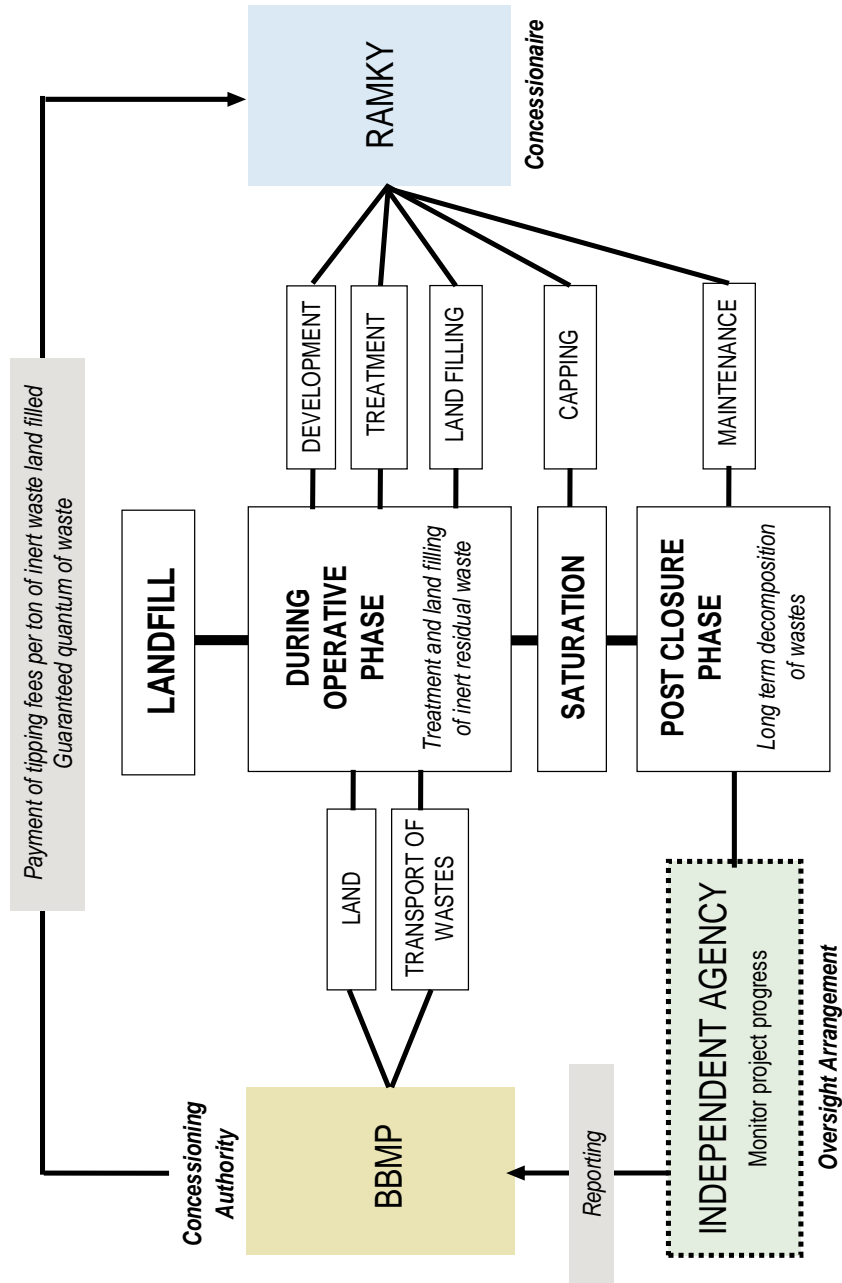
Review of the progress of project development activities was carried out on a weekly basis. The meeting was attended by representatives of BBMP, BATF, and the Transaction Advisor who discussed the various activities undertaken and action to be taken during the development stage. Whenever bottlenecks emerged, the matter would be taken up and resolved at the higher level with the Commissioner, BBMP or Secretary, Urban Development Department or any other senior office of the relevant Government Department.

PROCUREMENT PROCEDURE

Procurement of the Concessionaire was based on a two stage (RfQ followed by RfP) competitive bidding process. The final contract was awarded to M/s Ramky Enviro Engineers Limited in August 2004, based on their lowest quote for tipping fee per ton of residual inert matter going into the landfill (bid parameter).

CONTRACTUAL ARRANGEMENTS

3.1 PROPOSED CONTRACTUAL STRUCTURE



OPERATOR OUTPUT OBLIGATIONS

The Concessionaire was responsible for

Finalizing the design after consultations with the Independent Engineer appointed for the project and after approval from the BBMP within 90 days of commencement of contract

Financing and undertaking all construction work for the waste processing unit and landfill facility. Completing at least one cell of the landfill (ready for receipt of inert waste) within 10 months from the signing of contract

Processing the waste transported by the BBMP (maximum of 600 tons per day beyond which the Concessionaire could decline to process the excess) to the designated site, making it inert and disposing the inert residual matter at the same site through sanitary land filling technique.

Conversion of amenable portions of the MSW into compost/manure and supplying a fixed 500 tons to the BBMP per year

Carrying out procedures as per the specifications prescribed in the MSW Rules 2000 and obtaining necessary clearances from the Karnataka Pollution Control Board (KPCB) on a periodic basis.

Continuing operations for 20 years or up till the saturation of the landfill (whichever comes earlier)

'Capping' the landfill upon saturation and undertaking 'post closure maintenance' for the next 15 years

Handover of the project facility in good operating condition and free of cost at the end of the contract period

OBLIGATIONS OF THE CONCESSIONING AUTHORITY

The Concessioning Authority was responsible for the following:

Handing over peaceful possession of chosen site for the project to the Concessionaire within a period of 15 days from the start of the concession.

Supplying a minimum quantity of 400 tons of MSW per day at own costs. Supplying only inert waste to the Concessionaire up till the completion of the first landfill cell.

REGULATORY AND MONITORING ARRANGEMENTS

The BBMP monitored the performance of the Concessionaire as per the provisions of the contract. M/s Tetra Tech India Limited was appointed as the Independent Engineer for:

Conducting regular monitoring

Approving (where required as per contract) the design, implementation and maintenance of project facilities

Reporting to both the parties involved on various physical, technical and financial aspects of the project based on field visits and inspections,

Granting completion certificates, verifying weighing equipment, monitoring of compliance with prescribed methods for land filling, verification of extent of saturation of the landfill and reviewing matters related to safety and environmental management

Assisting the parties in amicable settlement of disputes.

PROJECT FINANCIALS

All investments for constructing, operating and maintaining the site for the project period (including investments required during post-closure maintenance phase) were borne by the Concessionaire.

Revenue for the Concessionaire was essentially through 'tipping fees' per ton of inert residual waste landfilled at the site. 85% of the tipping fee was paid immediately, and 15% was to be paid upon successful post closure maintenance of the site. A separate 'Post Closure Performance Account' was created and the Concessionaire was to receive the remaining 15% in the form of 60 quarterly payments over 15 years.

BBMP guaranteed a minimum supply of waste (400 tons per day) to the Concessionaire, failing which the BBMP had to bear charges for the remaining quantum.

The Concessionaire was expected to work towards obtaining carbon credits through management of greenhouse gas emissions. Benefits of the carbon credits (when available) would be shared equally between the Concessionaire and BBMP.

Proceeds from sale of manure developed from the MSW accrued entirely to the Concessionaire (except the minimum annual supply of 500 tons to the BBMP). Proceeds from sale of recyclables also accrued to the Concessionaire.

PROJECT RISKS AND ALLOCATION

Construction Risk Including time and cost overruns was borne by the operator. Overruns due to delays in handover of land by BBMP, including removal of encumbrances obstructing free access to the site was borne by BBMP.

Operating Risk Borne by the Concessionaire since operations and procedures were to be conducted as specified in the contract and in accordance with various environmental and MSW rules.

Performance Risk Borne by the Concessionaire since the contract specified the output parameters to be achieved and penalties could be imposed in case of default. This was further allocated through a Performance Guarantee valid for a period of 24 months from the date appointed as per contract

Investment Risk All capital and O&M expenditure was borne by the operator for developing and managing the landfill facility

Revenue Risk Even though payment was based on a 'tipping fee per ton' basis, the revenue risk for the Concessionaire was mitigated through assured quantum of waste supply by the BBMP. The Concessionaire however bore the 'payment risk' from the BBMP since no separate fund was created for the project so as to ensure timely payments

Policy Risk The Concessionaire was protected against changes in laws and policies that could affect their operations.

DISPUTES RESOLUTION MECHANISM

All disputes were to be resolved amicably through direct discussion between the parties involved (with the help of the independent oversight body where needed). In the event of non-resolution the dispute was to be settled through arbitration processes as prescribed under the Arbitration and Conciliation Act, 1996.

PARTNERSHIP IN PRACTICE

The land fill presently treats and disposes almost 200-300 tons of MSW per day. While this is lesser than originally envisaged (refer 4.2) the facility is by and large meeting its commitments.

PROJECT SHORTCOMINGS

The project originally envisaged a facility spread over 3 sites with a capacity to handle 1000 tons of MSW per day. This first project at Mavallipura required 100 acres of land to be made available to the Concessionaire. In reality however only 70 acres were eventually handed over since the BBMP realized that 30 acres of the proposed site were not under its possession. As a result the project handles approximately 200-300 tons of MSW per day instead of the earlier objective of 400 tons and above.

Local villagers living in the vicinity of the landfill have objected to the project, both through resistance before the start of the project as well as during the operation phase by locking up the facility on some occasions. The primary concern of the villagers is the run-off of leachate during heavy rains.

LEGAL/CONTRACTUAL ISSUES

There were no formal disputes, though the issues mentioned above caused concern. Matters have been settled between BBMP, the Concessionaire, and the local villagers through repeated and ongoing negotiations.

LESSONS LEARNT

The failure of the BBMP to hand over committed quantum of land for the sanitary landfill has resulted in both reduced capacity of the scheme as also reduced revenue expectations for the private Concessionaire (quantum has reduced but period of

concession has remained the same). Though the issue was resolved amicably it could have had very serious consequences for the future of the project since the very basis of the revenue forecasts had been changed. The importance of gaining possession of adequate land before committing to the obligation cannot be understated.

The project also highlights the importance of committed efforts by Public Authorities to ensure implementation of a project. The procedure of weekly meetings amongst project stakeholders to ascertain project progress and regular monitoring and intervention by top management followed in the case became a trendsetter for all future projects.

The project provided a unique opportunity to levy appropriate user charges, create a revenue stream for future recurring and capital expenses for SWM and create a framework which would be sustainable for the ULB in the long run. However due to certain logistical reasons the BBMP has not been to implement such user fees.

Importance of proper information, education and communication (IEC) so as to avoid resistances from other stakeholders. This is particularly important in sectors such as waste management due to the 'nuisance' value and 'not in my back yard (NIMBY)' syndrome associated with its processes.

The complaints of the citizens may nevertheless have been justified and as such projects of this nature should insist on incorporating environmental safeguards and if required insist on use of more appropriate and safe technologies.

7. EXPRESS METRO RAIL LINK FROM NEW DELHI RAILWAY STATION TO AIRPORT

CASE OVERVIEW

Country: India

ULB: New Delhi

Sector: Urban Transport **Sub-Sector:** Transit Systems

Award Date: January 2008

Type and Period of concession: Build-Operate-Own-Transfer (BOOT) Concession for 30 years

Stakeholders:

Contracting Authority Delhi Metro Rail Corporation Limited (DMRC), a Joint Venture between Government of India (GoI) and Government of National Capital Territory of Delhi (GNTCD)

Concessionaire Special Purpose vehicle (SPV) – Delhi Airport Metro Express Private Limited (DAMEPL) – formed between Reliance Infrastructure and CAF, Spain

Oversight Arrangement Through the Concessions Authority and through Independent Assessors appointed for ascertaining safety of the installed systems.

Present Status of Project: The project is expected to be operationalised by September 2010.

PROJECT TIMELINE:

2007 *Competitive bidding process for selection of Concessionaire*

2008 *Award of the contract to DAMEPL – SPV between Reliance*

Infrastructure and CAF, Spain

2010

Expected completion of the Delhi Airport Metro express project

PPP CONTEXT

The Airports Authority of India (AAI) forecast a steep growth in air traffic to be handled at the IGI airport in Delhi due to the Commonwealth Games to be held in the city in 2010. Annual traffic is estimated to grow from 12 million passengers in 2004-05 to 40 million by 2011-12 (233% growth).

At present the movement of passengers between the Airport and the City is largely through taxis and private cars, with a limited number of passengers using buses for the purpose. Due to heavy congestion the average travel speed is as low as 20-25 kmph and the average travel time ranges between 40 minutes to an hour (during peak hours). The condition is expected to worsen despite improvements in roads.

In order to address this issue, the AAI proposed a metro rail link between the city and the airport, and requested the DMRC to undertake the project as a part of the ongoing Delhi Metro project. DMRC, a Joint Venture between GoI and GNCTD, has already completed 65.1 km of Metro Rail for Delhi in Phase I and has taken up the airport link project as part of the 121 km stretch being developed as part of Phase II. The project is targeted to be completed before the start of the Commonwealth Games in October 2010.

PROJECT DEVELOPMENT

PROJECT CONCEPTUALIZATION

Metro rails involve very high construction and maintenance costs, and high investment risks due to low returns. Such projects are thus unattractive for the private sector and are usually undertaken through EPC contracts. To address this, the Delhi Airport Metro Express (DAME) project was structured innovatively – employing the EPC mode for all civil constructions and a PPP mode for installing and operating the actual rail service. This structure was aimed at sharing the investment risk between the public and private

sectors, thereby making the project attractive and utilising private expertise for developing a high quality facility in a time bound manner.

A preliminary Origin-Destination (O-D) Survey revealed that the maximum airport traffic originated in the Connaught Place (CP) area and its vicinity and hence the rail link has been proposed between New Delhi Railway Station (close proximity to CP) and the airport – attracting commuters from the northern, north western, central and trans-Yamuna areas of Delhi. Connection to a railway station is also expected to facilitate direct transit for passengers using Delhi as a connecting point en-route to their destinations.

PROJECT DEVELOPMENT

Various primary surveys were undertaken by the Transaction Advisor⁵ to supplement available secondary data regarding existing traffic volume, O-D of passengers coming to the airport, willingness to shift to the proposed rail link etc. Environmental Impact Assessment was also conducted for the proposed alignment. The willingness surveys indicated that 82% of the respondents were likely to shift to the new facility.

Feasibility studies were also undertaken including demand forecasts and detailed cost estimates for civil, electrical and telecommunications works, rolling stock, environmental impact mitigation, rehabilitation etc. at 2006 prices, both for capital and operation and maintenance (O&M) expenditure.

PROCUREMENT PROCEDURE

Procurement of Concessionaire was based on a two stage competitive bid. Criteria for eligibility included, in addition to financial profile of bidding consortia, technical criteria as follows:

The Applicants must have prior experience of developing or operating and maintaining rail based urban transport system or should have been a major equipment supplier for a rail based urban transport system

The Applicant should have installed systems including testing and commissioning for major Rail system/operated and or maintained Major Metro Rail/Rail/supplied electro-mechanical or signaling equipments including Rolling Stock in the last ten years.

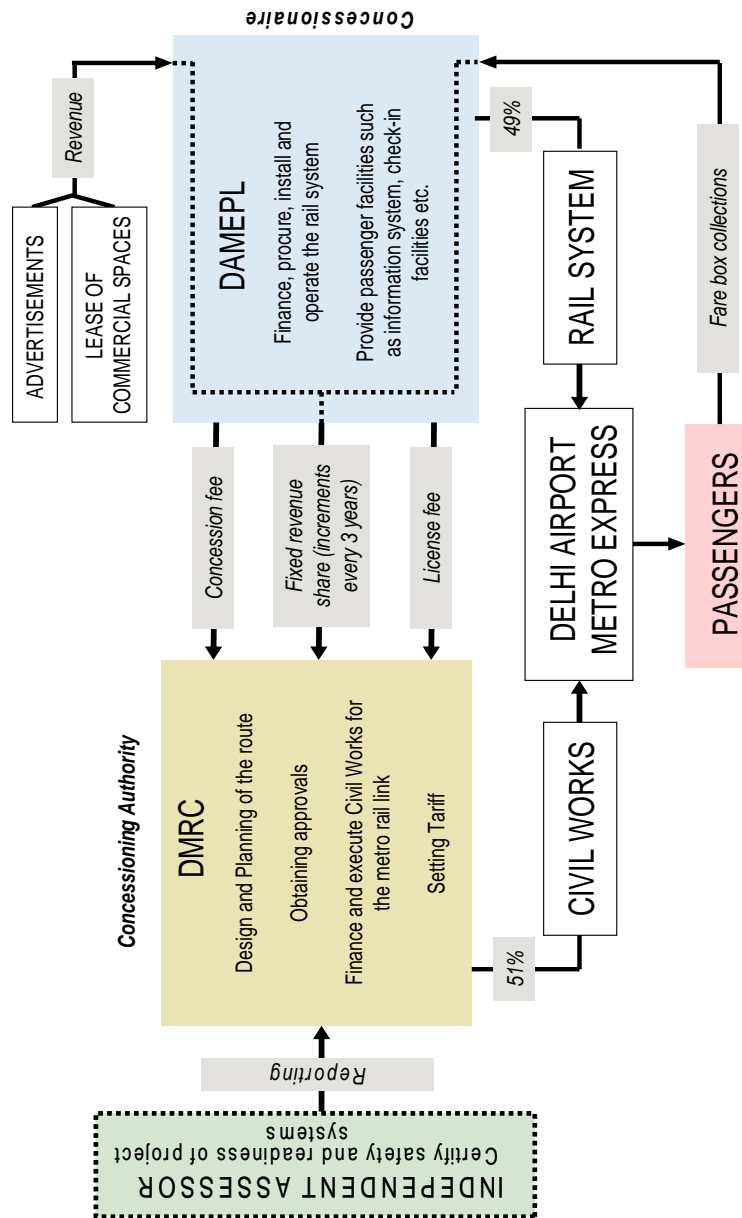
Works less than Rs.300 Crore were not considered for the selection

⁵ M/s Feedback Ventures

Delhi Airport Metro Express Private Limited (DAMEPL) – an SPV formed between Reliance Infrastructure and CAF, Spain was awarded the 30 year contract in January 2008, on the basis of their highest quote for annual concession fees to be paid to DMRC (bid parameter).

CONTRACTUAL ARRANGEMENTS

PROPOSED CONTRACTUAL STRUCTURE



OPERATOR OUTPUT OBLIGATIONS

The Metro Rail link has a total of 7 km of elevated stretch and 15.7 km of underground stretch. The Concessionaire was responsible for:

Designing, procuring, developing, financing, installing, operating and maintaining all systems including (but not limited to) rolling stock, overhead electrification, tracks, signalling, telecommunication, ventilation and air conditioning, automatic fare collection, baggage check-in and handling, depot and other facilities required for the successful operation of the link. Making available 8 trains (as per specifications) with 6 coaches each for the rail link service.

Providing state-of-the-art passenger facilities such as cushioned seats with armrests, overhead baggage compartments, access to real time updated flight information through display boards, CCTV cameras for surveillance and security and airline and baggage check-in facilities at all stations along the rail link.

Equipping each station along the rail link with fully automated access for passengers from the ground to the trains through lifts and escalators and provision of adequate parking facilities at such stations

O&M of the entire system (including periodic testing) for 30 years (including construction time) as per the detailed O&M manual developed in consultation with DMRC.

OBLIGATIONS OF THE CONCESSIONING AUTHORITY

Obligations of the Concessioning Authority included provision of land, obtaining clearances, setting of the tariff, construction of all civil work for the project and timely handover of the same to the Concessionaire.

REGULATORY AND MONITORING ARRANGEMENTS

The Concessionaire was to submit to the DMRC, monthly progress reports during the construction period, and maintenance reports (in accordance with the O&M manual) thereafter. The Concessionaire will appoint Independent Assessors as the Commission of Rail Safety may require, for certifying that all project systems are ready and capable for safe operation.

PROJECT FINANCIALS

All capital expenditure for the civil works required for the rail link was to be borne by DMRC. Investments for the rail system and all allied infrastructure was to be borne by the Concessionaire. O&M costs for the entire system including civil works were borne by the Concessionaire. Of a total project cost of Rs. 5800 Crore, Rs.2915 Crore was to be borne by DMRC and the remaining Rs.2885 Core by the Concessionaire.

Recovery of investments for the Concessionaire was envisaged through fare box collections (Rs.15/person/trip), advertisement revenue, lease of commercial spaces (built along side the rail infrastructure), and from other sources such as vending machines, retail outlets etc.

The Concessionaire would pay the DMRC Rs.10,000 per annum as licence fee in consideration of grant of site and right of way (ROW) under the project. The Concessionaire would also pay a Concession fee (bid parameter) of Rs.51 Crore to DMRC per year (to be cumulatively increased by 5% every year). In addition to this the Concessionaire will share a percentage of its revenue with DMRC as follows:

Period	Percentage of shared revenue
1 st to 5 th year	1%
6 th to 10 th year	2%
11 th to 15 th year	3%
16 th to 30 th year (end of 5% concession)	5%

PROJECT RISKS AND ALLOCATION

Construction Including time and cost overruns due to contractor default, was

Risk borne by the operator. Overruns due to delays completion and handover of civil works was borne by DMRC.

Operating Risk Including design of the system, procurement, and O&M of equipment and systems, was borne by the Operator. Design risks for overall route plan and the civil works undertaken were borne by the DMRC.

Performance Risk Borne by the Concessionaire (excepting for Civil Works) through a Performance Guarantee, initially valid for a period of 5 years and renewable from time to time.

Investment Risk Shared between the two parties, since DMRC was responsible for civil works and the Concessionaire for costs of procuring, installing and operating the rail link system

Revenue Risk Including demand risk was borne by the Concessionaire since revenues were based on fare box collections and revenue from advertisements, lease of commercial spaces etc. DMRC did not assure fixed returns. Besides the Concessionaire had to pay DMRC a fixed annual concession and license fee irrespective of the revenue generated.

Force Majeure The Concessionaire was protected through provisions for commensurate extensions in the concession period as deemed adequate to compensate for the time lost on account of a Force Majeure event.

DISPUTES RESOLUTION MECHANISM

All disputes were to be resolved amicably through direct discussion between the parties involved (with the help of the independent oversight body where needed). In the event

of non-resolution the dispute was to be settled through arbitration processes as prescribed under the Arbitration and Conciliation Act, 1996.

PARTNERSHIP IN PRACTICE

PROJECT OUTCOMES

The project is not yet operational. However, expected outcomes from the project include the following:

Approximately 42,000 passengers will be able to avail the facility on a daily basis by September 2010

Travel time will be reduced substantially – from the present average of one hour to around 18 minutes. Air bound passengers will be able to reduce time spent at the airport through check-in facilities at the stations

Both international and domestic passengers will find it convenient to use the service, since the metro station at the airport is proposed to be built close to terminals 3 and 4 which will handle both international and domestic traffic after 2010

Passengers will be able to avail of the improved services at a nominal rate of Rs.15 per trip leading to substantial per trip cost savings in comparison to using taxis or private vehicles.

PROJECT SHORTCOMINGS

Project implementation is underway and so far there have been no major shortcomings.

LEGAL/CONTRACTUAL ISSUES

Despite a robust environmental impact analysis conducted at the outset, objections against the project have been raised on several occasions. The Delhi Urban Arts Commission (DUAC) had objected to the proposed route, which passed through heritage and environmentally sensitive areas, particularly the underground section leading up to Dhaula Kuan. Similarly the Home Ministry objected to the underground high speed tunnel between CP and the Airport, citing possible security concerns for the

administrative zones. DMRC modified the plan and the revised proposal has been cleared by a group of ministers.

The Bureau of Civil Aviation had objected to the direct baggage check-in facility to be provided at the metro stations along the route, citing security concerns. This has now been overcome with the Delhi Airport developer – Delhi International Airport Limited (DIAL) constructing a separate secure tunnel to ensure contamination free transfer of checked-in luggage to the respective aircrafts.

LESSONS LEARNT

The project demonstrates that even financially unattractive projects with low returns on investments can be undertaken through private participation through a good risk sharing arrangement. The decision of DMRC to take on the investment risk for civil works, thereby reducing the overall risk for the operator made the project viable for the private partner.

The project has been able to bring in almost half of the investment required for the project from the private sector, and obtain technical expertise for building a world class facility. The Concessioning Authority will also be able to recover a large proportion of its own initial investments through the various concession fees and shares of revenue accruing from the Concessionaire.

The importance of robust project development and obtaining all necessary clearances and conducting stakeholder consultations so as to arrive at a consensus on the project layout cannot be understated. Objections raised during the course of project implementation can lead to substantial time and cost overruns and revenue losses to both parties involved in the arrangement.

8. INDORE CITY BUS CONCESSIONS

CASE OVERVIEW

Country: India

ULB: Indore, Madhya Pradesh (MP)

Sector: Urban Transport **Sub-Sector:** Transit Systems

Award Date: 2005

Type and period of concession: Separate contracts for bus operations, advertisement and pass vending (renewable every 5 years)

Stakeholders:

Contracting Authority Indore City Transport Services Limited (ICTSL) – Special Purpose Vehicle (SPV) between Indore Municipal Corporation (IMC) and Indore Development Authority (IDA)

Concessionaire The SPV manages 3 sets of private operators:
 Bus Operators: Dayajeet Nimay Logistics Private Limited, Rama Jyoti Travels, Anam Travels, Priyadarshani Transport Service - each operating on designated routes
 Pass Issuing Agency: R Square Systems and Solutions
 Advertising Agency: Giriraj Advertising and Marketing Services

Oversight Concessions Authority

Arrangement

Present Status of Project: The project is running successfully since 2006.

PROJECT TIMELINE:

Dec 2005 Constitution of the ICTSL as a SPV for implementing a bus public

transport system

Dec 2005	<i>Conduct of background studies, design of routes and system and finalization of bus model</i>
Dec 2005	<i>Bidding process for selection of private Bus Operators</i>
Jan 2006	<i>Bidding process for selection of Advertisement Agency and Pass Issuing Agency</i>
Jan 2006	<i>Successful launch of the Bus Transport System</i>

PPP CONTEXT

Indore (largest metropolis in MP) has experienced rapid economic and demographic growth in the past couple of decades, resulting in substantial increases in the workforce and resultant travel demand.

Public transport in Indore is essentially road based, and prior to the 'Bus Concessions' it was restricted to privately operated mini buses (Nagar Sewas), tempos and auto rickshaws. As a disintegrated and non-regulated system, it was perpetually plagued by problems of overcrowding and non-reliability.

In the absence of a good public system, the city experienced an increase in private transport (accounting for 51% of trips), albeit without a commensurate increase in the carrying capacity of existing roads leading to frequent bottlenecks. There was an urgent need for implementing an efficient mass transport system.

The sector lacked a specialized regulatory agency to implement and monitor an integrated road transport solution. In order to address this Indore City Transport Services Limited (ICTSL) was constituted in 2005 as an SPV with equal contributions from IMC and IDA. Management was entrusted to a Board of Directors, with the District Collector as the Executive Director. The SPV was a thinly capitalized entity - expected to lead private operators under a unified bus system for the city.

PROJECT DEVELOPMENT

PROJECT CONCEPTUALIZATION

The project was envisaged as a city level bus system, which integrated various private operators under a single system - designed, managed and regulated through ICTSL.

Key features of the proposed system were:

Standardized and colour coded ultra modern buses plying along select high traffic routes of the city

Improved compliance with schedules due to real time tracking of vehicles, through a Global Positioning System (GPS) based On Line Bus Tracking System (OLBTS) managed from a central control point

Computerized ticketing and Pass Vending (allowing user unlimited travel on any route for a month)

GPS based Passenger Information System for displaying arrival times and other information through LED displays installed at bus stops

PROJECT DEVELOPMENT

The Collector of Indore, Mr. Vivek Aggarwal, acted as the chief architect and champion for the Indore Bus Concession Model, conceptualizing the framework based on his studies of bus systems in Curitiba (Brazil) and Bogota (Columbia). He was also instrumental in the formation of ICTSL (December 2005), which was to anchor and regulate the proposed system.

Implementation of the project was proposed within a very short period of 56 days and hence all system design and studies were undertaken in-house and completed within a fortnight of constitution of the SPV

Background studies included analysis of financial feasibility, and surveys to finalize bus routes which would provide maximum passenger traffic. 18 routes were finalized in consultation with the Road and Transport Authority (RTA).

A movement system was designed as a hub-spoke pattern to cover both personal and workplace commuting requirements. Bus routes and buses were to be colour coded for ease of identification.

Ultramodern low-floor TATA buses were selected as the standard model to be procured by operators.

A pre-bid meeting was hosted on December 20, 2005 to introduce the business aspects of the project and address queries, so as to encourage private bidders.

PROCUREMENT PROCEDURE

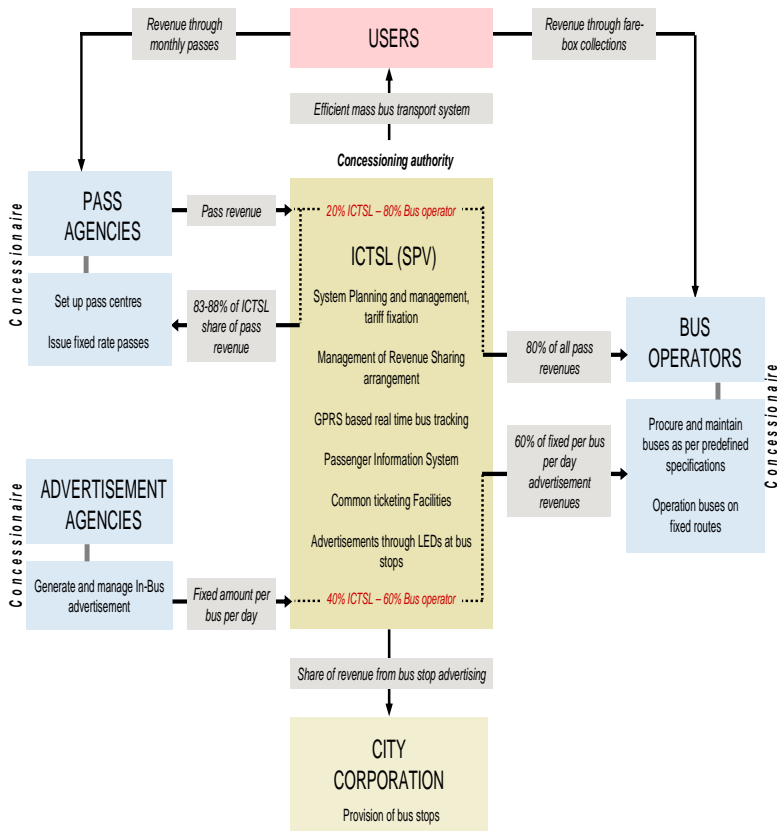
Competitive bidding process for selection of bus operators was held in December 2005 for each of the bus routes. The following companies: Dayajeet Nimay Logistics Private Limited, Rama Jyoti Travels, Anam Travels, Priyadarshani Transport Service were selected for operating on designated routes, based on the quotes for highest monthly premium to be paid to ICTSL.

Competitive bidding process for pass issuance agency was held in January 2005. Square Systems and Solutions was selected on the basis of their quote for cost per pass.

Competitive bidding process for advertising agency was held in January 2005. Giriraj Advertising and Marketing Services was selected on the basis of its quote for highest revenue offered per bus per month.

CONTRACTUAL ARRANGEMENTS

PROPOSED CONTRACTUAL STRUCTURE



OPERATOR OUTPUT OBLIGATIONS

Bus Operators Procure and maintain buses as per specifications laid down in the contract (ultramodern low-floor TATA Starbus)

Operate buses on fixed routes and as per predetermined schedules

Pass Issuance Agency Set up Instant Pass Centres throughout the city and administer computerized vending of uniform monthly passes

Issue a minimum of 15,000 passes in a month so as to ensure a minimum revenue stream

Advertisement Agency Provide all advertisement equipment, generate and manage in bus advertisement and ensure a fixed monthly revenue stream to the ICTSL and the bus operators.

OBLIGATIONS OF THE CONCESSIONING AUTHORITY

Act as a regulator for the entire system, administer tariff fixation/revision, monitor quality and standard of services, and undertake planning and route management

Provide and maintain allied infrastructure such as bus stops (through IMC), GPS based passenger information system and common ticketing facilities

Manage the revenue sharing arrangement between operators

REGULATORY AND MONITORING ARRANGEMENTS

Regulation was through the SPV and the powers vested in it through executive orders of the Government.

PROJECT FINANCIALS

All investments towards procurement and operation of buses, setting up of pass vending systems and advertising media were to be made by the respective private parties.

Investments for allied infrastructure (except bus stops developed by the IMC) were made by ICTSL

The following revenue streams and revenue-sharing mechanisms were envisioned as part of the project:

Revenue from fare-box collections: accrued entirely to Bus Operators for the specified bus routes

Revenue from passes: was shared on 80-20 basis between Bus Operators and ICTSL. ICTSL would retain 12.2% of its share in case of a new pass and 17% in case of a renewed pass and the remaining was given back to the pass issuance agency

Revenue from in-bus advertisement: accrued to the advertising agency and a fixed sum of Rs.25,000 was to be paid to ICTSL per bus per month. 60% of such advertisement revenue was shared by ICTSL with the Bus Operators

Revenue from advertisement at bus stops: and through ICTSL installed LEDs for displaying public information was shared between ICTSL and IMC

A monthly premium (bid amount) was paid by bus operators to ICTSL

PROJECT RISKS AND ALLOCATION

The operators bore the investment and revenue risk since travel demand is variable and the Concessing Authority did not guarantee fixed minimum payment to any of the Concessionaires. The risk was mitigated in part for the bus operators through the revenue sharing arrangements (described in 3.5).

DISPUTES RESOLUTION MECHANISM

The ICTSL Board of Directors was responsible for settlement of all disputes arising from the contracts

PARTNERSHIP IN PRACTICE

The project has been hailed as a major success and many organizations/cities have studied it with a view to replicate it.

PROJECT OUTCOMES

The SPV operates 110 ultramodern buses through private operators in Indore. Success of the bus initiative has prompted ICTSL to expand into new systems such as a Bus Rapid Transit (BRT) System and a network of CNG call cabs.

Users have benefitted through direct benefits such as better facilities, increased reliability and ease of accessibility. The project has also brought in allied benefits such as time and cost savings (for people using private transport previously) and improvement in quality of services offered by competing mini buses and auto rickshaws. The project has generated high and steady revenues for ICTSL with minimal asset holding in the system.

Bus operators have also gained advantages since there is no competition on the routes they operate.

The model has been replicated in all major cities in the State such as Bhopal, Gwalior and Ujjain as well as in other cities/States such as Raipur and Bilaspur (Chhattisgarh) and Ludhiana and Jalandhar (Punjab).

PROJECT SHORTCOMINGS

The contract did not prescribe any particular formula (indexing or otherwise) for calculating periodic increases in bus fares. Decisions on fare revisions are the mandate of the ICTSL Board of Directors and its acceptance is subject to mutual understanding between the two parties.

The existing bus system is focused on high capacity arterial routes of the city. The system does not service all areas of the city and expansion through the same model may be difficult due to smaller roads, problems of congestion and possible lack of enthusiasm from private parties due to lesser profits.

LEGAL/CONTRACTUAL ISSUES

The project has been operating smoothly since January 2006 and no legal or contractual complications have emerged during implementation.

LESSONS LEARNT

The current case illustrates that PPP arrangements can be employed even in sectors such as city bus transport, which are typically seen as loss-making public services.

Robust institutional structuring and risk distribution has been the key to the success of the Indore Bus Concessions. ICTSL as an overall regulatory body assesses demands, plans routes, regulates tariffs, and monitors daily performance through a permanent team appointed for the purpose. This has allowed the system to achieve optimum functional distribution and run efficiently, despite the presence of a number of different private operators within the arrangement.

The project is also an excellent illustration of the manner in which all possible revenue streams (bus operation, advertising etc.) have been tapped and captured under a single system, with a revenue sharing mechanism that allows all private operators to get adequate returns.

Indore city started with a 'clean slate' since a State Transport Corporation was not already operational. In cities where such corporations do exist, extensive financial and manpower investment is already 'sunk in' and such an arrangement may be infeasible. Many such corporations are also hampered by not having the freedom to fix fares. Only those corporations, such as Bangalore Metropolitan Transport Corporation (BMTCL) at Bengaluru, which have a reasonably better fare regime, manage to show profits in operations. As such replicability of the model in other cities may largely depend upon availability of such enabling preconditions.

References

- High Powered Expert Committee (2011), Report on Indian Urban Infrastructure and Services. Government of India
- India Infrastructure Report (1996), Report on the Commercialisation of Infrastructure, Government of India.
- McKinsey Global Institute (2010), India's Urban Awakening: Building Inclusive Cities, Sustaining Economic Growth, McKinsey and Company