

**PROJECT PERFORMANCE AUDIT REPORT**

**ON THE**

**KATHMANDU URBAN DEVELOPMENT PROJECT  
(Loan 1240-NEP[SF])**

**IN**

**NEPAL**

**September 2003**

## CURRENCY EQUIVALENTS

Currency Unit – Nepalese rupee/s (NRe/NRs)

	<b>At Appraisal</b> (February 1993)	<b>At Project Completion</b> (May 2000)	<b>At Operations Evaluation</b> (June 2003)
NRe1.00	= \$0.02	\$0.015	\$0.014
\$1.00	= NRs49.46	NRs68.40	NRs73.40

The Nepalese rupee is pegged to the Indian rupee (Re) at the rate of NRs1.60 to Re1.00 and is fully convertible on all current account transactions.

## ABBREVIATIONS

ADB	–	Asian Development Bank
DOR	–	Department of Roads
DUDBC	–	Department of Urban Development and Building Construction
EIRR	–	economic internal rate of return
FIRR	–	financial internal rate of return
km	–	kilometer
KMC	–	Kathmandu Metropolitan City
KVUDPP	–	Kathmandu Valley Urban Development Plans and Programs
LSGA	–	Local Self Governance Act
m	–	meter
MLD	–	Ministry of Local Development
PMU	–	project management unit
NPV	–	net present value
NRM	–	Nepal Resident Mission
O&M	–	operation and maintenance
OEM	–	Operations Evaluation Mission
PPAR	–	project performance audit report
PCR	–	project completion report
TA	–	technical assistance
UWSSRP	–	Urban Water Supply and Sanitation Rehabilitation Project of the World Bank

## NOTES

- (i) The Government's fiscal year (FY) ends on 15 July.
- (ii) FY before a calendar year denotes the year in which the fiscal year ends. For example, FY1999 begins on 16 July 1998 and ends on 15 July 1999.
- (iii) In this report, \$ refers to US dollars.

## CONTENTS

BASIC DATA	iii
EXECUTIVE SUMMARY	v
MAP	ix
I. BACKGROUND	1
A. Rationale	1
B. Formulation	1
C. Purpose and Outputs	2
D. Cost, Financing, and Executing Arrangements	2
E. Completion and Self-Evaluation	3
F. Operations Evaluation	3
II. PLANNING AND IMPLEMENTATION PERFORMANCE	4
A. Formulation and Design	4
B. Achievement of Outputs	4
C. Cost and Scheduling	5
D. Consultant Performance, Procurement, and Construction	6
E. Organization and Management	6
III. ACHIEVEMENT OF PROJECT PURPOSE	7
A. Operational Performance	7
B. Performance of the Operating Entity	11
C. Economic and Financial Reevaluation	12
IV. ACHIEVEMENT OF OTHER DEVELOPMENT IMPACTS	13
A. Socioeconomic and Sociocultural Impacts	13
B. Environmental Impact	14
C. Impact on Institutions and Policy	14
V. OVERALL ASSESSMENT	15
A. Relevance	15
B. Efficacy	15
C. Efficiency	15
D. Sustainability	15
E. Institutional and Other Development Impacts	15
F. Overall Assessment	15
G. Performance of the Borrower and ADB	15
VI. ISSUES, LESSONS, AND FOLLOW-UP ACTIONS	16
A. Key Issues for the Future	16
B. Lessons Identified	16
C. Follow-Up Actions	17

## APPENDIXES

1.	Project Costs	18
2.	Implementation Schedule	19
3.	Status of Covenants Without Full Compliance at the Time of Project Completion or Evaluation	20
4.	Findings of the Socioeconomic Survey	23
5.	Guided Land Development Versus Land Pooling in Naya Bazar	27
6.	Progress on the Bishnumati Link Road	28
7.	Improved Resource Mobilization in Kathmandu Metropolitan City	29
8.	Financial and Economic Reevaluation	34

## SUPPLEMENTARY APPENDIXES

(available upon request)

1. Responses from Executing Agencies to Questionnaires
2. Proceedings of Seminar on Human Values and Value-based Water Education
3. Socioeconomic Survey of Project Beneficiaries

## BASIC DATA

### Project Preparation/Institution Building

TA No.	Technical Assistance Name	Type	Person-Months	Amount (\$'000)	Approval Date
1172	Kathmandu Valley Urban Development Plans and Programs	ADTA	58	600.0	29 Jun 1989
1592	Kathmandu Valley Urban Development Project	PPTA	11	100.0	31 Oct 1991
1905	Improved Resource Mobilization for Kathmandu Municipality	ADTA	25	300.0	29 Jun 1993

### Key Project Data (\$ million)

	As per ADB Loan Documents	Actual
Total Project Cost	16.0	16.7
Foreign Exchange Cost	5.5	3.2
ADB Loan Amount/Utilization	12.0	7.5
ADB Loan Amount/Cancellation		4.6

### Key Dates

	Expected	Actual
Fact-Finding	10–25 Nov 1992	10–25 Nov 1992
Appraisal	Feb 1993	15 Feb–1 Mar 1993
Loan Negotiations	April 1993	20–21 May 1993
Board Approval	Jun 1993	29 Jun 1993
Loan Agreement		16 Sep 1993
Loan Effectiveness	15 Dec 1993	24 Feb 1994
First Disbursement		25 Jul 1995
Project Completion	31 Dec 1998	31 Oct 1999
Loan Closing		25 May 2000
Months (effectiveness to completion)	60	69

### Rates of Return (%)

	Appraisal	PCR	PPAR
Economic Internal Rate of Return			
Core Area Upgrading	41.7	11.5	13.9
Storm Water Drainage	37.2	18.3	25.5
Naya Bazar Land Pooling	39.7 <sup>1</sup>	64.8	52.3
Financial Internal Rate of Return			
Core Area Upgrading	n.a.	2.9	5.9
Storm Water Drainage	n.a.	0.5	2.6
Naya Bazar Land Pooling	n.a.	15.5	12.0

### Borrower

The Kingdom of Nepal

### Executing Agencies

Department of Urban Development and Building Construction  
Department of Roads  
Kathmandu Metropolitan City

<b>Mission Data</b>	<b>No. of Missions</b>	<b>Person-Days</b>
Fact-Finding	1	57
Appraisal	1	53
Project Administration		
Inception	1	18
Review	11	201
Project Completion	1	90
Operations Evaluation <sup>2</sup>	2	28

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ADB = Asian Development Bank, ADTA = advisory technical assistance, PCR = project completion report, PPAR = project performance audit report, PPTA = project preparatory technical assistance, TA = technical assistance.

<sup>1</sup> At appraisal the EIRR was computed for Guided Land Development.

<sup>2</sup> The first Operations Evaluation Mission (OEM) on 2–8 April 2003 comprised K.E. Seetharam (Mission Leader). The second OEM on 5–12 June 2003 comprised K.E. Seetharam (Mission Leader), Roshan Shrestha, and Bhuvan Bajracharya (staff consultants).

## EXECUTIVE SUMMARY

The Kathmandu Urban Development Project aimed to improve Kathmandu's urban environment through physical works, as well as institutional and policy development. The Project fell under the jurisdiction of Kathmandu Metropolitan City (KMC), which at the time of appraisal was 3,815 hectares (ha) in area. The Project also stressed mobilizing local resources.

The Project was the first the Asian Development Bank (ADB) had financed in Nepal's urban sector. A loan for \$12 million from Special Funds resources was approved on 29 June 1993. Attached was a technical assistance (TA) grant of \$300,000 to finance a study on resource mobilization. Part A covered (i) upgrades to Kathmandu's urban core, (ii) storm drains and environmental improvements to the Bishnumati River Corridor, and (iii) land pooling in Naya Bazar. Part B, which intended to construct a 2.8-kilometer (km) road and bridge that would cross the Bishnumati River, was cancelled. Part C comprised implementation assistance and institutional strengthening, including logistical and equipment support; consulting services; socioeconomic surveys, benefit monitoring and evaluation activities; support for institutionalizing the local planning processes and development controls; improvements in mapping; and training. The executing agencies were KMC and the Department of Urban Development and Building Construction (DUDBC). KMC was responsible for Part A, while DUDBC was responsible for Part C and overall coordination. Total cost at appraisal was \$16.0 million, of which \$5.5 million was denominated in foreign exchange and \$10.5 million equivalent in local currency. The ADB loan would finance the entire foreign currency portion and \$6.5 million equivalent of the local currency portion. Under a subsidiary agreement, the Government on-lent \$5.5 million of the ADB loan proceeds to KMC. The Kingdom of Nepal was to finance \$1.9 million equivalent and KMC was to contribute \$1.4 million equivalent. The remaining \$0.7 million equivalent was to be contributed by beneficiaries. The Project was to be implemented in 5 years.

Actual implementation took 5.75 years and the Project was completed in October 1999. The suspension and eventual cancellation of the World Bank's Urban Water Supply and Sanitation Rehabilitation Project hurt Part A's progress. Twenty-one months after the loan took effect, Part B was cancelled because the Government had difficulty financing the land acquisition essential for civil works to begin. The project completion report (PCR) circulated on 23 March 2001 was well prepared and rated the Project partly successful.<sup>1</sup>

The Operations Evaluation Mission (OEM) visited Kathmandu twice between April and June 2003. The mission engaged domestic consultants to survey 350 residents and visitors in the project impact areas, and conducted seminars and demonstrational activities on value-based water education in cooperation with local nongovernment organizations.

The Project was adequately designed from a technical perspective, but public participation was not sufficiently emphasized to ensure sustainability. The Project originally comprised guided land development because of the complexities involved with obtaining consensus for land pooling. However, during project implementation, KMC adopted land pooling and implemented it successfully. The Project is rated relevant.

The OEM corroborated the PCR's findings on the achievement of project outputs. Part A's physical targets were mostly achieved. The cancellation of Part B adversely affected the

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<sup>1</sup> The PCR followed the four-category rating system that the Operations Evaluation Department uses.

achievement of the Project's overall developmental objective because the beneficiaries of Part A do not have proper access to other parts of the city. Institutional strengthening in Part C was partly successful. Delayed enactment of Local Self Governance Act (LSGA) has, however, hampered achievements. The Project is rated less efficacious.

The Project moved very slowly in the initial years, but performance significantly improved after 1997 because new political leaders and project officers at both the ADB Nepal Resident Mission (NRM) and the executing agencies effectively supervised and monitored progress on a monthly basis. The OEM also confirmed the PCR findings that some contractors and consultants for construction supervision performed poorly. There were delays of 1 to 8 months in completing works, for reasons including unavoidable local disturbances in the heavily crowded business areas. Actual cost at completion amounted to \$16.7 million. The ADB loan of \$12.0 million equivalent was reduced to \$7.5 million after cancellations of \$3.3 million in November 1995, \$0.7 million in August 1999, and \$0.6 million at loan closing. Despite the cancellation of Part B, the total cost increased mainly because of higher-than-envisaged in-kind land contributions for land pooling.

Of the 38 covenants, 27 were complied with and the rest were not applicable or partially complied with. In the OEM's view, 38 covenants were ambitious for a simple project. KMC had still not implemented many of the recommendations in TA 1905-NEP at the time of the OEM.

The OEM estimated the population in the project area at 672,000, 27% higher than the target population of 530,000 in 2001, as projected in the appraisal report. Basic infrastructure was already overused and would be inadequate to meet future needs without substantial additions. In the OEM's view, the choice to pool land rather than use guided land development as suggested in the appraisal was correct. The subcomponent has become a model for other land-pooling schemes in terms of completion time and beneficiary participation. The Project only partly succeeded in improving 2.2 km of the Bishnumati River Corridor, where the environment suffers from improper waste management.

The OEM calculated the individual economic internal rate of return (EIRR) and financial internal rate of return (FIRR) estimates for the three subcomponents under Part A. All three subprojects came out with EIRRs above 12%. Only the Naya Bazar land-pooling subproject came out with an FIRR above the on-lending interest rate of 8%. The OEM conducted a sensitivity analysis on the improvements to the existing tax collection efficiency of 40%. The sensitivity analysis highlighted that the FIRRs for the core upgrading and Bishnumati River Corridor improvement would rise above 8% if tax efficiency exceeded 49% and 84%, respectively, for the two components. The Project is rated efficient.

Project sustainability is rated less likely. KMC does not yet have a regular maintenance schedule. At the current low level of maintenance, major rehabilitation would be needed in 2007 or earlier. The OEM is concerned that the different wards of KMC have not paid serious attention to maintenance.

The institutional and other development impacts are rated moderate. The Project played a positive role in enacting the LSGA, which has strengthened municipalities in many respects. However, KMC's weak organizational structure did not improve, despite major restructuring efforts under the Project.

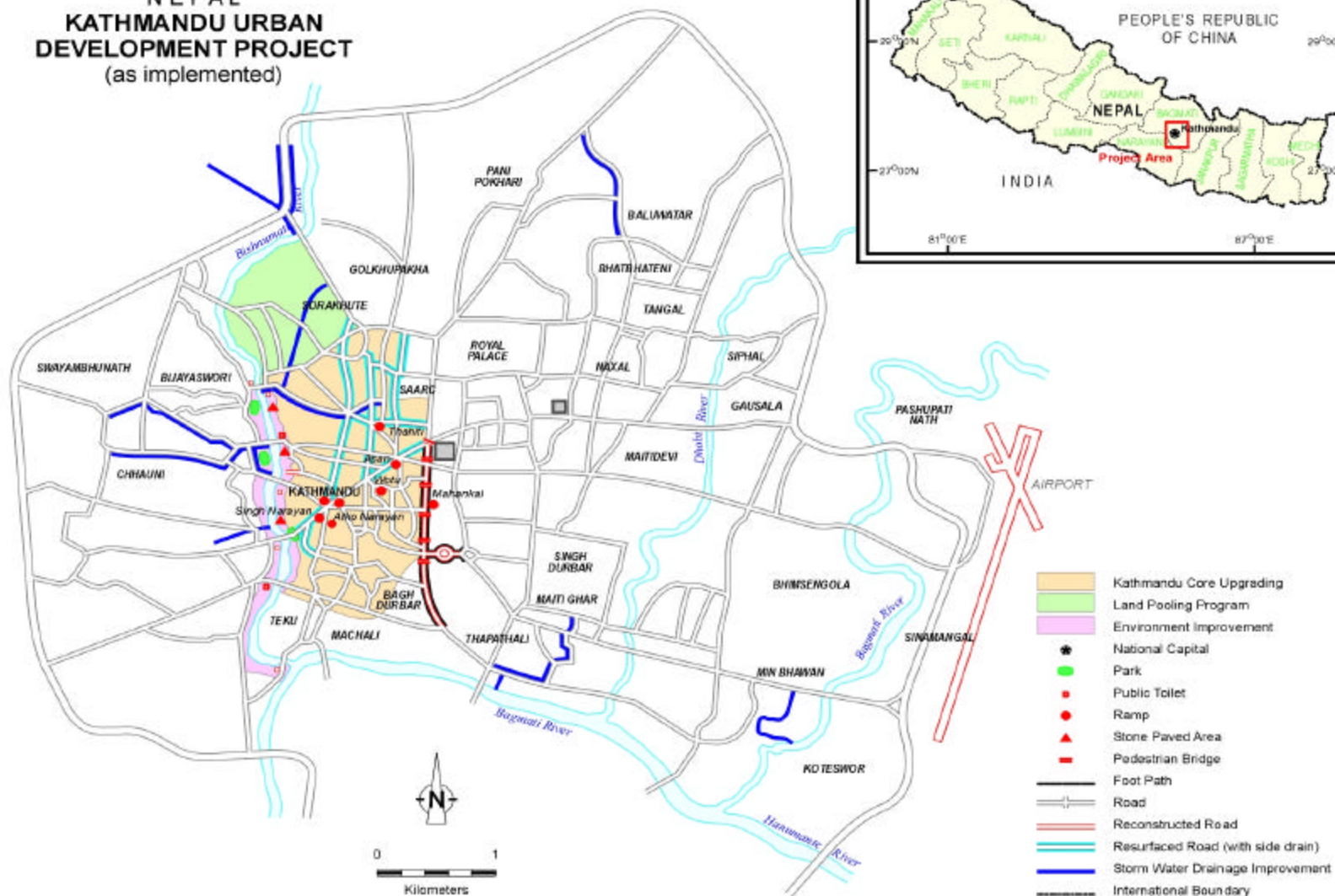
Overall, the Project is rated partly successful. TA 1905-NEP is rated successful.



As with most Asian cities where ADB has invested in the urban sector, Kathmandu's social structure is rather complex. Focusing on the poor is not possible without mapping their locations. NGOs can facilitate sustainable operation of municipal facilities by getting involved in training. Educating communities through children in schools is also crucial.

The OEM has recommended five actions within the next 2 years, with the guidance of NRM, to improve sustainability of project facilities and arrest further environmental deterioration.

# NEPAL KATHMANDU URBAN DEVELOPMENT PROJECT (as implemented)



## I. BACKGROUND

### A. Rationale

1. In the 1980s, poorly managed solid and liquid wastes, traffic congestion, and unplanned growth degraded Kathmandu's urban environment and threatened health and quality of life. Pollution adversely affected tourism prospects and reduced related employment opportunities. Uncontrolled, haphazard urban growth threatened cultural and heritage sites, and demanded integrated urban development initiatives.<sup>1</sup> After democracy was restored in 1990, Nepal has slowly devolved power to the municipalities. Kathmandu's annual population growth rate was 4.5% from 1991 to 2001, making the main challenges managing population; improving the environment; and creating jobs, especially for the urban poor. These challenges were even more pronounced because the number of households was rising at a faster rate (6.4% per annum) than the population, exerting more pressure on urban infrastructure.

2. These conditions prompted the Government to accord high priority to urban development in the Eighth Plan (1992–1997).<sup>2</sup> The Government recognized the need to upgrade infrastructure, services, and improve the environment in the historic city core (242 out of 5,076 ha).<sup>3</sup> In tandem with the Government's Eighth Plan, ADB's operational strategy included promoting broad-based economic growth by supporting urban infrastructure development. This covered the provision of basic services to the urban poor, enhancing the urban environment, and strengthening the institutional and financial capabilities of local governments to effectively manage urban areas. In September 1991, the study of Kathmandu Valley Urban Development Plans and Programs (KVUDPP) was completed under an ADB technical assistance (TA),<sup>4</sup> and in collaboration with the Department of Urban Development and Building Construction (DUDBC)<sup>5</sup> and the Ministry of Housing and Physical Planning.

### B. Formulation

3. The Kathmandu Urban Development Project was first identified in KVUDPP (footnote 4). KVUDPP recommended strategies for the development of the Kathmandu Valley followed by a 10-year investment plan for improving its urban environment. Of the six local area plans recommended by the study, two local area plans (the historic core area of Kathmandu and the Bishnumati corridor improvement) were considered under the Project. A small-scale technical assistance,<sup>6</sup> approved in October 1991, assisted in preparing the detailed project design.

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<sup>1</sup> The medieval township of Kathmandu and other settlements in the valley did not experience planned development over the last 50 years. Urban growth happened in unplanned fringes and the overcrowded city core.

<sup>2</sup> Under Nepal's Eighth Plan, local governments were primarily responsible for urban development; communities were to be involved in planning and implementation; and private investment was to be encouraged in land development, community infrastructure, and shelter. The central government was to guide local governments in community participation, local resource mobilization, urban planning and administration, and environmental management. The Plan emphasized adequate cost recovery, operation and maintenance, institutional strengthening of local governments, and promotion of rural-urban links.

<sup>3</sup> Kathmandu Valley comprises an area of around 66,000 ha and consists of the districts of Kathmandu, Lalitpur, and Bhaktapur.

<sup>4</sup> TA 1172-NEP: *Kathmandu Valley Urban Development Plans and Programs*, for \$600,000, approved on 29 June 1989.

<sup>5</sup> The Department of Housing and Urban Development was restructured and renamed Department of Urban Development and Building Construction (DUDBC) in 2000.

<sup>6</sup> TA 1592-NEP: *Kathmandu Urban Development Project*, for \$100,000, approved on 31 October 1991.

4. The Project was appraised in February 1993. The ADB loan for \$12 million from its Special Funds resources was approved on 29 June 1993. Attached to the loan was a TA grant of \$300,000 to finance a study on resource mobilization for KMC.<sup>7</sup>

### C. Purpose and Outputs

5. The Project's goal of improving the environment in Kathmandu Valley related principally to KMC's jurisdiction, which at the time of project appraisal was 3,815 ha in area. Project objectives were (i) to reduce critical infrastructure deficiencies; (ii) to institutionalize the local planning process and strengthen the development control system, including the issuing and enforcement of building permits; (iii) to improve KMC's capacity to maintain and operate local services and infrastructure; and (iv) to increase the capacity of local government agencies to mobilize financial resources to ensure sustainable urban investment.

6. The Project comprised three parts, the first part having four subcomponents.

- (i) **Part A - Municipal Infrastructure Improvement Project** included (a) core area upgrading; and (b) improved guided land development (which was changed later to land pooling), storm water drainage, and environmental improvement of the Bishnumati River Corridor. The Kathmandu core upgrading subcomponent—which included road and access improvement, traffic management and streetlights, storm water drainage, and land pooling<sup>8</sup>—was a pilot initiative in land management. Cleaning up the Bishnumati River Corridor included solid waste management and a public education campaign.
- (ii) **Part B - Construction of Bishnumati Link Road** comprised a 2.8-km road with 20-meter right-of-way, providing north-south linkage to Western Kathmandu.
- (iii) **Part C - Implementation Assistance and Institutional Strengthening** assisted executing agencies and municipalities within Kathmandu Valley in local planning, improving maps for Kathmandu and Lalitpur municipalities, and training.

7. Attached TA 1905-NEP comprised a study to enhance tax administration in Kathmandu by improving the revenue mobilization from property, vehicle, and commercial taxes.

### D. Cost, Financing, and Executing Arrangements

8. Total cost at appraisal was estimated at \$16.0 million, of which \$5.5 million was foreign exchange and \$10.5 million equivalent in local currency. The ADB was to finance 75% of the total, with the remaining amount contributed by the Government (12%), KMC (9%), and beneficiary groups (4%). The Government re-lent \$5.5 million of the loan proceeds to KMC at 8% annual interest, with repayments over 18 years including a 3-year grace period. KMC<sup>9</sup> and the Department of Roads (DOR) were responsible for Part A and Part B, respectively. DUDBC was responsible for Part C and for overall coordination among executing agencies.

<sup>7</sup> TA 1905-NEP: *Improved Resource Mobilization for Kathmandu Municipality*, for \$300,000, approved on 29 June 1993.

<sup>8</sup> Guided land development would acquire from landowners only the land necessary for constructing roads and other basic infrastructure. Under the land pooling scheme, all land ownership was temporarily transferred to the Land Management Subcommittee. The subcommittee was chaired by a ward chairperson and later by the mayor, and comprised of users' representatives. Land pooling developed plots with access to all sites, and readjusted the plots for distribution to landowners again.

<sup>9</sup> The Kathmandu Municipality was upgraded to Kathmandu Metropolitan City (KMC) in 1995.

## **E. Completion and Self-Evaluation**

9. The PCR, circulated on 23 March 2001, was well prepared and rated the Project partly successful.<sup>10</sup> It noted start-up problems that included the signing of the subsidiary loan agreement between KMC and the Government, recruiting the project management unit (PMU) consultant, land acquisition, suspension of the World Bank's urban water supply project, and the long reconstruction period. It also compared planned and actual civil works, traffic management initiatives to improve pedestrian environment, and environmental improvements to the Bishnumati River Corridor. It cited reductions in vehicle-pedestrian conflict and vehicle accidents in the core area. Environmental deterioration was visibly reversed along the Bishnumati riverbank. Storm drains reduced waterlogging and flooding during the wet season. The PCR also mentioned tourism-related employment and decreased accidents as major benefits.

10. The PCR did not fully analyze the impacts of significant start-up delays, the cancellation of Part B, cost overruns in Part A, or other factors hampering project performance. The PCR reported that only 8.3 km of the planned 10.9 km of road upgrades actually took place. The PCR attributed this shortfall to the cancellation of the World Bank scheme, but did not discuss the negative impacts on traffic in the city core. After Part B was cancelled, ADB financing totaled \$7.5 million, \$4.5 million less than the approved amount.<sup>11</sup> The cost of land pooling was \$7.7 million, compared to the appraisal estimate of \$1.7 million.

11. The PCR cited the late approval of the LSGA and associated bylaws, which were approved in 1999, as the sole reason for noncompliance with key financial management covenants. The PCR did not recommend specific measures to improve compliance.

12. The PCR also estimated high economic internal rates of return (EIRRs) and financial rates of return (FIRRs) for the three main subcomponents under Part A.<sup>12</sup>

## **F. Operations Evaluation**

13. The focus of this project performance audit report (PPAR) is to assess the relevance, efficacy, efficiency, sustainability, and institutional and developmental impacts of the Project and the attached TA 1905-NEP. It is also intended to identify lessons and follow-up actions, as well as address some of the PCR findings.

14. The PPAR presents the findings of the OEM that visited Kathmandu twice between April and June 2003. The PPAR is also based on a review of related project documents, an analysis

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<sup>10</sup> The project completion report followed the four-category rating system currently used by the Operations Evaluation Department.

<sup>11</sup> There were three cancellations: \$3.3 million in November 1995, \$0.7 million in August 1999, and \$0.6 at loan closing.

<sup>12</sup> In spite of significant cost overruns, land pooling came out with an economic internal rate of return (EIRR) of 64.8%, higher than the appraisal estimate of 39.7%. The EIRR of the storm drain subcomponent was 18.3%, below the appraisal estimate of 37.2%. The EIRR of core area upgrading was 11.5%, compared to the appraisal estimate of 41.7%. Only land pooling came out with a financial internal rate of return above 8%.

of data collected during field visits, surveys, and feedback at seminars<sup>13</sup> conducted by domestic consultants. It has also incorporated outcomes of discussions with project officials and experts, and comments received at an NRM workshop. A draft PPAR was provided to the Government, executing agencies, and ADB staff for their comments to be considered in the final version.

## **II. PLANNING AND IMPLEMENTATION PERFORMANCE**

### **A. Formulation and Design**

15. The project design addressed environmental degradation, as well as institutional development and capacity building. It was consistent with the ADB country strategy at the time of appraisal. Economic growth was identified as its primary objective, and environment and poverty reduction were secondary goals. The Project is relevant to ADB's country strategy and government priorities. Although the Project was ADB's first in urban development in Nepal, Part A pioneered delegating responsibility for project implementation to the local authority, KMC. The Project promoted the comparative advantage of Nepal in tourism.

16. While the project design was technically satisfactory, public participation was not adequately emphasized. This was particularly noted in the case of stone paving of the market centers and pedestrianization of Durbar Square. In Part C, the institutional issues and capacity building at executing agencies, especially KMC, were insufficiently addressed. Actual costs for some subcomponents far exceeded the budget at appraisal, implying underestimation of costs.

17. The Project originally intended to improve guided land development because consensus is difficult to attain when land pooling is adopted. However, KMC eventually adopted land pooling, implemented it successfully, and is now replicating it elsewhere with its own funds.

### **B. Achievement of Outputs**

18. The OEM confirmed the PCR's conclusions on achievement of outputs. The physical targets of Part A subcomponents were mostly achieved. The cancellation of Part B later proved unfortunate and hampered the overall project achievement. Part C's outputs were only partly achieved. Delayed enactment of the LSGA hurt the overall achievements.

19. Part A sought to upgrade about 10.9 km of existing roads but only 8.3 km of priority roads north of the monument zone were improved. The roads were originally planned for upgrade once water distribution improved under the World Bank-funded scheme. Road upgrades were significantly delayed and reduced in length, however, when the World Bank project was cancelled. In one case, road improvement suffered because a contractor, selected under the Government system of accepting the lowest bid, used substandard materials.<sup>14</sup>

<sup>13</sup> Domestic consultants conducted seminars with the help of the Nongovernment Organization Forum for Urban Water and Sanitation under the auspices of the Water for Asian Cities Program announced by Asia Development Bank and the United Nations Centre for Human Settlements in March 2003. More than 250 teachers and administrators from 70 public and private schools attended the seminars. Lesson plans and training materials were taken from the Values-Based Water Education that United Nations Centre for Human Settlements had prepared (Supplementary Appendix 2 on Seminars). The seminars provided important lessons on the role of nongovernment organizations and community groups in sustainable delivery of municipal services.

<sup>14</sup> Confusion over whether the loan amount would be subjected to the Government's rule of lowest bid, rather than Asian Development Bank's Guidelines for Procurement, led to the selection of the contractor with the lowest bid.

20. The project preparatory TA identified 14 catchments, or 16 km, that required storm drainage at the time of appraisal. However, only 11.7 km, or 10 catchments, were completed because of local opposition and a substantial increase in the cost of construction.

21. Part B was identified in KVUDPP (footnote 4) as part of a proposed internal ring road to better manage traffic. The appraisal included plans for a 2.8-km road, with a 20-m right-of-way, and a bridge connecting the banks of the Bishnumati River. Before the component was cancelled, the project consultants had completed detailed design of the road and its demarcation. The component was cancelled in 1995 because of slow implementation and the Government's failure to find funds for land acquisition (details in PCR, para. 18).

### **C. Cost and Scheduling**

22. The total cost at appraisal was estimated at \$16.0 million equivalent. The OEM confirmed the PCR data on actual costs (Appendix 1). The actual cost at completion amounted to \$16.7 million. The ADB loan of \$12.0 million equivalent was reduced to \$7.5 million after cancellations of \$3.3 million in November 1995, \$0.7 million in August 1999, and \$0.6 million at loan closing. Despite the cancellation of Part B, the total cost increased because of substantial costs for land pooling (para. 24).

23. The OEM confirmed the appraisal and actual implementation schedules presented in the PCR (PCR, Appendix 3). The Project envisaged an implementation period of 5 years from December 1993 to December 1998. Actual implementation took 5.75 years from February 1994 to October 1999. The Project moved very slowly in the initial years because of (i) 2 months' delay in signing the subsidiary loan agreement between KMC and the Government; (ii) 15 months' delay in recruiting the PMU consultant; (iii) 2 years' delay in acquiring land for Part B; (iv) the suspension, and eventual cancellation, of the World-Bank-assisted scheme, whose completion was a prerequisite for some Part A components; (v) recruitment of all Part A consultants more than 24 months after loan effectiveness; and (vi) a relatively long pre-construction period for core area upgrading (17–26 months) and land pooling (17–24 months). Frequent leadership changes at the executing agencies hampered initial progress. KMC also took time to familiarize itself with ADB's procurement process because this its first ADB project.

24. The OEM generally concurs with the PCR on the reasons for variations in cost and implementation (Appendix 2). The OEM identified the following additional points through interviews with concerned authorities. Some drain construction was delayed because the 1.2-m hume pipe included in the design was not available in Kathmandu and could only be procured from one source in eastern Nepal. Cost overruns for storm drains came from significant design changes.<sup>15</sup> The substantial cost overrun in land pooling happened when the beneficiaries' group contributed 700% more land than originally envisaged as in-kind contribution towards the infrastructure cost (para. 37). The appraisal had estimated only NRs70 million for this subcomponent, while the actual cost was NRs527 million (\$7.7 million equivalent).

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<sup>15</sup> For example, the outlet drain between Balaju Ring Road junction and Bishnumati Bridge needed to be more than 10 meters deep to attain the gradient required for drainage. Large hume pipes also increased the cost of construction.

## D. Consultant Performance, Procurement, and Construction

25. The Project followed ADB's *Guidelines for Procurement* and *Guidelines on the Use of Consultants* to procure goods, consultants, and other services.<sup>16</sup> International and domestic consultants assisted executing agencies in designing and estimating costs, supervising construction work, and supporting institutional strengthening. There was a 190% increase in the input of local consultants for Part A, mainly because of additional road widening and delays in land pooling. International competitive bidding recruited design and supervision consultants for Part B. International and local consultants completed detailed designs that were not used because the component was cancelled in 1995. Under Part C, international consultants, in association with domestic consultants, were engaged for project management support and some design work. The performance of international consultants was satisfactory. The OEM agreed with PCR findings that some domestic consultants supervised construction poorly.<sup>17</sup>

26. The Project satisfactorily followed ADB's *Guidelines for Procurement* for equipment, materials, and vehicles. All civil works were consistent with standard ADB procedures on local competitive bidding.<sup>18</sup> The OEM supports the PCR's observation that the contractors' general performance was not highly satisfactory. There were delays of 1–8 months in completing the works, often because of disturbance to heavily crowded business areas.<sup>19</sup>

## E. Organization and Management

27. The Project was implemented by three agencies: KMC; DOR; and DUDBC, which would also coordinate. The mayor chaired the project management unit under DUDBC, which coordinated effectively with KMC and DOR. Project performance significantly improved after 1997,<sup>20</sup> when city leadership and project management officers changed. The Nepal Resident Mission (NRM) also effectively supervised and monitored the Project on a monthly basis.

28. The OEM concurs with the PCR that unclear institutional responsibility caused delays to and the ultimate cancellation of Part B. Although DOR is responsible for road construction, Part B's budget was allocated to DUDBC to maintain a certain annual level of urban investment.

<sup>16</sup> Under Part A, 14 consulting firms were engaged for 19 contracts under local competitive bidding procedures satisfactory to Asian Development Bank. Part A used 486 person-months' worth of domestic consulting services, compared with the appraisal target of 169. Under Part B, 5 person-months' worth of international consulting and 15 person-months of domestic consulting were used, compared with the appraised target of 13 international and 68 domestic. Under Part C, 44.8 person-months of international and 163.2 of domestic consulting services were used, compared with the appraisal provision of 45 person-months of international services and 156 of domestic.

<sup>17</sup> Land pooling was divided into six parts, with one consultant appointed for each. The six consultants encountered several decision-making problems, as well as inconsistencies in design and implementation. The mission noted that proactive steps by Kathmandu Metropolitan City (KMC) staff responsible for improving municipal infrastructure resolved the problems.

<sup>18</sup> There were 12 contractors involved in 23 major contract packages.

<sup>19</sup> Some shopping outlets and temples are outside the planned 7.7-kilometer corridor. Because of local protests, immediate planned pedestrianization of the monument zone and Ason chowk could not be enforced. However, there was an understanding with the local people that the monument zone will be pedestrianized after Kankeswori road has been paved, providing alternative access to the area.

<sup>20</sup> Cumbersome procedures, an inexperienced team, a lack of political commitment, and frequent changes in ministerial and departmental leaderships hampered decision making and created delays in the early years. KMC also took some time to comprehend the new challenges, as it was the first externally funded project for a local government body. Government agencies also found it difficult to recognize KMC as an implementor. Widening of roads and construction of drains were delayed due to belated approval by the Department of Roads.



29. Out of the 38 covenants, 27 were complied with, and the rest were either not applicable or partially complied with (Appendix 3). In the OEM's view, 38 covenants were ambitious for a simple project. Many covenants were beyond the responsibilities of DUDBC, because they were contingent on the promulgation of the LSGA.<sup>21</sup> Belated promulgation of the LSGA was the main reason for delays and partial compliance of many covenants.

30. KMC eventually achieved full compliance for three covenants that were partly complied with at the time of the PCR. These include the survey works and mapping of parcels, collection of user fees for street cleaning, and privatizing maintenance of public toilets. Commercial accounting and the tax collection systems were further improved after project completion.

31. KMC is still lagging in implementing recommendations of TA 1905-NEP. Octroi<sup>22</sup> tax was discontinued and a local development tax was only a stopgap measure, so KMC focused on house and land tax. It has finished compiling and mapping baseline information for assessing property and has started sending notices to collect taxes. It has also defined a collection mechanism to collect property tax by dividing the city into six zones. The rates for business tax are defined by LSGA, and these rates are based on those proposed in TA 1905-NEP.<sup>23</sup> Vehicle tax collection is contracted to private collectors, but KMC has not made a concerted effort to increase revenues.<sup>24</sup> KMC still lags behind in formulating rates and collecting other taxes.

32. To strengthen KMC's corporate accounting practices, the Project and TA 1905-NEP arranged on-the-job training. One consultant was hired for this task, but the assigned KMC staff members did not devote much time to the training because of their day-to-day duties.<sup>25</sup> As a result, KMC could not properly operate software or produce intended outputs.

### **III. ACHIEVEMENT OF PROJECT PURPOSE**

#### **A. Operational Performance**

33. The OEM fielded an eight-member team, led by the domestic consultants, to interview a random sample of 350 households. The OEM used their responses to assess the performance of Part A subcomponents (Appendix 4). The OEM also interviewed officials in the executing agencies to evaluate the outputs of Part C and TA 1905-NEP (Supplementary Appendix 1).

34. The OEM found that the project area population was 672,000, 27% higher than the number the appraisal report estimated. The appraisal's estimate of annual population growth of 2.6% was far below the actual annual growth rate of 4.5% during the decade. Basic infrastructure was already overused and inadequate for future needs. Cancellation of Part B's

<sup>21</sup> The Local Self-Governance Act was a landmark in empowering the local government bodies in Nepal. It was a considerable change in the contemporary political circumstances and demanded much interaction and national debate. It also took some time to be enacted, and its regulations to be fully developed and approved.

<sup>22</sup> Octroi is a duty charged on goods brought into certain towns.

<sup>23</sup> For business tax, fully computerized record-keeping is still far off. Kathmandu Metropolitan City dispatches payment notices, and then employs temporary collection teams for 3 months each year.

<sup>24</sup> Kathmandu Metropolitan City (KMC) has yet to take strong initiative to merge the three taxes and fees collected so far by the Department of Inland Revenue Department, KMC, and the Department of Transport Management.

<sup>25</sup> According to this mission's interviews, only person who devoted full days to training without taking any other assignments learned to operate the software well, but left KMC after project completion.

road and bridge component has limited positive impacts because traffic in the central corridor is highly congested in its absence. Details of the subcomponents are discussed below.

## 1. Part A: Municipal Infrastructure Improvements

35. **Kathmandu Core Upgrading.** The OEM surveyed the 242-ha city core and inspected construction quality. All roads rehabilitated under the Project were provided with side drains, which were properly built and used. Rehabilitated streets in the tourist district were properly maintained. In other areas, roads dug up to mend water mains or sewage systems have not been resurfaced. The Project's footpaths were properly maintained, with the exception of digging in some areas. The OEM observed that solid waste management has improved through regular, private collection in several wards. KMC sweepers were cleaning most drains. In some areas, the local community has taken over the responsibility for maintenance. Streetlights were maintained by ward offices or local communities. After Durbar Square was paved with stones, it was pedestrianized (with an exception of a north–south link), and the area has regained its status as an important tourist attraction.

36. The OEM observed a visible increase of carrying capacity of the outer roads after they were widened and overhead bridges constructed in the core area.<sup>26</sup> All six overhead bridges were properly used and appreciated by pedestrians. KMC has contracted out all six bridges to a private party for regular maintenance and further investment on similar infrastructure. The private party is using shop space under the bridge and advertisement spaces. KMC lacks capacity to keep hawkers off the bridge lanes. Street signs were poorly managed, and a traffic plan for the city core has only been partially followed. The OEM attributes this to weak staffing at KMC's traffic and transportation section. KMC has not yet initiated construction on a bypass road for vehicles crossing Durbar Square as recommended in the PCR. Solid waste collection improved in areas where private entrepreneurs were collecting.

37. **Land Pooling.** Land pooling was divided into three phases. Phase 1 was completed under the Project. The activities comprised readjusting plots and improving infrastructure such as storm drains, river training, gravel roads, and open spaces. Phases 2 and 3—involving road surfacing, extension of street lighting, and water supply and sanitation system—were agreed to be undertaken by the beneficiaries through sale of service plots after project completion. The OEM checked the status of completion of these works. The choice of land pooling over guided land development was correct (Appendix 5). No landowners were displaced and no houses demolished. The OEM also concurs with the PCR that the subcomponent was highly successful, as it generated 700% more in-kind contribution from the community, apart from their input in design and management.<sup>27</sup> The improved slum area next to land pooling convinced the OEM of the subcomponent's success.<sup>28</sup> Ninety-two respondents in the OEM survey were happy about land pooling. Land was four to seven times its original value (OEM survey) and rental incomes were also high (an increase of about 200%). The success was confirmed by the demand for land pooling by landowners from the other side of the river. The 15-member users'

<sup>26</sup> Subsequently, Kathmandu Metropolitan City and Department of Urban Development and Building Construction have undertaken similar widening in another part of the Tundikhel Corridor.

<sup>27</sup> Phase 1's revised cost was estimated at NRs85.0 million as against NRs124.0 million. The Project was supposed to provide NRs35.0 million, with the rest borne by beneficiaries through sale of their service plots. The Project financed all Phase 1 costs because the service plots could be disposed of only after land development was completed. NRs50.0 million was treated as a Kathmandu Metropolitan City loan to the beneficiaries' group.

Kathmandu Metropolitan City has recovered the loan, plus interest, through the sale of plots.

<sup>28</sup> Waterlogging and slum conditions have been eliminated.

committee was still in place and the members were active in managing other activities after project completion.<sup>29</sup> The Project has become a model for other such schemes in Kathmandu in terms of beneficiary participation and completion time.

38. The OEM survey found that long-term impacts on local farmers' living standards were doubtful.<sup>30</sup> The users' committee was dedicated and confident about the successful operation and maintenance (O&M) and sustainability of the land pooling, but members lacked the required technical skills<sup>31</sup> and have not developed proper O&M mechanisms.

39. **Storm Water Drainage.** The drains have reduced flooding in many areas, including JP school (tourist center), Dallu/Chagal, Maharajgunj, and Naya Bazar, where waterlogging was an acute problem. About 400 houses have been saved from annual flooding,<sup>32</sup> eliminating the annual burdens of whitewashing walls and removing belongings from ground floors. Rents also rose by NRs1,000 per year in case of a room and NRs2,000 to NRs5,000 per year for a shop, depending on their location. Two km of roads have been relieved from annual repair and maintenance, and KMC estimated it saved them NRs150,000 per km per year.

40. Drain-cleaning equipment was properly used, but drains were still not well maintained. In Dallu/Chagal, several manhole covers and rain inlet buckets were missing. In some areas, sewer lines had been illegally connected to storm drains, and KMC had failed to prevent it.<sup>33</sup>

41. **Environmental Improvement in the Bishnumati River Corridor.** The Project only partly succeeded in improving 2.2 km of the Bishnumati River Corridor, which continues to suffer from poor waste management. The OEM observed that two parks were poorly maintained, and one was owned by the community. Greenery was poorly maintained in several places in the corridor. In Paropakar Park and upstream of Dallu Bridge, residents maintained trees well (Supplementary Appendix 3). A pilot reed bed for wastewater treatment was built next to Paropakar Park, but did not succeed because KMC lacked interest and expertise. KMC let locals make compost along the riverbank at Kankeswori, spoiling the environment. The OEM observed dumping of slaughterhouse waste in many places along the riverbank. Three ramps built for collecting solid waste were in use, but all were poorly maintained.

42. Six of the seven public toilets were functioning satisfactorily and serving the poor community. These toilets were privately managed under a contract with KMC and the ward office. Riverside defecation has been practically eliminated. The OEM's survey showed 70% of respondents were satisfied with activities to improve the environment.

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<sup>29</sup> Infrastructure under Phase 3 comprised blacktopping roads, and improving water supply and telephone cables near power lines. Utility offices financed water supply and telephone cables. Nine percent of temporary and 73% of the permanent landowners received their land ownership certificates.

<sup>30</sup> There is no doubt that the farmers' incomes have improved recently, but there has been a drastic change in their profession. Many have opened shops to sell consumer goods. It remains to be seen whether this change is sustainable.

<sup>31</sup> Kathmandu Metropolitan City would reportedly finish all infrastructure improvement in the next 6 months and hand over responsibility to the users' committee.

<sup>32</sup> The OEM found that in Dallu/Chagal, where there are 280 houses, 80 new ones had been constructed after the Project. All houses are now safe from annual water-logging.

<sup>33</sup> In the absence of separate sewage systems, several households have connected their sanitary sewers into the storm drains, polluting the Bagmati River.

## 2. Part B: Bishnumati Link Road

43. The OEM noted that the cancellation of Part B has harmed project achievements because city core pedestrianization depended on a vehicle bypass road. It also affected the environment of Bishnumati River Corridor, as it was expected to provide the western North-South traffic link. It also had a direct impact on land pooling. The Bishnumati Link Road's incompletion poses a severe burden on traffic to and from Naya Bazar (Appendix 6). Cancellation has also limited benefits to people who contributed one third of their land for the road without compensation. The proposed extension of the link road to the Bagmati and Dhobikhola Corridors, completing a proposed internal ring road, was also affected.<sup>34</sup>

44. The OEM observed that DUDBC has become involved in urban road construction and expansion in recent years.<sup>35</sup> One year after ADB cancelled the Bishnumati Link Road, the Government allocated sufficient funds for land compensation. After project completion, DUDBC reestablished an office and continued to construct the link road (Appendix 6). To date, the project office had cleared and demolished all houses on the right-of-way. DUDBC reported that the landowners contributed in-kind one third of their land and received cash compensation for the remaining two thirds. Until FY2003, the Government and KMC have spent NRs100 million for the link road, equivalent to \$1.4 million and exceeding \$1.3 million at appraisal. About 40% of the road has been graveled and little river-training work has begun. Heavy vehicles and delivery vans used the earthen road, and traffic was heavy during the dry season.

## 3. Part C: Implementation Assistance and Institutional Strengthening

45. Part C comprised three components, all implemented directly by the project management unit within DUDBC: local area planning, base mapping, and training. The component had little success. The few positive outputs were the following: (i) KMC revised local area plans after it gained authority to do so under LSGA; and (ii) the Project's base maps at a scale of 1:2,000 were in high demand for planning and development purposes. KMC created digital versions of these maps for geographic information systems applications.

## 4. TA 1905-NEP: Improved Resource Mobilization for Kathmandu Municipality

46. TA 1905-NEP provided useful input for reforms to revenue collection (para. 31), although KMC did not follow the timeline set down in the study.<sup>36</sup> KMC did not efficiently use the training, capacity building, technical support from the central government, or recommendations for organizational restructuring.<sup>37</sup> Experienced staff have been transferred to other sections, and a

<sup>34</sup> Proposed in Kathmandu Valley Urban Development Plans and Programs.

<sup>35</sup> The Department of Urban Development and Building Construction is involved in the Tundikhel road-widening project. (Source: discussion with a former project coordinator for the *Municipal Infrastructure Improvement Project*.)

<sup>36</sup> TA 1905-NEP was followed by TA 3185-NEP: *Institutional Strengthening of Kathmandu Metropolitan City* (KMC), approved for \$450,000, on 16 April 1999. The technical assistance (TA) supported KMC in building its capacity to keep pace with the growing demand for urban services and its increased responsibilities after decentralization. The completion report circulated in July 2002 rated the TA successful, but admitted that KMC would need support to sustain reforms.

<sup>37</sup> The Project Completion Report observed that the Project provided 2,391 person-days of training. Late introduction of the Local Self-Governance Act demanded further training after project completion. Follow-up was neither envisaged in the appraisal nor initiated by KMC.

consultant has completed groundwork for house and land taxes, working independently from the revenue department (Appendix 7). Overall, the TA is rated successful.<sup>38</sup>

## **B. Performance of the Operating Entity**

47. The Project was implemented during decentralization, and neither Government agencies nor local authorities were initially strong enough to handle an externally funded project. A steering committee under the chairmanship of the mayor was appropriate, ensuring strong political ownership.

48. DUDBC's performance was satisfactory. Its expertise in training, administrative support, and policy making were well recognized by other executing agencies. It played a less successful role in coordination, however. The OEM concurs with the PCR that poor government coordination caused most startup problems and continues to be a concern.<sup>39</sup> The Project did not suffer much from frequent change in leadership, as can often occur. The overall project manager and the Part A project coordinator were replaced only once. Leadership was stable compared to other externally funded projects at the time.

49. KMC's performance was generally satisfactory. KMC implemented Part A's four subcomponents to different levels of success. At appraisal, KMC's local financing was estimated at \$1.4 million equivalent, while the actual investment was \$2.1 million equivalent. Because of KMC's lack of trained manpower, many key people were outside experts delegated from other government agencies or recruited temporarily. This still left KMC with limited trained manpower after project completion.<sup>40</sup> Naya Bazar land pooling was timely compared to other government projects, which suffered long delays.<sup>41</sup> The storm drains were successful. The OEM also observed that KMC was more capable of generating local participation than other government agencies.<sup>42</sup>

50. KMC successfully achieved private-sector involvement in solid waste collection, but did experience a month-long strike against privatization from the sweepers' labor union. KMC started to transfer waste collection to private contractors, focusing its activities on waste management instead. Excess staff have still not been laid off. Tax collection efficiency is low at 40%. KMC revenues are not sufficient, and it depends on Government funds for O&M.

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<sup>38</sup> The assessments with respect to the five criteria were highly relevant, efficacious, efficient, likely sustainable, and moderate, respectively.

<sup>39</sup> Project lost almost 1 year waiting for approval and support from concerned agencies. Problems included poor support from traffic police in pedestrianizing Durbar Square, slow adoption of the traffic flow system in the project designed by the Project, slow approval from the Department of Roads for widening, and late approval from the Nepal Electricity Authority to relocate power poles. The mission observed that the Project's traffic flow has been unilaterally changed by traffic police at several locations. The Government's Department of Water Supply and Sanitation was collecting service charges for drainage facilities along with the charges for drinking water. There were numerous drains constructed by communities and KMC for which the department has insufficient information.

<sup>40</sup> Not one of the eight senior staff members who attended training sessions in Denmark was a permanent employee of Kathmandu Metropolitan City.

<sup>41</sup> A previous housing scheme reportedly forced the local poor to sell their land at throwaway prices, with plots later sold to government employees at below market value. The other not-so-happy experience was the Dattu Project, which took several years to complete, as they could not acquire land.

<sup>42</sup> The formation of the users' committee with strong involvement from ward offices and technical support from Government has proved effective. Local residents monitored the activities with full ownership because they had to bear partial costs. The users' committee has assumed the responsibility for O&M through monthly fees collected from landowners.

51. DOR's performance was less satisfactory. Further to the Government's belated allocation of funds for the link road, DOR was sluggish in distributing compensation to landowners. DOR did not consider construction of the link road a high priority.

### C. Economic and Financial Reevaluation

52. The OEM recalculated the EIRR and FIRR estimates for three major subcomponents evaluated in the PCR. The details of the assumptions and calculations are given in Appendix 8. All the three subprojects came out with EIRRs above 12%, but the financial reevaluation was less positive. Only the land pooling at Naya Bazar came out with an FIRR above the on-lending rate of 8% in the loan agreement. In addition to estimating the FIRR for the base case with existing tax collection at 40% efficiency, the OEM also calculated the FIRR for 100% tax collection. The sensitivity analysis indicates that the core area upgrading and the storm drains will be sustainable when the collection efficiency improves to 49% and 84% respectively. Land pooling will no longer be sustainable if collection efficiency drops below 27%.

#### Summary of EIRR, FIRR, and NPV

Components	EIRR	NPV at 12% <sup>a</sup>	FIRR		NPV at 8% <sup>a</sup>	
			At 40% Collection	At 100% Collection	At 40% Collection	At 100% Collection
Core Area Upgrading	13.9%	10.61	5.9%	17.5%	(24.14)	138.29
Storm Water Drainage	25.5%	28.05	2.6%	9.3%	(47.85)	6.76
Naya Bazar Land Pooling	52.3%	143.00	12.0%	23.5%	15.59	85.32

EIRR = economic internal rate of return, FIRR = financial internal rate of return, NPV = net present value.

<sup>a</sup> NRs millions.

53. **Sustainability.** The sustainability of Part A infrastructure depends on regular maintenance. KMC does not yet have a regular maintenance schedule. When drains clogged, KMC mobilized manpower and equipment on an ad hoc basis, often with delays. The annual allocation of government funds for repair and maintenance does not reflect ward requirements.<sup>43</sup> With the current low level of maintenance, the major rehabilitation would be due in 2007 or earlier.<sup>44</sup> The OEM was concerned that wards have not paid serious attention to maintenance.

54. In the context of the fast pace of urbanization, the urban sector strategy prepared under TA 3272-NEP<sup>45</sup> underscored that all municipalities in Nepal, including KMC, need continuous support to build O&M capacity. The OEM concurs with this assessment.

55. Private-sector operation of public toilets and solid waste collection are sustainable.

56. DUDBC sells the maps prepared under the Project for a fee and partially recovers their production cost, but the OEM did not notice any program for updating the maps.

<sup>43</sup> Kathmandu Metropolitan City distributes its budget equally among all wards, so some wards have surplus while some others fall short. The city needs to develop more scientific and objective mechanism to allocate its funds.

<sup>44</sup> The financial and economic internal rates of return would be significantly lower when rehabilitation costs are added to cost streams.

<sup>45</sup> TA 3272-NEP: *Nepal Urban Sector Strategy*, for \$200,000, approved on 6 October 1999.

## IV. ACHIEVEMENT OF OTHER DEVELOPMENT IMPACTS

### A. Socioeconomic and Sociocultural Impacts

57. The OEM completed a socioeconomic survey—including 350 household interviews, onsite visits, and meetings with local representatives and user groups—to assess the Project's economic impacts (Supplementary Appendix 3). The OEM also interviewed officials from executing and line agencies, and collected responses to in-depth questionnaires from officials involved in implementation.

58. The OEM assessed the Project's achievements of secondary objectives from the field observations and the sample survey (para. 15). The quality of the environment in the core area has generally improved,<sup>46</sup> leading to new activities such as an evening market in the stone paved area of Durbar Square.<sup>47</sup> However, initial project impacts have diminished with higher-than-expected population growth. Residents expressed varied views on increased business in the area, although they expressed general satisfaction with improvements under the Project.

59. Respondents from the land pooling area consistently praised that subcomponent. Residents, local authorities, and the Government observed that clear and timely completion contributed to its success. The two distinct features of land pooling—the substantial increase in land value and a lack of disturbance to local families—have generated new demand in other districts, including those where residents were earlier reluctant.

60. The Project pioneered the concept of a conservancy charge for solid waste management (later converted to a users' fee).<sup>48</sup> It also marked a turning point for KMC in privatizing solid waste management. There are now several, small private contractors involved in solid waste management.<sup>49</sup>

61. Improvements to the Bishnumati River Corridor had a distinct impact on poor people living there. OEM interviews with local women confirmed they appreciated the public toilets, and people from other areas paid nominal charges to use them for bathing and washing.

62. The surveys also revealed that local residents and representatives were generally reluctant to take over the maintenance—except in land pooling and the Bishnumati River Corridor—because they were not involved in project implementation.<sup>50</sup>

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<sup>46</sup> It was difficult for the mission to assess the project impacts on economic development in the core area because of ongoing political insurgency and a chaotic political atmosphere, both of which discouraged tourism.

<sup>47</sup> Several temporary shopkeepers operate in the evening, generating an annual rental income of NRs50,000 per annum for Kathmandu Metropolitan City (KMC). KMC has also introduced a tourist entry fee to Durbar Square of NRs50, with tickets valid for 15 days.

<sup>48</sup> The mission recommends that KMC and the Department of Urban Development and Building Construction generate political consensus to legalize the conservancy charge.

<sup>49</sup> During the project period, sweepers in KMC observed a month-long strike against the privatization. However, the mission noted that KMC took the correct policy decision, which has helped to educate people in taking responsibility for managing their waste. The mission is concerned that KMC has not laid off any of its sweepers, even after several private operators took over garbage collection.

<sup>50</sup> The mission noted that the executing agencies did not involve nongovernment organizations (NGOs) in awareness campaigns. The mission was informed that NGOs have limited involvement in Nepal's urban sector.

## B. Environmental Impact

63. The Bishnumati River Corridor environmental improvements were to directly contribute to the Project's goal of improving the environment of Kathmandu Valley, while other Project subcomponents were to indirectly contribute to that goal. The OEM survey confirmed only partial achievement.

64. Without proper arrangements to dispose of construction or slaughterhouse waste, the Bishnumati River Corridor environment has gradually deteriorated. The lack of continuous and efficient monitoring may mean environmental deterioration will continue unchecked. The Project did not improve water quality because storm drains were illegally used to dispose of sewage.<sup>51</sup>

## C. Impact on Institutions and Policy

65. The Project was first of its kind executed by a Nepalese municipality and has opened possibilities for similar investments in other municipalities.<sup>52</sup> It also opened new opportunities for municipalities to act as independent authorities to manage urban issues. Private solid waste collection was limited to a few wards at the time of the PCR. At the time of the OEM, nearly 30% of the solid waste collection, including street sweeping in Kathmandu, had been contracted out to private operators. With the support of TA 1905-NEP, KMC adopted a commercial accounting system; this has encouraged other municipalities to do the same. The Project also played a positive role in enacting the LSGA, which strengthened municipalities' powers in many respects.

66. KMC's weak organizational structure did not improve, in spite of major restructuring efforts under the Project (Appendix 7).<sup>53</sup> Efforts under TA 1905-NEP and recommendations in the final report did not improve revenue collection.<sup>54</sup> Urban roads, drainage, traffic management, and several other functions are still controlled by line agencies or government-owned authorities, contradictory to the LSGA.<sup>55</sup> One of KMC's innovations was to form a city planning commission to provide technical expertise. The commission provided critical input in developing policies and programs, but was dissolved after the Project because it could not be successfully integrated with KMC's organizational structure.

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<sup>51</sup> The project preparatory technical assistance (footnote 5) assumed that a World Bank-financed project would build sewers and sewage treatment facilities. After the World Bank scheme was cancelled, the Project did not revisit the comprehensive environmental improvements envisaged in the project preparatory technical assistance.

<sup>52</sup> Loan 1966-NEP[Sf]: *Urban Environmental Improvement*, for \$30 million, approved on 10 December 2002.

<sup>53</sup> The Project and TA 1905-NEP established 12 new departments and 33 sections for community development, new engineering works, revenue, roads, and sewers.

<sup>54</sup> Recommendations include restructuring and improving collection of vehicle taxes; raising business taxes, and improving the way they are collected; introducing entry fees for tourists; levying a municipality tax on hotels and restaurants; charging fees for and privatizing refuse collection and disposal; integrating property tax and improving collection; and strengthening the revenue division.

<sup>55</sup> Kathmandu being the capital city, the mission doubts if these responsibilities will be eventually transferred to Kathmandu Metropolitan City (KMC). The Government has no clear policy to support KMC or provide technical backstopping.



## **V. OVERALL ASSESSMENT**

### **A. Relevance**

67. The Project is considered relevant. The design addressed environmental degradation, provided basic infrastructure, developed institutions, and built capacity at executing agencies.

### **B. Efficacy**

68. The Project is considered less efficacious. Part A's physical targets were mostly achieved, Part B was cancelled, and Part C was only partly efficacious. KMC's weak organizational structure did not improve, despite major restructuring efforts.

### **C. Efficiency**

69. The Project is considered efficient, with significant achievements in land pooling. The EIRRs for Part A subcomponents are above 12%. However, basic infrastructure was already overused and would be inadequate to meet future needs without substantial extra investment.

### **D. Sustainability**

70. Project sustainability is less likely. KMC does not yet have a regular maintenance schedule, and major rehabilitation would be due in 2007 or earlier. The OEM is concerned that wards have not paid serious attention to maintenance.

### **E. Institutional and Other Development Impacts**

71. The Project's institutional and other development impacts are assessed as moderate. Land pooling was a major innovation. The Project also played a positive role in enacting the LSGA, which has strengthened Nepal's municipalities.

### **F. Overall Assessment**

72. The Project is rated partly successful. TA 1905-NEP is rated successful.

### **G. Performance of the Borrower and ADB**

73. The performance of DUDBC was satisfactory. Their expertise in training, administrative support, and policy making were well recognized by the other executing agencies. KMC's performance was also satisfactory. KMC implemented the four Part A subcomponents to different degrees of success. DOR's performance was partly satisfactory. It did not consider construction of the link road a high priority.

74. ADB's performance was satisfactory. ADB provided essential support and assistance in supervising implementation, disbursed adequate funds in a timely manner, and regularly fielded missions to review progress. ADB was also flexible and proactive in response to changing circumstances.

## VI. ISSUES, LESSONS, AND FOLLOW-UP ACTIONS

### A. Key Issues for the Future

#### 1. Financing Urban Infrastructure Improvement

75. Compared with most of South Asia's megacities, Kathmandu's urban challenges are still manageable. This rapidly growing city may avoid the mistakes of many other Asian cities if it exerts a concerted effort to reform urban services.<sup>56</sup> The Government's resource constraints and the shift in its policy to rural development have left most urban problems unaddressed. In the OEM's view, uncontrolled migration into the Kathmandu Valley underscores the urgency for immediate municipal investment. There has been no follow-up to the Project, which was only part of the first phase of investment plans recommended by KVUDPP (footnote 4). The second phase, which is required for comprehensive urban development, has not been implemented, although the LSGA provides an enabling environment for these plans.

#### 2. Community Education for Sustainable Delivery of Municipal Services

76. As with most Asian cities where ADB has invested in the urban sector, Kathmandu's social structure is complex. Focusing on the poor is not possible without mapping their locations. NGOs can help train the poor to operate municipal facilities. Educating local communities, starting with schoolchildren, is crucial. The Project raised schoolchildren's environmental awareness under a public education subcomponent that KMC has continued under the BABA<sup>57</sup> program. The seminar organized by the NGO Forum for Urban Water and Sanitation confirmed the spin-off effects of demonstrational activities in schools (footnote 13).

### B. Lessons Identified

77. Capability building of existing staff, recruiting key permanent staff, and retaining skilled staff are crucial to delivering sustainable services.

78. Urban infrastructure cannot be maintained unless the local government efficiently collects property tax. It is important to build community awareness on this matter through education campaigns.

79. Community networking and training should continue beyond project implementation. Pedestrianization, privatization of municipal services, and other project outputs illustrate that significant time and resources are needed to reach full project performance. NGOs play a crucial role in building awareness of proper O&M.

80. Land pooling has delivered significant social and economic benefits. Proper risk analysis during design and adequate community participation during implementation are vital for its success. An integrated environmental management system—comprising water supply, groundwater recharge, rainwater harvesting, wastewater recycling, and wastewater treatment—could also be implemented.

<sup>56</sup> Urban Indicators for Managing Cities (Cities Data Book), ADB, 2001.

<sup>57</sup> BABA, an acronym for "Children and Environment" in the Nepali language, is a nature club working for environmental awareness in 25 schools.

### C. Follow-Up Actions

81. The following five actions are recommended within 2 years, with the guidance of NRM:
- (i) The Government should complete the Bishnumati Link Road and upgrade it to a internal ring road, as was originally suggested in KVUDPP studies.<sup>58</sup>
  - (ii) KMC should immediately train the land pooling users' committee on O&M and advise farmers on alternative vocations.
  - (iii) KMC should implement several onsite sanitation programs to improve water quality and arrest environmental deterioration in the Bishnumati River Corridor.
  - (iv) KMC should develop advocacy campaigns and financing arrangements to encourage households to install septic tanks and stop discharging raw sewage into natural water systems.<sup>59</sup>
  - (v) KMC should formalize local community groups and give them responsibility for municipal O&M and fee collection.

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<sup>58</sup> The Nepal Resident Mission suggested including the link road in an upcoming Asian Development Bank project.

<sup>59</sup> The mission reported that most of Kathmandu's septic tanks do not function properly. Cost-effective sewage treatment methods like the reed bed system may be introduced in several locations. Private operators can run them successfully and provide collection services, without adding to local government's burdens. The Nepal Resident Mission has suggested rehabilitating sewer interceptors in affected areas and connecting the sewers to a treatment plant.

**PROJECT COSTS**  
(\$ million)

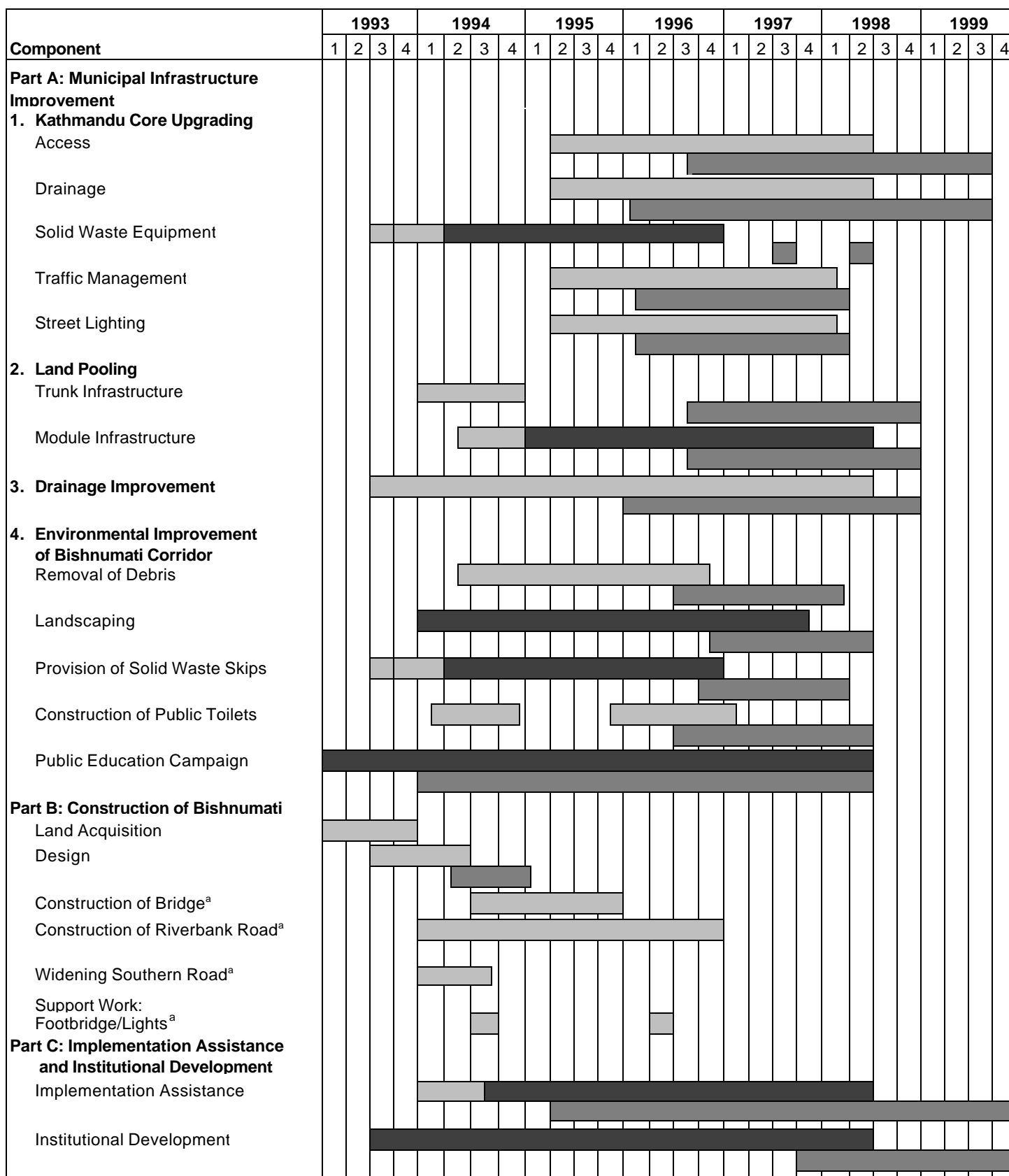
Project Component	ADB Financing		Govt. Financing		Municipality Financing		Beneficiary Contribution		Total Project Cost	
	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual
<b>A. Municipal Infrastructure Improvements</b>										
Core Area Upgrading	2.0	1.9	0.0	0.0	0.4	0.6	0.0	0.0	2.4	2.5
Guided Land Development	0.8	1.0	0.0	0.1	0.3	0.2	0.7	6.5	1.7	7.7
Drainage	1.6	1.4	0.0	0.0	0.4	0.5	0.0	0.0	2.0	1.9
Environmental Improvements	0.3	0.6	0.1	0.0	0.1	0.4	0.0	0.0	0.5	0.9
Design and Supervision	0.8	0.7	0.0	0.0	0.0	0.5	0.0	0.0	0.8	1.1
<b>Subtotal A</b>	<b>5.5</b>	<b>5.5</b>	<b>0.1</b>	<b>0.1</b>	<b>1.1</b>	<b>2.1</b>	<b>0.7</b>	<b>6.5</b>	<b>7.4</b>	<b>14.2</b>
<b>B. Bishnumati Link Road</b>	<b>4.5</b>	<b>0.2</b>	<b>1.3</b>	<b>0.2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>5.9</b>	<b>0.4</b>
<b>C. Implementation Assistance and Institutional</b>										
Project Management Support	1.5	1.5	0.4	0.3	0.0	0.0	0.0	0.0	1.9	1.8
Institutional Strengthening	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1
<b>Subtotal C</b>	<b>1.8</b>	<b>1.6</b>	<b>0.5</b>	<b>0.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>2.2</b>	<b>1.9</b>
Service Charge	0.3	0.2	0.0	0.0	0.3	0.0	0.0	0.0	0.6	0.2
<b>Total<sup>a</sup></b>	<b>12.0</b>	<b>7.5</b>	<b>1.9</b>	<b>0.6</b>	<b>1.4</b>	<b>2.1</b>	<b>0.7</b>	<b>6.5</b>	<b>16.0</b>	<b>16.7</b>

ADB = Asian Development Bank

<sup>a</sup> Inconsistencies in totals are due to rounding.

Source: Project Completion Report; Operation Evaluation Mission, 2003.

## IMPLEMENTATION SCHEDULE



<sup>a</sup> Bishnumati Link Road Component cancelled in November 1995.

■ : Intermittent Activity (Proposed)

■ : Continuous Activity (Proposed)

■ : Actual Activity

Source: Project Completion Report; Operation Evaluation Mission, 2003.

**STATUS OF COVENANTS WITHOUT FULL COMPLIANCE AT THE TIME  
OF PROJECT COMPLETION OR EVALUATION**

<b>Covenant No. in PCR</b>	<b>Covenant</b>	<b>Compliance at the Time of PCR</b>	<b>Compliance at the Time of OEM</b>
<b>A.</b>	<b>Financial</b>		
1.	Introduce regular property surveys and mapping, which will cover all of Kathmandu by 31 December 1998. [Project Agreement, Schedule, para. 1 ] (Kathmandu Metropolitan City [KMC])	Partly complied with. Completed in 3 pilot wards out of a total 35 wards.	Complied with. Surveying and mapping have been completed in all 35 wards with support from Kathmandu Valley Mapping Program.
2.	Levy and collect a conservancy charge to fully recover the cost of solid waste management, including street cleaning. [Project Agreement, Schedule, para. 3] (KMC)	Partly complied with. Pilot projects being initiated in wards 13–15, 18, and 35 through involvement of private parties. KMC collects user fees for primary collection of wastes.	Complied with. KMC appointed private parties collect user fees in all wards. They are also responsible for the management of solid waste and street cleaning. KMC has allowed them to dump collected wastes at their transfer station free of charge. A conservancy charge has not yet been levied. In many wards, community level groups manage solid waste.
3.	Develop and implement proposals for privatizing maintenance of public toilets and street cleaning, including primary solid waste collection. [Project Agreement, Schedule, para. 4] (KMC)	Partly complied with. All toilets have private management contracts, but street cleaning and solid waste collection have been introduced on a pilot basis only.	Complied with. Private parties manage all the toilets, which are properly managed except the toilet at ward 14. Respective wards retain revenues earned. Street cleaning for 11 km of road was given to private sector in August 1999.
4.	Examine the feasibility of privatizing the billing and collection functions for municipal services, and following discussions with the Asian Development Bank (ADB), implement such proposals from an agreed date. [Project Agreement, Schedule, para. 5] (KMC)	Partly complied with.	Partly complied with. The operation and maintenance (O&M) of the bus terminal has been contracted to a private party for 45 years. Overhead bridge management has been put on lease. Vehicle tax collection has been given to private party.

Covenant No. in PCR	Covenant	Compliance at the Time of PCR	Compliance at the Time of OEM
5.	Identify options for new property taxes based on current property values. These options will be submitted to and discussed with ADB, and the parties will agree on a date for implementation. [Project Agreement, Schedule, para. 2] (KMC)	Partly complied with. Local Self-Governance Act and its related by-laws allowed municipalities to collect land and house tax. KMC collected information on land and house tax in three pilot wards, and intends to levy this tax from the current financial year.	Complied with. Data collection on property has been completed. Computer-generated bills are being delivered.
6.	(i) Improve its financial management, by strengthening staffing and training, and introduce a corporate planning approach; (ii) review and develop an improved management information system, including financial aspects; and, (iii) introduce commercial accounting systems within the municipality. [Project Agreement, Schedule, para. 6] (KMC)	Partly complied with.	Partly complied with. KMC does not yet fully practice commercial accounting. KMC should organize training for new staff on the commercial accounting system and continue implementation.
<b>B.</b>	<b>Institutional</b>		
10.	KMC and Nepal Water Supply Corporation (NWSC) will closely coordinate the development of storm water drainage, which has an impact on the drainage system, particularly in areas where a combined system will be operational. [Loan Agreement, Schedule 6, para. 3] (KMC)	Complied with.	Partly complied with. The OEM noted inadequate coordination for O&M between KMC and NWSC.
13.	The maintenance of the sewer system in the guided land development in Naya Bazar, as elsewhere in Kathmandu, will be the responsibility of NWSC. [Loan Agreement, Schedule 6, para. 22] (Department of Urban Development and Building Construction, project management unit)	Not complied with. After the partial cancellation of a World Bank-funded urban water supply and sanitation project, the sewer line was not constructed in that area. Many houses have connected their household sewage drains to the Project's storm drains.	Not complied with. A joint initiative of KMC and local users' committee should be made to control raw sewage discharge in the drain.
14.	The Borrower and Kathmandu Municipality will undertake such acts as necessary to acquire, prior to the scheduled start of civil works, all land, rights to land, and other property rights required for the construction and/or establishment of project facilities. The Borrower will provide or ensure that appropriate compensation is provided and assistance is given in the resettlement of people affected by the Project. The Borrower will ensure that alternative sites for housing are provided to the affected squatters in	Part B was cancelled. In the case of public toilet construction at Kohity, where three squatter families were evicted, KMC constructed the toilet from its own resources. The evicted squatters were not given alternative sites for housing.	Not relevant.

Covenant No. in PCR	Covenant	Compliance at the Time of PCR	Compliance at the Time of OEM
	planned communities so that their living conditions are improved over a period of time. [Loan Agreement, Schedule 6, para. 24] (Department of Urban Development and Building Construction, project management unit)		
17.	The Borrower will ensure that private sector involvement is implemented in street cleaning and primary collection of solid wastes. There is further potential for private sector participation in various services related hereto, including billing and collection. [Loan Agreement, Schedule 6, para. 27] (Department of Urban Development and Building Construction, project management unit)	Partially complied with.	Complied with.

OEM = Operations Evaluation Mission, PCR = project completion report.  
Source: Project Completion Report; Operations Evaluation Mission, 2003.



## FINDINGS OF THE SOCIOECONOMIC SURVEY

### A. Land Pooling at Naya Bazar

1. The Operations Evaluation Mission (OEM) used a detailed questionnaire and interviewed 10 women and 40 men aged 18 to 73.<sup>1</sup> They had a variety of occupations: service providers (38%); business people (26%); farmers, housewives, and artists (a combined 28%). Eight percent of respondents were unemployed.

2. The OEM observed that about 80% of residents had settled in the area before land pooling began. Almost all residents have been using their land for farming and many had built houses and other buildings for their own use. Eighty-eight percent of homes were made of concrete. Inhabitants observed many changes after land pooling, such as roads, drains, and streetlights. Respondents said they did not participate during planning or implementation but did contribute their land. There had been few property transactions since land pooling, although some had sold their land for other investments. Land pooling had no significant affect on new business or trade. Land values tripled, but rents have not increased as much.

3. Before land pooling, most residents had paths 2 to 20 feet wide leading to their houses. Road width after land pooling was 6 to 8 meters.<sup>2</sup> In some areas, the road has been only graveled. Before land pooling, there was waterlogging in the area. Land pooling partly solved this problem, at least during the dry season.<sup>3</sup> The community was generally maintaining the area. About half the households have telephones. There was no government health facility in the area and residents visited private clinics. The area does not have streetlights even after the Project. The residents expressed concerns about health care and security.

4. Most residents opted for door-to-door garbage collection through a local waste collector, paying a service fee of NRs30 to NRs100 per month. Some of them compost their waste, some dispose in containers, and others in the river. There are still problems with water supply and electricity. About 60% of the residents lack proper drinking water, which they source instead from shallow tube wells, neighbors' taps, or tankers. The users' committee is now using its own funds to build a water supply system with a deep tube well source and a pipe network.

5. Most houses (64%) are connected to the municipal sewer line but some (36%) have septic tanks. Some households have illegally linked their sewers to storm drains that empty into the river.

6. Residents complained they had to visit government offices a number of times to get landowners' certificates because they had not been advised it was required.

### B. Storm Water Drainage

7. The OEM interviewed 20 women and 51 men aged 18 to 75, living in the area where the Project constructed storm drains. Almost all the respondents knew about the construction. Everybody agreed the drains were necessary and they appreciated the civil works. The public

<sup>1</sup> About 1,200 landowners participated in land pooling. The Operations Evaluation Mission surveyed 5% of participating households.

<sup>2</sup> Land pooling was compelled to provide lanes only 2 meters wide in some areas because of the presence of existing buildings. Land pooling compensated by reducing the contribution from concerned houses. Residents reported that trainee drivers use the area to practice and have damaged the roads.

<sup>3</sup> The drainage was not operating well in some locations.

participation during construction was low. All areas with storm drains had been severely affected by waterlogging, and many houses had flooded before the Project. Drivers and pedestrians had also suffered.

8. About 80% residents were satisfied and confirmed the quality of construction work. They also suggested building storm drains in other areas like Tallo Tushal, JP School, Kaldhara, Khursanitar, Chagal, Kuria Gaun, near Mahendra Ratna Campus, and District Education Office, Tahachal.

9. Inhabitants who were not satisfied pointed out that waterlogging still occurred in places including Lekhnath Marga and JP Marga. In these areas, the respondents found construction quality poor and civil works incomplete. The respondents complained the drainage canal had clogged and smelled foul.

### **C. Road Improvement Lainchaur to Tripureswor and Tempo Park Construction**

10. Before improvements, the roads were narrow and in bad condition, causing heavy traffic jams. Streets were dirty because of drainage problems. Accidents were frequent because pedestrians lacked proper footpaths. Parking was another problem and there was no waiting area for public transport. After the improvement program, roads were widened and flyover bridges were constructed. Traffic jams and accidents decreased. According to the survey and OEM field visits, drivers and pedestrians benefited significantly and acknowledged the convenience. Improvements also solved water logging during the rainy seasons. Vehicle parking has been properly managed. Tempo and bus drivers brought their vehicles into orderly queues. Streetlights lined the roads and were being maintained by the Kathmandu Metropolitan City (KMC) and the Ministry of Housing and Physical Planning. Drivers said traffic lights should be added at several manually controlled intersections.

11. Respondents also said KMC should remove street vendors from Tempo Park and the crossing bridges. They also suggested constructing tempo parks and public toilets in other places, as well as crossing bridges in the Balaju and Ghantaghar (Clock Tower) areas. Respondents echoed the need for regular maintenance.

### **D. Public Toilets**

12. KMC constructed eight public toilets along the Bishnumati River Corridor. Seven were constructed under the Project and one was financed by KMC.

13. KMC signed agreements with private contractors allowing them to operate the toilets, although some have been operating without contracts and were paying KMC NRs500 to NRs4,500 per month. The toilets were operating well.<sup>4</sup> Users paid NRs1 to NRs9 per visit, but some operators did not charge fees. The contractors themselves cleaned the toilets. Some operators faced water shortages. Two of the toilets surveyed have septic tanks (Indrayani and Bijeshwori), while the others discharged wastewater into the river. The contractors earned up to NRs3,000 a month and were satisfied with the income. The public demand for such toilets was very high. KMC proposes building similar toilets in Dallu Chautara, Sundhara, Balaju Chowk, Rato Pul, and Balaju Bridge and riverside.

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<sup>4</sup> A drainpipe in one toilet had to be repaired because it had cracked, but none of the other toilets required repair. The septic tanks did not require cleaning, as they were not filled.

14. Contractors said 70 to 75 males and 6 to 7 females visited public toilets each day. The public toilets have successfully stopped riverside urination and defecation, thus significantly improving the local environment. Most public toilet users in the area (80% of 15 respondents) subsequently built toilets in their own houses and visited public facilities occasionally. Users were in favor of private management. They said toilets were clean and water was consistently available.

## **E. Bishnumati Corridor Improvement Program**

15. The OEM interviewed a random sample of 14 females and 31 males aged 15 to 65,<sup>5</sup> all residents of the Bishnumati River Corridor. Respondents had a variety of living conditions: 51% had houses of brick and mud, 47% concrete, and 2% raw brick. They said the corridor program had been successful. Public participation was minimal, although some had contributed their labor, and 70% of respondents knew that KMC had undertaken the work. KMC and the community jointly maintained the area. The respondents identified as benefits the environmental improvement; removal of debris; and construction of public toilets, drains, parks, and roads.<sup>6</sup>

16. Almost all respondents had toilets at home, but only 25% had septic tanks.<sup>7</sup> Those without toilets at home used the public ones, which they praised. Respondents said they were pleased that people had stopped using riversides and surroundings to defecate and urinate, but complained about pollution and foul odors where public toilets discharged waste in the river.

17. Construction of parks has improved the environment and beautified the area. Visitors used the parks for games and entertainment, although locals seldom visited them. Garbage management has not been properly addressed. Wider roads opened access to heavy vehicles, resulting in traffic, noise, and air pollution. Respondents suggested completing the Bishnumati Link Road. Roads were incomplete and their dust significantly affected the health of residents.<sup>8</sup>

18. The OEM was concerned that the Bishnumati River Corridor was rapidly deteriorating because of garbage, slaughterhouse waste, and unmanaged composting along the riverbank.

## **F. Core Area Improvement Program**

19. The OEM interviewed 5 female and 35 male city core area residents aged 16 to 85. The OEM also interviewed 3 female and 27 male pedestrians with ages ranging from 15 to 64. Most of the respondents (53%) in the city core area lived in concrete houses, with the remainder (47%) in houses of mud and brick. Before the core area improvements, streets were narrow and poorly maintained, without storm drains, streetlights, or traffic management. The respondents listed as visible changes road improvements, streetlights, street signs, a new one-way traffic system, stone paving, and construction of side drains. They found quality of construction good.

20. Waterlogging continued, however, especially during the rainy season. KMC and the community cleaned the municipal drains and the rainwater inlets. After the core area

<sup>5</sup> The project completion report claimed that about 12,000 families benefited.

<sup>6</sup> The Operations Evaluation Mission observed that drug addicts disappeared from the riverside after the improvement scheme.

<sup>7</sup> About 83% of remaining respondents have extended their sewer lines to the river and about 17% have connected them to the municipal trunk line.

<sup>8</sup> The survey showed that there have been no considerable improvements in the health. The inhabitants suffer from cough, common cold, fever, diarrhea, headaches, jaundice, and other ailments.

improvements, the Nepal Water Supply Corporation, Nepal Telephone Corporation, KMC, and individuals dug up roads to maintain water lines and telephone cables but did not reseal them. The one-way traffic system has been implemented but in some locations was not followed. Traffic police were generally effective in supervising one-way traffic rules. Some streetlights were in bad condition and needed replacement.

### GUIDED LAND DEVELOPMENT VERSUS LAND POOLING IN NAYA BAZAR

Item	Guided Land Development (At Appraisal)	Land Pooling (Actual)	Remarks/Highlights
1. Development concept	Improved guided land development with access to 25% of the targeted area. No improved plot shapes or open space.	Land pooling with improved access to 95% of the targeted area. Improved road alignment with improved plot shape and open space (4%).	Increased. The 5% land area that land pooling access could not have been included because the houses needed to be demolished.
2. Estimated beneficiaries	297 plots	1,564 plots <sup>a</sup>	Larger area addressed.
3. Land contribution	1.68 hectares (ha) from the beneficiaries, 0.04 ha from the Project.	12.38 <sup>b</sup> ha from beneficiaries, 0.1 ha from the Government.	Due to change in strategy.
4. Total land area to be impacted	50 ha	45 ha	According to cadastral survey, only 45 ha of land were available.
5. Design density	170 persons/ha	338 persons/ha	More beneficiaries.
6. Financing of infrastructure costs	50% from beneficiaries, 50% from the Project.	75% from beneficiaries, 25% from the Project.	Kathmandu Metropolitan City recovered costs by selling service plots contributed by beneficiaries.
7. Community participation	Minimal.	Phase 2 and 3 activities.	Improved ownership.
8. Main access	Bishnumati Link Road	Balaju Road	Bishnumati Link Road cancelled.
9. Solid waste service	Kathmandu Metropolitan City	To be implemented by Land Management Subcommittee.	Local participation proved more efficient.

<sup>a</sup> Readjusted to 1,316 plots after land pooling.

<sup>b</sup> Includes in-kind contribution towards infrastructure cost.

Source: Project Completion Report; Operations Evaluation Mission, 2003.

## **PROGRESS ON THE BISHNUMATI LINK ROAD<sup>1</sup>**

### **A. Background**

1. The Bishnumati Link Road follows the banks of the Bishnumati River. It starts in Teku; passes through Kankeswori, Dhalko, and Indryani; and ends at Lekhnath Sadan (Shorakhutte). The road is 2.8 kilometers (km) long, four lanes or 20 meters (m) wide, and includes a bridge near Kankeswori.

2. In Kathmandu Valley, growing vehicle traffic has created serious road congestion and air pollution. The Bishnumati Link Road was an integral part of an internal ring road proposed under a Japan International Cooperation Agency (JICA) study in 1992, and was also included in Asian Development Bank's (ADB) Kathmandu Urban Development Project. The Department of Roads (DOR) started acquiring land and preparing a detailed design in fiscal 1992/93, estimating costs at NRs290 million. ADB cancelled the component in 1995 because DOR had not finished acquiring land or clearing the site. The Department of Urban Development and Building Construction (DUDBC) is now gradually building the road using government funds.

### **B. The Benefits of the Bishnumati Link Road**

3. The link road will reduce traffic on Kanitpath and Teku roads by connecting southern and northern Kathmandu. It will also relieve parking problems and reduce traffic in the city core, in turn improving tourism and the economy. The city core is already connected with the valley's eastern regions, and the link road will also connect it with the valley's west. The Project has significantly improved the Bishnumati riverbank, which was previously used as a dump site. Kathmandu Metropolitan City (KMC) has still not been able to stop dumping there, but it will stop when the link road is built. The road will provide link both sides of the Bishnumati River to places of historic and religious importance. It will also stop vehicles from going through the newly pedestrianized Durbar Square, a World Heritage Site. The health of the local poor and the environment would improve. Finally, the link road will act as an entrance to adjoining Naya Bazar, where land pooling took place.

### **C. Progress with Bishnumati Link Road Construction by the Department of Urban Development and Building Construction**

4. DUDBC (i) completed road alignment and processes for land acquisition in 1992/93; (ii) calculated land compensation costs at NRs91,709,911; (iii) completed a 1.5-km track road from Sorakhute to JICA Bridge in FY1999/2000; (iv) finished a 925-m gravel road, with 2-m-wide foot paths on each side, FY2000/01 (NRs14,200,000); (v) finished 500 m of foot paths and drainage work from Indrayani to JICA Bridge (NRs20,00,000); and (vi) built a 1.3-km track from JICA Bridge to Teku Bridge, requiring the eviction of 176 squatters. A users' committee has been formed, and it helped the KMC and residents to clear squatters and keep the track open.

5. Limited funds are the main challenge to completing the road on time. DUDBC fears illegal settlers will return to the land because of construction delays. One section, from Sorakhutte to Indrayani, has been graveled but could be damaged without further work.

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<sup>1</sup> This appendix was prepared based on a report from the Department of Urban Development and Building Construction.

## IMPROVED RESOURCE MOBILIZATION IN KATHMANDU METROPOLITAN CITY<sup>1</sup>

### A. Introduction

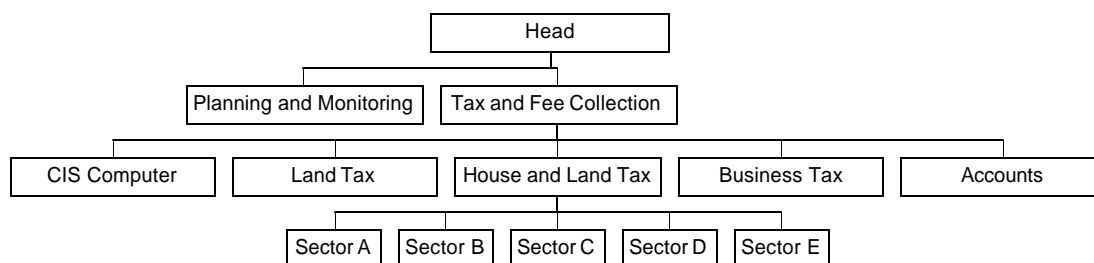
1. This report makes several recommendations to strengthen revenue administration of the Kathmandu Metropolitan City (KMC): (i) improving billing and collection for vehicle tax; (ii) raising business tax and improving collection; (iii) introducing tourist entry fee and a municipality tax on hotels and restaurants; (iv) privatizing refuse collection and disposal, then charging user fees; and (v) introducing an integrated property tax and improving collection methods. The Government was expected to support KMC in attaining these goals.

### B. Revenue Department and its Reorganization

2. The revenue department collects taxes and fees. Revenues and accounts were originally grouped under the finance division but later separated, while assessment and collection have not yet been separated. After TA 1905-NEP, new taxes were identified and introduced, including advertising tax, rents from the evening market, and parking fees.

3. The revenue department has one manager, five officials and 45 assistants who collect different taxes and fees. KMC used to hire temporary staff to collect business tax. There is one advisor who oversees both the accounts and revenue departments.

#### Revenue Department, KMC

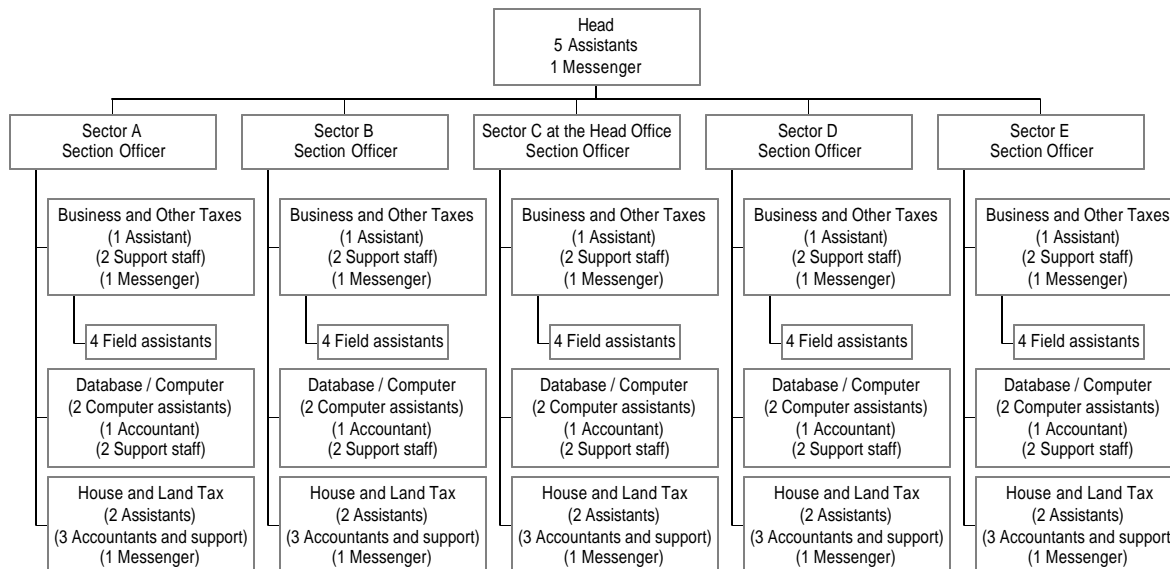


CIS = Computer Information System.

4. KMC proposes changing the structure of the revenue department as described in the diagram above. All taxes are currently collected at the center, with only house and land tax collected at five other collection points. In the proposed structure, sector offices would gather all taxes offering several collection points. The proposed structure is as follows:

<sup>1</sup> In response to recommendations in TA 1905-NEP.

### Proposed Structure of the Revenue Department, KMC



5. Under this structure, a client would first contact the database section to get his or her tax assessment, and then receive a payment slip to submit to other sections for payment. It indirectly gives responsibility for assessment and collection to two different groups within each section. This reform would ensure effective tax collection, particularly for property taxes, as envisaged under TA 1905-NEP.

### C. Revenues from Taxes

6. The local development tax introduced as a substitute for the octroi tax is the major source of KMC's revenue. It accounted for 52% of the revenue from own sources in 2001/02 and the amount collected has consistently increased since 1998/99.

7. Land and house tax revenues sharply increased in 2000/01 because of a voluntary disclosure scheme: the Government encouraged taxpayers to declare their income for taxation, and it in turn would not inquire how they earned the money.<sup>2</sup> Many new taxpayers promptly paid land and house tax as well. Now that KMC has done the groundwork for properly collecting this tax, its revenue from this source is expected to rise in future. Advertising tax has also generated considerable new income.

<sup>2</sup> Voluntary Disclosure of Income Source was introduced in 2000/01 as part of government efforts to mobilize revenue.



**Table A7.1: KMC Revenue (NRs in '000)**

Items	1995/96	1998/99	1999/00	2000/01	2001/02
Local Development Tax	247,814	197,087	216,428	235,136	266,204
Tax Revenues	8,538	10,330	25,673	58,885	132,040
Land and House Tax	2,200	3,722	4,072	43,175	107,399
Vehicle Tax	4,775	4,799	6,208	5,269	3,563
Integrated Property Tax	—	—	—	297	598
Entertainment Tax	—	—	—	493	425
Advertisement Tax	—	364	3,978	2,994	3,958
Business Tax	1,563	1,445	11,415	6,657	16,097
Other Revenues	—	45,799	26,890	100,248	118,474
Revenue from Own Sources	279,229	253,216	268,991	394,269	516,718
Grant and Loan from External Sources	4,331	35,503	22,807	153,080	13,999
<b>Total Income</b>	<b>283,560</b>	<b>288,719</b>	<b>291,798</b>	<b>547,349</b>	<b>530,717</b>

Note: No data was provided for 1996/1997; 1997/1998.

**Table A7.2: Percentage Share from Revenue from Own Sources**

Items	1995/96	1998/99	1999/00	2000/01	2001/02
Local Development Tax	89	78	80	60	52
Tax Revenues	3	4	10	15	26
Land/Land and House Tax	1	1	2	11	21
Vehicle Tax	2	2	2	1	1
Integrated Property Tax	0	0	0	0	0
Entertainment Tax	0	0	0	0	0
Advertisement Tax	0	0	1	1	1
Business Tax	1	1	4	2	3

8. **Vehicle tax.** None of the recommendations in TA 1905-NEP have been implemented. Three different taxes and fees are still being collected, at one location for two-wheeled vehicles and another for four-wheelers. KMC has yet to take steps towards merging these taxes, which need changes to the Act and Regulations. KMC contracted out vehicle tax collection instead. Table A7.1 shows no improvement in revenue collection.

9. **Business tax.** There has been no change in collection. KMC has no computerized records to monitor nonpayment or send notices. KMC dispatches teams each year to register new establishments on the spot and collect business tax. The teams of contractors are usually

hired for three months, and some 80 temporary employees were hired for this purpose in 2001/02. The Local Self-Governance Act adopted the rates as per the recommendations in TA 1905-NEP, and KMC has chosen the maximum rate of the recommended range.

10. **Property tax.** KMC has not yet integrated property tax and does not have a database to assess property, send tax notices, or record collection. TA 1905-NEP correctly focused on building the database. The OEM noted that the database with maps has been prepared for all wards. KMC is finally ready to assess the property and send notices to the owners for the payment of house and land tax. Access, commercial importance, and quality of construction have been used to estimate property values and tax.

11. The house and land tax notice contains following information (Box A7):

Box A7: House and Land Tax				
(i)	Ward No.			
(ii)	No.	Street No.	House No.	Street Code
(iii)	Street Name			
(iv)	Name of the Owner			
(v)	Address of the Owner			
(vi)	Tax Zone			
(vii)	Type of the House (in terms of structure, frame, etc.)			
(viii)	No. of Storeys	Plot No.		
(ix)	Area of the House		Area of the Plot (in Ropani and in sq. ft.)	
(x)	Year of Construction			
(xi)	Rate for Assessment: NRs Per Sq. Ft.		For Land: NRs Per Ropani	
(xii)	Value of the House		Value of the Land	
(xiii)	Total Value of Land and House		Depreciation Rate	
(xiv)	Depreciation Value			
(xv)	Taxable Value After Depreciation			
(xvi)	Tax Amount for the Year			
(xvii)	Old Arrears (if any)			
(xviii)	Total Tax Amount			

House and land tax rates are as follows:

First NRs1 million	-	No tax
Next NRs1 million	-	NRs300
Next NRs3 million	-	NRs0.05%
Next NRs5 million	-	NRs0.25%
Next NRs10 million	-	NRs0.5%
Above NRs 10 million	-	NRs1.5%

12. The tax must be paid within 35 days or a fine is levied. Those dissatisfied with assessments can file petitions within 35 days of notification.

13. **Other fees.** The tourist entry fee has been successfully introduced in Durbar Square. Many wards have privatized refuse collection and are charging fees for that service. KMC is trying to expand private refuse collection to all wards. KMC also introduced advertising tax, parking fees, and rents for small shops in busy market centers.

**D. Collection Methods**

14. There have been no changes to collection methods for any taxes. Temporary teams collect business taxes. KMC has collection counters for collecting other taxes, but lacks a strong system for sending notices for payment and nonpayment. Vehicle tax collection is contracted out. Other collection methods that have yet to be considered include multi revenue collection centers, bank payments, and piggybacking KMC taxes with phone or power bills.

**E. Institutional Strengthening**

15. There has been a significant increase in the number of staff in the revenue department, but KMC has not provided training or built skills. Revenue department staff members at the time TA 1905-NEP had been transferred to other departments by the time of evaluation. Staff members lack specialized experience because they are frequently transferred.

16. KMC has not followed up on TA 1905-NEP's proposal to second employees from the Government to strengthen the revenue department. Overall progress in implementing suggestions in TA 1905-NEP has been slow, but the study has proved useful in strengthening revenue collection.

## FINANCIAL AND ECONOMIC REEVALUATION

### A Introduction

1. The Operations Evaluation Mission (OEM) calculated financial and economic internal rates of return for core area upgrading, storm drains, and land pooling. The methodology followed that of the project completion report (PCR), and reviewed methodology used in recent evaluation reports. OEM held discussions with concerned stakeholders and used data from field visits to update the analysis. Tax collection is very low, with efficiency of only 40%. Kathmandu Metropolitan City (KMC) said it was making efforts to improve collection. In this context, two scenarios are worked out, one at the present level and the other at 100% collection efficiency. The gross domestic product (GDP) deflator from Asian Development Bank's statistical database has been used to convert the costs to 2002 constant prices. The analysis was conducted in local currency using the border prices numeraire.

### B. Operation Evaluation Mission's Observations on the Financial and Economic Internal Rates of Return Estimates and Update<sup>1</sup>

2. OEM could not reproduce PCR estimates because some assumptions were unclear. OEM observed the following problems with the PCR: (i) a realistic base for costs, especially operating costs, was not considered; (ii) operation and maintenance (O&M) costs were not considered in the financial internal rate of return (FIRR) calculations on Naya Bazar land pooling (Table A8.3); and (iii) total receipts were double-counted in total returns for the FIRR of land pooling.

3. OEM used relevant reports and discussions with stakeholders during household surveys to update business tax, property tax, and rental values. PCR data on costs and benefits were modified as follows: (i) actual data was used for capital and operating costs (civil works, machinery and equipment, consulting services, O&M costs, and office equipment); (ii) actual data such as business tax, property tax, building permits, and road maintenance was used for FIRR calculations; and (iii) actual data for project benefits (rental values, proceeds from sale of plots, maintenance costs, and health benefits) were included in the economic internal rate of return (EIRR).

### C. Financial Reevaluation

4. OEM used PCR data on capital costs, machinery, and equipment. Annual O&M was estimated at 1.5% of civil works, using government budget figures. Roads and drains improved under Part A would have to be rehabilitated in 2007 because current spending on O&M is low. These costs have not been included in the analysis, assuming that KMC will act on the recommendations. The incremental revenues were estimated as follows:

5. **Core Area Upgrading.** Business tax revenues were NRs3.5 million in 1999 and projected to reach NRs7 million in 2000. Twenty-five percent of the incremental income was attributed to Project upgrades. Property tax revenues were NRs6.7 million in 2000, and are assumed to increase by 10% per annum in the first 5 years and 2% each year after that. Of the new revenue, 25% can be attributed to the Project.

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<sup>1</sup> PCR, Tables A8.1– A8.3 and A9.1– A9.3).

6. **Storm Water Drainage.** Business tax revenues have been NRs1.8 million per annum since 2001 and are expected to increase by 10% per annum in the first 5 years and 2% each year afterward. Property tax revenue was NRs0.88 million in 2000, and it doubled the following year. Property tax revenues are expected to increase by 10% per annum in the first 5 years and 2% per annum afterward. Fifty percent of incremental revenues were attributed to the Project. Average road maintenance cost savings were estimated at NRs1.17 million per kilometer in 2002. OEM estimated that NRs1.76 million in annual maintenance cost would be saved, based on expenses to maintain roads without drains. Average annual house maintenance cost savings were estimated at NRs2,000 per household in 2002; they were expected to increase by 1% per year.

7. **Naya Bazar Land Pooling.** KMC's revenues from the sale of projects are as reported in the PCR. Business tax reached NRs2.9 million per annum in 2001 and was expected to rise by 10% per annum in the first 5 years and 2% each year afterward. Property tax collection was NRs0.88 million in 2000; it doubled in 2001 and was expected to increase by 10% per annum in the first five years and 2% per annum after that time. Revenues from building permits are estimated at NRs10 per square foot (sq. ft.), for construction of 3,786,554 sq. ft.; 10% per year in the next 10 years starting from 2001. All revenues were attributed to the Project.

8. The recalculated financial internal rates of return (FIRR) and net present values (NPV) at the 8% discount rate are presented in Tables A8.3–A8.5 and a summary presented in Table A8.1. The sensitivity analysis indicates that the core area upgrading and storm drain subcomponents will be sustainable when collection efficiency improves to 49% and 84%, respectively. Land pooling will not be sustainable if collection efficiency falls below 27%.

**Table A8.1: Summary of Financial Internal Rate of Return and Net Present Value**

Components	FIRR		NPV at 8% (NRs million)		Sensitivity Indicator	Switching Value
	@ 40% collection	@ 100% collection	@ 40% collection	@ 100% collection	10% change in collection	
Core Area Upgrading	5.9%	17.5%	(24.14)	138.29	0.67	48.9
Storm Water Drainage	2.6%	9.3%	(47.85)	6.76	0.14	84.1
Naya Bazar Land Pooling	12.0%	23.5%	15.59	85.32	(0.45)	26.6

FIRR = financial internal rate of return, NPV = net present value.

#### **D. Economic Reevaluation**

9. The OEM converted the financial costs of nontradable items to economic costs using a conversion factor of 0.9.<sup>2</sup> The benefits were estimated based on increased revenues from the sale of plots, rentals, and other maintenance savings. All costs and benefits before 2002 were converted into constant 2002 prices, and future costs and benefits were estimated in constant 2002 prices. The analysis has been in local currency, using the border prices numeraire.

10. **Core Area Upgrading.** The OEM used the incremental rental values in the PCR.

<sup>2</sup> The conversions factors were taken from the PCRs for the Project and Loan 1377-NEP.

11. **Storm Water Drainage.** Incremental rental values are as used in the PCR. The road and house maintenance savings are as used in the financial reevaluation. For the open plots sold by the Government, the benefits are valued at 80% of incremental incomes, noting clogged drains in 20% of the areas.

12. **Naya Bazar Land Pooling.** The incremental rental value for an estimated 40% of the developed land of 3,786,554 sq. ft. is valued at NRs30 per sq. ft. Noting diminished benefits because the link road was cancelled, OEM estimated a total of NRs.58.1 million, comprising 80% of revenue from plots already sold. Another 32 service plots are for sale.

13. All costs and benefits have been converted to constant 2002 prices. The recalculated EIRR and NPV at the 12% discount rate are calculated in Tables A8.6–A8.8 and a summary presented in Table A8.2. The sensitivity analysis indicates that an 11% decline in incremental rental values because of poor O&M would cause the core area subcomponent to become inefficient, with an EIRR below 12%.

**Table A8.2: Summary of Economic Internal Rate of Return and Net Present Value**

Components	EIRR (%)	NPV at 12% (in NRs million)			
		Using incremental rental values with the current level of O&M	Using 20% decline in incremental rental values due to poor O&M	Sensitivity Indicator 10% decline	Switching Value
Core Area Upgrading	13.9	10.61	(8.31)	0.89	11.2
Storm Water Drainage	25.5	28.05	23.14	0.09	114.3
Naya Bazar Land Pooling	52.3	143.00	110.54	0.11	88.1

EIRR = economic internal rate of return, NPV = net present value, O&M = operation and maintenance.

Table A8.3: Financial Analysis of Core Area Upgrading Component (NRs million)

Year	Financial Costs							Financial Benefits							
	Civil Works	Machinery, Equipment	Consulting Services	O&M	Incremental Administrative Costs	Office Equipment	Total Costs	Incremental Business Tax		Incremental Property Tax		Total Returns		Incremental Benefits	
								@ 40% collection	@ 100% collection	@ 40% collection	@ 100% collection	@ 40% collection	@ 100% collection	@ 40% collection	@ 100% collection
1994							0.00	0.00		0.00		0.00	0.00	0.00	0.00
1995							0.00					0.00	0.00	0.00	0.00
1996					3.00	0.60	3.60					0.00	0.00	(3.60)	(3.60)
1997			1.80		2.20	0.80	4.80					0.00	0.00	(4.80)	(4.80)
1998	59.00			0.89	2.50		62.39					0.00	0.00	(62.39)	(62.39)
1999	51.00		1.20	1.65	3.70	1.10	58.65	3.50	8.75			3.50	8.75	(55.15)	(49.90)
2000	46.57	2.10	1.80	2.32	2.57	0.19	55.54	5.25	13.13			5.25	13.13	(50.29)	(42.42)
2001				2.32			2.32	5.25	13.13	6.70	16.75	11.95	29.88	9.63	27.56
2002				2.32			2.32	5.25	13.13	7.37	18.43	12.62	31.55	10.30	29.23
2003				2.32			2.32	5.51	13.78	8.11	20.27	13.62	34.05	11.30	31.73
2004				2.32			2.32	5.51	13.78	8.92	22.29	14.43	36.08	12.11	33.76
2005				2.32			2.32	5.51	13.78	9.81	24.52	15.32	38.30	13.01	35.99
2006				2.32			2.32	5.79	14.47	10.79	26.98	16.58	41.45	14.26	39.13
2007				2.32			2.32	5.79	14.47	11.01	27.52	16.79	41.99	14.48	39.67
2008				2.32			2.32	5.79	14.47	11.23	28.07	17.01	42.54	14.70	40.22
2009				2.32			2.32	6.08	15.19	11.45	28.63	17.53	43.82	15.21	41.51
2010				2.32			2.32	6.08	15.19	11.68	29.20	17.76	44.39	15.44	42.08
2011				2.32			2.32	6.08	15.19	11.91	29.78	17.99	44.98	15.68	42.66
2012				2.32			2.32	6.38	15.95	12.15	30.38	18.53	46.33	16.22	44.02
2013				2.32			2.32	6.38	15.95	12.39	30.99	18.78	46.94	16.46	44.63
2014				2.32			2.32	6.38	15.95	12.64	31.61	19.02	47.56	16.71	45.24
2015				2.32			2.32	6.70	16.75	12.90	32.24	19.60	48.99	17.28	46.67
2016				2.32			2.32	6.70	16.75	13.15	32.88	19.85	49.63	17.54	47.32
2017				2.32			2.32	6.70	16.75	13.42	33.54	20.12	50.29	17.80	47.98
2018				2.32			2.32	7.04	17.59	13.68	34.21	20.72	51.80	18.41	49.49
2019				2.32			2.32	7.04	17.59	13.96	34.90	20.99	52.49	18.68	50.17
2020				2.32			2.32	7.04	17.59	14.24	35.59	21.27	53.18	18.96	50.87
2021				2.32			2.32	7.39	18.47	14.52	36.31	21.91	54.77	19.59	52.46
2022				2.32			2.32	7.39	18.47	14.81	37.03	22.20	55.50	19.88	53.19
2023				2.32			2.32	7.39	18.47	15.11	37.77	22.50	56.24	20.18	53.93
2024				2.32			2.32	7.76	19.39	15.41	38.53	23.17	57.92	20.85	55.60
													FIRR	5.9%	17.5%
													NPV @8%	(24.14)	138.29

FIRR = financial internal rate of return, O&amp;M = operation and maintenance, NPV = net present value.

Table A8.4: Financial Analysis of Storm Drain (NRs million)

Year	Financial Costs								Financial Benefits								
	Civil Works	Machinery, Equipment	Consulting Services	O&M	Incremental Administrative Costs	Office Equip-ment	Avoided Road Maintenance Cost	Total Costs	Increased Business Tax		Increased Property Tax		Other Taxes (Building Permit)	Total Returns		Incremental Benefits	
									@ 40% collection	@ 100% collection	@ 40% collection	@ 100% collection		@ 40% collection	@ 100% collection	@ 40% collection	@ 100% collection
1994								0.00	0.00		0.00			0.00	0.00	0.00	0.00
1995								0.00						0.00	0.00	0.00	0.00
1996					2.70	0.50		3.20						0.00	0.00	(3.20)	(3.20)
1997	27.00		2.80	0.41	1.70	0.60		32.51						0.00	0.00	(32.51)	(32.51)
1998	42.00		1.00	1.04	2.30			46.34						0.00	0.00	(46.34)	(46.34)
1999	40.30		2.70	1.64	3.10	0.90		48.64	0.40	1.00				0.40	1.00	(48.24)	(47.64)
2000	2.95	4.76	1.05	1.68	2.10	0.19	1.76	10.97	0.90	2.25	0.88	2.20	0.90	2.68	5.35	(8.29)	(5.62)
2001				1.68			1.76	-0.08	1.80	4.50	1.76	4.40	0.90	4.46	9.80	4.54	9.88
2002				1.68			1.76	-0.08	1.98	4.95	1.94	4.84	0.90	4.82	10.69	4.89	10.77
2003				1.68			1.76	-0.08	2.18	5.45	2.13	5.32	0.99	5.30	11.76	5.37	11.84
2004				1.68			1.76	-0.08	2.40	5.99	2.34	5.86	0.99	5.73	12.84	5.80	12.91
2005				1.68			1.76	-0.08	2.64	6.59	2.58	6.44	0.99	6.20	14.02	6.28	14.10
2006				1.68			1.76	-0.08	2.90	7.25	2.83	7.09	1.09	6.82	15.42	6.90	15.50
2007				1.68			1.76	-0.08	2.96	7.39	2.89	7.23	1.09	6.94	15.71	7.01	15.79
2008				1.68			1.76	-0.08	3.02	7.54	2.95	7.37	1.09	7.05	16.00	7.13	16.08
2009				1.68			1.76	-0.08	3.08	7.69	3.01	7.52	1.20	7.28	16.41	7.36	16.48
2010				1.68			1.76	-0.08	3.14	7.84	3.07	7.67	1.32	7.52	16.83	7.60	16.91
2011				1.68			1.76	-0.08	3.20	8.00	3.13	7.82	1.45	7.78	17.27	7.86	17.35
2012				1.68			1.76	-0.08	3.26	8.16	3.19	7.98	1.59	8.05	17.74	8.13	17.81
2013				1.68			1.76	-0.08	3.33	8.32	3.26	8.14	1.75	8.34	18.22	8.42	18.29
2014				1.68			1.76	-0.08	3.40	8.49	3.32	8.30	1.93	8.65	18.72	8.72	18.80
2015				1.68			1.76	-0.08	3.46	8.66	3.39	8.47	2.12	8.97	19.25	9.05	19.33
2016				1.68			1.76	-0.08	3.53	8.83	3.46	8.64	2.33	9.32	19.81	9.40	19.88
2017				1.68			1.76	-0.08	3.60	9.01	3.52	8.81	2.57	9.70	20.39	9.77	20.47
2018				1.68			1.76	-0.08	3.68	9.19	3.59	8.99	2.82	10.10	21.00	10.17	21.08
2019				1.68			1.76	-0.08	3.75	9.38	3.67	9.17	3.11	10.52	21.65	10.60	21.73
2020				1.68			1.76	-0.08	3.83	9.56	3.74	9.35	3.42	10.98	22.33	11.06	22.41
2021				1.68			1.76	-0.08	3.90	9.75	3.81	9.54	3.76	11.48	23.05	11.55	23.13
2022				1.68			1.76	-0.08	3.98	9.95	3.89	9.73	4.14	12.01	23.81	12.08	23.89
2023				1.68			1.76	-0.08	4.06	10.15	3.97	9.92	4.55	12.58	24.62	12.65	24.70
2024				1.68			1.76	-0.08	4.14	10.35	4.05	10.12	5.00	13.19	25.48	13.27	25.55
														FIRR		2.6%	8.6%
														NPV@8%		(47.85)	6.76

FIRR = financial internal rate of return, O&amp;M = operation and maintenance, NPV = net present value.



Table A8.5: Financial Analysis of Naya Bazar Land Pooling (NRs million)

Year	Financial Costs							Financial Benefits									
	Civil Works	Machinery, Equipment	Consulting Services	O&M	Incremental Administrative Costs	Office Equip-ment	Total Costs	Sale of Plots	Property Tax		Business Tax		Other Tax (Building Permit)	Total Returns		Incremental Benefit With Project	
									@ 40% collection	@ 100% collection	@ 40% collection	@ 100% collection		@ 40% collection	@ 100% collection	@ 40% collection	@ 100% collection
1994								0.00					0.00	0.00	0.00	0.00	0.00
1995							0.00	0.00						0.00	0.00	0.00	0.00
1996					1.30	0.40	1.70	0.00						0.00	0.00	(1.70)	(1.70)
1997	0.70	2.70	0.50	0.01	1.10	0.40	5.41	0.00						0.00	0.00	(5.41)	(5.41)
1998	6.50		0.30	0.11	1.00		7.91	0.00						0.00	0.00	(7.91)	(7.91)
1999	32.20	0.10	1.80	0.59	1.70	0.60	36.99	0.00						0.00	0.00	(36.99)	(36.99)
2000	34.76	0.57	3.24	1.09	1.24	0.10	40.99	16.50	0.88	2.20				17.38	18.70	(23.61)	(22.29)
2001				1.09			1.09	15.50	1.76	4.40	2.90	7.25	0.57	20.73	27.72	19.64	26.63
2002				1.09			1.09	14.50	1.94	4.84	3.19	7.98	0.57	20.19	27.88	19.11	26.80
2003				1.09			1.09	13.50	2.13	5.32	3.51	8.77	0.57	19.71	28.16	18.62	27.08
2004				1.09			1.09		2.34	5.86	3.86	9.65	0.57	6.77	16.07	5.68	14.99
2005				1.09			1.09		2.58	6.44	4.25	10.61	0.57	7.39	17.62	6.30	16.54
2006				1.09			1.09		2.83	7.09	4.67	11.68	0.57	8.07	19.33	6.99	18.24
2007				1.09			1.09		2.89	7.23	4.76	11.91	0.57	8.22	19.71	7.14	18.62
2008				1.09			1.09		2.95	7.37	4.86	12.15	0.57	8.38	20.09	7.29	19.00
2009				1.09			1.09		3.01	7.52	4.96	12.39	0.57	8.53	20.48	7.44	19.39
2010				1.09			1.09		3.07	7.67	5.06	12.64	0.57	8.69	20.88	7.60	19.79
2011				1.09			1.09		3.13	7.82	5.16	12.89		8.29	20.72	7.20	19.63
2012				1.09			1.09		3.19	7.98	5.26	13.15		8.45	21.13	7.36	20.04
2013				1.09			1.09		3.26	8.14	5.36	13.41		8.62	21.55	7.53	20.46
2014				1.09			1.09		3.32	8.30	5.47	13.68		8.79	21.98	7.71	20.90
2015				1.09			1.09		3.39	8.47	5.58	13.95		8.97	22.42	7.88	21.34
2016				1.09			1.09		3.46	8.64	5.69	14.23		9.15	22.87	8.06	21.78
2017				1.09			1.09		3.52	8.81	5.81	14.52		9.33	23.33	8.24	22.24
2018				1.09			1.09		3.59	8.99	5.92	14.81		9.52	23.80	8.43	22.71
2019				1.09			1.09		3.67	9.17	6.04	15.10		9.71	24.27	8.62	23.18
2020				1.09			1.09		3.74	9.35	6.16	15.41		9.90	24.76	8.82	23.67
2021				1.09			1.09		3.81	9.54	6.29	15.71		10.10	25.25	9.01	24.16
2022				1.09			1.09		3.89	9.73	6.41	16.03		10.30	25.76	9.22	24.67
2023				1.09			1.09		3.97	9.92	6.54	16.35		10.51	26.27	9.42	25.18
2024				1.09			1.09		4.05	10.12	6.67	16.68		10.72	26.80	9.63	25.71
															FIRR	12.0%	23.5%
															NPV@8%	15.59	85.32

FIRR = financial internal rate of return, O&amp;M = operation and maintenance, NPV = net present value.

**Table A8.6: Economic Analysis of Core Area Upgrading Component (NRs million)  
Constant 2002 Prices**

Year	Economic Costs							Economic Benefits		
	Civil Works	Machinery, Equipment	Consulting Services	O&M	Incremental Administrative Costs	Office Equipment	Total Costs	Increased Rental Value	Total Returns	Incremental Benefits
1994							0.00	0.00	0.00	0.00
1995							0.00		0.00	0.00
1996					2.25	0.40	2.65		0.00	(2.65)
1997			1.23	0.00	1.76	0.58	3.57		0.00	(3.57)
1998	44.36			0.67	2.09		47.11		0.00	(47.11)
1999	41.69		0.93	1.35	3.36	0.90	48.22		0.00	(48.22)
2000	39.55	1.68	1.44	1.97	2.43	0.16	47.23	21.70	21.70	(25.53)
2001				2.02			2.02	21.50	21.50	19.48
2002				2.08			2.08	24.41	24.41	22.33
2003				2.08			2.08	24.41	24.41	22.33
2004				2.08			2.08	24.41	24.41	22.33
2005				2.08			2.08	24.41	24.41	22.33
2006				2.08			2.08	24.41	24.41	22.33
2007				2.08			2.08	24.41	24.41	22.33
2008				2.08			2.08	24.41	24.41	22.33
2009				2.08			2.08	24.41	24.41	22.33
2010				2.08			2.08	24.41	24.41	22.33
2011				2.08			2.08	24.41	24.41	22.33
2012				2.08			2.08	24.41	24.41	22.33
2013				2.08			2.08	24.41	24.41	22.33
2014				2.08			2.08	24.41	24.41	22.33
2015				2.08			2.08	24.41	24.41	22.33
2016				2.08			2.08	24.41	24.41	22.33
2017				2.08			2.08	24.41	24.41	22.33
2018				2.08			2.08	24.41	24.41	22.33
2019				2.08			2.08	24.41	24.41	22.33
2020				2.08			2.08	24.41	24.41	22.33
2021				2.08			2.08	24.41	24.41	22.33
2022				2.08			2.08	24.41	24.41	22.33
2023				2.08			2.08	24.41	24.41	22.33
2024				2.08			2.08	24.41	24.41	22.33
								<b>EIRR</b>		<b>13.9%</b>
								<b>NPV@12%</b>		<b>10.61</b>

EIRR = economic internal rate of return, O&M = operation and maintenance, NPV = net present value.

**Table A8.7: Economic Analysis of Storm Water Drainage Component (NRs million)**  
**Constant 2002 Prices**

Year	Economic Costs									Economic Benefits				
	Civil Works	Machinery, Equipment	Consulting Services	O&M	Incremental Administrative Costs	Office Equipment	Avoided Road Maintenance Cost	Avoided House Maintenance Cost	Total Costs	Incremental Income from Sale of Plots	Increased Rental Value	Incremental Health Benefits	Total Returns	Incremental Benefits
1994									0.00	0.00			0.00	0.00
1995									0.00				0.00	0.00
1996					2.02	0.34			2.36				0.00	(2.36)
1997				0.00	1.36	0.43			1.79				0.00	(1.79)
1998	20.30		2.34	0.30	1.92				24.86				0.00	(24.86)
1999	34.33		0.91	0.85	2.82	0.74			39.64				0.00	(39.64)
2000	34.23		2.55	1.39	1.98	0.16	1.66	0.75	37.89	35.41	6.13	0.10	41.64	3.75
2001	2.58	3.93	1.02	1.47			1.71	0.78	6.52	36.45	6.08	0.10	42.62	36.11
2002				1.52			1.76	0.80	(1.04)	37.52	6.20	0.10	43.82	44.86
2003				1.52			1.76	0.80	(1.04)	37.52	6.20	0.20	43.92	44.96
2004				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2005				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2006				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2007				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2008				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2009				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2010				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2011				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2012				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2013				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2014				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2015				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2016				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2017				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2018				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2019				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2020				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2021				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2022				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2023				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
2024				1.52			1.76	0.80	(1.04)		6.20	0.20	6.40	7.44
													EIRR	25.5%
													NPV@12%	28.05

EIRR = economic internal rate of return, O&M = operation and maintenance, NPV = net present value.

**Table A8.8: Economic Analysis of Naya Bazar Land Pooling (NRs million)  
Constant 2002 Prices**

Year	Economic Costs							Economic Benefits			
	Civil Works	Machinery, Equipment	Consulting Services	O&M	Incremental Administrative Costs	Office Equipment	Total Costs	Incremental Income from Sale of Plots	Increased Rental Value	Total Returns	Incremental Benefit
1994							0.00			0.00	0.00
1995							0.00			0.00	0.00
1996					0.97	0.32	1.29			0.00	(1.29)
1997	0.50	1.95	0.40	0.01	0.88	0.32	4.06			0.00	(4.06)
1998	4.89	0.00	0.25	0.08	0.84	0.00	6.05			0.00	(6.05)
1999	26.32	0.08	1.63	0.48	1.54	0.48	30.54			0.00	(30.54)
2000	29.52	0.49	3.06	0.92	1.17	0.08	35.23			0.00	(35.23)
2001				0.95			0.95	45.15	44.14	89.29	88.34
2002				0.98			0.98		46.35	46.35	45.37
2003				0.98			0.98		46.35	46.35	45.37
2004				0.98			0.98		46.35	46.35	45.37
2005				0.98			0.98	16.52	46.35	62.87	61.89
2006				0.98			0.98		46.35	46.35	45.37
2007				0.98			0.98		46.35	46.35	45.37
2008				0.98			0.98		46.35	46.35	45.37
2009				0.98			0.98		46.35	46.35	45.37
2010				0.98			0.98		46.35	46.35	45.37
2011				0.98			0.98		46.35	46.35	45.37
2012				0.98			0.98		46.35	46.35	45.37
2013				0.98			0.98		46.35	46.35	45.37
2014				0.98			0.98		46.35	46.35	45.37
2015				0.98			0.98		46.35	46.35	45.37
2016				0.98			0.98		46.35	46.35	45.37
2017				0.98			0.98		46.35	46.35	45.37
2018				0.98			0.98		46.35	46.35	45.37
2019				0.98			0.98		46.35	46.35	45.37
2020				0.98			0.98		46.35	46.35	45.37
2021				0.98			0.98		46.35	46.35	45.37
2022				0.98			0.98		46.35	46.35	45.37
2023				0.98			0.98		46.35	46.35	45.37
2024				0.98			0.98		46.35	46.35	45.37
										<b>EIRR</b>	<b>52.3%</b>
										<b>NPV@12%</b>	<b>143.00</b>

EIRR = economic internal rate of return, O&M = operation and maintenance, NPV = net present value.