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IMPLEMENTATION COMPLETION REPORT
(IDA-27020)

ON A

CREDIT

IN THE AMOUNT OF US$36.0 MILLION
SDR24.5 MILLION EQUIVALENT

TO

SIERRA LEONE

FOR

URBAN WATER SUPPLY

December 24, 2003

CURRENCY EQUIVALENTS

(Exchange Rate Effective)

Currency Unit = Leone (Le)
Le 1.00 = US$ 0.002
US$ 1.00 = Le 600

FISCAL YEAR
January 1 December 31

ABBREVIATIONS AND ACRONYMS

ADF	African Development Fund
CM	Centimeter
DCA	Development Credit Agreement
DM	Nominal Diameter
EIA	Environmental Impact Assessment
FIRP	Freetown Infrastructure Rehabilitation Project
GOSL	Government of Sierra Leone
GVWC	Guma Valley Water Company
IDA	International Development Association
IERR	Internal Economic Rate of Return
KM	Kilometer
M^3	Cubic Meter
MIS	Management Information System
MM	Millimeter
MOEP	Ministry of Energy and Power
NPA	National Power Authority
PIU	Project Implementing Unit
PSP	Private Sector Participation
QAG	Quality Assurance Group
QSA	Quality of Supervision Assessment
RPA	Regional Procurement Adviser
SAR	Staff Appraisal Report
SLRA	Sierra Leone Roads Authority
SLWC	Sierra Leone Water Company
WSD	Water Supply Division

Vice President:	Callisto Madavo
Country Director	Mats Karlsson
Sector Manager	Inger Andersen
Task Team Leader/Task Manager:	Yao Badjo

SIERRA LEONE
URBAN WATER SUPPLY

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Project ID: P002428	*Project Name:* URBAN WATER SUPPLY
Team Leader: Yao Badjo	*TL Unit:* AFTU2
ICR Type: Core ICR	*Report Date: December 24, 2003*

1. Project Data

Name: URBAN WATER SUPPLY
L/C/TF Number: IDA-27020
Country/Department: SIERRA LEONE
Region: Africa Regional Office

Sector/subsector: Water supply (88%); Sewerage (7%); Sanitation (5%)
Theme: Water resource management (P); Pollution management and environmental health (P); Access to urban services for the poor (P); Infrastructure services for private sector development (S)

KEY DATES		*Original*	*Revised/Actual*
PCD:	09/15/1992	*Effective:*	08/14/1995	08/14/1995
Appraisal:	02/15/1994	*MTR:*	06/01/1997	06/15/2000
Approval:	04/11/1995	*Closing:*	12/31/1999	06/30/2003

Borrower/Implementing Agency: GOVT OF SIERRA LEONE/GUMA VALLEY WATER COMPANY
Other Partners:

STAFF	Current	At Appraisal
Vice President:	Callisto E. Madavo	Edward V. K. Jaycox
Country Director:	Mats Karlsson	Jean-Louis Sarbib
Sector Manager:	Inger Andersen	Alberto Harth
Team Leader at ICR:	Yao Badjo	Nguyen Tin and Mark Markanda
ICR Primary Author:	Yao Badjo; Paul Kriss; Marie-Adele Tchakounte	

2. Principal Performance Ratings

(HS=Highly Satisfactory, S=Satisfactory, U=Unsatisfactory, HL=Highly Likely, L=Likely, UN=Unlikely, HUN=Highly Unlikely, HU=Highly Unsatisfactory, H=High, SU=Substantial, M=Modest, N=Negligible)

Outcome: U
Sustainability: UN
Institutional Development Impact: M
Bank Performance: U
Borrower Performance: U

	QAG (if available)	ICR
Quality at Entry:		S
Project at Risk at Any Time:	Yes	

3. Assessment of Development Objective and Design, and of Quality at Entry

3.1 Original Objective:

The project's primary objectives were to: (i) improve water supply and sanitation services in Freetown; (ii) improve accessibility of these services to the urban poor; (iii) ensure that water supply and sanitation services are sustained, by strengthening the sectoral institutions, especially the Guma Valley Water Company (GVWC) and the agencies responsible for sanitation, and by identifying elements for private sector participation (PSP); and (iv) prepare water supply master plans and development programs as well as institutional frameworks for the major towns outside Freetown.

Assessment of Development Objectives and Design

The project's development objectives grew out of a request by the Government of Sierra Leone (GOSL) in April 1992 for Bank assistance in preparing an immediate action project to improve urban infrastructure in Freetown. As a first step in satisfying this request, the Freetown Infrastructure Rehabilitation Project (FIRP) was launched in June 1993, and it was successfully completed in June 2001 (ICR dated December 27, 2001). This follow-on project (CR 2702-SL) was appropriately designed to expand on the water supply components initiated under the FIRP. It envisioned a strategy to modernize and strengthen GVWC's operation and to explore the possibility for private sector participation in operations. It also included a low-cost sanitation program for Greater Freetown. Implementation risks identified at appraisal were to be mitigated by the fact that GVWC (unlike many of its neighboring utilities) had a long history of capable technical performance in addition to its demonstrated capability under the FIRP. The risk of delays in the sanitation component was to be mitigated by using the same implementing agency, Sierra Leone Roads Authority (SLRA), that had gained pertinent experience in the urban upgrading components of the FIRP, and by involving the communities.

The project design was in line with the International Development Association (IDA) regional objectives for development of urban water supply systems in Africa under reasonably normal country conditions. While the Staff Appraisal Report (SAR) did mention the possibility of a deterioration of security in Sierra Leone, it could not have anticipated the horrific events of the conflict that took place from 1997 to 2000, which is responsible for the project's failure to meet the development objectives relating to sustainability.

3.2 Revised Objective:

The project's objectives were not revised. It is important to note, however, that IDA used the mid-term review to refocus its sector activities in a pragmatic way to respond to the dire emergencies of the post conflict situation. In retrospect, it appears that given the very difficult implementation environment (civil unrest and war from 1997 to 2000, see section 5.1), and the odds that all the original objectives would have not been achieved, IDA could have used the review of the Sierra Leone portfolio to reformulate the project's institutional and financial objectives.

3.3 Original Components:

I. **<u>Water Supply</u>**

A. GVWC Water System Rehabilitation and Expansion

(i) Rehabilitation and repair work on Guma Dam intake tower and raising of the spillway by

1.5 m to increase storage (yield up to 90,000 m^3/day), and construction of weirs and canals/pipelines to divert wet season flows from small catchments into the Guma reservoir to increase water supply capacity and reliability by providing an incremental yield of about 13,000 m^3/day;

(ii) Refurbishment of the Guma Water Treatment Plant, including replacement of obsolete equipment, refurbishment of filters, and modifications to increase capacity to match the supply capacity of the Guma reservoir and transmission pipelines to Freetown (90,000 m^3/day);

(iii) Construction of new bulk transfer mains to improve supply to the rapidly growing eastern areas of Freetown, including: Congo Cross to Lumley Street (700 mm diameter, 4,060 m long); Lumley Street to Dan Street (600 mm, 1,340 m); Africanus Road to Wellington (600 mm, 4,900 m); new outlet to Wellington Reservoir (600 mm, 500 m), and installation of flow control valves at the Wellington Reservoir;

(iv) Extensions of the distribution system to meet the projected 2005 demands including: Spur Road Zone--about 2,300 m of 200-250 mm diameter pipelines and installation/replacement of pressure reducing valves; Wellington Zone-- secondary distribution network to serve the high growth/influx population; Tower Hill Zone--provision of a new 400 mm diameter common outlet main from the Tower Hill Reservoir; Income Tax Zone--provision of bypass to the Income Tax Break Pressure Tank;

(v) Improvement of reservoirs, including refurbishment of Dan Street and Income Tax Reservoirs, and re-integrate them into the distribution system; and provision of new reservoirs at Governor's Lodge, Kortright and Wilberforce Village;

(vi) Refurbishment of the subsidiary supply at Kongo, including provision of a package treatment plant of 1,600 m^3/day capacity with the Kongo Reservoir as the source of raw water, and replacement of the old Gloucester Service Reservoirs;

(vii) Secondary distribution reinforcement, including the supply of about 24 km of pipes and fittings for replacement of old mains of less than 100 mm diameter, and other materials and supplies for routine expansion of the distribution system; and

(viii) Consultant services for supervision.

B. GVWC Institutional Strengthening

(i) Supply of computers and software for accounting and Management Information Systems (MIS);

(ii) Supply of vehicles and tools for maintenance;

(iii) Technical assistance to implement computerized systems, and to identify roles for PSP in water supply operations to help GVWC manage increased investment programs and operations and to develop a public relations and education program; and

(iv) Training of GVWC staff.

C. Improvement of Water Supply Operations in Other Major Towns

(i) Provision of consulting services for water master plans, feasibility studies and designs for other major towns (including Bo, Kenema and Makeni); and studies for organization, finance and management of the water sector, including water supply operations, in these towns; and

(ii) Institutional support, including office equipment and vehicles.

II. Sanitation

A. Technical assistance to plan low-cost sanitation, including the design of a community outreach system involving NGOs and/or other private agencies and provision of ablution facilities in low-income areas in Freetown;

B. Rehabilitation and pilot-scale extension of the existing sewerage system and extension of the outfalls;

C. Management and consultant services for supervision; and

D. Institutional support including office equipment and vehicles.

3.4 Revised Components:

Despite the difficult implementation conditions, most of the original components were maintained throughout the project. Some components were, however, scaled back to fit the project budget, a few were deleted, and new components were added at the time of the Sierra Leone portfolio review (rehabilitation of water supply in secondary cities and power plant rehabilitation). The latter components responded to the urgent humanitarian needs of the post-conflict situation, particularly to help reduce the risks of cholera and other diseases in provincial towns due to lack of potable water and to restore power in Freetown. The GOSL requested IDA to re-program US$3.5 million to finance an emergency action plan to: (i) rehabilitate water works and distribution systems to channel water supply into the major provincial towns (Bo, Kenema, Makeni and Lungi); and (ii) repair two generators at the Kingtom Power Station. The amended project (CR 2702-1-SL) became effective in September 2000.

3.5 Quality at Entry:

The Quality Assurance Group (QAG) did not review the project. With hindsight, the ICR has assessed the Quality at Entry as satisfactory, based on current OED criteria. All of the following were rated substantial: the project's consistency with the Bank's strategy for Sierra Leone; the approach and design appropriateness; Government ownership; involvement of stakeholders/beneficiaries; technical aspects; economic and financial aspects; environmental aspects; poverty reduction and social aspects; institutional analysis; financial management aspects; readiness for implementation; and assessment of risk and sustainability.

The project was a continuation of IDA's involvement in the sector (Sector Study 1983; FIRP 1993), which helped to advance preparation. It responded to the GOSL's commitment to adhere to the agreed strategies,

including cost recovery and financial viability. The project was prepared with active participation of the GOSL and all of its relevant agencies in addition to beneficiary consultation during preparation of the low-cost sanitation component. A high level of cooperation between the GOSL and the Bank helped to facilitate quick processing of the project (see section 7.1).

Project institutional arrangements were in place, and an implementation/procurement plan was agreed during appraisal. Also, draft bidding documents were approved during appraisal. The preliminary and detailed engineering studies of the rehabilitation and upgrading of the GVWC components commenced before project preparation; the Terms of Reference for the major studies were prepared by GOSL, cleared by IDA and included in the SAR. All consultant assignments prior to project preparation were delivered on time, and Environmental Impact Assessments (EIAs) were prepared for all major components.

4. Achievement of Objective and Outputs

4.1 Outcome/achievement of objective:

Objective 1: ***Improve water supply and sanitation services in Freetown.***

In spite of severe disruption caused by civil disturbances, including a coup d'etat and a rebel invasion, the project's overall objective of improving water supply services in Freetown was partially satisfactory. The project succeeded in increasing the availability of water to Freetown, to the level foreseen in the SAR, through successful rehabilitation of the Guma Treatment Works. The water treatment plant is working at full capacity with production at about 95,340 m^3/day, up from 61,370 m^3/day at appraisal, a 55 percent increase. This would have been sufficient to meet SAR demand projections for Greater Freetown of 80,500 m^3/day, including wastage, had the city's demographics not changed substantially since project preparation. Consequently, until additional water sources are developed, and further investments are implemented, there will be continued stress on the water supply services in Freetown.

On the sanitation side, the outcome of the rehabilitation and pilot scale extension of the existing sewerage system is modest. Many buildings within the extended sewer catchment are now connected to the sewer network, and extension of the sea outfalls beyond tidal influence improved sewage disposal. Due to political events, the sewerage functions in Freetown have not yet been transferred from the Ministry of Energy and Power (MOEP) to GVWC for efficient management and cost recovery as agreed during project preparation. A current action plan includes the transfer of assets between the GOSL and GVWC as well as transferring the responsibility for collecting the sewerage charges to GVWC is to be implemented.

Objective No. 2: ***Improve the accessibility of water supply and sanitation services to the urban poor***.

The objective is rated partially satisfactory. Access to water in Freetown before the project was estimated at about fifty percent of the pre-war population of 800,000, i.e., 400,000. The war caused massive population displacement into Freetown, estimated at around 2 million at the end of the project in 2002. Current access is considered to be about seventy percent, i.e., 1.4 million persons. Urban water services became available to the densely populated eastern areas with the construction of a new bulk transfer pipeline from Congo Cross to Wellington, extensions of the distribution system, and construction of new public standpipes. While the project implemented its physical objectives, the inflow of refugees, as stated above, has reduced the access to Freetown's water supply and sanitation services as envisioned at the project's outset. All the project's works were implemented, but their impact was not sufficient due to a significant increase in the capital's population.

Objective No. 3: ***Strengthen the sectoral institutions, especially the GVWC and the agencies responsible for sanitation, and introduce private sector participation (PSP)***.

The impact is rated unsatisfactory. Improvement in technical and financial capacities of the agencies responsible for operating and maintaining project facilities has been modest, due largely to political instability. As a result of the crises, a number of key personnel fled the country, causing management to partially suspend operations. GVWC was particularly negatively impacted. Cars were stolen and equipment left in the field was ruined. Additionally, as customers were unable to pay for services, GVWC's financial situation substantially deteriorated and the company could not meet its financial obligations. Nevertheless, PSP studies were carried out, and recommendations for introducing PSP in water operations were made available to GVWC. A public relations and education program was developed, and its recommendations implemented, which is influencing consumers' awareness of their responsibility to pay for services. The supply of computers and software for accounting and MIS helped to improve billing and collection.

Objective No. 4: ***Prepare water supply master plans and development programs as well as institutional framework for the major towns outside Freetown***.

While objective 4 was stated as an objective in the SAP, the current ICR team views this as an output. However, it was completed satisfactorily. All the studies were completed on time as programmed in the SAR. The water supply master plans and related organizational and financial studies for improving water supply operations in major towns have been carried out. The organizational study, which provided recommendations on modalities to strengthen institutional management, performance and operations of the sector, was completed and submitted to the GOSL. The water supply master plans also served as a basis for implementing emergency works in secondary towns under the amended project. Damage to infrastructure as a result of the civil war will require a re-assessment of the initial studies.

4.2 Outputs by components:

Despite all the constraints and setbacks of the implementation context (see section 5.1), the overall achievement on outputs has been very satisfactory. Most of physical outputs have been delivered within contractual costs, which is an outstanding performance in the Sierra Leone environment. Project start-up was good. About 95 percent of procurement had been awarded in 1995/1996. At the time of the military coup in May 1997, 45 percent of the project was disbursed. Project implementation was interrupted by repeated outbreaks of war and two suspensions of disbursements from mid-1997 through June 2000. After final resumption of works in July 2000, and settlement of war-related compensation claims, progress remained steady through to completion. The status of completed works is described below.

Water Supply Systems Rehabilitation

A total of ten major contracts were awarded under this component and were implemented satisfactorily. Two contracts were signed for the Guma Dam Rehabilitation. The first included repairs to the draw-off shaft at Guma dam, crack injection, sealing around pipe and supplying and placing of tell-tales. This contract started in January 1996 and ended in June, two months after its planned date of April 1996. The second contract had original start and completion dates of January 1996 and July 1996. It consisted of raising the dam by 1.5 meters along the 61-meter spillway crest and end walls, construction of a draw-off shaft and intake tunnel (538 meters in length), refurbishment of pipework and steel work in the diversion tunnel and supply of instrumentation. Electrical equipment was looted during the 1997 events. These had to be replaced, causing the contract to be extended to its actual completion date of September 2000.

The Guma Diversion works included construction of an intake structure on Little Guma stream; construction of a 1 km buried pipeline and ancillary works; construction of a concrete outfall into the Guma reservoir and an unsurfaced track over the pipeline. There were delays caused by late start up and heavy rains. Rainfall at Little Guma exceeded that of Freetown, restricting works to the months of June through October. The major difficulties, however, were directly linked to the frequent abandonment of the site due to war. The unique nature of this contract (an intake structure on a large river subject to seasonal flooding) required remedial works as well as additional protection during suspension of works. The incomplete works were flooded and severely damaged during the wet season. As a result of the delays the actual completion was extended to December 2000.

The Guma Treatment Rehabilitation works consisted of rehabilitating the Guma treatment plant, buildings and structures, replacement of the existing plant, installation, testing and training of staff in its operations. The water turbine, which was originally to be replaced, was refurbished. Treatment capacity increased from 72,000 m^3 to 90,000 m^3 per day as a result of modification to the first phase filters. The initial implementation period of 24 months, effective January 1996 to December 1997, never materialized. The revised contractual period was April 2000 to March 2002, with actual completion in May 2002. It was necessary to reduce the scope of works to absorb extra costs due to war events and to remain within the original project budget. The main change in scope was to cancel the supply of a new turbine and to rehabilitate and increase the capacity of the existing one.

Bulk Transfer Pipeline works included supply of all materials and construction of approximately 4 km of 700 mm diameter and 7 km of 600 mm diameter water mains and ancillary works. The scope of works remained unaltered although there was an increase in the cost of outstanding works as a result of the war and inflation.

The Distribution System Extension contract works consisted of supplying all materials, including 26 km of ductile iron pipes, ranging from DN600 to DN80 at various locations and construction of pipes between DN600 and DN300. The completed revised schedule (December 1999 to September 2000) was limited to the installation of pipes of diameter DN300 and above. Several pipes and other fittings stacked at the quay suffered war damage. The scope of works had to be reduced to remain within the budget. The actual completion date was July 2002.

The Reservoirs Improvement contract had a start date of March 1997 and completion date of September 1998. The works included demolition of existing steel tanks, supply of materials for, and construction of, reinforced concrete reservoirs at the Governor's Lodge (capacity of 5,000 m^3), Wilberforce (capacity of 2,600 m^3), and Kortright (capacity of 2,600 m^3). The works were completed within their revised schedule of January 2000 to February 2002.

The Kongo Supply Improvement contract included supply of all materials and construction of a new treatment works at Banadori, incorporating slow sand filters, a pumping station, chemical dosing and generating units, provision of new DN150 pumping mains to Gloucester, construction of a new pipeline to Regent Village and repairs to the intakes. All civil works were completed within the revised construction plan of October 1999 to March 2001, including installation of filter media into the slow sand filters. The works were tested and commissioned in October 2001.

The Workshop Construction contract had a planned starting date of May 1997 and completion of February 1998. The works comprised the demolition of the existing workshop and store, supply of all materials

required for the construction of a new reinforced concrete workshop, furnished with plumbing and electrical services, drainage facilities, a security post and blockwork fencing. The revised planned program was from October 1999 to July 2000. There was no change to the scope of this contract, and works were completed in December 2000.

Contracts for the design and supervision of the above works (including preparation of bid documents, bid evaluation and preparation of progress reports) were awarded in October and December 1995 and were extended in November 1998 to the end of the design and supervision phases.

Sewerage System Rehabilitation

The Sewerage Rehabilitation and Extension contract was awarded in August 1995 with the first phase scheduled to start January 1996 and last three months. The works comprised rehabilitation and pilot scale extension of the existing sewerage system in five streets in the Central Business District of Freetown (Wilberforce, Rawdon, Howe, Charlotte and Gloucester Streets). Work, which had been stopped, started again in June 1999 and ended in July 1999. No payment was made on compensation claims on this sub-component. Several buildings were connected to the revamped and extended network. The second phase of the contract started in July 1996. The works comprised rehabilitation and extension of the existing sewers in six streets of the Central Business District (Pademba Road, Percival, Pultney, Walpole, Lamina Sankoh and George Streets). Also included were screening stations and extension of the sea outfalls beyond tidal influence to improve disposal, sewer network revamping and cross-connecting to the sewers leading to the screening chambers at Government Wharf and King Jimmy Wharf. The May 1997 coup delayed the final completion to July 1999.

Environmental Sanitation

The Environmental Sanitation Component had a difficult start. If this component had been implemented as planned at appraisal, it would have been completed by April 1997, one month before the coup. Lengthy start up delays combined with a later decision to shift resources to finance the emergency water supply program for the secondary cities led to a substantial reduction in this component from its initial US$1.87 million to US$0.20 million covering only construction of sanitary facilities in selected deprived areas of Freetown. The component included employment generation for qualified NGOs and private contractors using labor-intensive methods. Despite the reduction, achievements in outputs from this component were substantial. Seven sanitary facilities were completed and handed over to Freetown City Council; 13 rehabilitated sanitary facilities were provided to a low income area with high population density that had virtually no sanitary facility prior to project implementation, and to five market centers spanning Greater Freetown; these now have improved environmental sanitation, hygiene education and facility management.

Institutional Support to GVWC

This component completed the following: (i) procurement of computers and software for accounting and MIS and related technical assistance; (ii) procurement of vehicle and tools for maintenance; (iii) a study to identify roles for PSP in water supply operations to help GVWC manage increased investment programs and operations; (iv) development of a public relations and education program and training of GVWC staff.

Technical Assistance and Support to MOEP/WSD/SLWC

The consultants engaged in conducting the water supply master plans and feasibility studies prepared satisfactorily a design for major towns and an organizational, finance and management study for the water

sector. Their reports were submitted and were jointly reviewed by IDA, GOSL, SLWC (Sierra Leone Water Company) and GVWC. The institutional support included office equipment and vehicles.

Additional Emergency Works

By the end of the civil uprising, most water supply systems outside of Freetown had collapsed, and there was a massive influx of people into Freetown trying to escape the terrible conditions in the countryside. The GOSL requested emergency water works for the secondary cities to help in this humanitarian crisis and to restore the power system in Freetown, which was in permanent blackout. Bank management supported the request and reallocated funds for this purpose to rehabilitate water supply facilities in the secondary cities and to restore power in Freetown. The reallocation was introduced into the project's Development Credit Agreement as an amendment and was approved by the Board and became effective in September 6, 2000. The following changes were effected in the Development Credit Agreement (DCA): (i) reallocation of US$1.7 million within the project credits to the National Power Authority (NPA) for the procurement of spare parts, consultants services and training for the rehabilitation of two existing power generating units, to respond to the Government's first priority of reducing the enormous power shortages in Freetown; (ii) reallocation of US$2 million for spare parts and equipment needs for water emergency works in secondary cities. In addition, the DCA increased IDA financing to all budget categories to 100 percent.

*Secondary Cities Water Supply**:***
The water supply systems rehabilitated under the project in the four towns (Bo, Kenema, Makeni and Lungi) provide drinking water to about 1.0 million people, including villages along the trunk mains in these areas (Bo, Kenema, Makeni) that are heavily populated with refugees. Lungi is the country's international airport area.

Power Plant Rehabilitation:
The implementing agency of this component was the NPA. Achievements in the output on this component were substantial. The repair program was executed and the plant commissioned and put into operation. Residual funds were also used for training of NPA staff.

4.3 Net Present Value/Economic rate of return:

The ICR has used the same approach in estimating the Internal Economic Rate of Return (IERR) as that found in the SAR. The basic cost benefit calculation assumes: (i) a total investment cost of US$26.59 million; (ii) a yearly incremental water production quantity of around 18 million m^3 and associated maintenance costs; and (iii) a full production capacity of the treatment plant due to strong and steady demand. Results: Total Benefits US$41 million; Net benefits US$3.57 million; IERR 12 percent. The Staff Appraisal Report estimated the project's economic rate of return at 8 percent. Annex 3 provides the details of the analysis.

4.4 Financial rate of return:

The financial situation of GVWC is, in general, very weak and has reached the point of endangering its operational performance and its ability to adequately service the Freetown area. As indicated in Annex 8, GVWC Financial Indicators, the financial targets set at appraisal were not met, and have worsened considerably during the last few years. In 2002, the ratio on the return on average fixed assets was 2.08 percent, according to the audited statement ending December 31, 2002, compared to a ratio of 8.1 percent estimated at the appraisal. The nominal tariffs GVWC currently charges will not enable it to reach financial autonomy. It is important to note here that because of the civil unrest, massive dislocation of

people, and temporary breakdown of economic activity and of the government, GVWC could neither operate as planned, nor could it adjust water charges periodically to match operational costs as was agreed in the Project Agreement. A summary of the projected and actual financial indicators is presented in Annex 8.

Currently less than 30 percent of consumers pay their bills. The Government itself is delinquent in the amount of about 4.2 billion Leones. Parastatal companies, government and commercial clients are the only segment of consumers who pay water bills on a regular basis, but their share in the total revenue is estimated at less than 2 percent. The tariff is based on bulk consumption for most domestic consumers and on metered consumption for commercial and government consumers. The present situation is not in compliance with the SAR agreement, whereby a tariff structure based on metered consumption was to be effective by December 31, 1995. Additionally, tariffs were to be adjusted periodically to enable the company to increase its financial independence.

IDA missions repeatedly discussed with GVWC the severity of its financial situation and encouraged the management of GVWC to concentrate its efforts, to the extent possible, on improving collections while increasing the number of connections and meter installation as a first step. The project provided a renewed MIS and related staff training. Improvements have been made in the staffing of its accounting and auditing departments. These initiatives now need to be reinforced by a detailed strategy for the future financial recovery of the GVWC, which could be done on a sector basis or preferably as part of a country renewal strategy.

Financial audits of the project were prepared with long delays. For example, the 1997 and 1998 audits were received only by September and December 1999 respectively. The audit for the 17-month period ending December 2001 was received in 2003. While this latter report was found to be compliant with auditing standards and was given an unqualified opinion, it was not accompanied by the requisite management letter. Bank supervision missions reviewed on a regular basis the project's special accounts with the financial controller's department. The accounts were found to be in accordance with the disbursement requests submitted to the Bank.

4.5 Institutional development impact:

GVWC was able to receive some benefit from the project's institutional development goals. On the basis of recommendations of the financial review study of the FIRP, GVWC installed an accounting system and an MIS, which contributed to the improvement of the company accounting and management information monitoring. New billing procedures were put in place, including a prepaid card system for public standpipes. GVWC has also established satellite offices in Freetown to facilitate customer relations and payment by consumers, and the public relations and water awareness campaign has set the basis for improved revenue collection. At GVWC, the sanitary engineer engaged under the project is still in place to operate the sewerage system when the sewerage functions are transferred from the MEP to GVWC.

Major studies were prepared, and their findings and recommendations agreed upon by GVWC and IDA. These included the water supply master plan and feasibility studies for major towns; an organizational, finance and management study; identification of possible PSP to help GVWC manage its increased investment programs; development of a public relations and education program; and planning of low-cost sanitation, including the design of a community outreach system.

5. Major Factors Affecting Implementation and Outcome

5.1 Factors outside the control of government or implementing agency:

The main factor outside of the control of the GOSL and the Project Implementing Unit (PIU) was the security and political problems the country faced during 1997-2000. The lengthy period of civil unrest in Sierra Leone seriously impacted project implementation. Goods and equipment which had arrived in Freetown could not be transported to site; equipment and material were plundered during the war, and/or spoiled during a period of very heavy rainfall (June to October 1997). Foreign consultants and contractors were obliged to evacuate the country many times. Local consultants shouldered the supervision responsibility with frequent communication with their foreign counterparts. These events slowed the pace of implementation of various contracts substantially, and contributed to cost overruns, including three separate war-related contract arbitrations and compensation awards, amounting to US$1.68 million plus 350 million Leones. Project implementation was suspended due to the war for a total of 32 months as follows: May 1997-October 1998 for 18 months; January 1999-November 1999 for 11 months; and May 2000-July 2000 for 3 months. The Project was implementable over a period of 45 months including the wet season of 5 months each year when work is almost nil.

5.2 Factors generally subject to government control:

Serious shortcomings of the GOSL were: (i) failure to pay for its water consumption which would facilitate operation and maintenance of existing water facilities. This, coupled with the lack of payment by consumers, led to deterioration in the financial position of the GVWC, making it unable to meet its counterpart contributions for the project. During an interim period, when counterpart contributions were not available (later reduced to zero percent following the country-wide portfolio restructuring), delays in project implementation were experienced; (ii) failure to institute important sector policies affecting cost recovery and financial viability, such as universal metering; and (iii) failure to comply with the credit covenants, which include actions that should have been taken regarding sector reforms and transfer of sewerage management to GVWC.

5.3 Factors generally subject to implementing agency control:

GVWC made a great effort to ensure that the project's contracts were properly implemented. The main areas in which it could have improved its performance include: (i) devoting substantially larger resources and undertaking collaboration with other law enforcement agencies to increase payments by consumers; and (ii) devoting more resources and encouraging staff in the financial departments to improve understanding and management of the financial difficulties, with a particular focus on carrying out the project's audit reports on a timely basis; and (iii) upgrading the capacity of GVWC staff. During the supervision period, there was a large fluctuation in project staff; GVWC's Board of Directors could have made a greater effort to ensure that the company had the most qualified staff possible, especially in the financial management and procurement areas. This would have improved and facilitated management and implementation of both the project and the water utility. IDA missions repeatedly and unsuccessfully attempted to have GVWC take actions in that direction.

Fiduciary Issue (Misprocurement). Some goods were purchased from a German manufacturer without obtaining the required three quotations from different countries. The Bank recommended that those misprocured items, totaling $0.346 million, be cancelled. The misprocurement, which was due to a lack of familiarity with procurement procedures by SALWACO rather than an attempt to misuse project funds,

was noted by the Bank Procurement specialist during a routine mission in March 2002. The final report became available in July 2002, following review and clearance by the Regional Procurement Adviser (RPA). A letter was sent to the Borrower on December 20, 2002, requesting that evidence be provided to the Bank by February 2003. In November 2003, the project team received from the Bank Country Office in Accra, a report dated October 13, 2003 on audit inspection on the procurement of goods by the Sierra Leone Water company (SALWACO) for the period of September 2000 to February 2002. The report by Mrs. A. A. Caesar, Auditor General of the Government of Sierra Leone, stated that, "The absence of competitive bidding among suppliers may lead to collusion on inflated prices. The non-observance of the World Bank Rules of Procedures for Goods and works has resulted in anomalies in the procurement by SALWACO. The General Manager, SALWACO is requested to comment on these apparent anomalies." The report was sent to the Bank Department of Institutional Integrity, which is still investigating the issue.

5.4 Costs and financing:

The final total project cost was US$36.02 million. The following changes were effected: (i) reallocation of US$1.7 million within the project credits to the National Power Authority (NPA) for the procurement of spare parts, consultant services and training for the rehabilitation of two existing power generating units; and (ii) reallocation of US$2 million for spare parts and equipment needs for water emergency works in secondary cities. In addition, the DCA increased IDA financing to all budget categories to 100 percent. The reallocation of credit funds to secondary cities together with fluctuations in the exchange rate had a negative impact on financing, creating a financial gap of about US$3.5 million, an amount which is still outstanding to one of the contractors, and which the GOSL should settle. The planned and actual project costs and financing are as follows:

Component	Appraisal Estimate			Actual/Latest Estimate			Percentage of Appraisal		
	Bank	Govt.	GVWC	Bank	Govt.	GVWC	Bank	Govt.	GVWC
1. Water Supply	31.50	6.00	3.00	31.02	0.76	0.09	98.47	12.66	3.00
2. Sanitation	4.50	1.50	0.00	1.64	0.81	0.00	36.44	54.00	0.00
3. Power	0.00	0.00	0.00	1.70	0.00	0.00	0.00	0.00	0.00

6. Sustainability

6.1 Rationale for sustainability rating:

Sustainability is rated as unlikely. The project was designed within the frame of a medium term strategic development of GVWC to: (i) maximize the supply of water available from existing sources, by minimizing losses and increasing the yield of the Guma Reservoir; (ii) manage demand effectively through an appropriate tariff policy based on metered consumption; and (iii) maximize the efficiency of water supply operations of GVWC.

The project did succeed in maximizing the yield of the Guma Reservoir by repairing the draw-off shaft, increasing storage capacity, and diverting the flows of Little Guma into Guma Reservoir. Other critical water supply assets were rehabilitated or improved including major reservoirs, the Kongo Dam, treatment works, bulk distribution system and treated water storage facilities in Freetown. The project is weak, however, on efficiency measures that maximize asset use while minimizing losses, such as metering of production and consumption and programs to reduce fraud, all of which impact on sustainability.

Due to the massive influx of people from the countryside to Freetown following the lengthy period of chaos and violence, the demand for GVWC's service increased far beyond the capacity of its plants. In addition, affordability is a critical problem affecting the industry as the tariffs levied for water bear no relationship to the cost of production. Metered consumption is minimal. A tariff adjustment has not been applied since at least mid-1999. Without the resources to provide regular maintenance of constructed assets, their lifespan could be shortened. A realistic path needs to be developed to bring GVWC out of its financial and institutional crisis.

It was intended to maximize efficiency of GVWC's water supply operations through involvement of the private sector. Studies were carried out, but the political and economic situation did not support implementation of PSP. The GOSL is aware of the urgent need to restore GVWC's ability to provide efficient urban water services. The new GOSL has recently: (i) agreed with the universal metering policy instituted by GVWC; (ii) developed adequate infrastructure in other major towns to help stem the flow of migrants into Freetown; and (iii) reconstituted the City Council with the skills and commitment needed to develop effective strategies for meeting the needs of communities. With political stability, continued good governance, regular payment of water bills and cost control measures, GVWC could begin its journey back to normal operations.

Public relations and water awareness campaigns initiated by the project are helping to develop consumer support for paying water tariffs. Participatory measures were also adopted by the GVWC, which helped to ease some of the opposition to the metering of public standpipes, and initiated interest in the monthly prepaid card system whereby the communities retain a percentage of the user fees.

6.2 Transition arrangement to regular operations:

Arrangements have been discussed and put in place with the project agencies for future O&M of the project facilities. GVWC has instituted some of the PSP recommendations to help with its operation, maintenance and revenue collection. It also has a performance monitoring system in place (MIS). The indicators will be used to monitor the incremental impact of the water supply and sewerage component of the project. Freetown City Council has contracted out the management of public toilets, including cleaning and collection of user fees, to the private sector, with monitoring done by the community. However, a follow up operation will be necessary to consolidate progress made on urban water and sanitation infrastructure development and on financial viability of the GVWC, in order to pave the way for private participation in management and long term development of the water supply sector.

7. Bank and Borrower Performance

Bank

7.1 Lending:

The Bank's performance during project appraisal is rated as satisfactory. The project was prepared and processed in just over 17 months in an attempt to give timely support to the sector strategy adopted by the newly elected civilian government. Continuity with the preceding FIRP also helped. The initial appraisal was carried out jointly with the African Development Fund (ADF) in May/June 1994. When the ADF was unable to conclude its funding, the GOSL requested increased IDA financing. A post-appraisal took place in March 1995. Negotiations and Credit approval took place on April 11, 1995, followed by signing on May 15, 1995 and effectiveness on August 14, 1995. By the time of effectiveness, important studies were completed (water master plan and feasibility studies, and bid documents which were prepared under the FIRP), and some components were ready to be disbursed.

7.2 Supervision:

The performance of the Bank in project supervision is rated as unsatisfactory. Supervision is divided into two parts: (i) supervision prior to the outbreak of war; and (ii) supervision after the war. Prior to the outbreak of war, supervision missions visited Sierra Leone at least twice a year. The performance ratings for implementation progress and development objective were highly satisfactory, and disbursement was ahead of the forecast. Until that time, there was staffing continuity in the supervision team. The last mission prior to the war outbreak took place in December 1996, after which there was a break in supervision missions for about two years.

When the situation stabilized in November 1998, and again in January 2002, on the advice of IDA, a technical and financial audit of the project was carried out to determine the condition of project facilities, goods and equipment, and the cost involved to complete the outstanding works within the available budget. At the resumption of works and supervision, the post-conflict situation dictated that the focus on project implementation be narrowed to completing the civil works already begun. Subsequently, during the country portfolio review exercise, resources were allocated for emergency rehabilitation in secondary cities. IDA then restructured the project by reallocating funds within the project to meet emergency needs. A Quality of Supervision Assessment (QSA) review on December 16, 2002 judged that this approach was both appropriate and pragmatic given the situation. These measures ensured delivery of water to the eastern parts of Freetown for the first time in over two decades. However, the reallocation of funds created a financial gap for the project. In addition, restructuring did not change the project's objectives, some of which became unachievable.

Except during the period of intense instability between 1996 - 1998, the Task Team managed to visit the project twice a year and kept regular contact with the project office, maintaining an excellent working relationship with the Borrower. In particular, the supervision team demonstrated excellent contract management and negotiations skills by keeping the contractors in the country, through relentless negotiations and tight supervision albeit sufficient reasons for, and threats by, the contractors to terminate the contractors (quoting several contract clauses). Three compensation events were managed prudently, and engineering standards were not compromised. The team was composed of few dedicated volunteer staff, carrying out risky missions to the field, understanding that the completion of the contracts is necessary in order to bring water to the growing population of Freetown, especially the large number of refugees living in the eastern parts of the city. Due to the war the project did not get adequate supervision by the Financial Management Specialist, the Procurement Specialist and the Environmentalist.

The QSA findings include the following:

"(i) GVWC and core Task Team did an exceptional job in bringing back the international contractors to resume their work and to stay on the job. Careful attention was paid to establishing a clear approach for handling the compensation claims. On the environmental side, however, the Bank failed to produce in a timely manner its report from the field assessment of actual impacts; the report took many months to be issued and is being contested by the Task Team and the client.

(ii) The Task Team showed suitable flexibility in finding ways to prepare, contract and implement water supply investments in three secondary towns in an expeditious manner. However, the panel faulted the Bank for not moving quickly to deal with procurement irregularities identified in the ex-post review; this dragged on for five months before Regional Management started an investigation.

(iii) The panel faulted the restructuring plan for not re-evaluating project institutional and financial

objectives to take into account the crisis situation. More attention should have been paid to questioning what type of cost recovery would be possible, what parts of the financial management reform agenda could be implemented, and what would be a reasonable path for financial and institutional developments. Instead, communications with the Borrower continued complaining about the litany of outstanding covenants. This was not effective in bringing about compliance nor in setting the stage for the necessary restructuring of these aspects."

7.3 Overall Bank performance:

IDA performance is rated unsatisfactory.

Borrower

7.4 Preparation:

Performance of the GOSL and the GVWC during preparation is rated satisfactory. The GOSL performed very well during project preparation. The speed of preparation demonstrated a commitment to improve the quality of life and environmental conditions in Freetown. The GOSL committed itself to installation of domestic meters and billing based on metered consumption. It initiated payments for GVWC's water bills on behalf of Government ministries and agencies and established two project accounts, in the name of SLRA for implementation of the sanitation component and GVWC for the implementation of the sewerage component. It also initiated studies on behalf of MOEP. All of these activities were critical to getting the project started on schedule.

7.5 Government implementation performance:

The Government's performance during implementation is rated unsatisfactory. The factors that affected GOSL's rating are essentially related to the difficulty of functioning in a situation of lengthy political instability: failure to pay for its water consumption that would allow GVWC to honor payment of its counterpart funding; failure to institute important sector policies affecting cost recovery and financial viability, such as universal metering; and failure to comply with the credit covenants; these include actions that should have been taken regarding sector reforms, and transfer of the sewerage management to GVWC. In addition, outstanding claims of contractors for works completed under the GVWC component when the IDA credit was exhausted have not yet been honored. The financial gap was due to the reallocation of funds to meet emergency needs in the secondary cities and to restore power service in Freetown, after the end of the civil war.

7.6 Implementing Agency:

The performance of GVWC is rated unsatisfactory. There are several reasons for this rating. First and foremost is the lack of compliance with project covenants. These include achievement of various financial indicators aimed at improving the operational situation of GVWC. Audit reports were frequently delayed despite reminders from IDA. Additionally, the GVWC did not respond actively and in a serious manner to repeated requests by IDA to improve its financial management practices and staff. The financial situation within the GVWC has not improved in the last years and it is still a serious threat to the company's ability to perform and provide services to its clients. The performance of other PIUs (SLRA and NPA) was satisfactory.

7.7 Overall Borrower performance:

The performance of the Borrower is rated unsatisfactory.

8. Lessons Learned

The political crises from 1997 to 2000 brought the project to the verge of cancellation. Should the Bank cancel a project when a war erupts in a country during project implementation? The cancellation of the Sierra Leone urban water project would have aggravated the potable water crisis in Freetown and in the four cities to which the project had been extended and would have increased waterborne diseases for the population. Water works implementation in Freetown and emergency water works for the secondary cities helped to avoid a humanitarian crisis and restored the power system in Freetown, which was in permanent blackout. The case of Sierra Leone argues against cancellation of a project due to armed conflict, provided committed project team members can be found who are committed and willing to take the risk in continuing supervision.

A future Freetown water supply project could ensure that GVWC's operating, commercial and financial capabilities are adequately addressed through establishment of sound institutional arrangements. Any further investment should start with strengthening of GVWC's management capacity. Future operations should also include rehabilitation of the water supply and sanitation facilities in some major secondary cities to encourage the return of internally displaced people from Freetown back to their places of origin, reducing the pressure on Freetown's infrastructure facilities.

When a country's portfolio is restructured, project staff should be involved in the restructuring of individual project documents as a first step. It is important to restructure a project's objectives to bring them to reflect the current situation. This project would have benefited from greater involvement of project staff in the Bank-wide restructuring of projects in Sierra Leone, which took place in FY00. Project staff involvement could have led to the desired redefinition of the project documents to reflect only the revised and more limited objectives of the post-conflict period, while broader aspects could have been placed on the agenda for consideration as part of the country recovery response.

In the post conflict assistance situation, given local capacity constraints, a reasonable timetable for implementing sector reform programs needs to be developed; structural reforms (private sector participation, revenue collection) should be approached incrementally.

In post conflict situations, it is important to be clear about what burdens can be carried by a utility. Aspects which are beyond the capacities of the utility should be put clearly on the agenda for consideration as part of the country recovery response. Even if there is not yet time nor sufficient understanding to plot out a new institutional and financial path, it is better to recognize that explicitly than to continue to hold a client accountable for unachievable objectives.

9. Partner Comments

(a) Borrower/implementing agency:

Guma Valley Water Company.

Telephone: Freetown 225887
Fax: 232-22-228394
Cable: Guwater
Our Reference: TEC 60 DBLT/edc
Your Reference:

Guma Building
P.O.Box 700
Freetown
Sierra Leone

Date 16th September 2003

Mr. Yao Badjo
Task Team Leader
Sierra Leone Urban Water Supply Project
The World Bank Group

Mr. Badjo

I refer to your emails forwarded on 5th September 2003. Unfortunately these were not received here until late last week as all the telephone lines at Guma Valley Water Company were down because of an external fault. In addition there was also a problem with the international connection and not even the World Bank Office here could receive mails.

I have now read through the ICR and would agree in general with the contents. On section 7.6 dealing with the implementing agency I believe that mention should also be made of the reasons for the delays in the audits which had been earlier submitted to you and includes apart from the 1997 Military interregnum of nine months, two other complete cessation of activities in Freetown each lasting over six months. That is the Jan 6, 1999 invasion of Freetown and the May 2000 hoax invasion which led also to the closing down of several embassies. The Y2K problem was also compounded by the death of the Software supplier of our computer Management Systems which event also delayed the 2000 and 2001 accounts.

Staff calibre has also been improved by several training programmes and an Internal Auditor employed. Currently there are two Accountants undertaking advanced professional courses sponsored by the Company. Recruiting outside replacement staff has been extremely difficult during the implementation period which also coincided with the most intense period of the war years when fighting actually reached Freetown and many professionals were leaving the country

COMMENTS FROM GUMA VALLEY WATER COMPANY

Borrower/Implementing Agency

- 2 -

Please find attached the Summary of the projected and actual financial indicators requested.

Kindly review the financial indicators which I believe would show a serious effort on the part of Guma Valley Water Company to stabilise a deteriorating financial situation following the civil crises of 1997, 1999 and 2000 when income from commercial consumers dropped to an all time low as a result of damage to industries and other infrastructure.

Emergence from the war presented socio economic conditions which made it difficult for economic rates to be levied on domestic consumers. Large numbers of unemployed during and after the war years, displacement of people into the City from the countryside and returnees from neighbouring countries created very difficult circumstances with exceptionally high water demand and lack of adequate earnings to pay for the service. Although financial improvements projected could not be achieved, modest improvements were however realised considering the operating environment

On para 6.1 the last tariff adjustment was done in 1999 and not 1997.

We are in agreement with all the other figures in the ICR.

Yours faithfully

D B L Thompson

D. B. L. THOMPSON
GENERAL MANAGER/ENGINEER-IN-CHIEF

(b) Cofinanciers:

(c) Other partners (NGOs/private sector):

10. Additional Information

Annex 1. Key Performance Indicators/Log Frame Matrix

Outcome / Impact Indicators:

Indicator/Matrix	Projected in last PSR[1]	Actual/Latest Estimate
For the WATER component: (a) GVWC to increase water supply capacity to 90,000 Cubic Meter (CM) /day;	90,000 CM	90,000 CM
For the WATER component: (b) GVWC institutional strengthening: implementation of computerized accounting/MIS system;	MIS system completed and upgraded	MIS system completed and upgraded
For the WATER component: (c) water master plans carried out for the major secondary towns.	Completed	Completed
For the SANITATION component: (i) rehabilitation and pilot scale extension of the existing sewerage system;	Completed	Completed
For the SANITATION component: (ii) implementation of ablution facilities and low-cost sanitation.	Completed	Completed

Output Indicators:

Indicator/Matrix	Projected in last PSR[1]	Actual/Latest Estimate
The GVWC institutional strengthening	Completed	Completed

[1] End of project

Annex 2. Project Costs and Financing

Project Cost by Component (in US$ million equivalent)

Component	Appraisal Estimate US$ million	Actual/Latest Estimate US$ million	Percentage of Appraisal
I. Water Supply			
(i) GVWC Water Supply Systems Rehabilitation and Expansion	29.88	26.06	87
(ii) GVWC Institutional Strengthening	0.90	1.21	134
(iii) Technical assistance and support to DOEP/WSD/SLWC	3.31	4.60	139
II. Sanitation	5.13	2.45	48
II. Power (NPA)		1.70	
Total Baseline Cost	39.22	36.02	
Physical Contingencies	5.25		
Price Contingencies	2.03		
Total Project Costs	46.50	36.02	
Total Financing Required	46.50	36.02	

Project Costs by Procurement Arrangements (Appraisal Estimate)

Expenditure Category	Procurement Method[1] ICB	LCB	OTHER	TOTAL
1. Civil Works				
(a) Source and treatment works	6.53	2.06	0.00	8.59
	(4.89)	(1.54)	(0.00)	(6.43)
(b) Transmission and distribution	19.26	0.00	0.00	19.26
	(14.41)	(0.00)	(0.00)	(14.41)
(c) Sewerage and sanitation	3.31	0.49	0.00	3.80
	(2.48)	(0.36)	(0.00)	(2.84)
2. Goods and Equipment				
(a) GVWC	6.10	0.20	0.19	6.49
	(4.01)	(0.13)	(0.12)	(4.26)
(b) DOEP/SLWC	0.00	0.00	0.77	0.77
	(0.00)	(0.00)	(0.49)	(0.49)
(c) SLRA	0.00	0.00	0.20	0.20
	(0.00)	(0.00)	(0.18)	(0.18)
3. Consulting services and training				
(a) Policy support	0.00	0.00	0.58	0.58
	(0.00)	(0.00)	(0.58)	(0.58)
(b) Technical assistance and training	0.00	0.00	1.34	1.34
	(0.00)	(0.00)	(1.34)	(1.34)
(c) Project design and supervision	0.00	0.00	5.47	5.47
	(0.00)	(0.00)	(5.47)	(5.47)
Total	35.20	2.75	8.55	46.50
	(25.79)	(2.03)	(8.15)	(36.00)

Project Costs by Procurement Arrangements (Actual/Latest Estimate) (US$ million equivalent)

Expenditure Category	Procurement Method[1]				Total Cost
	ICB	NCB	Other[2]	N.B.F.	
1. Works	28.33 (27.98)	0.16 (0.13)	0.00 (0.00)	0.00 (0.00)	28.49 (28.11)
2. Goods	0.06 (0.26)	0.00 (0.13)	2.11 (4.00)	0.00 (0.00)	2.17 (4.39)
3. Services	0.00 (3.28)	0.00 (0.28)	5.59 (0.15)	0.00 (0.00)	5.59 (3.71)
4. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
5. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
6. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Total	28.39 (31.52)	0.16 (0.54)	7.70 (4.15)	0.00 (0.00)	36.25 (36.21)

Project Financing by Component (in US$ million equivalent)

Component	Appraisal Estimate			Actual/Latest Estimate			Percentage of Appraisal		
	Bank	Govt.	GVWC	Bank	Govt.	GVWC	Bank	Govt.	GVWC
1. Water Supply	31.50	6.00	3.00	31.02	0.76	0.09	98.47	12.66	3.00
2. Sanitation	4.50	1.50	0.00	1.64	0.81	0.00	36.44	54.00	0.00
3. Power	0.00	0.00	0.00	1.70	0.00	0.00	0.00	0.00	0.00

[1/] Figures in parenthesis are the amounts to be financed by the Bank Loan. All costs include contingencies.

[2/] Includes civil works and goods to be procured through national shopping, consulting services, services of contracted staff of the project management office, training, technical assistance services, and incremental operating costs related to (i) managing the project, and (ii) re-lending project funds to local government units.

Annex 3. Economic Costs and Benefits

The Staff Appraisal Report estimated the project's economic rate of return at 8 percent. Its sensitivity analysis states that with a 10 percent increase in costs, the rate of return would be 7 percent and with a 10 percent reduction in the volume of water saved, the rate of return would be 7.4 percent. A combination of both (cost increase and a reduction in the volume of water saved) would reduce the rate of return to 7 percent. The economic analysis below calculates the rate of return of the project, referring to the major investments in the Freetown water supply systems, comprising nine major contracts which constitute the larger part of the project's costs.

The investments in the urban water supply increased the production capacity of the system to 95,340 m^3 /day from an initial capacity of 61,370 m^3/day. It is also estimated that the original production capacity of Freetown's water supply system would not have been able to continue production at the same pace over a sustained period of time, without major investments and repairs of the treatment plant, Guma Dam, spillway crest and walls, pipes and reservoirs. Therefore, ini the without project scenario, reductions in the quantities of water produced are taken into account (at a rate of 2 percent per year from 2002 onwards). The cost of the investments required to produce the incremental amounts of water described above are estimated at US$26.59 million.

The current prices of water charged by the GVWC are very low even by sub-regional standards and reflect neither the value of water nor a willingness to pay for water in Sierra Leone. Water is seen as a social good which is to be subsidized by the GOSL. The project's objective of reaching financial independence has not been met and it is unlikely that it will be met soon. In the cost benefit calculation the economic value of water is estimated at US$0.22 per m^3. The price is on the low end of those charged by utilities in neighboring countries and the sub-region, and does not include all the positive externalities usually associated with the provision of potable water. The basic cost benefit calculation assumes: (i) a total investment cost of US$26.59 million; (ii) a yearly incremental water production quantity of around 18 million m^3 and associated maintenance costs; and (iii) a full production capacity of the treatment plant due to strong and steady demand. Results: Total Benefits US$41 million; Net benefits US$3.57 million; ERR 12 percent.

Annex 4. Bank Inputs

(a) Missions:

Stage of Project Cycle	No. of Persons and Specialty (e.g. 2 Economists, 1 FMS, etc.)		Performance Rating	
Month/Year	Count	Specialty	Implementation Progress	Development Objective
Identification/Preparation				
07/1992	*4*	TEAM LEADER (1); CONSULTANT (3)		
07/29/1993	*1*	TEAM LEADER (1)		
10/12/1993	*4*	PR. OPERATIONS OFFICER (1); FINANCIAL ANALYST (1); CONSULTANT (2)		
12/17/1993	*3*	PR. OPERATIONS OFFICER (1); FINANCIAL ANALYST (1); WATER AND SANI. ENGINEER (1)		
Appraisal/Negotiation				
03/09/1994	*4*	PR. OPERATIONS OFFICER (1); FINANCIAL ANALYST (1); SR. WATER AND SANI. ENGINEER (1); SR. TRANSPORT ECONOMIST (1)		
Supervision				
05/04/1995	*1*	PR. OPERATIONS OFFICER (1)	HS	HS
12/05/1995	*3*	PR. OPERATIONS OFFICER (1); ECONOMIST (1); SANITARY ENGINEER (1)	HS	HS
08/15/1996	*2*	PRINC. OPERATIONS OFF. (1); ECONOMIST/URBAN PLAN. (1)	HS	S
12/14/1996	*3*	PRINC. OPER. OFFICER (1); FINANCIAL ANALYST (1); SANITARY ENGINEER (1)	S	S
11/26/1998	*1*	TEAM LEADER (1)	U	U
10/02/1999	*2*	ECONOMIST (1); TTL, SR.SANIT.ENGINEER (1)	U	U
04/04/2000	*2*	SR. SANITA. ENGINEER (1); ECONOMIST (1)	S	U
06/17/2000	*2*	ECONOMIST (2)	S	U
11/01/2000	*1*	CIVIL ENGINEER (1)	S	S
01/23/2001	*1*	ECONOMIST (1)	S	S
05/04/2001	*5*	TEAM LEADER (1); ECONOMIST (1); CIVIL ENGINEER (1); PROGRAM	S	S

			ASSISTANT (1); WATER SANITATION SPEC. (1)		
	07/20/2001	*1*	ECONOMIST (1)	S	S
	11/26/2001	*1*	CONSULTANT (1)	S	S
	04/12/2002	*1*	TEAM LEADER (1)	S	S
	11/11/2002	*2*	TEAM LEADER (1); SR ECONOMIST (1)	S	U
ICR					
	10/2003	*1*	CONSULTANT		

(b) Staff:

Stage of Project Cycle	Actual/Latest Estimate	
	No. Staff weeks	US$ ('000)
Identification/Preparation	25.1	51.2
Appraisal/Negotiation	58.5	155.0
Supervision	122.96	353.78
ICR	9.78	23.52
Total	209.34	583.5

Annex 5. Ratings for Achievement of Objectives/Outputs of Components

(H=High, SU=Substantial, M=Modest, N=Negligible, NA=Not Applicable)

	Rating
☒ *Macro policies*	○ *H* ○ *SU* ○ *M* ○ *N* ● *NA*
☒ *Sector Policies*	○ *H* ○ *SU* ○ *M* ● *N* ○ *NA*
☒ *Physical*	○ *H* ● *SU* ○ *M* ○ *N* ○ *NA*
☒ *Financial*	○ *H* ○ *SU* ○ *M* ● *N* ○ *NA*
☒ *Institutional Development*	○ *H* ○ *SU* ● *M* ○ *N* ○ *NA*
☒ *Environmental*	○ *H* ○ *SU* ● *M* ○ *N* ○ *NA*
Social	
☒ *Poverty Reduction*	○ *H* ○ *SU* ○ *M* ○ *N* ● *NA*
☒ *Gender*	○ *H* ○ *SU* ○ *M* ○ *N* ● *NA*
☐ *Other (Please specify)*	○ *H* ○ *SU* ○ *M* ○ *N* ● *NA*
☒ *Private sector development*	○ *H* ○ *SU* ○ *M* ● *N* ○ *NA*
☒ *Public sector management*	○ *H* ○ *SU* ○ *M* ● *N* ○ *NA*
☒ *Other (Please specify)*	○ *H* ○ *SU* ● *M* ○ *N* ○ *NA*
Capacity Building	

Annex 6. Ratings of Bank and Borrower Performance

(HS=Highly Satisfactory, S=Satisfactory, U=Unsatisfactory, HU=Highly Unsatisfactory)

6.1 Bank performance	*Rating*			
☒ *Lending*	○ *HS*	● *S*	○ *U*	○ *HU*
☒ *Supervision*	○ *HS*	○ *S*	● *U*	○ *HU*
☒ *Overall*	○ *HS*	○ *S*	● *U*	○ *HU*

6.2 Borrower performance	*Rating*			
☒ *Preparation*	○ *HS*	● *S*	○ *U*	○ *HU*
☒ *Government implementation performance*	○ *HS*	○ *S*	● *U*	○ *HU*
☒ *Implementation agency performance*	○ *HS*	○ *S*	● *U*	○ *HU*
☒ *Overall*	○ *HS*	○ *S*	● *U*	○ *HU*

Annex 7. List of Supporting Documents

Project Related Documents

Urban Water Supply Project (Cr. 2702-SL), Mid-Term Review Aide Memoire, June 2000.

Freetown Infrastructure Rehabilitation Project ICR (IDA – 25110), World Bank Report No. 23289, December 27, 2001.

Urban Water Supply Project (Cr. 2702-SL) - Final Supervision Report , Cornelius A.H. Williams, Consultant, August 28, 2002.

Urban Water Supply Project Final Report, Howard Humphreys Consulting Engineers, ENGCON, TECHSULT and GENAC, October 2002.

Urban Water Supply Project (Cr. 2702-SL) - Aide-Memoire: Final Supervision Mission, Alpha Bah, Consultant, October 13-17, 2002.

Quality of Supervision Assessment (QSA5) Report, World Bank, December 16, 2002.

Additional Annex 8. GVWC Financial Indicators

GUMA VALLEY WATER COMPANY

PROJECTED BALANCE SHEET: 1995 - 2002 (LE 000)

	1995	1996	1997	1998	1999	2000	2001
Net Fixed Assets	17,003,195.00	31,768,753.00	40,220,530.00	43,174,663.00	46,931,124.00	48,872,973.00	48,872,973.00
Work in progress	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Investments	150.00	150.00	150.00	150.00	150.00	150.00	150.00
Special Reserve Investments	480.00	480.00	480.00	480.00	480.00	480.00	480.00
	17,003,825.00	31,769,383.00	40,221,160.00	43,175,293.00	46,931,754.00	48,873,603.00	48,873,603.00
Current Assests							
Inventories	254,234.00	371,412.00	456,601.00	514,059.00	582,590.00	646,996.00	646,996.00
Debtors	222,587.00	451,642.00	625,423.00	861,525.00	1,131,312.00	1,345,344.00	1,345,344.00
Cash at bank and in hand	1,431,841.00	1,299,930.00	2,728,492.00	3,182,497.00	3,772,824.00	4,447,068.00	4,447,068.00
	1,908,662.00	2,122,984.00	3,810,516.00	4,558,081.00	5,486,726.00	6,439,408.00	6,439,408.00
Creditors:							
Falling due within one year	776,521.00	1,281,308.00	1,922,604.00	2,691,082.00	3,607,763.00	4,652,056.00	4,652,056.00
Net Current Assets/Liabilities	1,132,141.00	841,676.00	1,887,912.00	1,866,999.00	1,878,963.00	1,787,352.00	1,787,352.00
Total Assets Less Current Liabilities	18,135,966.00	32,611,059.00	42,109,072.00	45,042,292.00	48,810,717.00	50,660,955.00	50,660,955.00
Provision for Liabilities & charges	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	18,135,966.00	32,611,059.00	42,109,072.00	45,042,292.00	48,810,717.00	50,660,955.00	50,660,955.00
Capital & Reserves							
Called Up Share capital	1,223,958.00	1,224,001.00	1,224,044.00	1,224,044.00	1,224,044.00	1,224,044.00	1,224,044.00
Reserves	5,836,596.00	5,778,624.00	6,431,884.00	7,358,447.00	9,222,392.00	9,457,448.00	9,457,448.00
Capital	7,060,554.00	7,002,625.00	7,655,928.00	8,582,491.00	10,446,436.00	10,681,492.00	10,681,492.00
Long Term Loans	11,075,412.00	25,608,434.00	34,453,144.00	36,459,801.00	38,364,282.00	39,979,463.00	39,979,463.00
Liabilities	18,135,966.00	32,611,059.00	42,109,072.00	45,042,292.00	48,810,718.00	50,660,955.00	50,660,955.00
Indicators:							
Exchange gain/(Loss)	(364,939.00)	(686,682.00)	(1,587,713.00)	(2,136,092.00)	(2,260,483.00)	(2,284,604.00)	(2,284,604.00)
Revenue from water	1,310,400.00	2,636,400.00	3,693,040.00	5,127,200.00	6,734,000.00	8,008,000.00	8,008,000.00
Net Operating Income	(343,037.00)	267,592.00	754,098.00	1,803,656.00	2,984,745.00	3,854,852.00	3,854,852.00
Net average fixed assets	17,003,825.00	24,385,974.00	35,994,641.50	41,697,596.50	45,052,893.50	47,902,048.50	47,902,048.50
Ratios:							
Return on average fixed assets (%)	-2.46	1.1	2.1	4.3	6.6	8.1	8.1

GUMA VALLEY WATER COMPANY
ACTUAL BALANCE SHEET: 1995 - 2002 (LE 000)

	1995	1996	1997	1998	1999	2000	2001	2002
Net Fixed Assets	15,250,389.00	14,487,805.00	13,585,797.00	9,614,824.00	10,959,328.00	10,962,262.00	11,414,302.00	10,814,152.00
Work in progress	1,972,087.00	6,889,013.00	18,836,453.00	28,977,299.00	41,522,985.00	55,723,336.00	83,453,980.00	93,114,890.00
Investments	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00
Special Reserve Investments	480.00	480.00	480.00	480.00	480.00	480.00	480.00	480.00
	17,223,106.00	21,377,448.00	32,422,880.00	38,592,753.00	52,482,943.00	66,686,228.00	94,868,912.00	103,929,672.00
Current Assests								
Inventories	672,666.00	784,342.00	599,434.00	1,180,064.00	1,211,361.00	688,652.00	676,553.00	377,031.00
Debtors	860,606.00	2,519,945.00	4,144,942.00	7,383,858.00	9,829,637.00	10,932,459.00	13,281,078.00	16,772,752.00
Cash at bank and in hand	1,111,729.00	905,484.00	921,056.00	1,326,771.00	1,137,248.00	541,769.00	593,877.00	566,798.00
	2,645,001.00	4,209,771.00	5,665,432.00	9,890,693.00	12,178,246.00	12,162,880.00	14,551,508.00	17,716,581.00
Creditors:								
Falling due within one year	1,256,358.00	1,761,015.00	3,092,454.00	5,114,000.00	10,170,867.00	12,956,734.00	17,889,401.00	22,910,477.00
Net Current Assets/Liabilities	1,388,643.00	2,448,756.00	2,572,978.00	4,776,693.00	2,007,379.00	(793,854.00)	(3,337,893.00)	(5,193,896.00)
Total Assets Less Current Liabilities	18,611,749.00	23,826,204.00	34,995,858.00	43,369,446.00	54,490,322.00	65,892,374.00	91,531,019.00	98,735,776.00
Provision for Liabilities & charges	110,128.00	2,149,619.00	4,372,374.00	6,416,463.00	9,090,491.00	9,890,405.00	13,900,653.00	14,624,789.00
	18,501,621.00	21,676,585.00	30,623,484.00	36,952,983.00	45,399,831.00	56,001,969.00	77,630,366.00	84,110,987.00
Capital & Reserves								
Called Up Share capital	1,223,872.00	1,223,872.00	1,223,872.00	1,223,872.00	1,223,872.00	1,223,872.00	1,223,872.00	1,223,872.00
Reserves	10,070,073.00	9,813,058.00	8,546,526.00	6,361,877.00	6,787,149.00	7,656,391.00	8,472,986.00	11,226,750.00
Capital	11,293,945.00	11,036,930.00	9,770,398.00	7,585,749.00	8,011,021.00	8,880,263.00	9,696,858.00	12,450,622.00
Long Term Loans	7,207,676.00	10,639,655.00	20,853,086.00	29,367,234.00	37,388,810.00	47,121,706.00	67,933,508.00	71,660,363.00
Liabilities	18,501,621.00	21,676,585.00	30,623,484.00	36,952,983.00	45,399,831.00	56,001,969.00	77,630,366.00	84,110,985.00
Indicators:								
Exchange gain/(Loss)	(1,981,701.00)	(568,419.00)	(1,082,130.00)	(1,272,492.00)	(2,360,937.00)	996,493.00	(1,004,294.00)	(915,583.00)
Water Revenue	1,428,217.00	3,419,907.00	2,690,077.00	4,129,935.00	3,768,393.00	5,694,909.00	6,211,931.00	8,549,171.00
Net Operating Income	(485,106.00)	138,865.00	(38,563.00)	1,501,847.00	864,364.00	(395,037.00)	1,438,416.00	2,066,315.00
Net average fixed assets	14,090,152.50	19,299,647.00	26,899,534.00	35,507,186.50	45,537,218.00	59,583,955.50	80,776,940.00	
								99,3398,662.50
Ratios:								
Return on average fixed assets (%)	-3.44	0.72	-0.14	4.23	1.90	-0.66	1.78	2.08

GUMA VALLEY WATER COMPANY

PROJECTED REVENUE STATEMENT: 1997 - 2001 (LE 000)

	1995	1996	1997	1998	1999	2000	2001	2002
Revenue from water	1,271,088.00	2,557,308.00	3,582,249.00	4,973,384.00	6,531,980.00	7,767,760.00	7,767,760.00	7,767,760.00
Operating Expenses	(794,371.00)	(911,950.00)	(1,050,127.00)	(1,212,789.00)	(1,404,582.00)	(1,631,059.00)	(1,631,059.00)	(1,631,059.00)
Operating Profit	**476,717.00**	**1,645,358.00**	**2,532,122.00**	**3,760,595.00**	**5,127,398.00**	**6,136,701.00**	**6,136,701.00**	**6,136,701.00**
Admin Expenses	(900,523.00)	(1,564,127.00)	(1,993,879.00)	(2,214,273.00)	(2,479,353.00)	(2,682,249.00)	(2,682,249.00)	(2,682,249.00)
Interest Payable	(422,468.00)	(412,280.00)	(381,633.00)	(337,444.00)	(758,892.00)	(2,622,291.00)	(2,622,291.00)	(2,622,291.00)
Other Income	80,769.00	186,361.00	215,855.00	257,334.00	336,700.00	400,400.00	400,400.00	400,400.00
Surplus/(Deficit) before exchange gain or loss	**(765,505.00)**	**(144,688.00)**	**372,465.00**	**1,466,212.00**	**2,225,853.00**	**1,232,561.00**	**1,232,561.00**	**1,232,561.00**
Gain/(Loss) on Exchange	(364,939.00)	(686,682.00)	(1,587,713.00)	(2,136,092.00)	(2,260,483.00)	(2,284,604.00)	(2,284,604.00)	(2,284,604.00)
Profit/(Loss) before taxation	**(1,130,444.00)**	**(831,370.00)**	**(1,215,248.00)**	**(669,880.00)**	**(34,630.00)**	**(1,052,043.00)**	**(1,052,043.00)**	**(1,052,043.00)**
Taxation	(65,733.00)	(133,375.00)	(184,695.00)	(254,419.00)	(334,091.00)	(397,297.00)	(397,297.00)	(397,297.00)
Profit/(Loss) for the year	**(1,196,177.00)**	**(964,745.00)**	**(1,399,943.00)**	**(924,299.00)**	**(368,721.00)**	**(1,449,340.00)**	**(1,449,340.00)**	**(1,449,340.00)**

GUMA VALLEY WATER COMPANY

ACTUAL REVENUE STATEMENT: 1997 - 2001 (LE 000)

	1995	1996	1997	1998	1999	2000	2001	2002
Revenue from water	1,428,217.00	3,419,907.00	2,690,077.00	4,129,935.00	3,768,393.00	5,694,909.00	6,211,931.00	8,549,171.00
Operating Expenses	(1,718,028.00)	(2,027,366.00)	(1,908,456.00)	(2,206,939.00)	(2,303,056.00)	(2,548,875.00)	(3,606,648.00)	(2,886,049.00)
Operating Profit	**(289,811.00)**	**1,392,541.00**	**781,621.00**	**1,922,996.00**	**1,465,337.00**	**3,146,034.00**	**2,605,283.00**	**5,663,122.00**
Admin Expenses	(276,235.00)	(1,339,942.00)	(910,651.00)	(496,852.00)	(694,719.00)	(3,641,712.00)	(1,288,272.00)	(2,291,827.00)
Interest Payable	(147,326.00)	(117,058.00)	(145,839.00)	(339,734.00)	(406,380.00)	(386,966.00)	(485,584.00)	(391,756.00)
Other Income	80,940.00	86,266.00	90,467.00	75,703.00	93,746.00	100,641.00	121,405.00	202,094.00
Surplus/(Deficit) before exchange gain or loss	**(632,432.00)**	**21,807.00**	**(184,402.00)**	**1,162,113.00**	**457,984.00**	**(782,003.00)**	**952,832.00**	**3,181,633.00**
Gain/(Loss) on Exchange	(1,981,701.00)	(568,419.00)	(1,082,130.00)	(1,272,492.00)	(2,360,937.00)	996,493.00	(1,004,294.00)	(575,543.00)
Profit/(Loss) before taxation	**(2,614,133.00)**	**(546,612.00)**	**(1,266,532.00)**	**(110,379.00)**	**(1,902,953.00)**	**214,490.00**	**(51,462.00)**	**2,606,090.00**
Taxation	(71,308.00)	-	0.00	0.00	0.00	0.00	0.00	0.00
Profit/(Loss) for the year	**(2,685,441.00)**	**(546,612.00)**	**(1,266,532.00)**	**(110,379.00)**	**(1,902,953.00)**	**214,490.00**	**(51,462.00)**	**2,606,090.00**