



Report and Recommendation of the President to the Board of Directors

Project Number: 29466-02
November 2006

Proposed Supplementary Loan India: Kolkata Environmental Improvement Project

CURRENCY EQUIVALENTS

(as of 13 November 2006)

Currency Unit	–	Indian rupee/s (Re/Rs)
Re1.00	=	\$0.0224
\$1.00	=	Rs44.71

ABBREVIATIONS

ADB	–	Asian Development Bank
BME	–	benefit monitoring and evaluation
DFID	–	Department for International Development of the United Kingdom
DSC	–	design and construction supervision consultant
DWF	–	dry weather flow
EIRR	–	economic internal rate of return
EKW	–	East Kolkata Wetlands
EMP	–	environmental management plan
FY	–	fiscal year
GoWB	–	Government of West Bengal
IEE	–	initial environmental examination
I&WD	–	Irrigation and Waterways Department
KMC	–	Kolkata Municipal Corporation
KMDA	–	Kolkata Metropolitan Development Corporation
LA	–	loan agreement
LIBOR	–	London interbank offered rate
NGO	–	nongovernment organization
O&M	–	operation and maintenance
OCR	–	ordinary capital resources
PMC	–	project management consultant
PMU	–	project management unit
S&D	–	sewerage and drainage
SDU	–	Social Development Unit
STP	–	sewage treatment plant
SWF	–	storm water flow
TA	–	technical assistance
VAMBAY	–	Valmiki Ambedkar Shahari Aawas Yojna

WEIGHTS AND MEASURES

lps	–	liters per second
MLD	–	million liters per day

NOTES

- (i) The fiscal year (FY) of the Government of India ends on 31 March. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2000 ends on 31 March 2000.
- (ii) In this project, "\$" refers to US dollars.

Vice President	L. Jin, Operations 1
Director General	K. Senga, South Asia Department (SARD)
Director	H. Kim, Urban Development Division, SARD
Team leader	K. Tamaki, Senior Urban Development Specialist, SARD
Team members	A. Djusupbekova, Senior Counsel, Office of the General Counsel
	T. Gallego-Lizon, Urban Development Specialist, SARD
	M. Otsuka, Economist, SARD
	M. Tsuji, Senior Environmental Officer, Regional Sustainable Development Department

CONTENTS

	Page
LOAN AND PROJECT SUMMARY	iii
MAP	ix
I. THE PROPOSAL	1
II. THE APPROVED PROJECT	1
A. Project Rationale	1
B. Objectives and Scope	2
C. Cost Estimates and Financing Plan	2
D. Status and Progress of Project Implementation	4
III. THE PROPOSED SUPPLEMENTARY LOAN	7
A. Cost Overrun	7
B. Key Physical Changes and Design Modifications	8
C. Impact on the Project	8
D. Rationale for the Proposed Supplementary Loan	9
E. Safeguards	10
F. Revised Cost Estimates	11
G. Revised Financing Plan	11
H. Remedial Steps	13
I. Implementation Arrangements	13
IV. PROJECT BENEFITS, IMPACTS, ASSUMPTIONS, AND RISKS	16
A. Benefits and Impacts	16
B. Assumptions and Risks	18
V. ASSURANCES	19
A. Specific Assurances	19
VI. RECOMMENDATION	20
APPENDIXES	
1. Revised Design and Monitoring Framework	21
2. Capacity Assessment of Executing Agencies	23
3. Implementation Progress Summary	26
4. Status of Compliance with Loan Covenants	30
5. Price Escalation and Cost Overrun Analysis	34
6. Summary of Physical Changes and Design Modifications	36
7. Procurement Plan	39
8. Revised Implementation Schedule	42
9. Summary Poverty Reduction and Social Strategy	43
10. Summary of Updated Resettlement Plan	47
11. Detailed Cost Estimates	54
12. Revised Economic Analysis	56
13. Good Governance and Anticorruption Measures Adopted by the Project	60

SUPPLEMENTARY APPENDIXES (available on request)

- A. Compliance Review of Environmental Safeguards Implementation
- B. Compliance Review of Resettlement Plan
- C. Updated Resettlement Plan
- D. Revised Initial Environmental Examination
- E. Revised Summary Initial Environmental Examination
- F. Detailed Implementation Program
- G. Outline Terms of Reference for Additional Consulting Requirements
- H. Revised Financial Analysis

LOAN AND PROJECT SUMMARY

Borrower	India
Classification	Targeting classification: Targeted intervention Sectors: Water supply, sanitation, and waste management Subsector: Integrated Themes: Inclusive social development, environmental sustainability, and sustainable economic growth Subthemes: Human development, urban environment, and urban development
Environment Assessment	Category B: sensitive. An initial environmental examination (IEE) and an Environmental Management Plan have been undertaken. A summary IEE was circulated to the Asian Development Bank's (ADB's) Board of Directors and posted on the ADB website on 7 August 2006.
Project Description	The supplementary loan for the Kolkata Environmental Improvement Project (the Project) will support the Kolkata Municipal Corporation (KMC) in achieving the original scope and objectives of the Project: the Calcutta (Kolkata) Environmental Improvement Project (Loan 1813-IND). The Project will continue to (i) improve environmental conditions in the outer areas of Kolkata, (ii) reduce poverty in low-income areas through affordable access to basic urban services, (iii) facilitate community empowerment through participatory processes, (iv) protect the environment from adverse developmental impacts, and (v) help the KMC develop as a proficient and autonomous municipality. The Project will contribute to achieving the targets of the Millennium Development Goals (MDGs), in particular MDG 7.
Rationale	<p>Despite initial delays and the subsequent cancellation of part of the loan proceeds, implementation of the Project is now in full swing, and there are strong justifications for providing the supplementary loan. The executing agencies have overcome the steep initial learning curve and are now well equipped to complete the scope of the Project as proposed. The Government of West Bengal (GoWB) is strongly committed, and during the last 18 months, substantial strengthening of project management has been apparent. As of 10 November 2006, under ADB's financing, contracts worth \$120.7 million have already been awarded, and the remaining contracts are being tendered. Disbursements will soon follow. The request for supplementary financing meets the criteria under the ADB's policy for supplementary financing¹ as demonstrated by the following:</p> <ul style="list-style-type: none">(i) The Project is a priority for both the GoWB and the Government of India's development strategy.(ii) The timely provision of funds is critical for maintaining the current momentum and the positive impacts that are already apparent as a result of the Project. The supplementary loan

¹ ADB. 2005. *A Review of the Policy on Supplementary Financing: Addressing Challenges and Broader Needs*. Manila.

is needed to complete improvements in sewerage, drainage, and canal works in an integral manner for the entire area. If the full project scope were not completed, the impacts and objectives envisaged for the Project would be seriously undermined, for instance, some facilities currently under construction would be underutilized or redundant.

- (iii) The continued value-added involvement of ADB in this Project will ensure that the unique ecological characteristics of the East Kolkata Wetlands (EKW) are maintained through the application of ADB's *Environment Policy* (2002) and its accumulated knowledge. In August 2002, the EKW, into which some of the treated wastewater from the project areas (from Borough VII, part of Borough XI, and Borough XII) is designed to be discharged, was included in the list maintained by the Ramsar Bureau established under Article 8 of the Ramsar Convention, which recognizes the EKW as a "wetland of international importance" (site number 1208) for its approach to treating the city of Kolkata's wastewater, whereby it efficiently recovers nutrients from the wastewater and uses the treated water for pisciculture (fish farming) and agriculture. This intervention has a significant demonstration effect as an urban sector, eco-friendly, best practice that could be maximized in India.
- (iv) The Project remains technically feasible, economically and financially viable, and complies with ADB's safeguard requirements. By rationalizing and extending the coverage to a new borough, the most congested and rapidly expanding area of Kolkata's outer peripheries, the Project enhances and further strengthens the Project's original objectives and extends its benefits to more than 150,000 additional beneficiaries than originally envisaged.
- (v) The due diligence matrix for ADB's policy on supplementary financing has been observed for all steps, and all new or revised policies approved by ADB's Board of Directors since the original appraisal of the Project have been taken into consideration as required by the policy on supplementary financing.
- (vi) The provision of this supplementary loan allows ADB to continue to assist the GoWB in its governance and anticorruption reforms and to enhance its long-term relationship with the GoWB.
- (vii) The financial health of both the KMC and the GoWB is sound as demonstrated by the financial analysis.

Impact and Outcome

The overall impact of the Project is sustained improvement in the environmental health and quality of life of residents of the city of Kolkata. The outcomes of the Project are (i) the provision of sewerage and drainage facilities for more than 2 million people, (ii) an improvement in environmental conditions and reduced

flooding incidents in Kolkata, (iii) an improvement in solid waste management services for more than 5 million people, (iv) the enhancement of basic urban services for 0.2 million slum dwellers, and (v) an improvement in the financial sustainability of the KMC whereby it can meet all operation and maintenance costs of urban services for which it is responsible.

Project Investment Plan	The revised total investment cost of the Project is estimated at \$401.4 million, including taxes, duties, and physical and price contingencies, of which the investment cost under the proposed supplementary loan is \$113.6 million. The supplementary loan from ADB financing is proposed to amount to \$80 million. With the proposed supplementary loan, ADB will cover 64.2% of the total investment requirement for the Project.
Financing Plan	A supplementary loan of \$80 million from the ordinary capital resources of ADB will be provided under ADB's London interbank offered rate (LIBOR)-based lending facility. The supplementary loan will be fully synchronized with the original loan, and will have a term of 19 years, an interest rate determined with ADB's LIBOR-based lending facility, a commitment charge of 0.75% per year, and any other terms and conditions set forth in the Loan and Project Agreements.
Allocation and Relending Terms	Under the revised financing arrangements, the two ADB loans will cover 64.2% of the total investment costs. Of the total investment cost, the GoWB will finance 18.5% and the KMC will finance 17.3%. The Government of India will pass the proposed supplementary loan on to the GoWB as 70% debt on the same terms and conditions as for the original loan and 30% grant. The GoWB will then onlend the full amount of the loan portion to the KMC on the same terms and conditions as for the original loan, while the grant portion will also be passed on to the KMC as a grant.
Period of Utilization	31 December 2010
Estimated Project Completion Date	30 June 2010
Implementation Arrangements	Implementation arrangements for the proposed supplementary loan will remain the same as for the original loan for the Project. The two project management units (PMUs) established under each of the executing agencies—the KMC and the Irrigation and Waterways Department—will continue to implement the respective components of the Project, i.e., the Irrigation and Waterways Department PMU will continue to be responsible for implementing canal works and the KMC PMU will continue to be responsible for implementing all the remaining works under the Project. To streamline project management and speed up implementation, the KMC will act as the lead executing agency responsible for overall project planning, budgeting, reporting, and execution and will be ADB's primary point of contact for the Project period.
Executing Agencies	Kolkata Municipal Corporation and Irrigation and Waterways Department

Procurement

Procurement of all goods and services under the proposed supplementary loan will be carried out in accordance with ADB's *Procurement Guidelines* (April 2006, as amended from time to time). All civil works contracts estimated to cost \$10 million equivalent or more will be procured on the basis of international competitive bidding procedures, and civil works contracts estimated to cost less than \$10 million will be procured using national competitive bidding procedures. Procurement of goods will, to the extent practicable, be grouped into packages larger than \$1 million to be suitable for international competitive bidding procedures. Goods that cannot be grouped into larger contracts and are estimated to cost less than \$1 million per contract will be procured following national competitive bidding or limited international bidding procedures, and miscellaneous minor goods estimated to cost less than \$100,000 will be purchased following shopping procedures. All civil works, equipment purchases, and consulting contracts under the proposed supplementary loan will be separate from contracts under the original loan for the Project.

Consulting Services

Under the original loan for the Project, and following ADB's quality-based selection procedures, an international consulting firm has already been engaged as the project management consultant and a national consulting firm has been engaged as the design and construction supervision consultant. Additional consulting services—63 person-months for the project management consultant and 367 person-months for the design and construction supervision consultant—will be required to implement the Project, including works under the proposed supplementary loan. The proposed additional consulting services will be provided by the current consulting firms, which will be engaged under the supplementary loan through single source selection procedures following ADB's *Guidelines on the Use of Consultants* (April 2006, as amended from time to time). Each of the firms will be requested to provide a biodata technical proposal for review by the KMC and ADB and for subsequent negotiations. In addition, a national firm will be engaged as creative consultants for 30 person-months in accordance with ADB's *Guidelines on the Use of Consultants* using quality- and cost-based selection procedures.

Project Benefits and Beneficiaries

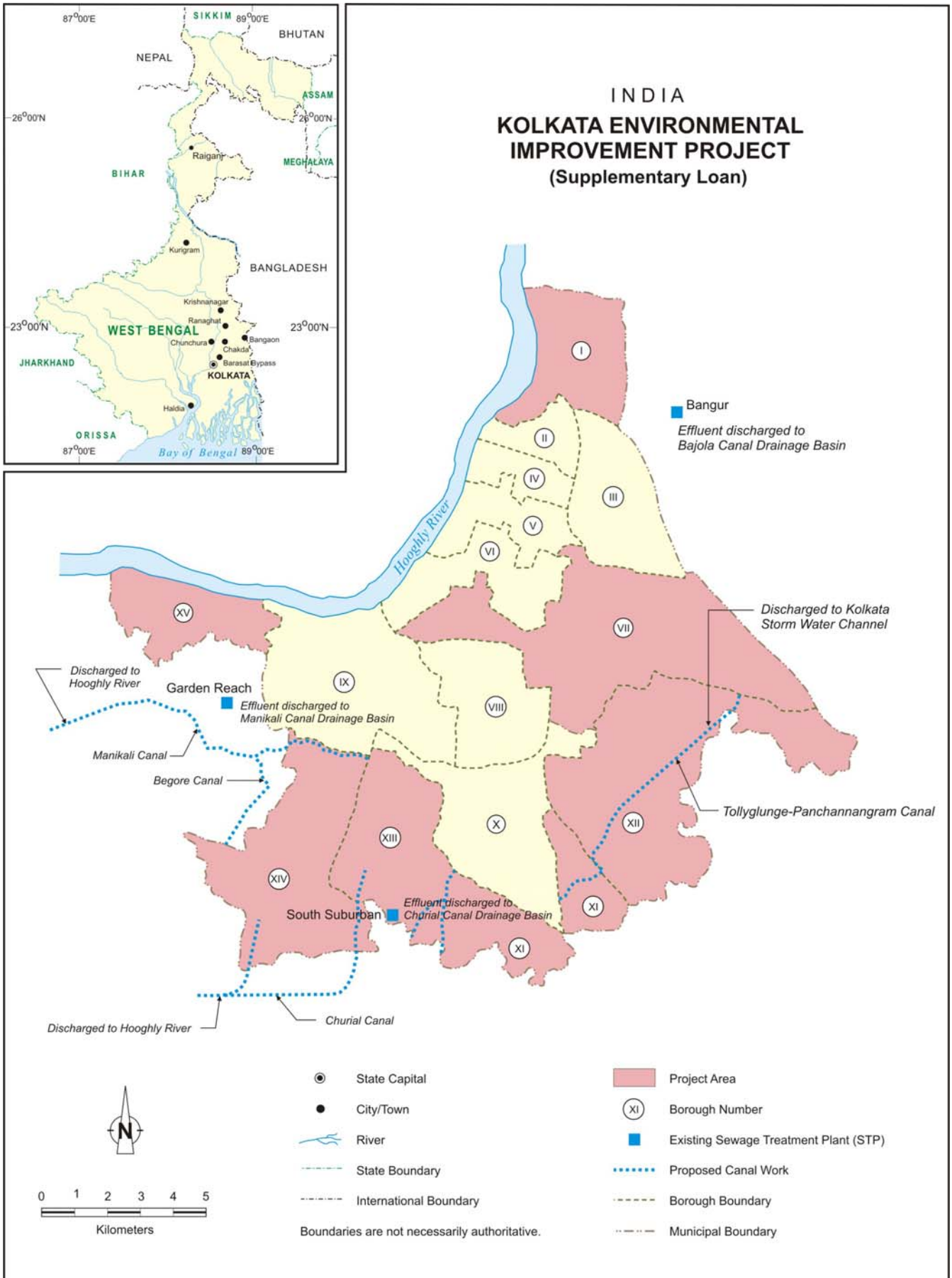
The Project will provide sewerage and drainage facilities for more than 2 million people, improved environmental conditions and solid waste management services for more than 5 million people, and enhanced basic urban services for 0.2 million slum dwellers. With an increase in the number of beneficiaries by more than 150,000 and in the number of property connections to sewer lines by 30,200 (the original target was 90,000 whereas the revised target is 120,200), the proposed supplementary loan will further refine the Project's scope, coverage, and benefits.

Risks and Assumptions

Risks and assumptions originally identified under the Project were reassessed to establish continued and additional risks to the Project, including those specific to the proposed supplementary loan, and mitigation measures are proposed. Key risks identified during the original Project appraisal pertained to (i) land acquisition, (ii) user

charges, (iii) rationalization of the KMC's staff, (iv) property tax reforms, and (v) state of the GoWB's finances. Significant progress with land acquisition for the Project, comprehensive analysis of the financial soundness of the GoWB and the KMC, and progress with the KMC Capacity-Building Program under the Department for International Development of the United Kingdom grant provide adequate assurances that risks (i), (iii), and (v) have been minimized, including for the supplementary loan. With regard to property tax reforms, the KMC has already prepared and ratified the necessary legal documents and forwarded them to the legal assembly of the GoWB. The GoWB has provided assurances that a relevant act will be effected by the end of fiscal year 2007. Furthermore, the original objective of property tax reforms was to strengthen the ailing financial standing of the GoWB, which is not the case anymore, as demonstrated by the new financial analysis of the GoWB and the KMC. The loan covenant on introducing user charges for domestic water and sewerage consumption is still outstanding, and the risk in relation to this aspect of the Project remains. To minimize this risk, a phased and realistic road map for tariff implementation, with firm milestones, has been agreed with the GoWB and the KMC to achieve the original objectives of the Project. Such a road map has been reflected in additional covenants in the proposed Loan Agreement for supplementary financing.

The risk of delayed implementation, as experienced in the early years of Project implementation, is minimal, as the capacity and mandate of the PMUs were significantly enhanced in the last 2 years and the PMUs have already completed detailed design, tender document preparation, and land acquisition for all the remaining major contracts under the Project, including contracts under the proposed supplementary loan.



I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed supplementary loan to India for the Kolkata Environmental Improvement Project.¹ A revised design and monitoring framework is in Appendix 1.

II. THE APPROVED PROJECT

A. Project Rationale

2. According to India's 2001 population census, more than 285 million people (27.8% of the total population) live in urban areas. Given current trends in population growth and migration, the urban population is estimated to reach 575 million by 2030. Estimates indicate that the urban sector contributes 50–52% of India's gross domestic product. Sixty-five percent of employment in trade, commerce, and financial services; 65% of manufacturing employment; and 68% of transport sector employment are concentrated in urban areas. Despite the significance of the urban sector, poverty, inadequate urban infrastructure and services, and environmental degradation are widespread in India's cities. Poor urban management is not only undermining India's ability to deliver a good quality of life to its citizens, but is also constraining potential local and national economic growth. Estimates indicate that one third of India's urban population lives below the poverty line. The provision of basic infrastructure facilities and services, and consequent environmental health conditions, is poor for many segments of society, but especially for those living in slums and poorer communities, where conditions are rapidly deteriorating. The need for a strong focus on and accelerated investment in urban development is clear.

3. Kolkata, the capital of the state of West Bengal, is one of India's most populous cities. According to the 2001 census, Kolkata has a population of 4.58 million, while the urban agglomeration as a whole houses an estimated 13.20 million people. Kolkata's municipal administration dates back to 1727. The Kolkata Municipal Corporation (KMC) Act (1980) is a progressive piece of legislation that contains many of the reforms currently under consideration in India's urban sector and was enacted well before the 74th Constitutional Amendment Act, which delegated power to from the central Government to local bodies. The KMC is made up of 15 boroughs subdivided into 141 wards. Some 36,000 executive officers and staff carry out the municipality's functions.

4. The KMC's average population density is more than 24,000 people per square kilometer, one of the highest population densities in India. While more than 85% of the KMC's population has access to piped water, only 50% of the KMC's population has a sewer connection, and in the outer areas this figure drops to about 17%. Sewage and storm water from the inner core area of Kolkata are conveyed by artificially created channels referred to as dry weather flow (DWF) channels and storm water flow channels, respectively. Both types of channels flow through the East Kolkata Wetlands (EKW) before eventually entering the Kulti River. Kolkata's flat topography necessitates pumping virtually all sewage and storm water to the points of discharge: either sewage treatment plants (STPs) or the DWF and storm water flow channels. The flat topography also leads to severe and rapid silting of many of the channels, which aggravates flooding. The extent of solid waste collection is quite high in the inner core areas, covering about 70–90% of the urban population, whereas collection efficiency in the outer areas is much lower. Registered *bustees* (slum or low-income communities) represent around 30% of the population, with unregistered *bustees* and illegal squatters accounting for approximately an additional 9%.

5. In the 1990s, faced with severe environmental degradation and a growing urban poverty problem, the Government of West Bengal (GoWB) prepared two long-term documents: the *Basic*

¹ The name of the original Project was the Calcutta Environmental Improvement Project, which has now been changed to the Kolkata Environmental Improvement Project, because the name of the city has changed officially from Calcutta to Kolkata.

Development Plan and the Master Plan for Water Supply, Sewerage, and Drainage, Kolkata Metropolitan District (1996–2001). These plans, which address the institutional and planning aspects of development as well as its physical investment requirements, have since been progressively implemented. Kolkata has also benefited from India's Megacity Scheme, which promotes the establishment of revolving funds for sustained investment in urban infrastructure through the adoption of direct and indirect cost-recovery measures, and the Bustee Improvement Program, whose implementation began in 1970 and focuses on sanitation. Loan 1813-IND: Calcutta (Kolkata) Environmental Improvement Project² was founded on these plans and schemes and takes Kolkata's pressing urban needs into account.

B. Objectives and Scope

6. On 19 December 2000, the Asian Development Bank (ADB) approved the Calcutta (Kolkata) Environmental Improvement Project (the Project) for \$250 million to help the GoWB improve sanitation in the outer areas of the municipality of Kolkata. The Project became effective on 16 April 2002 and has a closing date of 31 December 2007. The Project components are (i) part A: stakeholder consultation program, (ii) part B: sewerage and drainage (S&D) improvements, (iii) part C: solid waste management, (iv) part D: slum improvements, (v) part E: canal improvements, and (vi) part F: implementation assistance and capacity building. In parallel, a \$42 million Department for International Development (DFID) of the United Kingdom grant is supporting modernization and strengthening of the KMC. The project area covers boroughs I, VII, XI, XII, XIII, XIV, and XV for part B, while physical works under parts A, C, D, E, and F cover different boroughs.

7. The Project's objectives are to (i) improve environmental conditions in the outer areas of Kolkata, (ii) reduce poverty in low-income areas by means of affordable access to basic urban services, (iii) facilitate community empowerment through participatory processes, (iv) protect the environment from adverse developmental impacts, and (v) help the KMC develop into a proficient and autonomous municipality.³

C. Cost Estimates and Financing Plan

8. The total cost of the Project was estimated at \$360 million equivalent, including duties and taxes. Tables 1 and 2 summarize the original cost estimates and the financing plan, respectively.

9. Of the total cost of \$360 million, ADB provided a loan of \$250 million (the original loan) from its ordinary capital resources (OCR), representing approximately 69% of the total original project cost. The original loan was for a term of 25 years, including a grace period of 6 years. The original loan, which initially consisted of a pool-based loan and a London interbank offered rate (LIBOR)-based loan, was changed in July 2002 to an entirely LIBOR-based loan, and the amortization schedule was adjusted accordingly as determined in accordance with interest rates under ADB's LIBOR-based loan regulations.

10. The Government of India passed the original loan to the GoWB as 70% (\$175 million) debt and 30% (\$75 million) grant. GoWB then onlent the full amount of the loan portion to KMC on terms acceptable to ADB, while the grant portion was passed on to KMC also as a grant. In addition, the GoWB provided further budgetary support of \$54.6 million, of which \$9.17 million was allocated to the Irrigation and Waterways Department (I&WD), the second executing agency for the Project (the KMC was the first), as a grant to meet the cost of canal improvements and resettlement, and \$45.43 million was allocated as a grant to the KMC.

² ADB. 2000. *Report and Recommendation of the President on a Proposed Loan to India for the Calcutta Environmental Improvement Project*. Manila.

³ Contributing to the achievement of Millennium Development Goal 7.

Table 1: Summary of Original Project Cost Estimates
(\$ million)

Item	Foreign Exchange	Local Currency	Total Cost
A. Base Cost^a			
1. Part A: Stakeholder Consultation Program	0.0	0.3	0.3
2. Part B: Sewerage and Drainage Improvements	34.5	110.4	144.9
3. Part C: Solid Waste Management	13.8	17.8	31.6
4. Part D: Slum Improvements	2.5	8.6	11.1
5. Part E: Canal Improvements	0.0	44.5	44.5
6. Part F: Implementation Assistance and Capacity Building ^b	3.3	14.9	18.1
Subtotal (A)	54.0	196.5	250.5
B. Contingencies			
1. Physical Contingency	5.4	19.7	25.1
2. Price Contingency	6.2	22.6	28.8
Subtotal (B)	11.6	42.3	53.9
C. Interest			
Interest during Construction	38.1	17.5	55.6
Total (A + B + C)^c	103.7	256.3	360.0

^a At November 2000 prices. Includes duties and taxes estimated at \$15.5 million.

^b Excludes Department for International Development of the United Kingdom grant funds of \$42 million under the Capacity-Building Program.

^c Figures may not add up due to rounding.

Source: Asian Development Bank estimates.

Table 2: Original Financing Plan
(\$ million)

Source	Foreign Exchange	Local Currency	Total Cost	Percentage of Total
Asian Development Bank	103.7	146.3	250.0	69.0
Government of West Bengal	0.0	54.6	54.6	15.0
Kolkata Municipal Corporation	0.0	55.4	55.4	16.0
Total	103.7	256.3	360.0	100.0

Source: Asian Development Bank estimates.

11. In 2003, to reduce the GoWB's debt burden, the Government of India requested the cancellation of \$30 million of the original loan based on the expectation prevailing at the time that the Indian rupee would continue its depreciation against the US dollar and that prices would be relatively stable. Subsequently, in 2005, the Government of India requested the cancellation of \$42.2 million allocated for interest during construction, which was no longer necessary, as the Government had changed its policy and started paying interest during construction when it became due rather than capitalizing it. An additional rationale for these cancellations was that India had a few nonperforming urban projects that eventually had to be cancelled. Thus, the Government was seriously concerned that this Project would remain nonperforming, and might have to be cancelled eventually as well, because no significant project implementation took place for almost 4 years initially and little progress was apparent.

12. During the last 18 months, however, the Project has seen substantial strengthening of project management and speedy progress of project implementation (para. 13). At the same time, strong growth of the overall Indian economy in recent years has resulted in major inflation, especially in construction prices across the country, and in strengthening of the Indian rupee against the US dollar. As a result, a significant financial gap became evident in the Project, which is now performing well. The KMC attempted to reshuffle and rationalize the use of available funds by cutting the physical scope of the S&D and canal improvement components, but these

components, in particular, the S&D works, constitute integral packages of network development, therefore partial reduction of the physical scope of the Project would seriously undermine the impacts envisaged under the Project and jeopardize achievement of the Project's objectives. For instance, some facilities currently under construction would be underutilized or would be redundant unless the full Project scope were to be completed. Note also that current rationalization of the Project scope would result in more than 150,000 additional project beneficiaries under the S&D improvement component.

D. Status and Progress of Project Implementation

1. Summary of Project Implementation Progress

13. Despite significant start-up delays, the executing agencies are strongly committed and project implementation is now progressing steadily, as seen in the expeditious tendering and implementation of contracts over the last 18 months. This is a result of a major initiative undertaken by the GoWB in 2004–2005 to reorganize and strengthen the project management units (PMUs) in order to speed up project implementation (Appendix 2 provides details on measures introduced by the executing agencies). As of 10 November 2006, under ADB financing, contracts worth \$120.7 million have been awarded under the Project. Even though only \$30.8 million of ADB financing has been disbursed so far, the PMUs are projecting expenditure of \$50 million by the end of fiscal year (FY) 2007 based on work progress and contractors' projections. The remaining contracts are in the final stages of detailed design and tender document preparation. ADB's *Loan Financial Information System*⁴ report rates the Project as partially satisfactory based on past delays. All civil works and equipment purchase contracts are expected to be awarded by the end of 2007, including packages under the proposed supplementary loan, and no further time overrun is expected under the Project. Appendix 3 provides details of the implementation status of each component of the Project.

2. Compliance Review

14. A comprehensive assessment of compliance with the original loan covenants was carried out and is summarized in Appendix 4. Two major covenants that remain outstanding are (i) the introduction of an area-based property tax, and (ii) the introduction of water and sewerage tariffs. With regard to property tax reform, the KMC has already prepared, ratified, and forwarded the necessary legal documents to the provincial legal assembly of the GoWB and the GoWB has provided assurances that a relevant act will be approved by its legal assembly by the end of FY2007. Based on lessons from project implementation, GoWB, ADB and KMC agreed that a more phased tariff implementation road map, with firm milestones, is needed to achieve the original objectives of the Project. Such a road map has been reflected in additional covenants in the proposed Loan Agreement for supplementary financing. For example, the KMC has agreed to initially introduce a flat-rate tariff by 30 June 2007. Subsequently, the KMC will install at least 100,000 household water meters, conduct the necessary preparatory tariff analysis, and reassess willingness to pay by updating an earlier study⁵ by March 2007.

15. **Environment.** Supplementary Appendix A presents a review of compliance with environmental safeguards. The assessment indicates that mitigation measures proposed in the original initial environmental examination (IEE) for the Project have been incorporated in bidding documents. The executing agencies have prepared the necessary environmental assessment documents, such as IEEs, prior to commencement of works in all boroughs. These separate IEEs have now been incorporated in the revised IEE for the Project.

⁴ ADB. 2006. *Loan Financial Information System Report*. Manila

⁵ A willingness-to-pay study was conducted in 2000 with the assistance of the World Bank (Weston International, USA, et al. November 2001. *An Assessment of Social Aspects and Willingness to Pay: Project Preparation Studies for Calcutta Water Supply, Sewerage and Drainage Projects, World Bank Project No. P.O.50648*. Kolkata).

16. The Project was originally classified as category B for environment in 2000 when it was approved. However, in August 2002, the EKW, into which some of the treated wastewater from the project areas (from Borough VII, part of Borough XI, and Borough XII) is designed to be discharged, was included in the list maintained by the Ramsar Bureau established under Article 8 of the Ramsar Convention, which recognizes the EKW as a “wetland of international importance” (site number 1208) for its approach to treating the city of Kolkata’s wastewater, whereby it efficiently recovers nutrients from the wastewater and uses the treated water for pisciculture (fish farming) and agriculture. This designation of the receiving water body has resulted in the Project being reclassified as category B (sensitive) for environment under ADB’s *Environment Policy* (2002) and *Environmental Assessment Guidelines*.⁶ Furthermore, the KMC is currently conducting a comprehensive study of the Project’s potential environmental impacts on the EKW in order to propose dropping two STPs from the Project and instead discharging the sewage from Borough VII, part of Borough XI, and Borough XII into the DWF channel to be treated through the fisheries in the EKW. The DWF channel is an artificial channel that carries wastewater from almost the entire core of the city to the Kulti River, after traveling a distance of more than 30 kilometers (km), where it undergoes a process of natural treatment through fisheries and agriculture in the EKW area.

17. **Social Safeguards.** The Project was classified as category A for involuntary resettlement in 2000. A resettlement plan was prepared in 2000. Changes in design and physical scope during project implementation have increased the number of affected persons for the canal improvement component by 3%, but the current project design and scope will nevertheless have similar resettlement impacts as originally envisaged under the Project. Compliance assessment shows that implementation of the Project in general has been in accordance with the original loan covenants and relevant ADB policies.

18. An updated resettlement plan is required⁷ because (i) a detailed Project design is now available, (ii) there are some modifications in the Project’s scope and design, and (iii) entitlements for affected persons have changed. The Project is providing improved compensation for those affected by canal improvements. Salient issues that need to be addressed include ensuring that the updated resettlement plan includes (i) revision of the number of affected persons based on the updated socioeconomic information, including a census of highly vulnerable persons; (ii) inventory of common property losses; (iii) strategies on income restoration and social support; (iv) documentation on land acquired, particularly private land, ensuring consistency with the resettlement plan and loan agreements; (v) assessment of temporary impacts in relation to S&D improvements and subsequent entitlements; (vi) detailed budget and flow of funds; and (vii) full documentation of disclosure and consultation activities. Recommendations on and a review of compliance with the resettlement plan implementation are in Supplementary Appendix B. The executing agencies have prepared an updated resettlement plan.⁸

19. Gender issues have been carefully integrated into project planning, including resettlement planning and implementation. During the stakeholder consultation process, specific consultations were carried out separately for female groups to provide information on various issues such as appropriate entitlements, formation and role of user groups, self-help groups, and field-level monitoring committees, in order to address women’s concerns and to motivate and support their participation in the planning and implementation of project works at the local level. Female-headed households are considered to be vulnerable and are accorded additional entitlements.⁹ In addition,

⁶ ADB. 2003. *Environmental Assessment Guidelines*. Manila.

⁷ Para. 28, p. 41, of the original Loan Agreement.

⁸ The updated resettlement plan was disclosed on ADB’s website on 22 August 2006.

⁹ To assist the highly vulnerable, the Project will provide them with first-floor Valmiki Ambedkar Shahari Aawas Yojna (VAMBAY) apartments, which have commercial possibilities, provide access to land for social forestry and vegetable or other crop production along rehabilitated canal banks, and facilitate access to Government livelihood and other social programs. VAMBAY is a scheme of the Ministry of Urban Development and Poverty Alleviation of the Government of India. This scheme, launched in December 2001, provides grant subsidy for construction and rehabilitation of the dwelling units for the slum dwellers and the population living below the poverty line.

legal titles will be in the name of women, and thus the Project will help promote the empowerment of women.¹⁰ Other project actions consistent with gender development are (i) ensuring an adequate gender balance among the PMUs' staff; (ii) addressing and monitoring gender issues;¹¹ (iii) ensuring that women benefit from poverty alleviation schemes for the urban poor, from the formation of women's self-help groups, and from vocational training provided for such groups;¹² and (iv) empowering women through gender sensitization, participation, and training.

3. Lessons

20. Past urban development projects in India, including the Project, experienced significant delays in the executing agencies undertaking initial activities during the project start-up period. These resulted in both time and cost overruns, leading to the Borrower incurring undue commitment charges. Indeed, the cancellations of some of the loan proceeds under the Project were closely related to the accumulation of commitment charges accruing from significant start-up delays. To give the executing agencies more time to carry out project start-up activities, the Government of India also tended to delay loan signing for as long as possible following approval by ADB's Board of Directors, thereby reducing the commitment charges payable. For instance, in the case of the Project, the loan signing was delayed by 12 months. Furthermore, unlike experienced national agencies, such as the National Highway Authority of India or other central government entities, at the time of project appraisal, state governments and local urban bodies do not have dedicated PMUs that can take on advance procurement activities. Thus a new PMU has to be created for implementing each ADB loan project with staff deputed from several state government agencies or specifically hired for the purpose. This implies that PMUs' capacities to take on project-related work, especially their understanding of ADB procedures and requirements, need to be built up from scratch, which takes time.

21. It was therefore apparent that consultant support would be required not just at the detailed engineering design and supervision stage, but also at the project preparatory stage. In the absence of retroactive financing arrangements, state governments had to wait for loans to be signed and made effective to mobilize consultants, which is why, under the Project, appointing consultants after the loan signing took 11 months. Such initial delays in appointing consultants have a significant impact on subsequent project implementation, because the preparation of generic prequalification and standard bidding documents, detailed engineering surveys, and specific tender documents can only take place after the project management and design and construction supervision consultants are in place. As a result, in the case of the Project, it took more than 2 years after the appointment of the consultants to award the first major civil works contract.

22. Both the Government of India and ADB found these significant start-up delays and resulting time and cost overruns to be excessively costly. To overcome these start-up delays, in 2003 and 2004, Government and ADB representatives participated in extensive discussions and reviews pertaining to urban sector projects in India. For its part, the Government of India agreed to set up dedicated PMUs at the time of project appraisal, while ADB agreed to provide support to executing agencies to (i) establish project management and implementation units far ahead of loan effectiveness; (ii) strengthen the managerial and institutional capabilities of such units; (iii) help develop tender documents, select consultants, and prequalify contractors; (iv) familiarize project staff with ADB policies and procedures; and (v) develop a strong sense of ownership among state and municipal governments and promote public participation. The experience of providing advance support to the executing agencies was successful and it has now been adopted in all urban projects in India and other South Asian countries.

¹⁰ These apartments come with legal titles for occupants, turning informal dwellers on government lands to legal owners of well-built apartments.

¹¹ This is included in the implementation schedule for the resettlement plan, especially domestic violence issues.

¹² The Project has introduced skills training programs, self-help groups, and financing support for the self-help groups as additional measures to augment the income levels of affected families. Women are the main beneficiaries of programs currently run at the Nonadanga relocation site.

4. Project Benefits and Impacts

23. As substantial physical progress only started in the last 18 months, the Project's benefit monitoring and evaluation (BME) process has been delayed. However, the collection of baseline data on indicators to be used for monitoring project outputs and benefits has been completed for all works, and the data will be used during the comprehensive midterm review of the Project, which is scheduled for December 2007. After completion, the Project is expected to provide (i) S&D facilities for more than 2 million people, (ii) improved solid waste management facilities for more than 5 million people, and (iii) improved basic urban services for 0.2 million slum dwellers.

24. With assistance from nongovernment organizations and consultants, the Project has conducted extensive consultations with affected families, local leaders, and other stakeholders on various social development issues. Using those inputs, the Project has moved forward with a number of schemes designed to extend short-term and long-term benefits to the urban poor, including vocational training, insurance schemes, and health and hygiene awareness programs. Self-help groups are being established, and the Social Development Unit is coordinating with several government agencies to ensure that the schemes dovetail with their own schemes.

III. THE PROPOSED SUPPLEMENTARY LOAN

A. Cost Overrun

25. During detailed design and project implementation, the physical scope of the Project has undergone some modifications and changes, and the unit costs of goods and materials have risen significantly since 1999, when the original cost estimates for the Project were prepared. Based on revised cost estimates, the overall increase in the project cost is \$113.6 million, which is around 32% of the original total project cost estimate (\$360.0 million) and around 39% of the currently available total Project funds (\$287.8 million). S&D improvements, canal improvements, and implementation assistance are the major project components for which cost overruns are significant. Additional funds for contingencies are also required. Major factors causing project cost overruns include (i) price increases caused by general inflation; (ii) physical changes in the Project's design and scope; and (iii) cost underestimation at the appraisal stage, in particular, of market rates for construction works and materials.

26. Further analysis of the cost overrun shows that in monetary terms, of the total cost overrun of \$113.6 million, \$99.5 million is for civil works (87.5% of the total cost overrun); followed by \$9.4 million for contingencies (8.2%); \$8.0 million for consultancy costs (7.1%); \$3.9 million for taxes and duties (3.4%); \$3.1 million for incremental administration (2.8%); \$1.8 million for resettlement (1.6%); and \$0.3 million for land acquisition (0.2%). At the same time, project cost reductions occurred in two expenditure categories that include equipment (\$12.3 million) and the small-scale loan facility (\$0.1 million) resulting mainly from changes in the Project's design and/or scope.

27. The cost overrun is due primarily to price escalation from 1999 to 2005, which accounted for 37% of the escalation in total project costs, with the balance explained by changes in the Project's scope and/ or design (30%) and cost underestimation at the original appraisal stage (33%). In particular, civil works, which constitute about 70% of the revised cost estimate, witnessed a cost escalation of 55%.

28. **Price Escalation.** The average annual inflation rate, based on India's wholesale price index, was around 5% during 1999–2005; however, during this period, inflation fluctuated from year to year and for different commodity groups in particular years. While average inflation for all commodity groups was around 4.8% during this period, major construction materials such as iron and steel and cement recorded higher inflation rates of 7.7% and 5.5%, respectively. Considering the composition of construction materials in project costs, the price escalation for the Project is

estimated at 5.5% per year. The price contingencies provided under the original Project, amounting to 12% of the base cost, were thus insufficient to cover the real price increase of around 37%.

29. **Cost Increase Resulting from Changes in Project Scope and/or Design.** During the detailed design and implementation of the Project, it has undergone some changes in design and physical scope as noted earlier, including the inclusion of Borough VII, the changes in the canal improvement works, an increase in the number of project-affected persons to be resettled, changes in the entitlements for the affected families a reduction in the equipment component, and an increase in project implementation assistance caused by the delay in implementation. Based on a cost estimate analysis broken down by component (Appendix 5), of the total cost increase resulting from such changes (30%), changes in project scope contribute around 13% and the balance, i.e., 17%, can be explained by design changes, such as the change from a separate to a combined sewer system and increase in number of pumping stations required for the system.

30. **Cost Increase due to Underestimation.** Engineers' cost estimates during the original Project appraisal, which were subsequently reflected in tender documents, were based on the schedule of rates (state-imposed ceilings on rates that are periodically updated but do not necessarily reflect market rates). The bids for the tendered contracts under the Project indicated that the variation between the engineers' estimates and the bid amounts has been rather large. The cost increase due to this underestimation amounts to 33% of the total cost overrun. The highest variation (38%) between the estimates and the lowest bid values was observed in the S&D improvements packages (Appendix 5). Appendix 5 includes further details at cost overrun and price escalation analysis.

B. Key Physical Changes and Design Modifications

31. In 2003, the GoWB decided to build a centrally located biomedical and hazardous waste management facility as part of a build-own-and-transfer scheme for the city rather than constructing the facility as originally expected under the Project. Therefore, following a request from the Government of India, \$19 million originally allocated for this component was reallocated to allow additional S&D improvement works in various wards of Borough VII. Borough VII is the most congested, populous, and rapidly expanding area in the outer periphery of the city and is currently discharging its sewage into canals, thereby creating a significant environmental hazard. Its inclusion in the Project was considered necessary because it would not only benefit the largest number of beneficiaries per unit investment, thereby giving the largest return on investment, it would also result in the largest corresponding improvement in Kolkata's environmental sanitation. Some items of equipment were also dropped from the solid waste management component, as they had either already been purchased by the KMC with its own funds (because of earlier delays in project implementation) or are no longer required because of the planned outsourcing of solid waste management responsibilities.

32. The sanitary landfill site previously identified under the Project now falls within the EKW boundary, which is now a wetland protected under the Ramsar Convention. Therefore, the KMC has agreed to identify an alternative parcel of KMC land for the sanitary landfill site.

33. As already mentioned, the KMC is currently conducting a comprehensive study to identify the Project's potential environmental impacts on the EKW to propose dropping the two STPs from the Project and instead discharging the sewage from Borough VII, part of Borough XI, and Borough XII into the DWF channel to be treated through the fisheries in the EKW.

34. Appendix 6 summarizes all physical changes and their rationales.

C. Impact on the Project

35. The proposed supplementary loan will support the KMC in achieving the original objectives of the Project (para. 7), and will cover cost-overruns and modified activities under the following

parts of the Project: (i) part B: Sewerage and Drainage Improvement; (ii) part C: Solid Waste Management; (iii) part E: Canal Improvements; and (iv) part F: Implementation Assistance and Capacity Building. In particular, the proposed supplementary loan will cover civil works contracts for S&D improvement works in boroughs VII and XV, STP construction for sewage effluent from Borough VII, rehabilitation works in the Churial canal, pumping station at Gushighata, and additional consulting services. The supplementary loan is required to complete the full scope of the Project and is crucial for sustaining the current momentum and impacts already apparent under the Project and ensuring that its objectives and impacts are achieved.

36. For ease of administration and monitoring, contracts for civil works and consulting services under the proposed supplementary loan have been completely separated from the original loan for the Project. A procurement plan is included in Appendix 7. Planning, layout, and detailed engineering design for works in all boroughs have been completed and tender documents have been prepared for most of the works to be carried out under the proposed supplementary loan. A proposed revised implementation schedule for the Project is included in Appendix 8.

37. The capacity of the executing agencies to implement the Project and undertake the necessary procurement was reassessed. Various measures have been proposed to help the executing agencies strengthen their capacity, for example, holding a dedicated procurement workshop for the executing agencies with ADB, harmonizing the procurement procedures and resources of the KMC and the I&WD, and providing technical assistance (TA) for capacity building for the authorities responsible for monitoring and managing ecological resources.¹³ These measures and details of the implementation capacity assessment of the executing agencies are included in Appendix 2 and paras. 71–74. These assessments show that the executing agencies will have adequate resources and capacity.

D. Rationale for the Proposed Supplementary Loan

38. Despite the initial delays and subsequent cancellations of parts of the loan proceeds, project implementation is now in full swing and there are strong justifications for providing the supplementary loan. The EAs have overcome the steep initial learning curve and are now well equipped to complete the project scope. The Government of India is strongly committed, and during the last 18 months, substantial strengthening of project management has been apparent. Under ADB financing, contracts worth \$120.70 million have already been awarded and the remaining contracts are being finalized and tendered. Disbursements will soon follow. The request for supplementary financing meets ADB's criteria under its policy for supplementary financing¹⁴ as demonstrated by the following:

- (i) The Project is a priority for both the GoWB's and the Government of India's development strategy. The *Administrative Report (2001–2005)* of the Municipal Affairs Department of the GoWB¹⁵ mentions the Project as a priority and further states that "both the state government and the KMC are paying special attention to proper implementation and timely completion of the Project."
- (ii) The timely provision of funds is critical for maintaining the current momentum and positive impacts that are already apparent under the Project. The supplementary loan is necessary to complete the sewerage, drainage, and canal works in an integral manner for the entire catchment area. If the full project scope were not completed, the impacts and objectives envisaged for the Project would be seriously undermined, for instance, some facilities currently under construction would be underutilized or redundant.

¹³ A component TA is currently being processed under TA 4814-IND (ADB, 2006. *Technical Assistance Cluster for Project Processing and Capacity Development*. Manila) to support capacity building and training for responsible authorities and users of the EKW, including fishery cooperatives, farmers, and fishers; to develop a comprehensive EKW management plan; and to strengthen the regulatory framework.

¹⁴ ADB, 2005. *A Review of the Policy on Supplementary Financing: Addressing Challenges and Broader Needs*. Manila.

¹⁵ Government of West Bengal, Municipal Affairs Department, 2006. *Administrative Report (2001–2005)*. Kolkata.

- (iii) The continued value-added involvement of ADB in this Project will ensure that the unique ecological characteristics of the EKW are maintained through the application of ADB's *Environment Policy* (2002) and accumulated knowledge. The EKW, which is part of the Project, is a Ramsar-protected site that has been selected for its approach to treating the city of Kolkata's wastewater, whereby it efficiently recovers nutrients from the wastewater and uses the treated water for pisciculture (fish farming) and agriculture. The significant demonstration effect of the Project in relation to eco-friendly best practices in the urban sector can be maximized. An evaluation study of ADB's *Environment Policy* (2002) notes that "ADB has not maximized its potential for value addition to client countries such as India." This opportunity to realize this potential should not be missed.
- (iv) The Project remains technically feasible and economically and financially viable and complies with ADB's safeguard requirements. By rationalizing and extending the coverage to a new borough, the most congested and rapidly expanding area in Kolkata's outer periphery, the Project enhances and further strengthens the original objectives and extends the project benefits to more than 150,000 additional beneficiaries.
- (v) The steps listed in the matrix of due diligence for ADB's policy on supplementary financing (footnote 14) have all been observed and all new or revised policies approved by the Board since the original appraisal of the Project have been taken into consideration as required by the policy.
- (vi) The provision of this supplementary loan will permit ADB to continue to assist the GoWB with its governance and anticorruption reforms and will enhance ADB's long-term relationship with the GoWB.
- (vii) The financial health of both the KMC and the GoWB is sound as demonstrated by the financial analysis.

E. Safeguards

39. **Social.** The summary poverty reduction and social strategy for the Project is in Appendix 9. The executing agencies prepared an updated resettlement plan (Supplementary Appendix C) in line with (i) the Land Acquisition Act (1894, amended in 1984), (ii) the *National Policy on Resettlement and Rehabilitation for Project Affected Families*,¹⁶ and (iii) ADB's *Policy on Involuntary Resettlement* (1995). A summary of the updated resettlement plan is in Appendix 10. The Project design has carefully incorporated engineering solutions to minimize land acquisition and resettlement impacts.¹⁷ Changes in project design had the objective of minimizing disruptions to the project area population. In the case of canal improvements, which affect the most people of all the project components, design changes avoided densely populated canal tracts.¹⁸ Component siting and alignment continue to be studied with the objective of further reducing land acquisition and resettlement impacts as the Project is implemented.

40. For the S&D improvement component, the 2.58 hectares required for sewage pumping stations is government land.¹⁹ STP works will be within existing facilities. The S&D improvement component will result in temporary impacts because of the construction of trunk sewer lines. Solid waste management components will be sited on a 60-hectare KMC property. The eventual closure of the current landfill site will affect 655 garbage sorters. For the canal improvement component,

¹⁶ Government of India. 2003. *National Policy on Resettlement and Rehabilitation for Project Affected Families*. Gazette of India, Delhi.

¹⁷ For example, the need for maintaining an engineering right-of-way on either side of the canals have been reconsidered in light of the impacts on shopkeepers, and the engineering right-of-way will be maintained on one bank without disturbing shops.

¹⁸ For example, in the case of the Keorapukur canal, works were reduced from 9 km to 1.15 km. In the case of the Churial canal, the same objective of avoiding a densely populated settlement was achieved through a slight diversion through the Churial extension canal that involved an increase in the canal's length from 24 km to 27.55 km.

¹⁹ Eight drainage pumping stations originally proposed have been dropped from the Project based on the revised project design.

77.31 km of canals will be improved. While land acquisition is not required at the canal sites, it will affect 3,626 households dwelling along the canals. Government land will be used for relocation sites.

41. The Project's positive environmental impacts will result in public health benefits and it will improve the quality of life of urban residents. While no significant adverse impacts on vulnerable groups have been identified, the resettlement plan will provide additional entitlements to vulnerable affected persons, including indigenous peoples, should they experience adverse resettlement impacts.

42. **Environmental.** Environmental screening and an assessment of the Project's physical scope and design changes were carried out, and a revised IEE (Supplementary Appendix D) was prepared in accordance with ADB's *Environment Policy (2002)* and *Environmental Assessment Guidelines* (footnote 6). The Project has been recategorized as category B (sensitive) for environment. The summary IEE (Supplementary Appendix E) has been disclosed in accordance with ADB's disclosure and public communication policies.

43. A draft environmental management plan (EMP) has been prepared as part of the revised IEE for the management and monitoring of environmental impacts arising from the existing scope and design of the Project. The revised IEE and the draft EMP take into consideration the potential impacts, the proposed mitigation measures, and the environmental monitoring program allowing for the most sensitive case scenario (for potential environmental impact purposes), i.e., the sewage from concerned boroughs being treated through the fisheries and agriculture in the EKW.²⁰ A comprehensive environmental study will be undertaken and submitted to ADB for review and approval prior to any proposed diversion of sewage into the EKW.

44. The revised IEE shows that the Project, including works under the proposed supplementary loan, will still result in net environmental benefits. The draft EMP, the EKW management plan currently being prepared with Project support, and the legal framework for the EKW (the EKW Conservation and Management Act 2006) will further ensure that adequate measures are taken to mitigate potential impacts on the EKW and the wider environment.

F. Revised Cost Estimates

45. Revised costs for the Project, including those to be financed under the proposed supplementary loan, are estimated at \$401.4 million including taxes and duties, physical and price contingencies, and front-end fees. However, commitment and interest charges have not been included in line with Government policy to pay interest during construction when it becomes due rather than capitalizing it. Table 3 summarizes the revised cost estimates for the Project. Details of revised cost estimates are included in Appendix 11. Appendix 12 presents details of the revised economic analysis.

G. Revised Financing Plan

46. The original loan of \$250.0 million was allocated from ADB's OCR. The available loan amount is now \$177.8 million. With an additional \$80.0 million proposed under the supplementary loan from ADB's OCR, the total available ADB loan amount will be \$257.8 million. The Government of India requested that the repayments of the supplementary OCR loan be fully synchronized with the repayments of the original loan.²¹ Consequently, the supplementary OCR loan will have a term

²⁰ Authorities have been identified for implementing mitigation measures and monitoring requirements. Responsibilities for reporting and review, cost estimates, and feedback and adjustment have been identified. The PMUs will submit to EMP progress reports to ADB on a 6-monthly basis, including monitoring results. The EMP ensures proper operation and maintenance of fisheries facilities to improve water treatment functions and maintain them at a desired level.

²¹ This is allowed under the OM Section H5/BP. *Supplementary Financing*.

of 19 years, shortened grace period,²² an interest rate determined with ADB's LIBOR-based lending facility, a commitment charge of 0.75% per year, and any other terms and conditions as set forth in the draft Loan and Project Agreements. The Government of India has provided ADB with (i) the reasons for its decision to borrow under ADB's LIBOR-based lending facility on the basis of these terms and conditions, and (ii) an undertaking that these choices were the Government of India's own independent decision and not in reliance on any communication or advice from ADB.

Table 3: Summary of Revised Project Cost Estimates
(\$ million)

Cost Components	Total Costs
A. Base Costs	
1. Part A: Stakeholder Consultation Program	0.25
2. Part B: Sewerage and Drainage Improvements	234.92
3. Part C: Solid Waste Management	10.15
4. Part D: Slum Improvements	10.72
5. Part E: Canal Improvements	41.19
6. Part F: Implementation Assistance	29.16
7. Resettlement	6.78
Subtotal Base Cost	333.17
B. Taxes and duties	19.39
C. Contingencies	
1. Physical	13.18
2. Price	30.76
Subtotal Contingencies	43.95
D. Finance Costs	4.87
Total (A + B + C + D)	401.37

Notes:

1. The original investment cost was \$360.0 million, which was reduced by \$72.2 million because of partial loan cancellations. The additional investment cost needed to complete the Project is \$113.6 million, resulting in total investment for the Project of \$401.4 million.
 2. Cost estimates are in constant 2006 prices.
 3. Contingencies for the components under the existing loan are set at the original amount, whereas contingencies for those under the supplementary loan are set at 16%.
 4. Taxes and duties are computed as 12.24% for service tax, 25% for withholding tax for foreign consultancy. Table 1, original cost estimates, includes taxes and duties in the base cost.
 5. Financing costs include interest during construction on the original loan paid up to April 2005.
- Source: Asian Development Bank estimates.

47. Under the revised financing arrangements, the two ADB loans will cover 64.2% (\$257.8 million) of the total investment costs of \$401.4 million. The proposed supplementary loan will cover 70.4% (\$80.0 million) of the additional financing requirement of \$113.6 million. Of the total investment costs, the GoWB will finance 18.5% and the KMC will finance 17.3%, which will include taxes and duties, land, a portion of contingencies, civil works, and incremental administration. ADB's loan funds will fund part of civil works, equipment, consultancy services and a portion of contingencies. The proposed financing plan is summarized in Table 4.

48. The Government of India will pass the proposed supplementary loan on to the GoWB as 70% debt on the same terms and conditions as for the original loan and 30% grant. The GoWB will then onlend the full amount of the loan portion to the KMC on the same terms and conditions as for the original loan, and the grant portion will be passed on to the KMC also as a grant. The existing onlending agreement, signed between KMC and GoWB, will be revised, as acceptable to ADB, to reflect the changes arising from the proposed supplementary loan.

²² Repayments will commence on 1 July 2007.

Table 4: Revised Financing Plan

Source	\$ million	Percent
Asian Development Bank	257.8	64.2 ^a
Ordinary Capital Resources: Original Allocation	177.8	
Ordinary Capital Resources: Supplementary Allocation	80.0	
GoWB	74.1	18.5
GoWB Contribution: Original Allocation	54.6	
GoWB Contribution: Supplementary Allocation	19.5	
KMC	69.5	17.3
KMC Contribution: Original Allocation	55.4	
KMC Contribution: Supplementary Allocation	14.1	
Total	401.4	100.0

GoWB = Government of West Bengal, KMC = Kolkata Municipal Corporation.

^a This is less than the current cost-sharing for India, which is 70%.

Source: Asian Development Bank estimates.

H. Remedial Steps

49. **Reliable Costing.** To minimize underestimation and/or overestimation errors in the future, adequate steps have been taken during cost estimation that include (i) the use of an updated schedule of rates (2005) applicable to the KMC and of market rates where applicable, (ii) an adequate premium to take into account the gap between the engineers' estimates and contracted amounts based on already tendered work packages, (iii) the use of adequate provisions for land acquisition and resettlement requirements, and (iv) a requirement for implementation assistance during the revised project period. As the preparation of detailed engineering design and tender documents has already been completed for most remaining contracts under the Project, the variation that generally arises during the detailed engineering design phase has already been minimized. Annual cost updates will be continued and will be monitored by project review missions.

50. **Price Contingencies.** Adequate price contingencies have been included to accommodate price escalation. Given the status of remaining works, which are mostly at the tender stage, the risks of time overruns are minimized. Furthermore, adequate provisions have been included in the cost estimates to meet unforeseen variations during the contract implementation period. To provide risk coverage for the uncompleted and ongoing work packages under the original loan, an adequate contingency of about 16% is provided under the supplementary loan.

51. **Timely Implementation.** To prevent further cost overruns, minimizing delays in construction activities is essential. For this purpose, the PMUs will continue to update the existing critical path method diagrams as part of the project performance monitoring system and to implement necessary measures. The implementation periods for ongoing and future packages and the revised Project completion date are reasonable and the capacity of the executing agencies to implement the Project is adequate, hence the risk of time overruns is minimal.

I. Implementation Arrangements

1. Project Management

52. Implementation arrangements for the proposed supplementary loan will remain the same as for the original loan for the Project. The two PMUs established under each of the executing agencies—the I&WD and the KMC—will continue to implement the respective components of the Project, i.e., the I&WD PMU will continue to be responsible for implementing canal improvement works, while the KMC PMU will continue to be responsible for implementing all the remaining works, such as S&D improvement works, slum improvements, solid waste management, and stakeholder consultation. As the two PMUs share the same premises and supporting consultants, coordination between the two is already good.

53. To improve efficiency and streamline project implementation, the KMC will act as the lead executing agency responsible for overall project planning, budgeting, reporting, and execution and the primary point of contact for ADB for the revised project period. While the PMUs share consultants, such as the design and construction supervision consultant (DSC) and the project management consultant (PMC), as well as the Social Development Unit, the KMC PMU will continue to manage consultants/ contracts and be accountable for ensuring that all ADB and GoWB policies and ADB's loan covenants for both the original and the supplementary loan are adhered to during the revised project implementation period.

2. Implementation Period

54. The Project was originally expected to be implemented over 7 years with a completion date of 31 December 2007. Given the delays in Project implementation, it is envisaged that the Project will now be completed by 30 June 2010. The proposed supplementary loan will be implemented in parallel with the original project activities. The completion date for activities under the proposed supplementary loan is 30 June 2010. A proposed revised implementation schedule is included in Appendix 8 and a detailed project schedule identifying critical paths and milestones for all packages is included in Supplementary Appendix F.

3. Procurement

55. Procurement of all goods and services under the proposed supplementary loan will be carried out in accordance with ADB's *Procurement Guidelines* (April 2006, as amended from time to time). All civil works contracts estimated to cost the equivalent of \$10 million or more will be procured on the basis of international competitive bidding procedures. Civil works contracts estimated to cost less than \$10 million will be procured using national competitive bidding procedures. Procurement of goods will, to the extent practicable, be grouped into packages larger than \$1 million to be suitable for international competitive bidding procedures. Goods that cannot be grouped into larger contracts and are estimated to cost less than \$1 million per contract will be procured following national competitive bidding or limited international bidding procedures, and miscellaneous minor goods costing less than \$100,000 will be purchased following shopping procedures. All NCB procurement under the proposed supplementary loan shall be conducted in accordance with the procurement procedures agreed for the original Loan Agreement. In 2004, before commencement of NCB procurement, ADB reviewed the standard bidding documents to be used under the Project to ensure consistency with the ADB requirements. Under the proposed supplementary loan, these bidding documents will be reviewed and modified as necessary to ensure consistency with the updated ADB requirements before commencement of NCB procurement. All civil works, equipment purchases, and consulting contracts under the proposed supplementary loan will be separated from contracts under the original loan for the Project. The procurement plan for the Project (Appendix 7), which also details contracts to be funded under the supplementary loan, will be updated annually by the executing agencies for approval by ADB.

56. The two PMUs have requested ADB's approval of (i) advance contracting to recruit consultants and to procure goods and civil works; and (ii) retroactive financing of up to 20% of the proposed supplementary loan amount for eligible expenditures, including consultants, goods, and civil works, incurred prior to loan effectiveness, but no earlier than 1 January 2006 or 12 months before the signing of the Loan Agreement. Advance contracting and retroactive financing are necessary to avoid any disruption and ensure smooth and continuous project implementation. The two PMUs have been advised that ADB's approval of advance contracting and retroactive financing does not constitute a commitment to finance the supplementary loan.

4. Consulting Services

57. Under the original loan for the Project, an international consulting firm has already been engaged as the PMC and a national consulting firm has been engaged as the DSC following ADB's quality-based selection procedures. Additional consulting services under the PMC

(63 person-months) and the DSC (367 person-months) will be required to implement the Project, including works under the proposed supplementary loan. The proposed additional consulting services will be provided by the respective firms currently working as the PMC and DSC, which will be engaged for the additional works under the supplementary loan through single source selection procedures following ADB's *Guidelines on the Use of Consultants* (April 2006, as amended from time to time). The executing agencies have found the performance of both firms to be satisfactory, and single source selection is considered to be the most appropriate and advantageous method for the selection of the PMC and DSC, because the proposed tasks represent a natural continuation of their previous work. Each of the firms will be requested to provide a biodata technical proposal for the KMC's and ADB's review and for subsequent negotiations.

58. In addition, a national firm will be engaged as creative consultants to provide consulting services for 30 person-months in accordance with ADB's *Guidelines on the Use of Consultants* using quality- and cost-based selection procedures. As these services will involve public relations, including extensive consultations with affected families and other stakeholders, local firms are deemed to be appropriate. Furthermore, an adequate number of local firms qualified to perform such services exists in the market. Outline terms of reference for additional consulting services are included in Supplementary Appendix G.

5. Anticorruption Policy

59. ADB's *Anticorruption Policy* (1998, as amended to date) was explained to and discussed with the KMC and the GoWB. Consistent with its commitment to good governance, accountability, and transparency, ADB reserves the right to investigate, directly or through its agents, any alleged corrupt, fraudulent, collusive, or coercive practices relating to the Project. To support these efforts, relevant provisions of ADB's *Anticorruption Policy* are included in the loan regulations and the bidding documents for the Project. In particular, all contracts financed by ADB in connection with the Project shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agencies; the PMUs; and all contractors, suppliers, consultants, and other service providers as they relate to the Project.

60. The GoWB and the KMC are already implementing various anticorruption and governance measures in the Project, for example, (i) public disclosure of project progress, including physical and financial details, via information centers, newspapers, and the Project's website; (ii) public audits of project works by field-level committees in every borough; (iii) public disclosure of the results of all tenders on the Project's website; (iv) mobilization of third-party "flying squads" to carry out random spot checks of quality and safety aspects at work sites; (v) development of a regulatory framework for better management of the EKW area; (vi) redress of public grievances through such means as complaint registers at information centers, an online complaint handling system, and a requirement to respond to complaints within 24 hours of receipt; and (vii) computerization of all data relating to contracts under the Project. The GoWB and the KMC will ensure strict adherence to such Project-specific anticorruption measures (Appendix 13).

6. Disbursement Arrangements

61. Disbursement of the proposed supplementary loan proceeds will be in accordance with ADB's *Loan Disbursement Handbook* (2001), as amended from time to time, and detailed arrangements between ADB and the GoWB. No imprest account has yet been established with the Reserve Bank of India for the original loan. The KMC may request the opening of a separate imprest account for the supplementary loan to ensure timely release of loan proceeds and efficient project implementation. The KMC will be responsible for managing the imprest account and ensuring timely release of funds. The KMC may also establish a second-generation imprest account in a noninterest bearing current account with a commercial bank acceptable to ADB. ADB's statement of expenditures procedures will be followed to replenish and liquidate the imprest account for eligible expenditures not exceeding \$100,000 per payment. The advance to the imprest account and the second-generation imprest account will be limited to projected disbursement for

the next 6 months, or 5% of the loan, whichever is lower. Auditors, satisfactory to ADB, will audit the use of the imprest account and the statement of expenditures procedures. A separate audit opinion on the use of the imprest account and statement of expenditures procedures will be included in the annual audit report.

7. Accounting, Auditing, and Reporting

62. The PMUs will continue to maintain separate records and accounts adequate to identify financing resources received and expenditures made on the Project, including all goods, works, and services financed by the supplementary loan proceeds, the KMC, and the GoWB. The project accounts and related financial statements will be audited annually in accordance with sound auditing standards by auditors acceptable to ADB. The PMUs will submit annual audited reports and related financial statements to ADB within 9 months of the end of each fiscal year. The KMC was made aware of ADB's policy on delayed submission, and also of the importance of satisfactory and acceptable quality, of audited reports. The KMC, as the lead executing agency for the Project, will support the I&WD in ensuring that financial audit statements for the Project are submitted within the agreed time frame.

63. The PMUs will prepare quarterly progress reports, in a format acceptable to ADB, with information on (i) progress made against established targets, including preidentified monitoring indicators; (ii) delays and problems encountered, and actions taken to resolve them; (iii) work carried out by consultants; (iv) updated results of water quality monitoring and action taken on problems encountered; (v) changes in project staff; (vi) compliance with loan covenants; (vii) proposed program of activities for the next quarter; and (viii) progress expected during the next 3 months. The quarterly report will be submitted to ADB by the end of first week of the following quarter. Within 3 months of physical completion of the Project, the PMUs will prepare and submit to ADB a project completion report on the execution of the Project, including its costs and compliance with the loan covenants.

8. Project Performance Monitoring and Evaluation

64. The BME process currently being carried out by the executing agencies will include the proposed supplementary loan, and the BME for the Project will be carried out in accordance with ADB's guidelines on the project performance monitoring system. The collection of BME baseline data, including contracts under the proposed supplementary loan, will be completed by the end of December 2006. These data will be used as benchmarks for monitoring project outcomes, including of the proposed supplementary loan, throughout the Project period.

9. Project Review

65. Because of implementation delays, the midterm review of the Project has not yet been carried out. A comprehensive midterm review will be carried out in December 2007, by which time all major contracts should have been awarded and commenced, including contracts financed by the supplementary loan. The midterm review will include a comprehensive review; an evaluation of the project outputs against the indicators set by the BME; and a review of implementation arrangements, of compliance with loan covenants, and of progress on the Capacity-Building Program. The midterm review will also identify implementation constraints and critical issues, if any, in order to recommend corrective measures and adjustments in the project design for speedy implementation.

IV. PROJECT BENEFITS, IMPACTS, ASSUMPTIONS, AND RISKS

A. Benefits and Impacts

66. With an increase in the number of beneficiaries by more than 150,000 and in the number of property connections to sewer lines by 30,200 (original target 90,000, revised target 120,200), the design, scope, and coverage of most components of the Project have been refined and

expanded. Therefore the benefits and impacts anticipated under the Project not only remain relevant, but will be further enhanced.

67. The Project will improve the urban environment and enhance human capital, which will lead to improvements in health and increased productivity, particularly among slum dwellers and the poor, especially poor women. In the long run, improved health will contribute to better educational standards and economic growth. The Project will have large benefits for women. As caretakers of the home environment, women are particularly affected by poor living conditions, especially poor sanitation conditions, and improved environmental sanitation will enhance their quality of life. Given its framework to mitigate environmental and social risks effectively, the Project will help ensure that the ecological characteristics of the EKW are not adversely affected.

68. **Economic Analysis.** An economic analysis of the components considered for the proposed supplementary loan was carried out, namely, the S&D improvement and canal improvement component. The analysis reappraised the economic viability of the components incorporating design changes, revised cost estimates, and updated information available from the socioeconomic survey.

69. The economic internal rate of return (EIRR) for the S&D improvement component is estimated at 12.7% for the full project scope including all seven boroughs and at 11.8% for the two boroughs under the supplementary loan. Both these figures are around the economic opportunity cost of capital of 12.0%. For the canal improvement component, the EIRR is estimated at 19.2%, much higher than the economic opportunity cost of 12.0%. Combining both S&D and canal improvement components, the EIRR is estimated at 13.3%. The sensitivity analysis with respect to operation and maintenance (O&M) costs and assumptions about the beneficiaries demonstrates the robustness of the analysis. Appendix 12 presents details of the revised economic analysis.

70. The analysis does not include some important benefits that are difficult to quantify at present or might incur double counting under some circumstances. These benefits include (i) reduced private and public costs of mosquito control, (ii) appreciation of land values because of the improved environment and the reduced risk of flooding, (iii) psychological benefits from reductions in morbidity and mortality, (iv) reduced disruptions to traffic because of flooding, (v) benefits to visitors and nonresidents working in the areas, and (vi) positive impacts on tourism and tourist-related businesses. If these nonquantified benefits were considered, the EIRR would be much higher.

71. **Financial Analysis.** A financial analysis was carried out to confirm the financial viability of the components as determined during the original Project appraisal using the revised cost estimates and paying particular attention to the components considered for funding under the proposed supplementary loan. Hence the S&D improvement component, the only revenue-generating component, was reappraised to confirm its financial viability. As the KMC has no nonrevenue-generating components to maintain and the revenue-generating component may not be self-financing within the sector, the KMC's overall financial capacity was also assessed.

72. The functional efficiency of accounting practices in the KMC has recently improved considerably. The preparation of accounts and financial statements on a timely basis and the completion of the backlog of audits are among the loan covenants that the KMC has complied with. In addition, various reforms in accounting procedures are under way in the KMC under the Capacity-Building Program funded by the DFID. By 2008, a fully computerized accounting system is expected to be in place. Training the KMC's accounting personnel in the newly computerized environment is also progressing. This capacity building is expected to improve the KMC's tax collection efficiency to 80% of the total dues as required under the loan covenants for the original Project.

73. The KMC's financial performance for the last 5 years shows that it has achieved a cash surplus in its revenue account since FY2003. From FY2001 to FY2005, revenues generated by the KMC have increased from around 66% of the total amount billed to 73%, thereby reducing its dependence on transfers from the GoWB. During the same period, collection efficiencies for property taxes and commercial and bulk water supply charges improved substantially from 24% and 29%, respectively, to 64% and 66%, respectively. However, the proposed reforms to introduce area-based property taxes and user charges for water and sewerage are long overdue. Once these are implemented, the KMC's receipts under the revenue account will improve considerably.

74. The S&D improvement component covered under the proposed supplementary loan (boroughs VII & XV) is estimated to have a financial internal rate of return of 6.6%, which is above the weighted average of cost of capital of 4.9%. Even though the full S&D improvement component under the original loan and the proposed supplementary loan together is estimated to have a financial internal rate of return of only 1.31%, the S&D improvement component can generate more than enough revenues to cover the incremental O&M costs resulting from the Project. Indeed, the incremental revenues from the Project are estimated to cover the full O&M costs as well as 58% of the capital costs resulting from the Project. Given that 30% of the capital costs are provided as a grant, the actual subsidy required for the S&D improvement component is not a substantial burden for the KMC (Supplementary Appendix H: provides details).

B. Assumptions and Risks

75. Risks and assumptions originally identified under the Project were reassessed to establish continued and additional risks to the Project, including those specific to the proposed supplementary loan, and to recommend mitigation measures. Key risks identified during the original Project appraisal pertained to (i) land acquisition, (ii) user charges, (iii) rationalization of the KMC's staff, (iv) property tax reforms, and (v) state of the GoWB's public finances. Significant progress on land acquisition for the Project, comprehensive analysis of the GoWB's and KMC's financial soundness, and progress on the Capacity-Building Program for the KMC under the DFID grant provide adequate assurances that risks (i), (iii), and (v) have been minimized for both the Project and the supplementary loan. With regard to property tax reforms, the KMC has already prepared and ratified the necessary legal documents and forwarded them to the legal assembly of the GoWB, which has provided assurances that a relevant act will be effected by the end of FY2007. Furthermore, the original objective of property tax reforms was to strengthen the then ailing financial standing of the GoWB, which is no longer the case. The loan covenant on the introduction of user charges for domestic water and sewerage consumption is still outstanding. To minimize this risk, a phased and realistic tariff implementation road map with firm milestones has been agreed with the GoWB and the KMC to achieve the Project's original objectives. Such a road map has been reflected in additional covenants in the proposed loan agreement for supplementary financing.

76. The risk of delayed implementation, as experienced in the early years of implementation of the Project, is minimal, as the capacity and mandate of the PMUs have been significantly enhanced in the last 2 years and the PMUs have already completed detailed design, tender document preparation, and land acquisition for all the remaining major contracts under the Project, including contracts under the proposed supplementary loan.

77. **Environmental Risks.** Risks that may be posed by the possible disposal of sewage from Borough VII, part of Borough XI, and Borough XII into the DWF channel will be mitigated by the implementation of adequate mitigation measures and regular monitoring as outlined in the revised IEE.

78. **Financial Viability.** The financial viability of such revenue-generating components as the S&D improvements depends on the proposed user fee structure for the forecast period from 2010 (the revised project completion date). It is assumed that by FY2011, the implementation of all S&D

improvement works will have been completed and that property tax and water and sewerage tariff reforms will have been introduced. Revenue collection from these charges will determine cost recovery for the S&D improvement component. In the absence of compliance in relation to these reforms, the financial viability of the Project will be compromised. However, the sound cash flow situation projected for the KMC could support the Project even if this component were not being financially sustainable on a stand-alone basis.

79. **Economic Growth and Political Stability.** The success of the Project in achieving its impacts assumes stability in the economic and political environments of both the Government of India and the GoWB. As both governments show ample signs of stability, the risks to the Project are minimal.

V. ASSURANCES

A. Specific Assurances

80. In addition to the assurances set forth in the amended and restated Loan Agreement dated 24 July 2002 and the Project Agreement dated 18 December 2001, both for the Calcutta Environmental Improvement Project, the Government of India and the GoWB have given the following assurances, which are incorporated in the legal documents:

- (i) The GoWB and the KMC will ensure that the project director of the KMC PMU continues to be a special secretary, that the project director of the I&WD PMU continues to be a chief engineer, and that both PMUs continue to have qualified and experienced project staff for the revised duration of the Project.
- (ii) The GoWB and the KMC will ensure that BME of the Capacity-Building Program funded by the DFID, is carried out. The baseline data for the Capacity-Building Program will be collected and monitoring indicators will be established by March 2007.
- (iii) The GoWB and the KMC will ensure that the Project's capacity-building and social sector interventions continue to be supported by the DFID throughout the revised Project period.
- (iv) The GoWB will ensure that the KMC completes stakeholder consultations and consensus building on water tariffs by 31 December 2006.
- (v) The KMC will complete a study of willingness to pay by 31 December 2006.
- (vi) The KMC will finalize its water tariff strategy and publicly disclose it on its website by 31 March 2007.
- (vii) The KMC will have introduced a flat-rate water tax/tariff no later than 30 June 2007.
- (viii) The GoWB and the KMC will ensure that by 28 February 2007, at least 100,000 water meters will have been procured.
- (ix) The GoWB and the KMC will ensure that the city sewerage and drainage master plan has been completed by 31 March 2007.
- (x) The KMC will submit to ADB an EMP of the EKW, including a detailed study, satisfactory to ADB, on the potential impacts of additional sewage discharges from the catchment zones covered under the Project into the EKW in the event the KMC chooses alternative treatment through the fisheries in the EKW. The study will provide scientific and quantitative evidence that (a) all types of sewage-receiving environments within the EKW will be capable of treating current and proposed additional sewage discharges to required levels; (b) effluent discharged into receiving waters will meet inland surface water standards, as prescribed by local statutes and Government of India regulations and requirements, and those in the World Bank's *Pollution Prevention and Abatement Handbook*²³ as referred to in ADB's *Environment Policy* (2002); (c) current and proposed additional discharges will not have adverse impacts on the ecological resources in the EKW and other receiving environments throughout the Project's design life; and (d) associated canals and/or channels and the EKW as a whole can absorb the current and additional pollution load without posing a significant environmental threat of any kind. The study and the resettlement plan should be publicly disclosed and discussed with affected persons in the Project area.

²³ World Bank. 1998. *Pollution Prevention and Abatement Handbook*. Washington, D.C.

- (xi) The GoWB and the KMC will ensure (a) strict compliance with the existing environmental laws of the Government of India and of the GoWB and with ADB's *Environment Policy* (2002); (b) implementation of all necessary measures to mitigate any adverse environmental impacts associated with the Project and of environmental monitoring activities as identified in the revised IEE and EMP; and (c) consultation with affected persons on environmental issues.
- (xii) The Government of India will cause the GoWB and the KMC to revise the IEE, in consultation with other concerned agencies and with due public consultation, upon the acquisition of land for any Project facility and to prepare an environmental impact assessment upon the acquisition of land for any project facility that is considered to have a significant environmental impact, both in accordance with ADB's *Environment Policy* (2002) and the Government of India's relevant guidelines.
- (xiii) The KMC will, by 31 December every year, (a) submit an annual report to ADB providing the results of the environmental and safety monitoring program as identified in the EMP and copies of relevant permits and licenses obtained for the project facilities, and (b) ensure that the Project facilities are operated and maintained in accordance with the environmental and safety standards of the Government of India.
- (xiv) The GoWB and the KMC will ensure that resettlement activities under the Project are carried out in accordance with the Government of India's applicable laws and policies and ADB's *Policy on Involuntary Resettlement* (1995). The GoWB and the KMC will ensure that land, facilities, and resettlement entitlements are made available to affected persons in accordance with the updated resettlement plan and that affected persons are relocated directly from current settlements to permanent apartments so that no more transit villages are established.
- (xv) The KMC, as the lead executing agency for the Project, will ensure that all necessary steps are carried out in a timely manner, such as (a) providing training to the I&WD, (b) engaging consultants and auditors as required, (c) seconding personnel to the I&WD as applicable, and (d) assisting I&WD in submitting all required reports and information to ADB.
- (xvi) The GoWB and the KMC will take concrete proactive steps to ensure good governance and prevent corruption (Appendix 13). In particular, the GoWB and the KMC will ensure that (a) relevant provisions of ADB's *Anticorruption Policy* (1998, as amended to date) are included in the bidding documents for the Project; (b) all contracts financed by ADB in connection with the Project include provisions specifying the right of ADB to audit and examine the records and accounts of the I&WD, the KMC, and all contractors, suppliers, consultants, and other service providers as they relate to the Project; and (c) information on bidding procedures, bidders, and contract awards for the Project is publicly disclosed on the website for the Project.

VI. RECOMMENDATION

81. I am satisfied that the proposed supplementary loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve the supplementary loan of \$80 million to India for the Kolkata Environmental Improvement Project from ADB's ordinary capital resources, with interest to be determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility, a term of 19 years, and such other terms and conditions as are substantially in accordance with those set forth in the draft Loan and Project Agreements presented to the Board.

Haruhiko Kuroda
President

20 November 2006

REVISED DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
Impact Sustained improvement in the environmental health and quality of life of residents of the city of Kolkata	Three years after project completion (2013): <ul style="list-style-type: none"> • Percentage of people below the poverty line reduced by 7% • Average number of flood days reduced by 10% 	<ul style="list-style-type: none"> • Government of India census • KMC records 	Assumption <ul style="list-style-type: none"> • Macroeconomic and political stability Risks <ul style="list-style-type: none"> • Natural disaster • High in-migration
Outcome Provision and sustainable management of urban sanitation and solid waste management facilities in the project areas (contribute to the targets of Millennium Development Goal 7)	By the end of the Project (2010): <ul style="list-style-type: none"> • More than 2 million people in the project areas have access to sewerage and drainage facilities • Improved environmental conditions and solid waste management facilities for more than 5 million people in Kolkata • Improved basic urban services for more than 0.2 million slum dwellers • The KMC to meet all operation and maintenance costs • The KMC to fulfill its debt-service commitment 	<ul style="list-style-type: none"> • KMC records • PPMS reports • ADB loan review mission reports • Financial audit reports 	Assumptions <ul style="list-style-type: none"> • Sustained financial health of the GoWB and the KMC • Skilled human resources remain in place • Willingness of the community to pay Risks <ul style="list-style-type: none"> • Lack of political will to introduce and/or increase user charges for urban services
Outputs 1. Provision of new and rehabilitation of existing sewerage, drainage, and other urban infrastructure facilities completed in the Project areas 2. Basic slum improvements carried out and infrastructure facilities built in low-income areas and access to	By the end of the Project (2010): <ul style="list-style-type: none"> • Construction of about 424 km of a new sewerage and drainage network (52 km completed) • Renovation and de-silting of about 364 km of existing sewers and drains • Construction of 18 new pumping stations and augmentation and rehabilitation of 17 existing pumping stations • Augmentation and rehabilitation of three existing STPs • Construction of two new STPs (total capacity of 150 million liters per day) • Rehabilitation of around 14 small water bodies and parks (3 completed) • 100,000 sewerage connections (746 completed) and 100,000 water meters installed • Sanitary landfill with a capacity of 1,200 metric tons per day constructed and waste collection equipment purchased • Approximately 70 km of de-silting and 21 km of canal lining undertaken (1.3 km completed), and 53 bridges constructed over canals (8 completed) • Resettlement of 3,626 affected households in apartments in line with the agreed resettlement plan (229 families relocated) • Construction of 8,500 water standposts, construction and upgrading of 700 community latrines, construction of 280 washing and/or bathing platforms, widening of 28 km of drains, and improvement and paving of 178,000 square meters of open public space 	<ul style="list-style-type: none"> • PPMS reports • KMC records • ADB loan review mission reports • PPMS reports • ADB loan review mission reports • Willingness to pay 	Assumptions <ul style="list-style-type: none"> • Households will connect to the new sewerage and drainage network • Households will allow the installation of water meters • The KMC's and GoWB's financial health remains sound • Current project management units remain in place and the KMC and GoWB remain committed to the Project • Communities are receptive to awareness and self-help programs • Department for International Development of the United Kingdom funding for capacity building continues for the revised duration of the Project Risks <ul style="list-style-type: none"> • Change in the political environment • Households are not willing to pay • Delays in project implementation • Change in key

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>services provided</p> <p>3. Communities empowered and involved through participatory processes</p> <p>4. STPs completed and functioning in line with standards</p> <p>5. The KMC achieves cost recovery in relation to services and develops as a proficient and autonomous municipality</p>	<p>(currently 70% of all slum works have been completed)</p> <ul style="list-style-type: none"> • Water and sanitation service fees to represent no more than 5% of the average monthly household income • Community representatives involved in the project steering committees and management procedures • Sewage effluent from all treatment plants meets the standards specified by the West Bengal Pollution Control Board • Sewerage and drainage assets belonging to the Kolkata Metropolitan Development Authority transferred to the KMC • Water and sewerage tariffs introduced and the KMC operates water and sewerage services on commercial principles • The KMC's workforce reduced by 10% • The KMC's accounting system is fully computerized • The KMC's solid waste management responsibilities are delegated to the private sector • Area-based property tax system introduced and tax collection efficiency of 80% achieved 	<p>survey</p> <ul style="list-style-type: none"> • PPMS reports • ADB loan review mission reports • West Bengal Pollution Control Board and project environmental monitoring reports • KMC progress and financial audit reports • ADB loan review mission reports 	<p>project management unit staff</p> <ul style="list-style-type: none"> • Poor tariff collection
<p>Activities with Milestones</p> <p>1.1 All civil works and material supply contracts awarded by December 2007</p> <p>1.2 All consulting services contracts, including those for implementation of the proposed supplementary loan, awarded by December 2007</p> <p>1.3 Baseline data collection and indicator setting for benefit monitoring and evaluation of all project components completed by December 2006</p> <p>2.1 Stakeholder consultations and consensus building, including the revised willingness to pay study, for the installation of water meters completed by December 2006</p> <p>2.2 Water and sewerage tariff strategy completed by January 2007</p> <p>2.3 Flat-rate water tariff introduced by June 2007</p> <p>2.4 Water meters procured by February 2007</p> <p>2.5 Installation of water meters started by March 2007</p> <p>2.6 Sewerage and drainage master plan completed by March 2007</p> <p>2.7 STPs and pumping stations rehabilitated and operational by June 2010</p> <p>3.1 Private sector participation contract for solid waste management developed and tendered by June 2007</p> <p>3.2 Procurement of solid waste collection equipment completed by December 2006</p> <p>3.3 Sanitary landfill construction and commissioning completed by June 2009</p> <p>4.1 Transition resettlement camps decommissioned by December 2006</p> <p>4.2 Resettlement of all affected families completed by December 2007</p> <p>4.3 Self-help groups and user groups in all project slum areas formed by September 2006</p> <p>5.1 Water supply and sewerage assets transferred from the Kolkata Metropolitan Development Authority to the KMC by March 2007</p> <p>5.2 Area-based property tax enacted by the GoWB's legal assembly by March 2007</p> <p>5.3 The KMC's accounting system fully computerized by December 2007</p> <p>5.4 Geographic information system implemented for the KMC by March 2008</p>			<p>Inputs</p> <ul style="list-style-type: none"> • ADB: \$147 million undisbursed from the original loan, \$80.0 million proposed supplementary loan • GoWB: \$74.1 million • KMC: \$69.5 million

ADB = Asian Development Bank, GoWB = Government of West Bengal, KMC = Kolkata Municipal Corporation, PPMS = project performance monitoring system, STP = sewage treatment plant.

CAPACITY ASSESSMENT OF EXECUTING AGENCIES

A. Introduction

1. The executing agencies for the Kolkata Environmental Improvement Project are the Kolkata Municipal Corporation (KMC) and the Irrigation and Waterways Department (I&WD). As the project management units (PMUs) established for each of the executing agencies share the same premises and supporting consultants, coordination between the two is good. The I&WD PMU is responsible for implementing canal works, while the KMC PMU is responsible for implementing all other activities under the Project, such as the sewerage and drainage, slum improvement, and solid waste management works and the community consultation program.

2. The PMUs are assisted by the design and construction supervision consultant (DSC), the project management consultant (PMC), nongovernment organizations (NGOs), and individual social development and creative consultants. While both PMUs share these consultants, the KMC PMU manages their contracts and is accountable for ensuring that all Asian Development Bank (ADB) and Government of West Bengal (GoWB) policies and ADB loan covenants are adhered to during project implementation. Furthermore, the KMC PMU acts as the lead PMU and is responsible for overall project planning, budgeting, execution, and implementation and is ADB's primary point of contact for the Project.

B. Assessment of Implementation and Procurement Capacity

3. In 2004–2005, the KMC and GoWB undertook a major initiative to reorganize and strengthen the PMUs to speed-up project implementation, which had been slow. This resulted in the following:

- (i) Upgrading of the post of project director from the rank of joint commissioner to that of commissioner of the KMC, with the posting of a senior Indian administrative service officer as project director in February 2005, thereby strengthening the project director's decision-making capacity and autonomy.
- (ii) Setting up of a Contracts Management Unit within the KMC PMU headed by a chief engineer deputed from the KMC. The other members of the Contracts Management Unit include two deputy chief engineers, six executive engineers, and 12 assistant engineers.
- (iii) Establishment of a new unit, the Social Development Unit (SDU). The SDU consists of social sector staff seconded to the PMUs from the KMC and experts and consultants engaged from the market. The SDU engages NGOs to carry out field-level activities. The SDU currently has 4 KMC staff and 7 consultants assisted by 10 NGOs and 3 community mobilizers. The PMUs have also engaged benefit monitoring and evaluation consultants, who are supervised by the SDU. Planning, monitoring, and evaluation of the stakeholder consultation process, resettlement activities, and other social sector initiatives of the Project are specific SDU responsibilities. Creative consultants have been engaged to provide design and operational support to the Project's communication and public relations activities. The allocation of person-months for the DSC and PMC has been revised to suit the Project's current needs.
- (iv) Establishment of a Project Accounts Unit (PAU), headed by a senior state audit accounts officer, which consists of a mix of finance and accounts officers seconded to the KMC PMU from the KMC and chartered accountants hired from the market. The Project's accounting system has been fully computerized and is operational.
- (v) Establishment of a separate Project Coordination Unit in the KMC PMU under a senior administrative officer from the GoWB's civil service. Special officers are

recruited for this unit to look after land acquisition matters, environmental issues, and all interdepartmental coordination issues arising during the implementation of the Project.

4. These structural changes were coupled with PMU empowerment and autonomy. The financial and decision-making powers of the project director are now equivalent to those of the KMC's commissioner. Similarly, the PMUs' accounting system is now independent, and payments and disbursements are being processed and made from the PMUs rather than the KMC, which was the practice prior to 2005.

5. The Project Steering Committee has been reconstituted with the minister of municipal affairs as chair and the project director (in place of the KMC's commissioner) as the convenor. A Project Review Committee has been set up under the mayor of Kolkata to undertake monthly reviews of the Project. A Coordination Committee under the secretary of municipal affairs is in place that includes representatives of all GoWB departments and utility providers connected with the Project.

6. The I&WD project director is a chief engineer seconded from the GoWB to the Project. Although, unlike the KMC PMU, I&WD PMU has not undergone major changes in its organizational setup, it was sufficiently strengthened during 2005–2006 to enable it to implement and monitor the canal rehabilitation works. In addition to the project director, the I&WD PMU has two project managers who are superintending engineers, six executive engineers, four assistant engineers, and one subassistant engineer.

7. The PMUs handle procurement following ADB norms with assistance from the DSC and PMC. The KMC PMU's Technical and Finance Committee consists of team leaders of the Contracts Management Unit, Project Accounts Unit, the DSC, and the PMC. It is headed by the project director. Relevant KMC officials and/or engineers are invited to the meetings of this committee as and when required. The committee is responsible for all procurement matters, including the evaluation and recommendation of tenders and bids. Similarly, the I&WD PMU has a Project Implementation Committee consisting of the I&WD project director, the project manager, the DSC team leader, and the PMC team leader. It performs the same functions as the KMC's Technical and Finance Committee.

8. The PMUs have also created a technical subcommittee to oversee the technical aspects of various work packages that consists of team leaders and deputy team leaders of the Contracts Management Unit, the DSC, and the PMC. This subcommittee meets on a fixed day each week. Key PMU officials attend procurement training programs and workshops held in India or abroad on a regular basis, including those organized by ADB. For consistency and harmonization, during the Appraisal Mission for the Project it was agreed that the team leader of the PAU of KMC be made a permanent member of the Procurement Committee of the I&WD PMU. For further strengthening of the two PMUs' procurement skills, it was proposed by ADB that, with ADB support, a dedicated procurement workshop be organized by the end of 2006. Furthermore, the KMC, as the lead executing agency for the Project, will ensure that all necessary steps are carried out in a timely manner, such as (a) providing training to the I&WD, (b) engaging consultants and auditors as required, (c) seconding personnel to the I&WD as applicable, and (d) assisting I&WD in submitting all required reports and information to ADB.

C. Assessment of Financial Capacity

9. The functional efficiency of the KMC's accounting practices has recently improved considerably. The preparation of accounts and financial statements on a timely basis and the completion of backlogged audits are among the loan covenants that the KMC has complied with. Also various accounting procedures reforms are under way in the KMC under the Capacity-

Building Program funded by the Department for International Development of the United Kingdom. By 2008, a completely computerized accounting system is expected to be in place. Training of KMC accounting personnel in the newly computerized environment is also progressing. This capacity building among KMC accounting staff is expected to improve the KMC's tax collection efficiency to 80% as required under ADB's loan covenants for the Project.

10. The KMC's financial performance for the last 5 years shows that it has achieved a cash surplus. From fiscal year (FY) 2001 to FY2005, revenues generated by the KMC increased from around 66% of total receipts to 73%, an average annual growth rate of 10%. The other major source of recurrent revenues is annual transfers from the GoWB to the KMC. In FY2001, total transfers from the GoWB to the KMC represented 34% of the KMC's receipts. This figure declined to 27% in FY2005, demonstrating a decline in the KMC's dependence on the state. Nevertheless, the proposed reforms to introduce area-based property taxes and user charges for water and sewerage are long overdue. Once these have been implemented, the KMC's revenues will improve considerably. Further details of the assessment of the KMC's and GoWB's financial capacity are included in Supplementary Appendix H.

11. Thus with the support of consultants and by means of the internal arrangements for dealing with various aspects of the Project, the two executing agencies have adequate capacity to implement the Project.

IMPLEMENTATION PROGRESS SUMMARY¹

A. Part A: Stakeholder Consultation Process

1. The stakeholder consultation process is being implemented smoothly. Implementation arrangements for this component were slightly rearranged in 2005 to improve the efficiency of implementation. While nongovernment organizations (NGOs), community-based organizations, and field-level coordinators continue to be responsible for field-level implementation, a Social Development Unit (SDU) has been created, consisting of Kolkata Municipal Corporation (KMC) officials and consultants and shared by both the project management units (PMUs), to manage and coordinate overall implementation of part A, the stakeholder consultation process; part D, slum improvements; benefit monitoring and evaluation, and social interventions across all components of the Project. With the assistance of NGOs and consultants, extensive consultations on various social development issues have been carried out with affected families and other stakeholders.

2. The community development plan has been finalized and linked to government schemes for the urban poor. Four NGOs have been engaged to help implement the community development plan, and the Project has moved forward with a number of schemes designed to extend short-term and long-term benefits to the urban poor, including vocational training, insurance schemes, and health and hygiene awareness programs. Self-help groups are also being established. The Project is coordinating with several GoWB agencies to ensure that these schemes dovetail with theirs. Examples of good practice include promoting house connections to sewer lines through door-to-door campaigns, holding frequent public meetings, distributing information leaflets to citizens, establishing ward-level coordination committees, and setting up information centers in project areas and public complaints registers at the contractors' site offices. These measures are helping to generate wide public support for the Project.

B. Part B: Sewerage and Drainage Improvements

3. Sewerage and drainage (S&D) improvements suffered from serious start-up delays and contract awards and physical works have only commenced in the last 18 months. However, detailed design and tender document preparation for all remaining contracts have now been completed. Works under six contracts are in progress and major civil works contracts for two boroughs are being tendered. All contracts under the S&D works will be awarded by March 2007 and all works will be completed by mid-2010. The KMC PMU is exploring measures to expedite the S&D works to make up for lost time. As part of such efforts, the KMC PMU organized a workshop for contractors in May 2006 to seek feedback and identify potential constraints and opportunities. The participants' recommendations, such as introducing a bonus clause in remaining contracts, are being incorporated in the Project's implementation and contract documentation.

4. S&D works in the project boroughs have been grouped under six works packages. While works under four packages are in progress, bid documents for works packages in Borough XV has been sent to ADB for approval, and detailed design for works package in Borough VII is complete and tender documents are being prepared. In addition, pilot works are being implemented in one ward of each of the boroughs, of which four packages have been completed and works for the rest are in progress. Because of the delayed start-up, however, physical progress for S&D works has only just started, with only 52 kilometers of S&D pipes of the total 424 kilometers under the Project completed to date.

5. **S&D Pumping Stations.** Pumping stations under the Project are divided into six works packages. Technical evaluation of works package for construction of pumping stations in boroughs XII, XIII, and XIV is in progress, and works package for augmentation of the existing pumping stations in boroughs I, XI, XIII, XIV, and XV has been tendered. While works package for pumping

¹ As of 10 November 2006.

stations in boroughs I and XV is being tendered, tender documents for, works package for pumping stations for Borough VII and Borough XV are being prepared.

6. **Sewage Treatment Plants (STPs).** Based on the satisfactory outcome of a detailed impact study, an alternative proposal for treating sewage effluent from boroughs VII and XII and parts of Borough XI may be adopted and the construction of two new STPs may be dropped from the Project. Therefore the detailed design of the two STPs has been put on hold. The remaining works include augmenting three STPs, of which financial evaluation of works package for augmentation of the South Suburban East STP is in progress; and tender documents for works package for augmentation of the Bangur STP and works package for augmentation of the Garden Reach STP are being prepared. Tenders for these two packages will be invited in December 2006.

7. **Lake Rehabilitation Works.** Rehabilitation works for identified small parks and water bodies have been divided into two works packages. While rehabilitation works under the larger works package have been completed, contract documentation for the remaining works package is being finalized, with contract award expected in March 2007.

8. **Procurement of Equipment.** Smaller equipment (1 suction machine, 2 jetting machines, etc.) has already been procured. The purchase of water meters will start in January 2007.

C. Part C: Solid Waste Management

9. Detailed design of the sanitary landfill is in its final stages. A noteworthy development is that the Project has engaged consultants to package transfer and disposal responsibilities for the city's solid waste management under a public-private partnership modality. The consultants will conduct the necessary viability assessments and options analysis and will prepare contract documents under an appropriate public-private partnership modality for the construction, operation, and financing of a solid waste management and disposal system for Kolkata, including the construction and operation of the sanitary landfill. In the long run, the KMC is also considering involving the private sector in primary collection of solid waste, which will reduce and rationalize the massive workforce currently engaged in the sector. Subsequent to the adoption of the findings of the consultants' assessments, the tender process for the new sanitary landfill is expected to start in June 2007.

10. Procurement of equipment and vehicles for collection efficiency improvement is almost complete. This subcomponent consists of 10 packages, out of which five packages have been completed: procurement of mechanical sweepers, bulldozers, vehicles with containers and pay loaders. While contracts for the purchase of other collection equipment has been awarded, contract for the procurement of collection bins, push carts, etc. is expected to be awarded in March 2007.

D. Part D: Slum Improvement Works

11. Slum improvements are progressing well. Works have started in all slum areas identified under the Project. Field-level committees have been formed in all slums and meet at least once every month. Four-hundred-and-fifty user groups have already been formed for the operation and maintenance of assets in 14 slums. Similarly, 15 self-help groups have been formed and financing support for the self-help groups has been established. Noteworthy good practices include the integration of slum improvement activities under the Project with the KMC's poverty alleviation programs, resulting in long-term social security benefits for slum dwellers, such as insurance schemes. Most of the civil works under the slum improvement component have already been implemented or are under implementation.

12. Slum improvement works are being executed through 15 works packages. Works under the first six packages have been completed. While works four packages are in progress, financial evaluation of three packages are in progress, and the remaining packages are currently being finalized for tender. As noted earlier, the community development plan is assisting slum dwellers to form self-help groups and to benefit from other long-term Project and Government of West Bengal initiatives.

E. Part E: Canal Improvements

13. Canal improvements are divided into three types of packages: canal rehabilitation, bridge construction, and construction of canal pumping stations. While contracts for bridge construction have been awarded, implementation of canal rehabilitation and pumping station works has been slow, with only one contract currently in the implementation phase. Most of the remaining packages are at the tendering stage, and detailed engineering design of works for the Churial canal is under way. Similar to the S&D works, this component of the Project has gained renewed momentum only in the last 18 months, and since then has been moving ahead speedily. This part also involves the resettlement of 3,626 families, which is being undertaken as agreed in the original and revised resettlement plans.

14. **Canal Rehabilitation.** Works under this subcomponent are being implemented under 11 work packages. Works package for rehabilitation of downstream of the Tollygunge-Panchannagram canal has been awarded. Financial evaluation of the following packages: rehabilitation of the rest of the Tollygunge-Panchannagram canal and Monikhali canal (upstream and branch canals) have been completed. Detailed design and tender document preparation are underway for the remaining works packages.

15. **Construction of Canal Pumping Stations.** Three canal pumping stations will be constructed under a single package at Keorapukur, Monikhali, and Chowbaga under a single package, financial evaluation of which has been completed. A pumping station at Ghushighata will be constructed under a separate package that is currently being designed.

16. **Construction of Bridges.** The construction of 53 bridges over canals is included under two works packages. Work under the first package, comprising 23 bridges, is in progress and is expected to be completed in December 2006. Work under the second package, comprising 30 bridges, has recently started.

17. **Resettlement and Rehabilitation of Canal Bank Dwellers.** Of the 3,626 affected families, 229 families have already been relocated in apartments being constructed by the Kolkata Municipal Metropolitan Development Authority under the Valmiki Ambedkar Shahari Aawas Yojna². Similarly, 352 families will be relocated to these apartments in March 2007. All these families are displaced by canal works in the Tollygunge-Panchannagram basin. In addition, the Project is expected to construct 1,417 apartments in phases at Nonadanga by November 2007. Another 510 apartments will be constructed in Kasba by June 2007 and 57 more apartments will be constructed in Purba Putiary, Purba Barsiha, and Sampa Mirzanagar by November 2007 for relocating families affected by other canal works.

² Valmiki Ambedkar Shahari Aawas Yojna (VAMBAY) is a scheme of the Ministry of Urban Development and Poverty Alleviation of the Government of India. This scheme, launched in December 2001, provides grant subsidy for construction and rehabilitation of the dwelling units for the slum dwellers and the population living below the poverty line.

F. Part F: Implementation Assistance and Capacity Building

18. Consulting services by the project management consultant and design and construction supervision consultant are ongoing. In parallel, the Capacity-Building Program funded by the Department for International Development of the United Kingdom is being implemented by a separate KMC department. Coordination between the PMUs and the KMC's Capacity-Building Program team needs immediate strengthening. Baseline data collection for benefit monitoring and evaluation of the Capacity-Building Program has started. The Capacity-Building Program is being implemented under the following subcomponents (each being carried out by a consulting firm engaged through a competitive bidding process): (i) organizational development; (ii) computerization; (iii) public relations and communication; (iv) geographic information system; (v) program management, including implementation, change management and governance, social inclusion, and urban planning; and (vi) resource mobilization. All components are progressing smoothly under the KMC's Capacity-Building Program Department.

STATUS OF COMPLIANCE WITH LOAN COVENANTS

Reference in Loan Agreement	Covenants ^a	Status of Compliance
Loan Agreement, Schedule 6, para. 1	Project Implementation Constitution and function of the Project Steering Committee.	Being complied with.
Loan Agreement, Schedule 6, para. 2 and 3	Constitution of and support to the Executing Agencies (EAs) and the Project Management Units (PMUs).	Being complied with.
Loan Agreement, Schedule 6, para. 4	Reports, Accounts, and Midterm Review Submission of quarterly reports from the PMUs.	Being complied with.
Loan Agreement, Schedule 6, para. 5	Submission of project completion report to ADB.	Not yet due.
Loan Agreement, Schedule 6, para. 6	Submission of reports, accounts and financial statements within agreed time frames satisfactory to the Bank.	Being complied with.
Loan Agreement, Schedule 6, para. 7	Within 2 years of effective date ... a midterm review shall be conducted ... following completion of detailed design and award of procurement and consulting services contracts.	Not yet due. Even though the original loan was made effective in 2002, detailed design and procurement are not yet completed because of substantial initial delays in the Project. Therefore it is proposed that the midterm review be undertaken in December 2007, when all detailed design and procurement activities under the Project have been completed.
Loan Agreement Schedule 6, para. 8.	Benefit and Monitoring Evaluation Ensure that a BME program is undertaken in accordance with ADB's project performance monitoring system (PPMS).	Being complied with.
Loan Agreement, Schedule 6, para. 9	Conduct necessary surveys, implementation plan, etc.	Being complied with.
Loan Agreement, Schedule 6, para. 10	Policy and Institutional Reform Execute the Policy and Institutional Action Plan as agreed to by the Borrower, the State, KMC and the Bank.	Being complied with.
Loan Agreement, Schedule 6, para. 11	Ensure that water supply investments in the Project area shall be maintained up to Fiscal Year (FY)2006/2007 at a level that will result in at least 100,000 total connections by the end of that FY, with an average number of connections of 8,000 per year and 57,000 incremental connections by the end of FY2007.	Being complied with.
Loan Agreement, Schedule 6, para. 12	The KMC shall undertake a program of metering all water consumers with 20mm ferrule size or more...and (c) 100% of all such consumers shall be metered by the end of FY2004/2005. All consumers shall be metered by the end of FY2009/2010.	Partially complied with. Compliant on metering industrial, commercial, and institutional consumers. Noncompliant on metering domestic consumers. Based on lessons from Project implementation, it was agreed that a more phased implementation road map was needed to achieve the original objectives, for example, installing 100,000 domestic water meters initially on a pilot basis. Such a road map is reflected in additional covenants for the proposed Loan Agreement for supplementary financing.
Loan Agreement, Schedule 6, para. 13	The KMC shall implement property tax reform acceptable to the Bank by no later than the end of FY2003/2004 in accordance with actions agreed to between the State, KMC and the Bank	Not complied with. However, the KMC has already prepared and ratified the necessary legal documents and the GoWB has forwarded them to the legislative assembly of West Bengal. The GoWB expects

Reference in Loan Agreement	Covenants ^a	Status of Compliance
	under the Policy and Institutional Reform Agenda and amendments to the KMC Act under para.12(a) of Schedule 4 to this Loan Agreement.	the act to be effected by the end of FY2007. Furthermore, the original objective of property tax reforms was to strengthen the ailing economy of the GoWB, which is no longer the case as demonstrated by the financial analyses of the GoWB and KMC.
Loan Agreement, Schedule 6, para. 14	Excluding Garden Reach water supply treatment plants, the KMC shall adopt water supply and sewerage assets within its geographical boundaries under the control of the KMDA such that all such assets are adopted by KMC no later than the end of FY2004/2005 in accordance with actions agreed to between the State, KMC and the Bank under the Policy and Institutional Reform Agenda.	Complied with.
Loan Agreement, Schedule 6, para. 15	The KMC shall ensure that the rationalization and redeployment of KMC staff shall result in sufficient number and quality of staff deployed in the management of hazardous and biomedical wastes, such that these wastes are handled, transported, treated and disposed of in accordance with the relevant legislation and regulations of the Borrower, State and KMC and the Bank's environmental guidelines.	Not relevant, as the central biomedical and hazardous waste management facility has been dropped from the Project with ADB's consent.
Loan Agreement, Schedule 6, para. 16	Financial Reform Subject to the ongoing World Bank studies on metering and para. 12 of this Schedule,, the State and KMC shall ensure that a progressive block rate of water tariff and sewerage surcharge, based on metering of such water supply consumers as previously agreed to with the Bank, shall be implemented such that ... the adoption of such water tariff and sewerage surcharge shall be completed in the KMC's jurisdictional area at the end of FY2007/2008.	Not complied with. Based on lessons from Project implementation, it was agreed that a more phased tariff implementation road map was needed with firm milestones to achieve the original objectives of the Project. Such a road map has been reflected in additional covenants in the proposed Loan Agreement for supplementary financing.
Loan Agreement, Schedule 6, para. 17	The KMC shall ensure that pending the progressive block rate of water tariff and sewerage surcharge in accordance with para. 16 of the LA and the Policy and Institutional Reform Agenda, there shall be retention of the flat rate surcharge based on consumer connection size for un-metered water connections in accordance with Section 6.01 (a) of this LA.	Being complied with.
Loan Agreement, Schedule 6, para. 18	The KMC shall improve property tax collection efficiency to 80% on a basis satisfactory to the Bank by the end of FY2004/2005 in accordance with actions agreed to between the State, KMC and the Bank under the Policy and Institutional Reform Agenda.	Complied with.
Loan Agreement, Schedule 6, para. 19	The KMC shall ensure that external auditors acceptable to the Bank shall have audited KMC's un-audited accounts and ... shall have audited as per the agreed schedule.	Complied with.

Reference in Loan Agreement	Covenants ^a	Status of Compliance
Loan Agreement, Schedule 6, para. 20	The KMC shall ensure that the audit of KMC's FY2000/2001 accounts shall be completed by external auditors ... within 12 months of the end of the FY.	Complied with.
Loan Agreement, Schedule 6, para. 21	By 31 December 2004, the KMC shall have amended its contract with the Kolkata Port Trust (KPT) under Section 17(7) of the KMC Act and the State shall have ratified such an amendment which shall ensure a revision satisfactory to the Bank, to the exemption or reduction on property tax for KPT properties.	Not complied with. However, the KMC has sent proposals to both the GoWB and the KPT for amendment of the contract. A response from KPT is pending.
Loan Agreement, Schedule 6, para. 23	Ensure adoption of budget estimates and charges on the Consolidated Fund of the State ... with the Bank's financing plan agreed with the Borrower.	Complied with.
Loan Agreement, Schedule 6, para. 25	Ensure that a dedicated operating account shall be established for solid waste management by the end of FY2001/2002.	Complied with.
Loan Agreement, Schedule 6, para. 26	The State and KMC shall ensure that KMC shall have issued regulations with State approval or KMC shall have adopted budget estimates to meet full operations and maintenance recovery and 30% allocation from property tax for water supply, sewerage and drainage by the end of FY2004/2005.	Partially complied with. Budget allocations are not yet adequate to meet full operation and maintenance recovery. Upon the introduction of flat-rate tariffs in June 2007, as agreed with ADB, the KMC will revise its budget allocations to meet these objectives by FY2008.
Loan Agreement, Schedule 6, para.27	Resettlement and Environment Ensure that all necessary measures shall be taken to mitigate any adverse social impacts associated with the Project. Such mitigation measures shall include rehabilitation assistance for Part E of the Project in accordance with a Resettlement Plan satisfactory to the Bank.	Being complied with.
Loan Agreement, Schedule 6, para. 28	The State and KMC shall ensure that upon completion of the design of Project facilities under the Project, a Resettlement Plan, if required, shall be prepared ... in accordance with the Bank's Resettlement Policy and the Bank's Handbook on Resettlement 1998, as amended from time to time	Complied with.
Loan Agreement, Schedule 6, para. 29	The Resettlement Plan in para. 27 of this LA Schedule 6 and para. 28 of LA Schedule 6 shall, <i>inter alia</i> , implement (a) minimization of relocation; ...ensure relocation sites for affected persons shall be no further than 2 kilometres (km) from their present location and that such relocation sites are confirmed in consultation with affected persons.	Complied with.
Loan Agreement, Schedule 6, para. 30 (b)	The Borrower shall cause the State and KMC to prepare, in consultation with other concerned agencies and due public consultation, an initial environmental examination (IEE) upon acquisition of land for any Project ...in accordance with the Bank's relevant guidelines and the Borrower's relevant guidelines.	Complied with.

Reference in Loan Agreement	Covenants ^a	Status of Compliance
Loan Agreement, Schedule 6, para. 30 (c)	Submit an annual report to the Bank providing the results of an environmental and safety monitoring program and copies of permits and licenses certifying that Project facilities, including the Integrated Hazardous Waste Management Facility and the Central Biomedical Waste Treatment Facility, are operated and maintained in accordance with the environmental and safety standards of the Borrower.	Complied with. However, the hazardous waste management facility and the central biomedical waste treatment facility have been dropped from the Project with ADB's consent.
Loan Agreement, Schedule 6, para. 31	The State and KMC shall ensure the enforcement of new connections from properties to sewers and drains.	Complied with.
Loan Agreement, Schedule 6, para. 32	<p>Cofinancing</p> <p>In the event the DFID Agreement shall become liable for suspension or cancellation, the Borrower shall promptly and to the satisfaction of the Bank ensure that the funds under the DFID Agreement shall be made available to the Project on the same terms, conditions and quantum of funds as the DFID Grant pursuant to the DFID Agreement.</p>	Not applicable, as the DFID grant support is progressing smoothly.

ADB = Asian Development Bank, BME = benefit and monitoring evaluation, DFID = Department for International Development of the United Kingdom, EA = executing agency, FY = fiscal year, GoWB = Government of West Bengal, IEE = initial environmental examination, I&WD = Irrigation and Waterways Department, KMC = Kolkata Municipal Corporation, KMDA = Kolkata Metropolitan Development Authority, KPT = Kolkata Port Trust, LA = Loan Agreement, PPMS = project performance management system, PMU = project management unit.

^a Some of the original loan covenants have been summarized.

Source: Asian Development Bank estimates.

PRICE ESCALATION AND COST OVERRUN ANALYSIS

Table A5.1: Comparison of Initial and Revised Cost Estimates by Component

Components	Project Cost in US\$ million				Change in Revised Project Cost over RRP Cost Estimate (%)
	Initial Cost	Revised Cost Estimates	Cost Overrun	Distribution of Cost Overrun %	
Sewerage and Drainage	139.1	234.9	95.8	84.3	68.9
Canal Improvement Works, excluding Resettlement	32.7	41.2	8.5	7.5	26.0
Resettlement	4.8	6.8	2.0	1.7	41.2
Solid Waste Management	29.9	10.1	(19.8)	(17.4)	(66.1)
Slum Improvement	10.1	10.7	0.6	0.5	6.1
Stakeholders Consultation	0.3	0.3	0.0	0.0	0.0
Implementation Assistance	18.1	29.2	11.1	9.7	61.1
Taxes and Duties	15.5	19.4	3.9	3.4	25.1
Contingencies	23.9	43.9	20.0	17.6	83.9
Financial Costs	13.4	4.9	(8.5)	(7.5)	(63.7)
Total	287.8	401.4	113.6	100.0	39.5

() = negative value.

RRP = report and recommendation of the President to the Board of Directors.

Notes:

- Initial cost was estimated at the original appraisal stage at constant 1999 price, while revised cost was prepared at constant 2006 price.
- The cost increase in sewerage and drainage (S&D) was caused by (i) price escalation in construction materials, (ii) inclusion of Borough VII, (iii) increase in property connections, (iv) change in design, (v) high risk premium imposed in the bid value (the work areas are heavy traffic zones), and (vi) engineer's underestimation of enhanced financing and insurance costs for large international competitive bidding (ICB) packages.
- The cost increase in canal improvement works was caused by (i) change in physical scope (e.g., number of bridges, and length of canals), (ii) underestimation of the project deliverables, and (iii) engineer's underestimation of unit costs.
- The cost increase in resettlement was caused by change from temporary shelters to permanent shelters.
- The cost decrease in solid waste management (SWM) was caused by (i) removal of bio medical and hazardous waste treatment plant, and (ii) removal of some equipment.
- The cost increase in implementation assistance was purely caused by an extension of implementation period.
- Service tax rate was increased from 5% to 12.24%.

Source: Asian Development Bank estimates.

Table A5.2: Comparison of Initial and Revised Cost Estimates by Category

Components	Project Cost in \$ million				Change in Revised Project Cost over RRP Cost Estimate (%)
	Initial Cost	Revised Cost Estimates	Cost Overrun	Distribution of Cost Overrun %	
Civil Works	182.0	281.5	99.5	87.5	54.6
Equipment	20.0	7.7	(12.3)	(10.8)	(61.4)
Small Scale Loan Facility	0.1	0.0	(0.1)	(0.1)	(100.0)
Resettlement	5.0	6.8	1.8	1.6	35.5
Land	7.5	7.8	0.3	0.3	4.3
Training	0.3	0.3	0.0	0.0	0.0
Consulting Services	12.3	20.3	8.0	7.1	65.2
Front-end Fee	2.5	2.5	0.0	0.0	0.0
Interest and Commitment Charges	2.4	2.4	0.0	0.0	0.0
Incremental Administration	5.0	8.1	3.1	2.8	63.5
Prior Technical Assistance	0.8	0.8	0.0	0.0	0.0
Financing					
Taxes and Duties	15.5	19.4	3.9	3.4	25.1
Unallocated	34.6	43.9	9.4	8.2	27.0
Total	287.8	401.4	113.6	100.0	39.5

() = negative value.

RRP = report and recommendation of the President to the Board of Directors.

Notes:

- The cost decrease in equipments was caused by (i) removal of bio medical and hazardous waste treatment plant, (ii) re-categorization of equipment for pumping stations and sewerage treatment plants (STPs) to civil works, and (iii) removal of some equipment for SWM.
- The cost decrease in land was caused by using more government land.
- Interest and commitment charges are not included in revised costs.

Source: Asian Development Bank estimates.

Table A5.3: Wholesale Price Inflation in India for Selected Commodity Groups

Year	(%)						
	All Commodities	Manufactured Products	Fuel Only	Metal Products	Iron and Steel	Mineral Products	Cement
1998–99	5.3	4.9	3.2	1.0	4.6	2.9	5.6
1999–00	6.5	2.4	26.7	3.2	0.9	(0.9)	(0.7)
2000–01	4.9	3.8	15.0	3.2	1.4	15.7	20.3
2001–02	1.6	0.0	3.9	(0.9)	0.0	(2.8)	(4.7)
2002–03	6.5	5.1	10.8	6.6	9.2	3.3	1.1
2003–04	4.5	6.3	2.7	20.3	34.2	3.0	1.3
2004–05	5.1	4.6	10.5	17.1	21.3	11.4	10.2
2005–06	4.0	1.5	8.9	(2.9)	(7.5)	8.5	13.0
Average (1999–2006)	4.8	3.6	10.2	6.0	8.0	5.1	5.8
AACGR(1999–2006)	4.7	3.4	11.0	6.4	7.7	5.3	5.5
Weighted (1999–2006)				5.5			

() = negative value.

AACGR = average annual compound growth rate.

Note: The weighted average was computed, assuming the cost composition of 30% for all commodities, 25% for manufactured products, 10% for fuel 10% for iron and steel, and 25% for cement.

Source: Reserve Bank of India. 1999–2000. *Annual Reports 1999–2000*. India.

Table A5.4: Cost Change due to Change in Physical Scope

Civil Works	Change in Cost Estimates (%)
S&D	
Borough (Service Area)	5
Borough (House Connection)	11
	8
Canal	
Disiltation and Excavation	47
Lining	77
	62
Solid Waste Management	
Machineries	(66)
Collection equipments	(64)
Total	13

() = negative value.

S&D = sewerage and drainage.

Source: Asian Development Bank estimates.

Table A5.5: Comparison of Engineer's Estimates and Contracted Values

(Rs. million)						
Package No.	Description	Engineer's Estimate	Contract Value	Difference	% Difference	
Sewerage and Drainage						
SDA1	S&D Borough XI and XIII - LOT1	392.3	448.1	55.8	14	
SDA2	S&D Borough XI and XIII - LOT2	335.8	495.8	160.0	48	
SDA3	S&D Borough XI and XIII - LOT3	571.1	783.5	212.4	37	
SDB1	S&D Borough XIV - LOT 1	350.7	514.3	163.6	47	
SDB2	S&D Borough XIV - LOT 2	308.7	447.5	138.8	45	
SDB3	S&D Borough XIV - LOT 3	211.6	299.5	87.9	42	
		2,170.2	2,988.7	818.5	38	
Canal Improvements						
CW03	Bridges on Canals - PK1	57.4	67.6	10.2	18	
CW04	Bridges on Canals - PK2	94.8	105.6	10.8	11	
CW05	Canal Rehab - PK1, TP basin	58.0	67.0	9.1	16	
		210.2	240.2	30.0	14	
Slum Improvements						
SI01	Works of Slum Improvement - PK1	3.9	4.1	0.2	6	
SI02	Works of Slum Improvement - PK2	40.2	47.0	6.8	17	
SI03	Works of Slum Improvement - PK3	37.8	54.0	16.2	43	
SI04	Works of Slum Improvement - PK4	29.0	26.7	(2.3)	(8)	
SI05	Works of Slum Improvement - PK5	18.0	35.0	17.1	95	
SI06	Works of Slum Improvement - PK6	16.5	21.6	5.0	30	
SI07	Works of Slum Improvement - PK7	46.2	52.2	6.0	13	
SI08	Works of Slum Improvement - PK8	25.8	29.1	3.3	13	
SI09	Works of Slum Improvement - PK9	76.5	98.2	21.7	28	
		293.9	367.9	74.0	25	
Resettlement						
RSA	Resettlement of 1280 canal dwellers at Nonadanga - VAMBAY KEIP Package 1 - Lot 1-5	128.0	133.5	5.4	4	
	Total	2,802.3	3,730.3	928.0	33	

() = negative value.

CW = canal works, KEIP = Kolkata Environmental Improvement Project, S&D/SD = sewerage and drainage, SI = slum improvement, PK = package, RS = resettlement, VAMBAY = Valmiki Ambedkar Shahari Aawas Yojna.

Source: Asian Development Bank estimates.

SUMMARY OF PHYSICAL CHANGES AND DESIGN MODIFICATIONS

Details	Original	Revised	Description
Part A: Stakeholder Consultation Process			
No change in deliverables, mode of supervision rearranged			A nongovernment organization was mobilized in September 2002 to oversee the stakeholder consultation process as originally envisaged. As this arrangement was found to be ineffective, the SDU was set up within the Kolkata Municipal Corporation (KMC) Project Management Unit to oversee the stakeholder consultation process. Implementation (field-level activities) is still being carried out by nongovernment organizations, community-based organizations, and consultants. The SDU consists of consultants and KMC personnel.
Part B: Sewerage and Drainage Improvements^a			
Total number of beneficiaries	1,395,900	1,463,138	The total number of beneficiaries, originally estimated from the 1991 census, changed following the 2001 census. The current number of beneficiaries reflects the population of wards and boroughs reported under the 2001 census plus the population of wards under the newly added Borough VII works.
Total number of connections	90,900	120,000	Revised property connections have been calculated on the basis of the current population of beneficiaries.
Borough I			
New pumping stations	4	5	Under the original project design, construction of four new pumping stations was proposed for Borough I. During detailed design, comprehensive hydraulic modeling was carried out by the design and construction supervision consultants, based on which the requirements for pumping stations were adjusted accordingly. For instance, the existing pumping station at Beerpara was found to be adequate to handle the flow, and hence the proposal for an additional pumping station was dropped. Similarly, flow generated from an area in Ward 5 could not be diverted directly to the Circular Canal because of the area's physical constraints, thus a new pumping station with a capacity of 610 lps was designed within the existing pumping stations premises.
Borough XI			
Augmentation of pumping stations	0	6	Hydraulic modeling showed that all six existing pumping stations had to be augmented to cope with the calculated DWF discharge from the area. All DWF is designed to reach the pumping station LS-5, from where it will be pumped to the Keorapukur MPS to be pumped to the South Suburban (East) STP.
Borough XII			
New pumping stations	0	4	The number, size, and location of these pumping stations were determined from the conclusions of the hydraulic modeling carried out during the detailed engineering design phase.
STP	2 (total capacity 50 MLD)	2 (total capacity 150 MLD)	The capacity of the two STPs proposed will need to be increased to 150 MLD because of the inclusion of S&D works in Borough VII. However, the KMC is currently conducting a comprehensive study to identify potential environmental impacts on the East Kolkata Wetlands to propose alternative treatment of sewage from Boroughs VII, XI and XII into the DWF channel to be treated through the fisheries in the East Kolkata Wetlands.
Borough XIII			
Augmentation of pumping stations	2	4	Of the four existing DWF pumping stations in Borough XIII, two pumping stations (LS-3 and the Keorapukur MPS) were considered for augmentation in the original Project design. However, during detailed design it became evident that all four existing pumping stations (LS-1, LS-2, LS-3, and the Keorapukur MPS) needed augmentation in order to pump the DWF to the South Suburban (East) STP as originally envisaged.

Details	Original	Revised	Description
New pumping stations	4	1	Four new SWF pumping stations were considered in the original Project design. However, after detailed engineering design (and the fact that the S&D system being built was now a combined one), it was found that one additional pumping stations at Canal Road would be sufficient to handle the DWF from the area. The remaining SWF will be discharged by gravity.
Borough XIV			
Augmentation of pumping stations	2	1	The flow to the existing Jinjira Bazar pumping station (capacity 558 lps) was overestimated during the original project design. During detailed design and hydraulic modeling, the design flow to this pumping station was estimated to be 344 lps, which is well below the capacity of the pumping station. Hence, augmentation of this pumping station was dropped from the Project.
New pumping stations	1	3	The original Project design had considered only one new SWF pumping station near the Parnasree canal. During detailed design, it was found that the SWF can be achieved by gravity at this location. Furthermore, during detailed hydraulic modeling and design, it was found that to achieve optimal utilization of existing canals and effective utilization of the existing DWF network, three more DWF pumping stations were required: (i) at the Diamond Harbour Road canal (capacity 178 lps); (ii) adjacent to the Begore Branch canal (capacity 305 lps); and (iii) at the Behala Flying Club (capacity 545 lps).
Borough XV			
New pumping stations	3	2	Of the three new pumping stations proposed for Borough XV, the Karbala pumping station for DWF and the Monikhali pumping station 1 have been eliminated, as it was found possible during the detailed design phase to divert DWF to existing systems and/or canals by gravity. Due to the lack of land, the location of the Monikhali pumping station 2 was shifted to Mudiali for the disposal of SWF to the Monikhali canal. Similarly, detailed design of S&D works in Borough XV established the need for constructing another pumping station within the existing Santoshpur pumping station premises to augment pumping capacity at that location from 464 lps to 1,108 lps.
Borough VII			
S&D network, pumping stations and pumping main	Borough not covered	36.3 km of S&D network, augmentation of 7 pumping stations, 3 new pumping stations, 0.90 km of pumping main	Savings from the elimination of the biomedical and hazardous waste subcomponent were reallocated to allow additional S&D works in various wards of Borough VII. Borough VII was selected as it is the most congested, populous, and rapidly expanding area in the periphery of Kolkata and is currently discharging its sewage into canals, thereby creating a significant environmental hazard. Its inclusion in the Project was considered a necessary step, because it would not only benefit the largest number of beneficiaries, thereby giving the largest return on investment, but it would also result in the largest corresponding improvement in environmental sanitation in Kolkata. The design principles follow the least-cost approach and comply with safeguards.
Rehabilitation of public facilities (Subhas and Rabindra lakes)	2 large lakes	14 small water bodies and parks	As the rehabilitation of facilities at the Subhas and Rabindra lakes were being taken up by the KMC from its own funds, other parks, water bodies, and public spaces within Kolkata have been taken up based on consultations with the boroughs under the Project (technically feasible and compliant with the Asian Development Bank's safeguard requirements).

Details	Original	Revised	Description
Part C: Solid Waste Management			
Biomedical and hazardous waste facility	1	0	The government of West Bengal decided to take up construction of a central biomedical and hazardous waste management facility as part of a private build-own-and-transfer scheme for the city. Therefore the savings from this subcomponent were reallocated to allow additional S&D works in various wards of Borough VII.
Procurement of cleaning, waste collection, and other equipment	Various	Various	The equipment budget was slightly reduced because the equipment had either already been purchased by the KMC's own funds (because of the delay in project implementation the KMC could no longer wait for project funds for some crucial items of equipment) or the items no longer need to be purchased separately because of the planned outsourcing of solid waste management responsibilities under the private sector partnership scheme currently being designed for the KMC.
Sanitary landfill	1	1	The Project is in the process of packaging the entire transfer and disposal part of the solid waste management process into a public-private partnership contract and envisages private investment in construction and operation of the municipal landfill. Therefore the Asian Development Bank's contribution to the sanitary landfill was reduced.
Part D: Slum Improvement			
Tollygunge-Panchannagram basin de-siltation			De-siltation of the Tollygunge-Panchannagram basin has been taken up under part E: canal improvement works. There are no significant deviations from other slum improvement works. As already noted, the SDU is now responsible for oversight of this part of the works.
Part E: Canal Improvement Works			
Increment in the canal de-siltation and lining works, and number of bridges			After the cancellation of significant funds from the original loan, the KMC attempted to reshuffle and stretch the available funds by cutting some of the physical scope under the canal components (even though the project preparatory technical assistance and the original Project appraisal had appraised them). For instance, de-silting and lining of significant lengths of the Churial canal and other canals were dropped. As these subcomponents form an integral part of the larger catchment area, the lack of improvements or their removal from the Project would undermine the impacts and objectives envisaged for the Project. Furthermore, detailed design showed that if the complete canal improvement works were not carried out, the effects of the S&D system would not be fully realized. Therefore these subcomponents will be implemented under the proposed supplementary loan. The modifications are based on outputs and recommendations from the hydraulic modeling and the current scope of S&D works. The basic objectives are to provide relief from recurrent waterlogging and flooding problems upstream of the Tollygunge-Panchannagram basin. In some cases, the canal lining length has been reduced. The largest increment has been in the number of bridges (from 30 to 53). These were considered necessary, pursuant to detailed design and hydraulic modeling, to avoid flow obstructions in the canal and to provide reasonable connectivity in the area. Furthermore, a pumping station at Gaushighata, instead of at the Churial canal as in the original design, was found to be more effective for the functioning of the SWF channel and for minimizing flooding risks, based on detailed hydraulic modeling and design.

DWF = dry weather flow, KMC = Kolkata Municipal Corporation, lps = liters per second, mld = million liters per day, MPS = main pumping station, S&D = sewerage and drainage, SDU = Social Development Unit, STP = sewage treatment plant, SWF = storm water flow.

^a Even though the project preparatory technical assistance had designed separate S&D networks under the original Project, it was later negotiated and included in the Loan Agreement that combined sewers would be built in keeping with the city's existing (combined) system and separate storm water drains would be built where feasible. However, during detailed design it was found that most of the lanes and by-lanes in the Project areas are narrow and already contain underground utility cables, therefore laying a separate system was not deemed feasible. This has resulted in changes in the length of the sewer network, pumping mains, and associated infrastructure; however, overall coverage and household connections have increased as shown here.

Source: Asian Development Bank estimates.

PROCUREMENT PLAN

Table A7.1 Project Information

Country	India
Name of Borrower	India
Project Name	Kolkata Environmental Improvement Project
Loan or TA Reference	Loan 1813-IND and TBD (for the proposed supplementary loan)
Date of Effectiveness	16 April 2002 (original loan), TBD (for the proposed supplementary loan)
Amount US\$	\$257.1 million
Of which Committed, US\$	\$177.8 million
Executing Agency	Kolkata Municipal Corporation and Irrigation and Waterways Department
Approval Date of Original Procurement Plan	Not applicable
Approval of most recent Procurement Plan	Not applicable
Publication for Local Advertisements	The Telegraph and Anandabazar Patrika
Period Covered by this Plan	2000–2010

TA = technical assistance, TBD = To be decided.

Table A7.2: Procurement Thresholds, Goods and Related Services, Works and Supply and Install^a

Procurement Method	Amount
International Competitive Bidding (ICB) Works	\$10,000,000 and above
ICB Goods	\$1,000,000 and above
National Competitive Bidding (NCB) Works ^b	Less than \$10,000,000
NCB Goods	Less than \$1,000,000
Limited International Bidding (LIB)	Less than \$1,000,000
Shopping Works	Less than \$100,000
Shopping Goods	Less than \$100,000

^a These thresholds apply only to the proposed supplementary loan.

^b The standard bidding documents to be used under the Project will be reviewed and modified as necessary to ensure consistency with the updated Asian Development Bank requirements before commencement of National Competitive Bidding procurement.

Table A7.3: Procurement Thresholds, Consultants Services^a

Procurement Method	Amount
Consultants qualifications selection	Less than \$200,000
Single source selection may be used to engage the existing project management consultants, the design and construction supervision consultants for the execution and/or continuation of services under the supplementary loan.	Less than \$100,000

^a These thresholds apply only to the proposed supplementary loan.

Table A7.4: List of Contract Packages in Excess of \$100,000, Goods, Works and Consulting Services^a

Contract No.	Contract Description	Estimated Cost (\$ million)	Procurement Method	Expected Date of Advertisement	Prior Review Y/N	Comments	Loan Source
Sewerage and Drainage Improvement							
SDA1	Construction of S&D Network for Borough XI - Lot1	9.96	ICB	15 July 2004	Y	Under implementation	Existing
SDA2	Construction of S&D Network for Borough XIII - Lot 2	11.02	ICB	15 July 2004	Y	Under implementation	Existing
SDA3	Construction of S&D Network for Borough XI - Lot 3	17.41	ICB	15 July 2004	Y	Under implementation	Existing
SDB1	Construction of S&D Network for Borough XIV - Lot 1	11.43	ICB	8 December 2004	Y	Under implementation	Existing
SDB2	Construction of S&D Network for Borough XIV- Lot 2	9.94	ICB	8 December 2004	Y	Under implementation	Existing
SDB3	Construction of S&D Network for Borough XIV - Lot 3	6.66	ICB	8 December 2004	Y	Under implementation	Existing
SDC	Construction of S&D Network for Borough XII	30.01	ICB	2 January 2006	Y	Under Tendering	Existing
SDD	Construction of S&D Network for Borough I - Lot 1 & 2	30.33	ICB	2 January 2006	Y	Under Tendering	Existing
SDE	Construction of S&D Network - Borough XV	22.47	ICB	15 November 2006	Y	Ready for tender	Supplementary
SDF	Construction of S&D Network - Borough VII	22.80	ICB	15 December 2006	Y	Design Stage	Supplementary
SD12	Lake Rehabilitation Work Package I	0.71	NCB	4 August 2003	N	Under implementation	Existing
SD13	Lake Rehabilitation Works Package II	1.50	NCB	30 November 2006	N	Design Stage	Existing
SD21	Construction of S&D Network (Borough I Ward 6)	0.10	NCB	31 August 2004	N	Under implementation	Existing
SD22	Construction of S&D Network (Borough XV Ward 133)	0.09	NCB	31 August 2004	N	Under implementation	Existing
SD23	Construction of DWF Pumping Stations in Boroughs XII, XIII & XIV (Package 1)	6.78	ICB	23 May 2006	Y	Under Tendering	Existing
SD24	Augmentation of DWF Pumping Stations in Boroughs I, XI, XIII, XIV and XV (Package 2)	2.86	NCB	11 October 2006	N	Under Tendering	Existing
SD25	Augmentation of STP - Suburban East (Package 1)	3.00	NCB	23 May 2006	N	Under Tendering	Existing
SD26	Construction of new DWF Pumping Stations in Boroughs I (Package 3)	4.86	ICB	30 November 2006	N	Design Stage	Existing
SD27	Construction of new DWF Pumping Stations in Boroughs VII (Package 4)	3.55	NCB	20 November 2006	N	Design Stage	Supplementary
SD28	Augmentation of new DWF Pumping Stations in Boroughs VII (Package 5)	2.33	NCB	30 November 2006	N	Design Stage	Supplementary
SD29	Augmentation of STP - Bangur (Package 1)	3.56	ICB	1 December 2006	N	Design Stage	Existing
SD30	Augmentation of STP- Garden Reach (Package 2)	8.20	NCB	1 December 2006	N	Design Stage	Supplementary
SD31	Water Meters - Equipment Purchase and Installation (multiple packages)	2.00	NCB	30 November 2006	N	Design Stage	Supplementary
SD32	Construction of DWF Pumping station in Borough XV	1.77	NCB	3 October 2006	N	Design Stage	Supplementary
SD33	Construction of new STP for Boroughs XI & XII	10.79	ICB	30 June 2007	Y	Design Stage	Existing
SD34	Construction of new STP for Borough VII	8.09	NCB	30 June 2007	N	Design Stage	Supplementary
Solid Waste Management							
SWA1	Procurement of Vehicles - Package A Lot 1	2.09	ICB	1 July 2004	Y	Under Implementation	Existing
SWB	Procurement of Vehicles - Package 2 Lot 1	2.22	ICB	25 February 2006	Y	Under Tendering	Existing
SW03	Procurement of Collection Bin, Push Carts etc.	0.49	LIB	30 March 2007	N	Design Stage	Existing
SW04	Civil works for Sanitary Landfill	4.58	NCB	15 June 2007	N	Design Stage	Supplementary

Contract No.	Contract Description	Estimated Cost (\$ million)	Procurement Method	Expected Date of Advertisement	Prior Review Y/N	Comments	Loan Source
Slum Improvement							
SI04	Civil Works of Slum Improvement - Package IV	0.59	NCB	25 November 2003	N	Under Implementation	Existing
SI05	Civil Works of Slum Improvement - Package V	0.78	NCB	1 March 2004	N	Under Implementation	Existing
SI06	Civil Works of Slum Improvement - Package VI	0.48	NCB	21 June 2004	N	Under Implementation	Existing
SI07	Civil Works of Slum Improvement - Package VII	1.16	NCB	30 November 2004	N	Under Implementation	Existing
SI08	Civil Works of Slum Improvement - Package VIII	0.65	NCB	30 November 2004	N	Under Implementation	Existing
SI09	Civil Works of Slum Improvement - Package IX	2.18	NCB	6 April 2005	N	Under Implementation	Existing
SI10	Civil Works of Slum Improvement - Package X	1.93	NCB	24 January 2006	N	Under Tendering	Existing
SI11	Civil Works of Slum Improvement - Package XI	1.09	NCB	16 October 2006	N	Design Stage	Existing
Canal Improvement							
CW01	Construction of Pumping Stations at Canal Outfalls	11.20	ICB	10 January 2006	Y	Under Tendering	Existing
CW03	Construction of Bridges on Canals - Package I	1.50	NCB	4 August 2003	N	Under Implementation	Existing
CW04	Construction of Bridges on Canals - Package II	2.35	NCB	11 November 2005	N	Under Implementation	Existing
CW05	Civil Works for Canal Rehabilitation (TP Basin downstream) - Package I	1.49	NCB	29 August 2005	N	Under Implementation	Existing
CW08	Civil Works for Canal Rehabilitation (TP Basin midstream) - Package 2	0.87	NCB	16 June 2007	N	Design Stage	Existing
CW09	Civil Works for Canal Rehabilitation (TP Basin upstream) - Package 3	2.09	NCB	16 June 2007	N	Design Stage	Existing
CW10	Civil Works for Canal Rehabilitation Manikhali upstream - Package 4	1.69	NCB	20 June 2006	N	Under Tendering	Existing
CW11	Civil Works for Canal Rehabilitation Manikhali - Package 5	1.80	NCB	17 May 2006	N	Under Tendering	Existing
CW12	Civil Works for Canal Rehabilitation (Churial Extension & Keorapukur Package 6 (2 Lots)	2.72	NCB	21 October 2006	N	Design Stage	Existing
CW13	Civil Works for Canal Rehabilitation Churial diversion canal system Package 7	4.27	NCB	22 June 2007	N	Design Stage	Supplementary
CW18	Construction of Pumping Station at Ghushighata	3.99	NCB	15 June 2007	N	Design Stage	Supplementary
CW19	DWF and SWF Channel lining and fencing works	1.62	NCB	20 August 2007	N	Design Stage	Supplementary
Implementation Assistance							
IP01A	PMC - under the existing contract	4.80	QCBS	May 2002	Y	Under Implementation	Existing
IP01B	PMC - under the new contract	0.72	SSS	July 2007	Y		Supplementary
IP02A	DSC - under the existing contract	9.47	QCBS	May 2002	Y	Under Implementation	Existing
IP02B	DSC - under the new contract	3.33	SSS	July 2007	Y		Supplementary
IP03	Creative Consultant	1.50	QCBS	October 2006	Y		Supplementary
Resettlement							
RS1	Resettlement of Canal Dwellers -KMDA	0.80	DC	29 August 2005	N	Under Implementation	Existing
RSA	Resettlement of canal bank dwellers at Nonadanga - VAMBAY KEIP Package 1 - Lot 1-5	2.59	NCB	26 December 2005	N	Under Implementation	Existing
RSB	Resettlement of 510 TP Basin upstream dwellers at Kasba-VAMBAY KEIP	0.90	NCB	15 November 2006	N	Design Stage	Existing
RSC	Resettlement of 571 Manikhali Canal Bank Dwellers at Sampa Mirza Nagar VAMBAY KEIP (3 Lots)	1.38	NCB	9 September 2006	N	Design Stage	Existing
RSD	Resettlement of 387 Churial Canal Dwellers KEIP	0.94	NCB	16 March 2007	N	Design Stage	Existing

DC = direct contracting, DSC = design and construction supervision consultants, DWF = dry weather flow, ICB = international competitive bidding, KEIP = Kolkata Environmental Improvement Project, KMDA = Kolkata Metropolitan Development Authority, LIB = limited international bidding, NCB = national competitive bidding, PMC = project management consultant, QCBS = quality- and cost-based selection, S&D = sewerage and drainage, SSS = single source selection, STP = sewage treatment plant, SWF = storm weather flow, TP = Tollygunge-Panchannagram, VAMBAY = Valmiki Ambedkar Shari Awaz Yojna.

^a Already executed contracts not shown in the procurement plan.

Sources: Asian Development Bank estimates.

SUMMARY POVERTY REDUCTION AND SOCIAL STRATEGY

A. Linkages to the Country Poverty Analysis

Is the sector identified as a national priority in country poverty analysis?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the sector identified as a national priority in country poverty partnership agreement?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Contribution of the sector or subsector to reduce poverty in Kolkata:			
<p>Kolkata is one of India's largest urban centers and is urbanizing at an annual rate of 2.5–3.0%. The Kolkata municipal area has a high population density, and between 1950 and 1970 grew by about 20–30% each decade, with much of the growth occurring over short periods because of geopolitical events or natural disasters. However, since the 1970s, the rate of population growth has declined considerably. Between 1971 and 1981, the Kolkata Municipal Corporation (KMC) recorded an annual growth rate of less than 0.5%, and between 1981 and 1991 the total growth for the decade was a little over 6%. The 1991 census recorded a population for the Kolkata municipal area of 4.38 million, with a heavy concentration in the inner wards, which are thought to have population densities of up to four times what an urban area can support on a sustainable basis. Thus people in these areas are likely to move to the outer areas, with a consequent readjustment of population densities. The outer areas, which comprise the project area for most of the components, currently have a total population of around 1.40 million, with densities ranging from 7,000 to 29,000 people per square kilometer. Based on land use maps and recent growth trends, the population in the outer areas is expected to grow to around 1.47 million by 2011 and 1.52 million by 2021.</p> <p>Around 50% of the project area population live in slum housing or worse.¹ A slum dwelling is typically a single-roomed, single-story dwelling constructed of nonpermanent building materials. About 700,000 people live in such houses. About 26–30% of the slum-dwelling households in the project area live below the poverty line, that is, about 180,000–210,000 people or 13–15% of the project area population.² Low-income or slum settlements comprise registered <i>bustees</i> (29% of the project area population),³ refugee colonies (11%), unregistered settlements (unregistered <i>bustees</i> and canal bank settlements) (10%), and pavement dwellers. The KMC Act (1980) and the Thika Tenancy Act aim to mainstream the poor into society by providing them with security of tenure and basic services. Under a series of refugee rehabilitation schemes, the Government of West Bengal is progressively recognizing refugee colonies by providing them with land titles and basic amenities. The KMC does not recognize unregistered settlements and pavement dwellers, who are therefore not entitled to any security of tenure or basic services.</p> <p>In the project area, only 17% of residents have a sewerage connection, fewer than 50% are covered by a drainage system, and 70% are served by solid waste collection. While infrastructure deficiencies affect all segment of society, they particularly affect the urban poor, more than 90% of whom must share toilet facilities. Drainage systems are aging and inadequate, which gives rise to frequent flooding and environmental contamination of low-lying residential areas. Industrial wastes flow, largely untreated, into the surrounding environment, exposing the community to acids, toxic chemicals, paints and varnishes, and other highly toxic compounds. Smoke from the burning of dung, wood, coal, and kerosene inside slum dwellings predisposes occupants, especially young children and women, to acute respiratory infections. Some 77% of respondents to a socio-economic survey conducted during project preparation reported having no separate and dedicated cooking area. Degradation of the environment is leading to increasing concern about morbidity and mortality rates. Although the KMC's database on public health is limited, it shows that mortality rates due to acute respiratory infections and diarrhea account for around 29% of all infant deaths. The population density typical of slum settlements remains a major public health concern with regard to the transmission of communicable diseases, especially tuberculosis.</p>			

B. Poverty Analysis

Proposed Classification: Targeted Intervention

An estimated 200,000 people live below the poverty line in the project area. The stakeholder consultation process and the Capacity-Building Program will have a direct impact on poor groups through the development of mechanisms and approaches to the design and operation of projects that will specifically make provisions for the underprivileged. In

¹ For classification purposes, the term slum refers to low-income settlements with a high population density that lack adequate public services and amenities.

² The poverty line is defined as the income necessary to buy food to meet a daily intake of 2,400 calories of energy in rural areas or 2,100 calories in urban areas and certain basic nonfood items, such as clothing and transportation.

³ A *bustee* is a settlement of primarily low-income people.

In addition, the stakeholder consultation process will empower communities, enabling them to participate more actively and constructively in all civic matters. Up to 5 million people will benefit from the Project, of which some 50% reside in slum settlements. Under the Capacity-Building Program, skills will be developed in the KMC, in nongovernmental organizations (NGOs), and in community-based organizations to ensure effective program delivery, and systems will be institutionalized under the Project. The Program will also empower civil society in general. Extending access to the sewerage system and ensuring better solid waste management for the poor will enhance their health.

The project interventions in the slum communities will address poverty in two ways. First, the slum communities will have greater access to basic facilities, such as water supply and sanitation. Second, the standard of shelter in the slums is expected to improve, as the communities will be offered financial assistance to rehabilitate their homes, where appropriate. About 190,000 slum dwellers will benefit from direct slum intervention under the Project. A crisis management approach will be adopted to address immediate needs for water supply and sanitation in unrecognized low-income settlements. Up to 65,000 slum dwellers will benefit from targeted settlements in Cossipore, Garden Reach, and Jadavpur. Proposed civil works include (i) providing water standposts (9,350 units), (ii) constructing and/or converting sanitary latrines (4,200 units), (iii) constructing and/or renovating community latrines (910 units), and (iv) constructing washing and/or bathing platforms (430 units). Longer-term improvements will include a wide range of amenities to improve the living conditions of slum dwellers. The same rights and responsibilities that the KMC has conveyed to dwellers in registered *bustees* will accrue to slum dwellers in unrecognized *bustees*. This will be achieved through a pilot scheme to establish land titles, register dwellings, recognize tenancy rights, impose rent controls, and assess municipal tax liabilities. Security of tenure will enhance tenants' creditworthiness and improve their access to financing for physical improvements. A small-scale loan facility of \$60,000 will be established to finance the physical improvement of slum dwellings on a pilot basis. Proposed civil works include (i) widening and realigning neighborhood access lanes (1,490 meters); (ii) providing electric lighting to illuminate lanes and open public spaces (40 poles and wiring); (iii) widening, realigning, and lining drains (595 meters); (iv) constructing sewer and drainage lines (380 meters); (v) building water supply lines (785 meters); (vi) providing solid waste containers (6 units); and (vii) improving public open spaces (3,182 square meters). An estimated 190,000 people will benefit from improved facilities under this component.

The canal bank dwellers who are relocated under the canal rehabilitation works will have an improved quality of life through the provisions of the Asian Development Bank-approved resettlement plan. The Government of West Bengal and the KMC have recognized this exercise as an opportunity to help the canal bank dwellers improve their standard of living. The resettlement plan ensures a minimum standard of housing for relocation and addresses the special needs of vulnerable groups, such as children and female household heads, through specially designed rehabilitation programs.

C. Participation Process

Is there a stakeholder analysis: Yes No

The stakeholder consultation process will promote stakeholders' involvement in the Project and contribute to effective implementation of the project investments. The process is designed to ensure stakeholder awareness, participation, and education with respect to the implementation and management of the project facilities. It will also educate communities about the link between environmental sanitation and health. The project beneficiaries will be consulted about project operations, as well as the implications for the community in terms of benefits and responsibilities. Information about stakeholders' needs and expectations under the Project will be conveyed to the project management teams. Using existing community networks where possible, stakeholders will be encouraged to become involved in project design, implementation, operation and maintenance, and monitoring. As a cross-cutting component, the stakeholder consultation process will underpin the promotion of affordable access by the poor to basic urban services in low-income areas and facilitate community empowerment through the development and adoption of demand-led, participatory approaches across all project components.

Is there a participation strategy: Yes No

The stakeholder consultation process will underpin the Project's sustainability through improved representation. In addition, the process will empower communities, enabling them to participate more actively and constructively on all civic matters. NGOs will also be mobilized to facilitate consultation, community mobilization, participation in prioritizing community requirements, planning and scheduling of civil works, management of the small-scale loan facility, and maintenance. The NGOs will work with community-based organizations and other civil society organizations.

D. Gender Development**Strategy to maximize impacts on women:**

Although the Project is not specifically targeted at women, all components will help improve their quality of life. Women, as “caretakers” of the home environment, are affected by poor living conditions, particularly poor sanitation standards. In addition, their exposure to cooking smoke substantially increases the risk of acute respiratory infection. Improved environmental sanitation and the replacement of traditional indoor cooking fires will enhance their quality of life.

Gender issues have been carefully integrated in resettlement planning and implementation. Female-headed households are considered to be vulnerable households and are accorded additional entitlements.⁴ In addition, legal titles will be in the name of women, and thus the Project will help promote the empowerment of women.⁵ Among the resettlement plan’s actions consistent with gender development are (i) ensuring an adequate gender balance among the staff of the project management units; (ii) addressing gender issues and monitoring them;⁶ (iii) ensuring that women benefit from poverty alleviation schemes for the urban poor, the formation of women’s self-help groups, and provision of vocational training;⁷ and (iv) empowering women through sensitization, participation, and training.

Has an output been prepared? Yes No

E. Social Safeguards and other Social Risks

Issues	Significant/ Not Significant/ None	Strategy to Address Issues	Plan Required
Resettlement	<input checked="" type="checkbox"/> Significant <input type="checkbox"/> Not significant <input type="checkbox"/> None	The Project, particularly the canal rehabilitation component, will involve resettling more than 3,000 households. A resettlement plan has been prepared and updated to ensure the provision of assistance and compensation to affected persons.	Full
Affordability	<input type="checkbox"/> Significant <input type="checkbox"/> Not significant <input checked="" type="checkbox"/> None	<p>Affordability analysis looked at monthly direct user charges and expressed such charges as ratios of projected median and lower-bound incomes, respectively. In FY2002, the user charge would represent 1.1% and 1.6%, respectively; in FY2006, it would represent 1.3% and 1.8%; and in FY2011, it would represent 1.2% and 1.6%. All these ratios are substantially below the affordability limit of 2.5%. The proposed cost-recovery mechanisms are considered to be affordable.</p> <p>Indirect recovery of costs for the solid waste management operations is proposed through the consolidated rate charge (15%) as currently applied. This will represent 1.3 % of the median household income. As with sewerage and drainage, poor households will not contribute because they are exempted from the consolidated rate charge.</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

⁴ To assist the highly vulnerable, the Project will provide them with first-floor Valmiki Ambedkar Shahari Aawas Yojna (VAMBAY) apartments that have commercial possibilities, provide access to land for social forestry and production of vegetables and other crops on rehabilitated canal banks, and facilitate access to Government livelihood and other social programs. VAMBAY is a scheme of the Ministry of Urban Development and Poverty Alleviation of the Government of India. This scheme, launched in December 2001, provides grant subsidy for construction and rehabilitation of the dwelling units for the slum dwellers and the population living below the poverty line.

⁵ The apartments come with legal titles for occupants, turning informal dwellers on government lands to legal owners of well-built apartments.

⁶ This is included in the resettlement plan implementation schedule, in particular, addressing domestic violence issues.

⁷ The Project has introduced skills training programs, self-help groups, and assisting individuals in opening savings accounts and accessing financial institutions as additional measures to augment the existing income levels of affected families. Women are the main beneficiaries of programs currently being run at the Nonadanga relocation site.

Issues	Significant/ Not Significant/ None	Strategy to Address Issues	Plan Required
Labor	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None	<p>The Project will not result in negative labor impacts. The Project will have positive labor impacts through temporary employment opportunities during construction. The operation and maintenance requirements of the Project will generate skilled and unskilled employment opportunities.</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Indigenous Peoples	<input type="checkbox"/> Significant <input type="checkbox"/> Not significant <input checked="" type="checkbox"/> None	<p>The Project will be implemented in urban areas of Kolkata. While some urban residents fall under the classification of scheduled tribes, the social, cultural, economic, and political characteristics of scheduled tribes are no different from those of nonscheduled tribe groups.</p> <p>The Project will improve the quality of life of urban residents by means of positive environmental impacts and enhanced public health. All residents will benefit, including scheduled tribe groups.</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Other Risks/ Vulnerabilities	<input type="checkbox"/> Significant <input type="checkbox"/> Not significant <input checked="" type="checkbox"/> None		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SUMMARY OF UPDATED RESETTLEMENT PLAN

1. On 19 December 2000, the Asian Development Bank (ADB) approved the Calcutta (Kolkata) Environment Improvement Project to help the government improve sanitation in the outer areas of the Kolkata municipality. The supplementary loan has been proposed to address (i) cost overruns, (ii) price escalation, (iii) cost increases caused by physical and design changes, and (iv) cost underestimates. A resettlement plan was prepared for the Project in 2000 and updated in 2006 based on project design and physical changes, specifically: (i) increase in the length of canals to be improved, (ii) cancellation of sewage treatment plant components and drainage pumping stations, and (iii) change in the location of the solid waste management facility.

A. Scope of Land Acquisition and Resettlement

2. The project design has carefully incorporated engineering solutions to minimize land acquisition and resettlement impacts. The objective of changes in the project design was to cause the least disruption to the project area population. In the case of canal improvements, which of all the project components affect the most people, design changes led to the avoidance of densely populated canal tracts.¹ Reviews of siting and alignment continue with the objective of reducing land acquisition and resettlement impacts as the Project is implemented.

3. Components B (sewerage and drainage improvements), C (solid waste management), and E (canal improvements) require land. For Component B, the 2.58 hectares required for sewage pumping stations is government land,² and sewage treatment plant works will take place within existing facilities. Component B will result in temporary impacts because of the construction of trunk sewer lines. For component C, an estimated 60 hectares are required for the solid waste management facility and this land will be Kolkata Municipal Corporation (KMC) property. The eventual closure of the current landfill site will affect garbage sorters. For component E, 77.31 kilometers of canals will be improved. While land acquisition is not required at the canal sites, the component will affect a significant numbers of canal dwellers and government land will be used for relocation sites. Table A10.1 summarizes component E's resettlement impacts.

B. Policy Framework and Entitlements

4. The policy framework and entitlements for the Project are based on (i) the Land Acquisition Act (1894, amended in 1984); (ii) the *National Policy on Resettlement and Rehabilitation for Project Affected Families*; and (iii) ADB's *Policy on Involuntary Resettlement* (1995). The entitlement matrix for the Project, based on the foregoing, is given in Table A10.2.³

¹ For example, in the case of the Keorapukur canal, works were reduced from 9 km to 1.15 km. In the case of the Churial canal, the same objective of avoiding a densely populated settlement was achieved through a slight diversion through the Churial extension canal that involved an increase in the canal's length from 24 km to 27.55 km.

² Eight drainage pumping stations originally proposed have been dropped from the Project based on revised project design.

³ An assessment of the status and progress of project implementation shows that for components that will require land and result in resettlement impacts, progress has been slow. This pace ensures that all affected persons are provided with compensation and assistance based on the updated resettlement plan.

Table A10.1: Summary of Resettlement Impacts Caused by Component E

Item	Total
Number of Affected Households	3,626
Number of Affected Persons	16,317
Number of Affected Persons without Land Titles	16,317
Number of Female-Headed Households	462
Number of Very Poor Households (incomes less than Rs2,300 per month)	2,765
Number of Elderly and/or Disabled Affected Persons	399
Number of Residential Structures Affected	3,177
Main Type of Residential Structure	<i>Kutcha</i> (96%) ^a
Number of Affected Shops	449
Number of Affected Common Property Resources	18
Average Annual Household Income (Rs)	2,000–2,500
Primary Source of Income	Wages (82%), self-employment (18%)
Average Household Size (number of people)	6

^a *Kutcha* are dwellings that typically have bamboo mat or mud walls with roof tiles and mud floors.

Source: Kolkata Municipal Corporation. 2006. *Updated Resettlement Plan of India: Kolkata Environmental Improvement Project (Supplementary Financing)*. Kolkata.

C. Information Dissemination, Consultation, Disclosure, and Grievance Redress

5. The Project adopts a participatory approach throughout implementation of the resettlement plan. Every month, a series of interactive sessions is held with all stakeholders, including affected persons, ward committee members, municipal councilors, and representatives of civil society groups. Thirty-seven canal resettlement groups with a total of 460 affected person members have been formed. These groups meet regularly to decide on and discuss issues pertaining to their communities and will be the basis of housing cooperatives when affected persons are moved to the Valmiki Ambedkar Shahari Aawas Yojna (VAMBAY) apartments.⁴ VAMBAY is a scheme of the Ministry of Urban Development and Poverty Alleviation of the Government of India. This scheme, launched in December 2001, provides grant subsidy for construction and rehabilitation of the dwelling units for the slum dwellers and the population living below the poverty line. The Project regularly distributes English and local-language pamphlets containing information about the Project's progress to stakeholders. In addition, information booths have been set up at construction sites and in resettlement areas and are being set up in boroughs and canal settlements to increase information dissemination. Information about resettlement planning was disclosed to affected persons and other stakeholders.

6. At the settlement level, canal resettlement groups address the grievances of affected persons. The groups are expected to resolve any issues brought to their attention within a week, after which the grievance is brought to the attention of the relevant nongovernment organization (NGO), which has 1 week to resolve grievances.⁵ Grievances not resolved by the NGO are brought to the attention of the Social Development Unit, which in consultation with the councilor and appropriate government authority, will address the grievance within one week. Grievances not redressed by the Social Development Unit (SDU) are brought to the Grievance Redress Committee, which consists of the councilor, two SDU staff, two project staff, and two representatives from the canal resettlement groups. Grievances not addressed by the Grievance Redress Committee within 2 weeks can be taken to the appropriate court.

⁴ Canal resettlement groups will also be responsible for the operation and maintenance of infrastructure facilities, such as drainage, internal pathways, solid waste collection, and water supply in the apartments.

⁵ Suggestion boxes have been placed at settlement sites so that affected persons who hesitate to approach canal resettlement groups, NGOs, or SDU can convey their complaints. The NGOs collect these complaints and forward them to the SDU via the field staff every week.

Table A10.2: Entitlement Matrix

Item Number	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Implementation Issues	Responsible Agency
	Canal Improvement Works					
1	Loss of structure	Loss of residential structure	Encroacher/squatter household head	<ul style="list-style-type: none"> ▪ Provision of 190-square foot VAMBAY apartment with connections to basic urban services (water supply, electricity, and sewage) allotted on a 99-year nonresalable lease. ▪ Transport and labor support of Rs300.^a ▪ Exemption from any registration costs and other fees related to moving into VAMBAY apartments. ▪ Additional compensation for highly vulnerable households (item 4). 	<ul style="list-style-type: none"> ▪ Each affected family will contribute 5%^b of the total cost of the apartment, which is estimated at Rs4,000.^c The Government of India will contribute Rs30,000 from its basic services for the urban poor program. The Project will cover the remaining cost, estimated at Rs65,000. ▪ Apartments will be in the name of the wife of the household head in the case of male-headed households or of the household head in the case of female-headed households, with the spouse/next of kin as beneficiary. ▪ Highly vulnerable households identified in DMSs. 	<p>PMUs (primarily through the SDU).</p> <p>Highly vulnerable households to be verified by the SDU.</p>
2	Loss of structure	Loss of commercial structure	Encroacher/squatter business operator	<ul style="list-style-type: none"> ▪ Provision of 100-square foot shops, which will form part of the VAMBAY complex,^d provided to affected persons with the condition that any employee will be retained. ▪ Transport and labor support of Rs300. ▪ Exemption from any registration costs and other fees related to shops. ▪ Additional compensation for highly vulnerable households (item 4). 	<ul style="list-style-type: none"> ▪ Each affected family will contribute 5% of the total cost of the shop, estimated at Rs2,500 to Rs3,000. The Project will cover the remaining costs, estimated at Rs47,500. ▪ Shops will be in the name of the business operator. ▪ Highly vulnerable households identified in DMSs. 	<p>PMUs.</p> <p>The SDU will verify the employee(s) of the business operator and will ensure their retention as a condition for the provision of shops.</p> <p>Highly vulnerable households to be verified by the SDU.</p>

Item Number	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Implementation Issues	Responsible Agency
3	Loss of structure	Loss of structure that is both commercial and residential	Encroacher/squatter household head	<ul style="list-style-type: none"> ▪ Provision of a 190-square foot first-floor VAMBAY apartment with connections to basic urban services (water supply, electricity, and sewage) allotted on a 99-year nonresaleable lease on the condition that any employees will be retained. ▪ Transport and labor support of Rs300. ▪ Exemption from any, registration costs and other fees related to moving into VAMBAY apartments. ▪ Additional compensation for highly vulnerable households (item 4). 	<ul style="list-style-type: none"> ▪ Each affected family will contribute 5% of the total cost of the apartment, estimated at Rs4,000 to Rs5,000.^c The Government will contribute Rs30,000 from its basic services to the urban poor program. The Project will cover the remaining cost, estimated at Rs65,000. ▪ Apartments will be in the name of the wife of the household head in the case of male-headed households or the household head in the case of female-headed households, with the spouse/next of kin as beneficiary. ▪ Highly vulnerable households identified in DMS surveys. 	<p>PMUs.</p> <p>The SDU will verify the employee(s) of the business operator and will ensure their retention as a condition for the provision of apartments.</p> <p>Highly vulnerable households to be verified by the SDU.</p>
4	Impacts on highly vulnerable affected persons	Loss of structure	Households headed by females, the elderly (over 65), or handicapped, and households below the poverty line. Child laborer	<ul style="list-style-type: none"> ▪ Provision of ground floor VAMBAY apartments that have commercial possibilities. ▪ Livelihood training. ▪ Priority in allocation of land for social forestry and production of vegetables and other crops along canal banks. ▪ Schooling based on national education policy. ▪ Implementation of a plan of action for rehabilitation developed together with the United Nations Children's Fund, Save the Children, NGOs, and community-based organizations. ▪ Gradual discontinuation of work and mainstreaming of child 	<ul style="list-style-type: none"> ▪ Highly vulnerable households identified in DMSs. ▪ Enrollment of children in preparatory centers and finally in schools. 	<p>Highly vulnerable households to be verified by the SDU.</p> <p>The SDU will identify child laborers.</p> <p>The SDU will be primarily responsible for plan development and implementation.</p> <p>The SDU will ensure the enrollment of child laborers in preparatory centers and schools.</p>

Item Number	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Implementation Issues	Responsible Agency
				laborers into the education system.		
5	Loss of community structures	Loss of access to community structures	Community	<ul style="list-style-type: none"> ▪ Replacement of affected schools. ▪ Community sheds will be provided in the VAMBAY complex for activities such as community meetings, recreational activities, meetings of user groups, and vocational training. ▪ Salvaging of materials for reuse or sale by the community organization will be allowed. 		PMUs
	Sewerage and Drainage					
6	Temporary loss of access	Temporary loss of access to land, structure, utilities, and common property resource	Legal owner, tenant, leaseholder, encroacher, or squatter	<ul style="list-style-type: none"> ▪ Sixty days advance notice, including a repeat notification 30 days in advance, with notification through loudspeakers 7 days in advance and notification through the cable network 3 days in advance. ▪ Provision of temporary access (e.g., planks across trenches) where possible and traffic management to ensure that access is maintained. ▪ Restoration of affected land, structure, utilities, and common property resources. 	<ul style="list-style-type: none"> ▪ Traffic management carried out in consultation with concerned government agencies. 	<p>PMUs, design and construction supervision consultant, Contract Management Unit.</p> <p>Design of content for cable prepared by the creative consultants.</p> <p>Verification of affected persons by the NGO under the SDU</p> <p>Restoration as part of the contractors' contracts.</p>
7	Temporary loss of livelihood	Temporary loss of livelihood/source of income	Business owner, tenant, leaseholder, employee, hawker/vendors	<ul style="list-style-type: none"> ▪ Sixty days advance notice, with repeat notification 30 days in advance, notification through loudspeakers 7 days in advance and notification through the cable network 3 days in advance ▪ Provision of temporary 		<p>PMUs, design and construction supervision consultant, Contract Management Unit.</p> <p>Design of content for cable prepared by the creative consultants.</p>

Item Number	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Implementation Issues	Responsible Agency
				<p>access (e.g., planks across trenches) where possible and traffic management to ensure that access is maintained.</p> <ul style="list-style-type: none"> ▪ Provision of alternative sites in the vicinity for continued economic activity/or compensation for lost income. ▪ Restoration of affected land, structure, utilities, and common property resources. 		<p>Verification of affected persons by the NGO under the SDU.</p> <p>NGO to determine income loss/minimum wage</p> <p>Restoration as part of the contractors' contracts.</p>
	Solid Waste Management					
8	Loss of livelihood	Loss of livelihood/source of income	Garbage collector/ragpicker	<ul style="list-style-type: none"> ▪ In the interim, provision for gloves, boots, aprons, and masks plus periodic health checkups. ▪ Post closure, assistance with establishing alternative livelihoods. 		SDU/PMUs. NGO.
9	Any other loss not identified			<ul style="list-style-type: none"> ▪ Unanticipated involuntary impacts shall be documented and mitigated based on the principles provided in the Asian Development Bank's policy on involuntary resettlement. 		

DMS = detailed measurement survey, NGO = nongovernment organization, PMU = project management unit, SDU = Social Development Unit, VAMBAY = Valmiki Ambedkar Shahari Aawas Yojna

^a The amount of Rs300 is based on the transport requirements of the first 165 households shifted to VAMBAY apartments.

^b To be deposited in a bank designated by the SDU.

^c For 165 households already provided with VAMBAY apartments, 5% amounted to Rs3,930.

^d These will be located around the perimeters of the residential structures.

Source: KMC. 2006. *Updated Resettlement Plan of India: Kolkata Environmental Improvement Project (Supplementary Financing)*. Kolkata.

D. Compensation and Income Restoration

7. Lost structures (residential and commercial) will be replaced with apartments, shops, or combined residential and commercial units from the VAMBAY scheme. The affected household will contribute 5% of the cost of the unit, and in exchange, rather than informal dwellers on government land they become legal owners of units with access to basic urban infrastructure. Units will be provided on a 99-year nonresaleable lease in the name of the female head of household. In addition, affected households are entitled to a relocation grant of Rs300. The highly vulnerable group comprises households headed by women, the elderly, the disabled and/or handicapped, very poor households with incomes of less than Rs2,300 per month, and child laborers. Legal titles will be in the name of women, and thus the Project will help promote the empowerment of women. To assist the highly vulnerable, the Project will provide them with first-floor VAMBAY apartments that have commercial possibilities, provide access to land for social forestry and the production of vegetables and other crops along rehabilitated canal banks, and facilitate access to Government livelihood and other social programs. Child laborers (i) will be provided with schooling based on national education policy, (ii) will be given assistance based on a plan of action for rehabilitation, and (iii) will gradually discontinue work and be mainstreamed into the education system.

E. Institutional Framework, Resettlement Costs, and Implementation Schedule

8. The KMC has established the SDU within its Project Management Unit that coordinates its activities with all government agencies as well as with NGOs. The Irrigation and Waterways Department, the other executing agency for the Project, is responsible for implementing canal works. The SDU is responsible for all tasks connected with the resettlement and rehabilitation of the affected people in a participatory manner, for the livelihood restoration program, for internal monitoring, and for reporting. This requires the SDU to be in regular consultation with affected persons in the field. Even though a strong field presence is essential, no staff will be recruited for this purpose in either the KMC or the Irrigation and Waterways Department. Instead, the Project will use consultants and engage NGOs as implementing agencies. Two NGOs have been engaged specifically for field-level implementation of resettlement activities. The total estimated resettlement costs are \$6.90 million, including for transferring land from other government departments, for transit villages, for VAMBAY units, for income restoration, and for administration. Resettlement implementation is expected to be completed within a 19-month time frame.

F. Monitoring and Evaluation

9. Internal and external monitoring will make use of both quantitative and qualitative approaches using a variety of tools and methods, such as key informant interviews, focus group discussions, community public meetings, structured direct observations, and case studies. The SDU will prepare a monthly plan to check the progress of implementation of the resettlement plan and will be responsible for conducting regular internal monitoring. Internal monitoring will cover compensation and assistance; resettlement entitlements; transit camps; land development; income restoration; special interventions for vulnerable groups; empowerment of through sensitization, participation, and training; information sharing and consultation; grievance redress; implementation strategy and schedule sharing; coverage of affected persons under various government schemes for poverty alleviation and income generation; and formation of women's self-help groups and the provision of vocational training for such groups. Internal monitoring reports will be monthly. An external monitor will be engaged primarily to create a database to be used as a baseline for monitoring project output and impacts, assess project outcomes and impacts, and identify quality of life indicators against which the impacts can be monitored. The external monitor will submit quarterly reports in the first 3 years and two reports for the remainder of the Project's duration. External monitoring will verify the results of internal monitoring and evaluate whether the objectives of the plan are being met. The external monitor will submit reports to both ADB and the Project Management Units.

DETAILED COST ESTIMATES

Table A11.1: Detailed Cost Estimates by Expenditure Category

Item	(\$ million)			% of Total Base Cost
	Foreign Exchange	Local Currency	Total	
A. Base Cost				
Component 1: Stakeholder Consultation Process				
Training	0.00	0.25	0.25	0
Component 2: Sewerage and Drainage				
Civil Works	0.00	230.56	230.56	69
Equipment	2.14	0.00	2.14	1
Land Acquisition	0.00	2.22	2.22	1
Component 3: Solid Waste Management				
Civil Works	0.00	4.58	4.58	1
Equipment	5.57	0.00	5.57	2
Component 4: Slum Improvement				
Civil Works	0.00	10.72	10.72	3
Component 5: Canal Improvement Works				
Civil Works	0.00	35.59	35.59	11
Land Acquisition ^a	0.00	5.60	5.60	2
Component 6: Implementation Assistance				
Incremental Administration	1.62	6.48	8.10	2
Consultancy	6.09	14.22	20.31	6
Prior Technical Assistance	0.15	0.60	0.75	0
Component 7: Resettlement				
Resettlement	0.00	6.78	6.78	2
Total Base Costs	15.58	317.60	333.17	100
B. Contingencies				
Physical Contingencies	0.62	12.57	13.18	4
Price Contingencies	1.44	29.32	30.76	9
Total Contingencies	2.05	41.89	43.94	13
C. Finance Charges	4.87	0.00	4.87	1
D. Tax and Duties	0.00	19.39	19.39	6
Grand Total	22.50	378.87	401.37	120

Notes:

- The original investment cost was \$350 million, which was reduced by \$72.2 million due to partial loan cancellation. The investment cost is now increased by \$113.6 million, amounting to \$401.4 million.
- Cost estimates are in constant 2006 prices. Exchange rate of Rs45=\$1 is used.
- Contingencies for the components under the existing loan are set at the original amount, while contingencies for those under the supplementary loan are set at 16%.
- Taxes and duties are computed as 12.24% of service tax, 25% of withholding tax for foreign consultancy, and no excess duty.
- Financing costs include interest during construction (IDC) paid up to April 2005 on the existing loan.

Source: Asian Development Bank estimates.

Table A11.2: Detailed Cost Estimate by Financier/Loan
(\$ million)

Item	ADB - Original OCR loan					ADB - Supplementary OCR loan					GOWB				KMC			
	Cost	Foreign Exchange	Local Currency	Total	%	Foreign Exchange	Local Currency	Total	%	Foreign Exchange	Local Currency	Total	%	Foreign Exchange	Local Currency	Total	%	
A. Base Cost																		
Component 1: Stakeholder Consultation Process																		
Training	0.25	0.00	0.25	0.25	100	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	
Component 2: Sewerage and Drainage																		
Civil Works	230.56	0.00	116.17	116.17	50	0.00	49.83	49.83	22	0.00	41.96	41.96	18	0.00	22.59	22.59	10	
Equipment	2.14	0.14	0.00	0.14	7	2.00	0.00	2.00	93	0.00	0.00	0.00	0	0.00	0.00	0.00	0	
Land Acquisition	2.22	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	2.22	2.22	100	
Component 3: Solid Waste Management																		
Civil Works	4.58	0.00	0.00	0.00	0	0.00	3.30	3.30	72	0.00	0.83	0.83	18	0.00	0.45	0.45	10	
Equipment	5.57	5.57	0.00	5.57	100	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	
Component 4: Slum Improvement																		
Civil Works	10.72	0.00	7.72	7.72	72	0.00	0.00	0.00	0	0.00	1.95	1.95	18	0.00	1.05	1.05	10	
Component 5: Canal Improvement Works																		
Civil Works	35.59	0.00	18.52	18.52	52	0.00	7.11	7.11	20	0.00	9.97	9.97	28	0.00	0.00	0.00	0	
Land Acquisition ^a	5.60	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	5.60	5.60	100	0.00	0.00	0.00	0	
Component 6: Implementation Assistance																		
Incremental Administration	8.10	0.16	0.65	0.81	10	0.00	0.00	0.00	0	0.49	1.94	2.43	30	0.97	3.88	4.86	60	
Consultancy	20.31	4.42	10.31	14.73	73	1.68	3.91	5.59	27	0.00	0.00	0.00	0	0.00	0.00	0.00	0	
Prior Technical Assistance	0.75	0.15	0.60	0.75	100	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	
Component 7: Resettlement																		
Resettlement	6.78	0.00	6.78	6.78	100	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	
Total Base Costs	333.17	10.44	161.00	171.44	51	3.68	64.15	67.82	20	0.49	62.25	62.74	19	0.97	30.20	31.17	9	
B. Contingencies																		
Physical Contingencies	13.18	0.02	0.42	0.44	3	0.17	3.48	3.65	28	0.04	0.82	0.86	7	0.38	7.85	8.23	62	
Price Contingencies	30.76	0.05	0.97	1.02	3	0.40	8.13	8.53	28	0.09	1.91	2.00	7	0.90	18.31	19.21	62	
Total Contingencies	43.94	0.07	1.39	1.46	3	0.57	11.61	12.18	28	0.13	2.72	2.86	7	1.28	26.16	27.45	62	
C. Finance Charges	4.87	4.87	0.00	4.87	100	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	
D. Tax and Duties	19.39	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	8.54	8.54	44	0.00	10.84	10.84	56	
Grand Total	401.37	15.38	162.39	177.77	44	4.25	75.75	80.00	20	0.62	73.52	74.14	18	2.25	67.21	69.46	17	

OCR = ordinary capital resources, GoWB = Government of West Bengal, KMC = Kolkata Municipal Corporation.

^a This land acquisition is for the resettlement purpose.

Source: Asian Development Bank estimates.

REVISED ECONOMIC ANALYSIS

A. Introduction

1. The original scope of the Project (loan of \$250 million) was designed to finance sewerage and drainage (S&D) improvements, slum improvements, and canal improvements in seven boroughs (I, XI, XII, XIII, XIV, VII, and XV) in the outer areas of Kolkata and to help all 15 boroughs of the Kolkata Municipal Corporation (KMC) with stakeholder consultation programs, solid waste management improvements, and project implementation and capacity building. The supplementary loan (\$79.33 million loan) is intended to cover S&D improvements in two boroughs (VII and XV),¹ for canal improvements in the Churial basin, and sanitary landfill construction and associated resettlement and project implementation assistance and to support the original scope of the Project over an extended period of implementation. The economic analysis reappraises the economic viability of the Project incorporating design changes, revised cost estimates, and updated information available from the socioeconomic survey in accordance with the *Guidelines for the Economic Analysis of Projects*.²

2. The Project focuses on providing services to the outer areas of Kolkata, which have been experiencing rapid population growth of around 2.5% annually, much higher than the annual growth rate of 1% observed in the city's core areas, and which are therefore facing increasing demand for urban services. Service coverage in the outer areas is low with 32% coverage by water supply, 17% by sewerage systems, less than 50% by drainage systems, and less than 70% by solid waste management. Without the Project, the service coverage would deteriorate further, as it would be unable to keep up with the population growth. Furthermore, by focusing on the outer areas, the Project targets the poor, as the incidence of poverty is much higher in the outer areas of Kolkata.

B. Rationale for Government Intervention

3. The main goals of the Project are to improve the social, economic, and environmental quality of life in Kolkata; to reduce poverty in low-income areas by ensuring affordable access to basic urban services; to reduce flooding in low-income areas; and to improve sewerage and drainage (S&D) management systems, thereby decreasing the incidence of waste-related and waterborne diseases. The economic rationale for the intervention is sound, because (i) the investment is large enough to achieve significant economies of scale; (ii) the services provided are of a public good nature, including protection of the environment and of public health; (iii) the Project focuses on low-income communities with a view to distributing income;³ and (iv) wastewater management needs to be centrally controlled and monitored, as the wastewater discharges affect the larger ecological system of the East Kolkata Wetlands, requiring management of externalities.

4. While the KMC, under the KMC Act, is responsible for all urban services assisted under the Project, some service delivery may be suitable for private sector participation under overall supervision by the KMC. In particular, the transfer and disposal of municipal solid waste, including a compost plant, are being considered for a public-private partnership, and the Project has engaged consultants to conduct the necessary assessments and prepare a package and/or contract under an appropriate modality. The KMC is also considering extending a public-private partnership modality to primary collection of municipal solid waste in the long run.

¹ The capital work includes sewerage and drainage and a sewerage treatment plant for sewage effluent from Borough VII.

² ADB. 1997. *Guidelines for the Economic Analysis of Projects*. Manila.

³ One-third of the population in the outer areas of Kolkata belong to low-income communities.

C. Cost Overruns and Change in Project Beneficiaries

5. The supplementary loan of \$79.33 million is required because of two main reasons: (i) there was a loan cancellation of \$72.2 million by the Government in expectation of the rupee depreciating against the dollar and lower cost inflation; and (ii) there was cost escalation because of minor design changes, higher than expected price increases in materials and rupee appreciation, underestimation of costs at the appraisal stage, and delayed implementation. While the Project has suffered from the cost escalation, the number of project beneficiaries was revised upward during the detailed design period, partially offsetting the negative impact on net benefits of the cost escalation. The beneficiary population is now based on 2001 census figures, which were not available at the appraisal stage, and design modifications allowed for more household connections for the S&D component. In particular, Borough VII, which was added to the original scope of the S&D component, is the most congested borough among the outer areas and has an estimated 338,697 beneficiaries. All the economic costs and benefits are adjusted to constant 2006 prices.

D. Alternatives Considered for the Supplementary Loan

6. For the S&D component, the area coverage, the number of beneficiaries, and the amount of dry weather flow (DWF) and storm water flow discharges are reestimated for each borough. The sewer network and the location of pumping stations are reconfigured to optimize system efficiency. Gravity outfall was proposed rather than pumping to the extent possible to minimize the investment and operation costs. The Government also proposed to drop two sewage treatment plants (STPs) and discharge sewage effluent into the DWF channels to further reduce costs. However, as the environmental impacts of discharging sewage effluent into the DWF channels and treating it in the East Kolkata Wetlands could be significant, the two STPs are still included under the Project. Reducing the coverage of S&D and canal components was also considered to downsize the Project and retain it within currently available funds, but as the Project was prepared as an integrated environmental improvement of the outer areas, dropping some boroughs or canals would undermine the environmental impact of the Project. It was therefore decided to retain the original scope of the Project for the S&D and canal components.

7. At the micro design level, alternative designs were considered and the best design was selected based on three factors: (i) the cost-effectiveness of the design, (ii) the operation and maintenance capacity of the executing agencies, and (iii) the health hazard risk. Cost-effectiveness is assured by covering only the already densely populated areas or high population growth areas, as well as by using locally available materials and equipment for construction and maintenance; the technology selected is manageable given the executing agencies' current capacity; and no significant health hazard risks are anticipated.

F. Economic Viability of the Project

8. The components financed under the supplementary loan mainly include (i) S&D improvements in boroughs VII & XV, and (ii) canal improvements along the Churial and Suti canals. Economic analysis is undertaken for the S&D component assuming the entire scope of the Project financed by both the existing and the supplementary loans including seven boroughs, and the scope of the Project financed by only the supplementary loan including two boroughs, while economic analysis for canal improvements is conducted for the entire project scope only financed by both the existing and the supplementary loans.

9. **Assumptions.** The economic internal rate of return (EIRR) is calculated by estimating the incremental economic benefits and costs over a 25-year period upon commission of the Project. All the costs are expressed in constant 2006 prices and are adjusted to economic prices with a shadow exchange rate factor of 1.1 and a shadow wage rate of 0.7 for unskilled labor. Incremental operation and maintenance (O&M) costs (0.7% of investment costs) are added to capital costs to

obtain the total economic cost of the Project. For the S&D component, the capital replacement costs are added at 80% of equipment investment costs in fiscal year (FY) 2024.

10. The S&D component will benefit 1.34 million people in the entire scope and 0.44 million in the limited scope financed only by the supplementary loan by FY2010, the first year of operation. The canal component will benefit 1.25 million people in the entire scope by FY2010. These are increases from the appraisal figure of 1.07 million for the S&D component in the entire scope and 0.72 million for the canal component in the entire scope, respectively. One of the quantified economic benefits for both components is health benefits, which are estimated by multiplying disability-adjusted life years saved because of the Project by the median per capita income. Disability-adjusted life years are derived from the number of life years lost because of a disability using a scale from 0 (perfect health) to 1 (death). In 1992, an estimated 171 disability-adjusted life years per 1,000 population were lost in West Bengal.⁴ For this economic analysis, disability-adjusted life year losses attributable to poor S&D and poor canal management are assumed to be 15% and 2%, respectively. The median household income in 2006 prices is Rs103,496 (\$2,352) per year. This means that the average loss per capita resulting from illness is Rs2,923 (\$66.4) per year. Hence the per capita loss caused by poor S&D and poor canal management is Rs452 (\$10) and Rs52 (\$1.2) per year, respectively. The economic value of health benefits is assumed to increase in line with real increases in state domestic product per capita. The per capita state domestic product of West Bengal increased at an average annual rate of 5.51% during FY1993–FY2002.⁵ This analysis assumed that the per capita value of health benefits increases at an annual rate of 6%.

11. Other quantified benefits for the S&D component include (i) savings in household (private) health expenditures that represent about 1.9% of total household expenditure in the KMC area; (ii) savings in public health expenditures equivalent to 15% of the amount spent annually on hospital and health services by the KMC; (iii) savings in the costs of repairing damage to roads and vehicles caused by flooding, assuming that 20% of the KMC's expenditure on road maintenance is related to flooding and an 50% of vehicle maintenance expenditures are due to flooding; (iv) avoided expenditures on construction and maintenance of septic tanks considering the average annual price per household for cleaning and renting a septic tank; (v) benefits from cleaner water downstream of the STPs for communities that use canal water for washing, bathing, domestic water supply, irrigation, etc; and (vi) business benefits derived from fewer disruptions of economic activities from flooding, especially for small firms and the informal sector. Other quantified benefits for canal components include (i) savings in expenditures on repairs of dwellings and other properties damaged by waterlogging, assuming that 6.25% (5.00% for dwellings and 1.25% for other properties) of total household expenditures on repairs is related to flooding; (ii) recreational benefits estimated at 1% of income; (iii) reduced productive days lost because of flooding, assuming that the average number of days lost is 5 (2.5 days for working days lost because of flooding and 2.5 days because of disruption and clean-up operations after flooding) days per household per year; and (iv) savings in private and public health expenditures.

12. Both components also yield unquantifiable benefits, including (i) reduced private and public costs of mosquito control, (ii) appreciation of land values because of the improved environment and reduced risks of flooding, (iii) psychological benefits from reductions in morbidity and mortality, (iv) reduced traffic disruptions caused by flooding, (v) benefits to visitors and nonresidents working in the areas, and (vi) positive impacts on tourism and tourist-related businesses. Hence the estimated EIRRs should be considered conservative.

13. **EIRR.** The economic viability of the Project is summarized in Table A13. The EIRR for the S&D component is estimated at 12.7% for a full scope and at 11.8% for a supplementary scope, which are around the economic opportunity cost of 12.0%. At the same time, the EIRR for the

⁴ Health and Family Welfare Department, GoWB. 1999. *Health Indicators – West Bengal*. West Bengal.

⁵ GoWB. 2005. *Economic Review 2004–2005*. West Bengal.

canal component is estimated at 19.2%, much higher than 12.0%. Combining both S&D and canal improvement components, the EIRR is estimated at 13.3%. Sensitivity analysis was also conducted with respect to cost and benefit assumptions and is also presented in Table A13. Switching values for two parameters critical for the EIRR computation (i.e., the percentage of capital costs assumed to go toward O&M costs and the number of beneficiaries) are shown in the bottom panel of Table A13. In the base case scenario, O&M costs are assumed to be 0.7% of capital costs, while the 10% EIRR switching value for the percentage of capital cost going toward O&M costs is as high as 5.9% for the total investments. This means that even if the annual O&M costs increase up to 8.4 times as much as that assumed in the base case scenario, the Project remains economically viable with an EIRR of 10%. Similarly, the number of beneficiaries can be decreased by a maximum of 29.5% from the base case assumption for the Project to be economically viable with an EIRR of 10%. In sum, the components financed under the supplementary loan are considered to still be economically viable, given the large unquantifiable economic benefits and positive externalities that would enhance the Project's economic benefits.

Table A13: Summary Result of Economic Viability of the Project

Analysis Scenario	Sewerage and Drainage Component						Canal Improvement Works			Total		
	Full Scope			Supplementary Scope			Full Scope			Full Scope		
	EIRR (%)	NPV (Rs. Million)		EIRR (%)	NPV (Rs. Million)		EIRR (%)	NPV (Rs. Million)		EIRR (%)	NPV (Rs. Million)	
		at 12% Discount	at 10% Discount		at 12% Discount	at 10% Discount		at 12% Discount	at 10% Discount		at 12% Discount	at 10% Discount
Base Case	12.7	689.1	3,439.8	11.8	(45.5)	591.7	19.2	890.7	1,396.4	13.3	1,579.9	4,836.2
Sensitivity Analysis												
Capital and O&M costs up by 10%	11.8	(255.2)	2,443.5	10.9	(306.2)	312.4	17.6	744.7	1,241.3	12.4	489.5	3,684.9
Benefits down by 10%	11.7	(324.1)	2,099.5	10.9	(282.2)	277.8	18.6	794.4	1,271.7	12.3	331.5	3,201.2
Combined Effect	10.8	(1,268.5)	1,103.3	9.9	(562.3)	(26.0)	15.9	509.7	946.7	11.4	(758.8)	2,049.9
Construction Delay 1 year	12.0	44.0	2,708.9	11.3	(196.9)	417.7	17.6	718.9	1,204.2	12.6	762.9	3,913.1
Construction Delay 2 years	11.6	(430.8)	2,129.6	10.9	(281.4)	304.3	16.3	572.0	1,034.3	12.1	141.2	3,163.9
Switching Value		12% EIRR	10% EIRR		12% EIRR	10% EIRR		12% EIRR	10% EIRR		12% EIRR	10% EIRR
Assumption of O&M cost (% of capital cost)		1.7	5.0		0.5	3.4		9.3	11.8		2.7	5.9
O&M cost per year (Rs.million)		190.1	559.2		17.0	115.2		169.3	214.8		351.1	767.2
No of beneficiaries		(7.0)	(26.0)		2.0	(17.5)		(38.0)	(47.5)		(13.0)	(29.5)

() = negative value.

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

Source: Asian Development Bank estimates.

**GOOD GOVERNANCE AND ANTICORRUPTION MEASURES
ADOPTED BY THE PROJECT**

Area	Measures Adopted by the KMC
Transparency	<ul style="list-style-type: none"> ▪ Advertisement of all tenders under the Project on ADB's and the Project's websites and in leading local newspapers ▪ Public disclosure of results of all tenders on the Project's website ▪ Public disclosure of the physical and financial details and progress of Project works through (i) newspapers, (ii) information centers in boroughs and at Project sites, and (iii) Project website ▪ Public notices on billboards and notice boards
Audit or Random Spot Checks	<ul style="list-style-type: none"> ▪ Public audit of project works by field-level committees in every borough that include local councilors, borough chairs, and public representatives ▪ All contract related data—from award of contracts to payment of claims—are electronically captured and stored in computerized systems ▪ All contracts financed by ADB for the Project include provisions stipulating ADB's right to audit and examine the records and accounts of the contractors, and the KMC will cooperate with any such audit and provide the necessary documents ▪ Internal controls and checks are ensured through provisions of the Kolkata Municipal Corporation Act (1980) and the financial rules of the state of West Bengal ▪ Third-party “flying squads” have been mobilized by the KMC for random spot checks pertaining to quality and to safety measures
Good Governance	<ul style="list-style-type: none"> ▪ Strict adherence to ADB's procurement guidelines for procurement under the Project ▪ Reasonable scheduling of procurement and timely payments to the contractors ▪ Maintenance of accounts by means of the project account system, which uses Oracle software ▪ Financial statements audited by the examiner of local accounts, West Bengal, a unit of the Controller and Auditor General of India ▪ Redress of public grievances carried out through: (i) complaint registers at various information centers, (ii) online complaint handling system, and (iii) requirement to respond to complaints received through the mail within 24 hours

ADB = Asian Development Bank, KMC = Kolkata Municipal Corporation.

Source: Asian Development Bank.