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ECUADOR

**PRIVATE-SECTOR CONCESSION FOR
WATER SUPPLY AND SEWERAGE SERVICES IN GUAYAQUIL**

(EC-0002)

LOAN PROPOSAL

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ABBREVIATIONS

ECAPAG	Empresa Cantonal de Agua Potable y Alcantarillado de Guayaquil [Guayaquil Water and Sewerage Authority]
EMAG	Empresa Municipal de Alcantarillado de Guayaquil [former municipal sewerage authority]
EPAP-G	Empresa Provincial de Agua Potable del Guayas [former municipal water authority]
PEU	Program Execution Unit

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Basic Socio-Economic Data
Statistics and Quantitative Analysis
Integration and Regional Programs Department

Executive Summary

Social Statistics

Land Area (Km2)	1996	270,670
Population (Thousands)	1996	11,733
Population Under 15 (Percent)	1995	36.4
Population 60 and Over (Percent)	1995	6.5
Population (Average Annual Growth Rate)	1987-1996	2.3
Rural (Percent)	1996	38.4
Density (Population per Km2)	1996	43.3
Vital Statistics		
Total Fertility (Rate per Woman)	1993	3.4
Crude Birth (Rate per 1,000 Population)	1992	29.5
Infant Mortality (Rate per 1,000 Live Births)	1993	49.2
Crude Death (Rate per 1,000 Population)	1992	6.8
Life Expectancy at Birth (Years)	1993	69.0
Poverty and Inequality		
Gini Coefficient	1994	0.53
IDB Poverty Incidence (Percent)	1994	22
Poverty Gap (Percent)	1994	16
Labor Force (Thousands)	1992	3,489
Participation Rate (Percent)	1990	53.6
Unemployment Rate (Percent)	1995	8.4
Real Minimum Wage (Index 1990=100)	1995	155.2
Education		
Gross Enrollment Ratio - Primary	1992	119.3
Gross Enrollment Ratio - Secondary	1992	53.9
Gross Enrollment Ratio - Tertiary	1990	21.1
Pupil/Teacher Ratio - Primary	1992	31.4
Pupil/Teacher Ratio - Secondary	1987	14.4
Average Years of Schooling (Population > 25 Years)	1995	6.2
Illiteracy (Percent)	1995	9.9

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Executive Summary

Economic Statistics

Exchange Rate (Sucres/US\$)	2-1997	3,738.0
GDP per Capita (Average Annual Growth Rate)	1987-1996	0.3
GDP (Average Annual Growth Rate)	1987-1996	2.6
Agriculture	1987-1996	3.8
Agriculture Terms of Trade	1986-1995	-3.1
Industry	1987-1996	1.7
Services	1987-1996	2.9
Gross Domestic Investment (% of GDP)	1996	17.3
Gross Domestic Saving (% of GDP)	1996	24.4
Consumer Prices (Twelve Month Variation)	2-1997	31.7
NF Public Sector Overall Balance (% of GDP)	1996	-4.2
Domestic Credit (% of GDP)	1996	23.5
Private Sector	1996	25.0
Public Sector	1996	-1.5
Balance of Payments (Millions of US\$)		
Current Account Balance	1996	293
Trade Balance	1996	1,402
Capital and Financial Account Balance	1996	-19
Change in Reserves (- Increase)	1996	-274
Current Account Balance (% of GDP)	1996	2.2
Capital and Financial Account Balance (% of GDP)	1996	-0.1
Total External Debt (Millions of US\$)	1996	14,016
Long-Term Debt	1996	12,418
Short-Term Debt	1996	1,451
Total Debt Service	1996	1,475
Interest Payments	1996	3
Debt to GDP Ratio (Percent)	1996	103.8
Debt Service Ratio (Percent)	1996	25.7

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Basic Socio-Economic Data

1. Poverty and Inequality

In Percent

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Gini Coefficient	0.53
Urban	0.45	0.51
Rural	0.48
IDB Poverty Incidence	22
Urban	18	11
Rural	36
Poverty Gap	5	16
Urban	8	8
Rural	25

2. Health and Nutrition

Mortality by Cause - In Percent

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Communicable and Perinatal Diseases	24.0	23.3	22.6	20.8
Non-Communicable Diseases	25.2	25.8	27.8	28.4
External and Other Causes	35.7	35.9	35.3	36.5
Ill Defined Causes	15.1	15.0	14.3	14.3

Percent of Central Government Expenditure

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Expenditure on Health	11.2	9.7	11.4	11.2	0.0	0.0	0.0	0.0
Hospitals
Clinics and Practitioners
Other

Immunization as Percent of Age Group Nutrition/Per Capita in Units

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Other Indicators										
Children (< 1 Yr) Immunized DPT3	51.0	54.0	55.0	75.2	68.6	79.1	76.4	79.8	73.6	84.0
Children (< 1 Yr) Immunized Measles	46.0	52.0	57.0	66.7	60.8	62.8	73.0	100.0	72.9	73.0
Access to Safe Water (% Population)	...	57.1	57.6
Doctors per 1000 Inhabitants	1.0	1.1	1.0	1.0	1.2	1.2	1.1	1.3
Hospital Beds per 1000 Inhabitants	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6
Daily Caloric Intake	2490.0	2614.0	2562.0	2485.0	2549.0	2583.0
Daily Protein Intake (grams)	49.8	53.2	50.8	51.5	52.6	52.2

3. Education

In Percent

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Net Enrollment Ratios										
Primary	92.2
Gross Enrollment Ratios										
Primary	117.8	116.2	115.3	113.9	122.8	119.3
Secondary	56.1	...	53.0	53.9
Tertiary	30.2	26.4	20.7	21.1
Primary Survival Rate	63.0	63.0	63.0

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Basic Socio-Economic Data

3. Education (cont.)

Ratios

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Pupil/Teacher Ratios										
Primary	31.2	29.3	30.4	30.2	31.6	31.4
Secondary	14.4

Percent of Central Government Expenditure

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Expenditure on Education	24.8	23.5	21.1	18.4	0.0	0.0	0.0	0.0
Pre-Primary through Secondary
Tertiary
Other

4. Labor Market

In Percent Index 1990=100

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Labor Force by Sector										
Agriculture	2.4	6.3	6.9	6.9	7.4	6.6	7.3	7.0
Industry	29.2	25.0	24.2	26.8	25.1	24.3	24.9	22.8
Services	68.3	68.6	68.9	66.3	67.4	69.1	67.7	70.2
Participation Rate	53.6
Male	79.1
Female	28.2
Unemployment Rate	7.2	7.4	7.9	6.1	8.5	8.9	8.9	7.8	8.4	...
Real Minimum Wage Index	167.8	143.4	119.1	100.0	91.3	105.6	111.9	139.2	155.2	...

5. Exchange Rates

Sucres/US\$, End of Period Index 1990=100

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Exchange Rate	221.5	432.5	648.4	878.2	1270.6	1844.3	2043.8	2269.0	2923.5	3635.0
Real Effective Index	79.2	105.4	91.1	100.0	94.2	93.9	80.5	75.8	77.2	77.6

6. Prices

Average Annual Growth Rates in Percent

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Consumer Price Index	29.5	58.2	75.6	48.5	48.7	54.3	45.0	27.5	22.9	24.4
Wholesale Price Index	31.6	66.8	79.8	45.6	48.0	54.7	39.1	18.3

7. International Liquidity

Millions of US\$

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Reserves	657	563	706	1004	1090	1034	1545	2010	1794	2025
Reserves minus Gold	491	398	540	839	924	868	1380	1844	1628	1859
Special Drawing Rights (SDRs)	1	1	1	15	41	0	4	4	3	3
Reserve Position in the IMF	24	24	25	26	25
Foreign Exchange	490	396	540	824	883	845	1352	1815	1599	1831
Gold (National Valuation)	166	166	166	166	166	166	166	166	167	167

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Basic Socio-Economic Data

8. National Accounts

Millions of 1990 US\$
1990 US\$

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Gross Domestic Product	11354	12719	12657	12975	13629	14137	14507	15205	15584	15912
GDP Per Capita	1188	1299	1262	1264	1298	1316	1321	1354	1358	1356

Annual Growth Rates in Percent - Constant Prices

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
GDP Per Capita	-8.3	7.9	-2.1	0.7	2.6	1.3	-0.2	2.0	0.1	-0.2
GDP by Type of Expenditure (MP)	-6.0	10.5	0.3	3.0	5.0	3.6	2.0	4.3	2.3	2.0
Consumption	2.3	1.9	1.7	2.4	1.8	1.5	2.0	2.5	2.2	1.5
Gross Domestic Investment	-3.1	-3.7	2.9	-15.2	29.9	-1.2	-4.1	6.6	8.5	-11.3
Exports of Goods and Services	-16.1	31.1	-1.7	10.2	10.5	9.6	4.2	8.7	5.0	3.6
Imports of Goods and Services	15.4	-10.0	5.1	-3.7	16.0	1.0	0.8	6.0	9.8	-5.9
GDP by Sector of Origin (MP)										
Agriculture, Forestry and Fishing	2.5	7.7	2.8	6.1	5.9	3.4	-1.7	3.9	3.2	4.2
Mining and Quarrying	-54.7	115.8	-9.7	-0.9	8.4	5.8	11.0	10.6	3.8	-1.9
Manufacturing	1.7	2.0	-5.0	0.7	3.2	3.6	2.5	4.4	2.2	3.6
Electricity, Gas and Water	17.2	4.0	6.5	-4.1	2.2	2.7	2.1	3.1	-3.7	2.8
Construction	2.5	-14.1	4.0	-14.9	-1.1	-0.3	-4.3	5.3	-1.4	2.5
Wholesale and Retail Trade	2.4	2.1	2.1	3.8	4.0	3.0	1.7	3.6	2.2	3.3
Transport and Communications	2.1	6.2	7.9	4.5	6.0	5.7	4.5	4.2	3.0	3.1
Financial Services	1.7	0.6	5.6	12.6	9.1	4.5	1.0	3.3	2.3	0.4
Government	0.7	4.1	0.1	2.4	1.0	-0.3	-2.2	-1.3	0.2	-0.9
Other Services	3.0	0.3	3.0	0.6	3.1	3.2	1.4	2.5	1.9	2.3

Composition in Percent - Current Prices

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
GDP by Type of Expenditure (MP)										
Consumption	83.6	80.6	81.1	77.1	76.2	75.0	78.3	78.0	80.3	75.6
Gross Domestic Investment	22.7	21.5	20.7	17.5	22.2	21.2	21.1	19.0	18.7	17.3
Exports of Goods and Services	24.0	28.4	29.4	32.7	31.4	31.5	26.2	26.7	29.7	30.5
Imports of Goods and Services	30.3	30.5	31.2	27.4	29.7	27.7	25.5	23.7	28.6	23.4
GDP by Sector of Origin (MP)										
Agriculture, Forestry and Fishing	15.3	14.3	14.0	13.4	14.3	12.7	12.1	11.9	11.9	11.9
Mining and Quarrying	6.8	9.8	11.7	14.8	11.1	12.6	10.7	10.5	10.5	10.6
Manufacturing	19.5	21.4	21.1	19.4	20.8	22.0	21.7	21.7	21.1	21.7
Electricity, Gas and Water	0.4	0.1	0.1	-0.2	-0.1	0.1	0.3	0.3	0.3	0.3
Construction	5.5	4.6	4.6	4.0	4.5	4.5	4.9	4.7	4.6	4.6
Wholesale and Retail Trade	20.2	20.2	21.6	21.2	22.1	21.5	20.2	20.4	20.0	19.4
Transport and Communications	9.5	9.8	8.9	8.6	8.7	7.8	8.9	9.3	9.2	9.1
Financial Services	9.8	8.8	8.4	9.8	9.9	9.5	10.4	10.2	10.6	10.2
Government	8.2	6.8	5.3	4.7	4.1	4.2	4.8	5.2	6.2	6.8
Other Services	4.7	4.1	4.4	4.3	4.6	5.1	5.9	5.8	5.7	5.4

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Basic Socio-Economic Data

9. Non-Financial Public Sector

As a Percent of GDP

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Current Revenues	21.9	21.5	26.2	27.1	25.4	25.8	26.1	24.1	24.9	22.8
Current Expenditures	24.5	21.4	20.1	19.5	18.5	19.6	19.1	17.4	20.6	20.3
Current Savings	-2.6	0.1	6.1	7.6	6.9	6.2	7.0	6.7	4.3	2.5
Capital Expenditure	7.1	6.0	7.5	7.5	7.9	7.9	7.4	6.9	5.2	6.6
Overall Balance (- Deficit)	-9.6	-5.9	-1.4	0.1	-1.0	-1.7	-0.4	-0.2	-0.9	-4.2
Domestic Financing	1.8	2.8	-2.9	-3.6	-1.0	0.5

10. Monetary Survey

As a Percent of GDP

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Domestic Credit	25.4	21.1	19.2	15.6	14.1	14.0	13.5	37.0	20.2	23.5
Public Sector	3.3	4.8	8.0	4.6	3.1	2.4	1.0	19.4	-2.4	-1.5
Private Sector	22.5	16.9	11.9	10.9	11.0	11.6	12.5	17.6	22.5	25.0
Money (M1)	10.1	8.9	7.8	7.4	8.2	6.9	8.4	8.9	8.2	6.8

11. External Trade

Direction in Percent - Customs Basis Index 1990=100

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Exports of Goods (fob)										
Developed Countries	66.8	58.4	70.3	53.2	67.8	65.0	65.2	65.0	65.9	62.2
Developing Countries	33.2	41.6	29.7	46.8	32.2	35.0	34.8	35.0	34.1	37.8
Latin America	12.9	14.7	17.8	15.0	17.1	17.8	21.0	22.1	21.9	22.7
Imports of Goods (cif)										
Developed Countries	63.6	72.4	69.5	68.7	67.7	71.1	72.4	60.6	57.8	54.6
Developing Countries	36.4	27.6	30.5	31.3	32.3	28.9	27.6	39.4	42.2	45.4
Latin America	26.2	18.6	23.0	25.1	23.1	21.2	20.7	30.1	31.6	34.1
Terms of Trade Index	102.3	93.4	100.8	100.0	92.9	92.3	86.1	90.7	89.1	94.3

Millions of US\$ - Customs Basis Composition in Percent

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Exports of Goods (fob)	2020.7	2192.5	2353.8	2713.4	2851.2	3036.1	2960.6	3773.2	4265.6	...
All Food	55.6	51.7	47.0	44.2	55.2	50.0	48.1	55.0	52.9	...
Agricultural Raw Materials	1.3	1.4	1.5	1.4	1.7	1.3	2.2	2.5	3.1	...
Fuels	40.6	44.5	48.8	51.9	40.5	44.0	42.3	34.6	35.9	...
Ores and Metals	0.2	0.2	0.2	0.2	0.2	0.8	0.3	0.4	0.5	...
Manufactured Goods	2.3	2.2	2.4	2.3	2.4	3.9	7.1	7.5	7.7	...
Chemicals	0.6	0.5	0.3	0.4	0.5	0.6	1.1	1.0	1.3	...
Machinery and Transport Equipment	0.3	0.4	0.4	0.3	0.3	0.7	2.4	2.4	2.0	...
Other Manufactured Goods	1.4	1.3	1.7	1.6	1.6	2.6	3.7	4.0	4.4	...
Imports of Goods (cif)	1889.1	1713.5	1859.7	1803.9	2327.9	2501.3	2552.7	3621.2	4194.7	...
Capital Goods	33.9	38.9	32.8	32.5	37.1	36.7
Consumption Goods	9.7	9.6	9.9	9.6	10.6	18.8
Intermediate Goods	56.2	51.3	56.8	57.7	52.3	44.4
Fuels	13.6	3.4	3.8	4.9	3.8	3.7
Other	0.2	0.2	0.5	0.2	0.1	0.1

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Basic Socio-Economic Data

12. Balance of Payments

Millions of US\$

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Current Account Balance	-1187	-683	-716	-366	-707	-215	-682	-680	-735	293
Trade Balance	-33	619	661	1003	644	925	588	562	354	1402
Exports of Goods (fob)	2021	2202	2354	2714	2851	3008	3062	3844	4411	4890
Imports of Goods (fob)	2054	1583	1693	1711	2207	2083	2474	3282	4057	3488
Service Balance	-241	-179	-122	-123	-161	-125	-145	-177	-57	-20
Transportation	-138	-94	-66	-74	-133	-124	-150	-170	-137	-76
Travel	-3	6	18	13	12	14	40	49	20	62
Other Services	-100	-91	-74	-62	-40	-15	-35	-56	60	-6
Addendum: Freight and Insurance	-48	-29	5	0	-31	-30	-66	-74
Income Balance	-1045	-1220	-1352	-1353	-1300	-1135	-1255	-1210	-1263	-1379
Compensation of Employees	-130	-173	-162	-144	-185	-188	-330	-210
Investment Income	-915	-1047	-1190	-1209	-1115	-947	-925	-1000
Current Transfers Balance	132	97	97	107	110	120	130	145	231	290
General Government	132	97	97	107	110	120	130	145	231	290
Other Sectors
Capital and Financial Account Balance	1269	629	719	345	622	337	1237	1155	580	-19
Capital Account Balance	43
Financial Account Balance	1269	629	719	345	622	337	1237	1112	580	-19
Direct Investment	123	155	160	126	160	178	469	531	470	447
Abroad
In Reporter	123	155	160	126	160	178	469	531	470	447
Portfolio Investment
Assets
Liabilities
Other Investment	1146	474	559	219	462	159	768	581	110	-466
Assets	4	14	-68	-120	-14	64	-29	-9
Liabilities	1142	460	627	339	476	95	797	590
Change in Reserves (- Increase)	185	26	-118	-195	-78	-22	-490	-453	155	-274
Errors and Omissions	-268	28	115	216	163	-99	-65	-22	0	0

13. External Debt

Millions of US\$

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Total Debt	10015	9946	10246	10587	10576	10235	11820	12697	13945	14016
Long-Term Debt	9089	9147	9585	10030	10094	9932	10215	10748	12472	12418
Public and Publicly Guaranteed	8991	9028	9427	9867	9951	9831	9974	10523	12032	12108
Bilateral	1303	1529	1774	1938	1978	2146	2199	2352	2260	2139
Multilateral	1848	1943	1965	2127	2233	2253	2371	2580	2991	3101
Bond Holders	0	0	0	0	0	0	0	191	5999	5990
Banks	5254	4842	4847	4885	4908	4763	4831	4959	492	658
Suppliers	343	323	350	320	334	260	210	171	121	101
Other Creditors	244	391	492	597	499	409	364	271	168	119
Private Non-Guaranteed	98	119	158	164	143	100	241	224	440	310
Use of IMF Credit	490	405	325	265	182	100	71	198	174	147
Short-Term Debt	436	394	336	292	300	203	1534	1751	1300	1451
Interest Arrears on Debt	459	800	1071	1522	1892	2045	2330	2337	13	53
Total Debt Service	838	1059	1047	1112	1106	1078	921	1000	1867	1475
Public and Publicly Guaranteed	597	817	821	875	927	812	762	870	1285	1309
Bilateral	86	103	178	184	165	186	152	179	408	339
Multilateral	204	297	308	304	322	305	352	382	405	455
Private Non-Guaranteed	10	13	36	37	26	47	27	18	11	133
IMF Repurchases and Charges	152	170	119	145	125	89	36	25	39	30
Short-Term Debt (Interest only)	80	59	53	28	27	33	95	88	81	3

ECUADOR
Basic Socio-Economic Data

13. External Debt (cont.)

Ratios in Percent

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Debt to GDP Ratio	82	75	80	82	77	72	83	101	108	104
Debt Service Ratio	34	40	36	34	32	30	25	22	36	26

... Not Available

0.0 Indicates that the amount is nil or negligible

ECUADOR

Basic Socio-Economic Data

Sources and Notes

Executive Summary

Social Statistics:

Land Area: Organization of American States (OAS), América en Cifras 1974.

Population: IDB estimates based on data from Latin America Demographic Center (CELADE) and United Nations Population Division (UNPOP).

Vital Statistics:

World, Bank Social Indicators of Development (WBSID) and Economic Commission for Latin America and the Caribbean (ECLAC), Statistical Yearbook.

Labor Force:

WBSID.

Education:

Average Years of Schooling (Population >25 yrs): Number of completed grades of formal education of population older than 25 years. IDB estimates based on data from United Nations Educational, Scientific and Cultural Organization (UNESCO), using the Perpetual Inventory Method.

Illiteracy: Number of adult illiterates as a percentage of that age group. UNESCO Data Base.

Economic Statistics:

Agricultural Terms of Trade: Index of ratio of agricultural GDP deflator to non-agricultural GDP deflator. IDB estimates from National Accounts data. Base year 1990.

1. Poverty and Inequality:

Gini Coefficient: Measure of inequality based on the income distribution of the population. A coefficient equal to one (1) indicates perfect inequality, and a coefficient equal to zero (0) perfect equality.

Poverty Incidence: The poor as a percentage of total population, using a poverty line of US\$60 (constant 1985 prices) per month per capita inflated using the Consumer Price Index (CPI).

Poverty Gap: Average income deficit of the poor in relation to the poverty line multiplied by the Poverty Incidence.

IDB estimates based on income data from the “Encuesta Periódica sobre Empleo y Desempleo” (1987) and the “Encuesta de Niveles de Vida” (1994). Income data were corrected for likely underreporting using national income accounts estimates. Poverty estimates probably are “lower bounds”.

2. Health and Nutrition:

Mortality Causes: Main causes of death by type of disease. Pan American Health Organization (PAHO) Data Base.

Expenditure on Health: Budgetary Central Government. International Monetary Fund (IMF) Yearbook.

Immunization: Percentage of children under one year who have been immunized for dpt3 and measles. WBSID.

Access to Safe Water: Percentage of population with access to safe water. WBSID.

Doctors/hospital beds per 1000 inhabitants: Number of doctors/hospital beds per 1000 inhabitants. ECLAC, Statistical Yearbook.

Caloric and Protein Daily Intake: Apparent daily per capita average intake. Food and Agriculture Organization of the United Nations (FAO) Data Base.

3. Education:

Net Enrollment Ratio Primary: Enrollment for the age group corresponding to the official age of primary education. ECLAC, Statistical Yearbook.

Gross Enrollment Ratio: Total enrollment in primary, secondary or tertiary education, regardless of age, divided by the population of the age-group which officially corresponds to primary, secondary or tertiary (ages 20 to 24 only) education. IDB estimates based on data from UNESCO and UNPOP. WBSID.

ECUADOR

Basic Socio-Economic Data

Primary Survival Rate: Percentage of children of the same cohort starting primary school in a certain year who eventually finish it. IDB estimates based on data from UNESCO, using the Reconstructed Cohort Method with enrollment and repetition data.

Pupil/Teacher Ratio: Number of students per teacher in primary and in secondary school. UNESCO Data Base and WBSID.

Expenditure on Education: Budgetary Central Government. IMF, Government Finance Statistics (GFS) (magnetic tapes).

4. Labor Market:

Labor Force by Sector: Labor force in that sector as a percentage of total labor force. International Labour Office (ILO) Data Base. Data either from Labor Force Sample Survey or Household Survey. Data include Quito, Guayaquil and Cuenca.

Participation Rate: IDB estimates based on data from the ILO, Year Book of Labour Statistics, and UNPOP. Economically Active Population as a percentage of total population age 15 and older.

Unemployment Rate: Programa Regional del Empleo para América Latina y El Caribe (PREALC).

Real Minimum Wage Index: Base year 1990. ECLAC.

5. Exchange Rates:

IMF, International Financial Statistics (IFS). Official rate.

Real Effective Index: IDB estimates based on data from the IMF, IFS.

6. Prices:

IMF, IFS. Annual figures are expressed as average annual growth rates; monthly figures as a twelve month variation.

7. International Liquidity:

IMF, IFS.

8. National Accounts:

GDP in 1990 US Dollars: IDB estimates.

GDP by Type of Expenditure and Sector of Origin: Banco Central del Ecuador, Subgerencia de Cuentas Nacionales. Financial Services includes Value Added Tax from 1990.

9. Non-Financial Public Sector:

Ministerio de Finanzas, Banco Central del Ecuador, and International Monetary Fund (IMF) estimates.

10. Monetary Survey:

IMF, IFS and IDB estimates based on information from the Banco Central del Ecuador (mid-year observations).

11. External Trade:

Trade by Direction: IMF, Direction of Trade Statistics (magnetic tapes).

Terms of Trade: ECLAC, Balance preliminar de la economía de América Latina y el Caribe.

Export Composition: United Nations Statistical Division (UNSTAT) Commodity Trade (COMTRADE) Data Base; Exports include Re-Exports.

Import Composition: Banco Central del Ecuador, Boletín Anuario and Revista Quincenal. Fuels include Crude Petroleum.

12. Balance of Payments:

Banco Central del Ecuador, Subgerencia de Balanza de Pagos, and Balance of Payments Statistics (magnetic tapes).

13. External Debt:

World Bank, World Debt Tables (magnetic tapes) and estimates.

ECUADOR

Regional Support Services

REI/IRO

IDB LOANS

APPROVED AS OF MAY 31, 1997

	<i>US\$Thousand</i>	<i>Percent</i>
TOTAL APPROVED	3,245,107	
DISBURSED	2,628,638	81.0%
UNDISBURSED BALANCE	616,469	19.0%
CANCELLATIONS	418,521	12.9%
PRINCIPAL COLLECTED	908,017	28.0%
APPROVED BY FUND		
ORDINAY CAPITAL	2,255,590	69.5%
FUND FOR SPECIAL OPERATIONS	901,039	27.8%
OTHER FUN	88,478	2.7%
OUTSTANDING DEBT BALANCE	1,720,621	
ORDINAY CAPITAL	1,069,120	62.1%
FUND FOR SPECIAL OPERATIONS	634,383	36.9%
OTHER FUNDS	17,118	1.0%
APPROVED BY SECTOR		
AGRICULTURE AND FISHERY	1,086,892	33.5%
INDUSTRY, TOURISM, SCIENCE TECHNOLOGY	455,429	14.0%
ENERGY	320,015	9.9%
TRANSPORTATION AND COMMUNICATIONS	317,145	9.8%
EDUCATION	165,808	5.1%
HEALTH AND SANITATION	326,085	10.0%
ENVIRONMENT	35,901	1.1%
URBAN DEVELOPMENT	155,564	4.8%
SOCIAL INVESTMENT AND MICROENTERPRISE	88,943	2.7%
REFORM PUBLIC SECTOR MODERNIZATION	263,434	8.1%
EXPORT FINANCING	0	0.0%
PREINVESTMENT AND OTHER	29,890	0.9%

* Net of cancellations with monetary adjustments and export financing loan collections

ECUADOR

REGIONAL SUPPORT SERVICES ITC/IRO

TENTATIVE LENDING PROGRAM

US\$ Millions

1997			
EC0173	PPF:EC0157 EARLY CHILD CARE & AT RISK YO	0.3	APPROVED
EC0179	PPF:EC0138 HOUSING SECTOR SUPPORT PRG.	0.6	
EC0002	CONCESSION PROGRAM FOR GUAYAQUIL	40.0	
EC0175	TAXATION SYSTEM MODERNIZATION	10.0	
EC0157	EARLY CHILDCARE PROGRAM	45.0	
EC0138	HOUSING SECTOR PROGRAM	50.0	
EC0178	PPF:EC0175 TAXATION SYSTEM MODERNIZATION	1.0	
TOTAL A		146.9	
EC0177	RUMICHACA-RIOBAMBA TOLL ROAD	20.0	
TOTAL B		20.0	
TOTAL 1997		166.9	
1998			
EC0101	HEALTH SECTOR REFORM	50.0	
TOTAL		50.0	
EC0139	URBAN DEVELOPMENT II	100.0	
EC0126	MICROENTERPRISE CREDIT PROGRAM II	25.0	
EC0125	IMPROVEMENT OF QUALITY OF EDUCATION	25.0	
TOTAL A		150.0	
EC0174	ELECTROQUIL	10.0	
EC0134	ENVIRONM. MANAGEMENT PROGRAM GALAPAGOS	35.0	
EC0121	MULTISECTORAL CREDIT PROGRAM II	100.0	
EC0132	NATIONAL ROAD PROGRAM II	80.0	
EC0144	CUENCA SANITATION II	60.0	
EC0172	EXPANSION OF ELECTRIC TRANSMISION SYSTEM	80.0	
TOTAL B		365.0	
TOTAL 1998		565.0	



INTER-AMERICAN DEVELOPMENT BANK
REGIONAL OPERATIONS DEPARTMENTS
INFORMATION RESOURCES MGT. UNIT

ECUADOR

STATUS OF ACTIVE LOANS AS MAY 31, 1997

(Amounts in US\$ thousands)

APPROVAL PERIOD	NUMBER OF PROJECTS	AMOUNT APPROVED	AMOUNT DISBURSED	% DISBURSED
1986 - 1989	4	102,385	76,735	74.95%
1990 - 1994	14	880,396	435,459	49.46%
1995 - 1996	4	119,000	5,265	4.42%
1997	1	300	0	0.00%
TOTAL	23	\$1,102,081	\$517,459	46.95%

* Net of Cancellations . Excluding export financing loans.

**PRIVATE-SECTOR CONCESSION FOR
WATER SUPPLY AND SEWERAGE SERVICES IN GUAYAQUIL**

(EC-0002)

EXECUTIVE SUMMARY

**BORROWER AND
GUARANTOR:** Republic of Ecuador

EXECUTING AGENCY: Empresa Cantonal de Agua Potable y Alcantarillado de
Guayaquil [Guayaquil Water and Sewerage Authority]
(ECAPAG)

AMOUNT AND SOURCE: IDB: US\$40 million
Local counterpart funding: US\$10 million
Total: US\$50 million

**FINANCIAL
TERMS AND
CONDITIONS:** Amortization period: 25 years
Disbursement period: 3 years
Interest rate: variable (IFF)
Inspection and supervision: 1%
Credit fee: 0.75%
Currency: U.S. dollars, under the
Single Currency Facility

OBJECTIVE: The program's general objective is to upgrade water
supply and sewerage services in Guayaquil by granting
a long-term concession to the private sector.

DESCRIPTION: The program has three components:

Concession component (US\$2 million)

Under this component, services will be transferred to
the private sector. The necessary technical, legal,
and financial studies will be conducted in order to
prepare the respective bid specifications; ECAPAG
will receive assistance in selecting an operator; the
concession will be awarded and negotiated; and other
related activities will be carried out.

Reconfiguration of ECAPAG (US\$15.9 million)

Under this component, ECAPAG will be revamped to
enable it to respond to the needs arising out of the
concession agreement. The component has three sub-
components: relieve ECAPAG of obligations associated
with sector staff that will be transferred to the
private sector; conduct an actuarial study of

ECAPAG's pension fund and arrangements for transferring it to a fiduciary; and set up and launch an oversight agency for the concession.

Rehabilitation of water supply and sewerage systems
(US\$19.8 million)

Under this component, urgent rehabilitation work will be carried out to the extent that it is strictly necessary in order to prevent further deterioration of infrastructure, keep the systems in operation, and make them less vulnerable.

**ENVIRONMENTAL
CLASSIFICATION:**

The Environment Committee, at its meeting of June 19, 1996, classified this as a Category III operation. The social and environmental impact report was approved on May 16, 1997.

POVERTY-TARGETING:

According to the guidelines of the Eighth Replenishment mandate on poverty alleviation and the Bank's implementation criteria, this program does not qualify as a poverty-targeted investment.

BENEFITS:

- a. Better water supply and sewerage services in Guayaquil, in terms of customer service, quality and volume of water supplied, less unaccounted-for water, more efficient rate structure, and a financially self-supporting system.
- b. ECAPAG staff trained and able to work at private-sector companies or to set up microenterprises.
- c. Better water distribution in marginal neighborhoods and less leakage; upgraded sewerage system in the downtown area, which will help prevent flooding.

RISKS:

The main risks that could affect this operation are:

- a. Lack of interest on the part of experienced, solvent operators in participating in the concession arrangement proposed by ECAPAG.

This risk will be mitigated by hiring an international investment bank specialized in concessions, which will provide comprehensive consulting services to assist ECAPAG in devising a concession model. One of its key tasks will be to propose an arrangement for private-sector participation that is both attractive to operators and beneficial for the city of Guayaquil.

- b. Lack of continued political support from the Municipality throughout the preparation and award of the concession and the transfer of services to the private operator. The Municipality has provided firm support for this operation ever since work first began on it.
- c. Setbacks owing to the country's lack of experience with similar tender processes. To mitigate this risk, government oversight agencies would be involved in the process from the very beginning.
- d. Failure of workers to participate in the voluntary termination program. To mitigate this risk, a professional training and guidance program will be offered. The current municipal government has past experience with successful staff downsizing programs that it gained when it privatized the city's solid waste collection and disposal services.
- e. The oversight agency for the concession may not have sufficient technical capacity to monitor and supervise the concessionaire. To mitigate this risk, an oversight agency will be set up and strengthened, in keeping with the action plan drawn up by the comprehensive consulting services.

**PROCUREMENT OF
GOODS AND
SERVICES:**

International competitive bidding will be required for construction work valued at over US\$1 million, for the procurement of goods valued at over US\$250,000, and for the hiring of consulting services valued at over US\$200,000.

**EXCEPTIONS TO
BANK POLICY:**

The comprehensive consulting services, which will be funded by the IDB and the World Bank, were hired in May 1997 under an international competitive process that followed IDB prequalification procedures but used price as a weighting factor in the selection process. This exception to Bank policy was made in view of the degree of specialization in concession and privatization issues that is required by these services, coupled with the unique nature of the international market for such services (which means that price is a deciding factor in awarding such contracts). The decision was made jointly by the World Bank and the IDB after prior consultation with the Procurement Unit.

**THE BANK'S
COUNTRY AND
SECTOR STRATEGY:**

The Bank's strategy in Ecuador outlines five critical courses of action for development in the country: (i) consolidate macroeconomic stability,

(ii) reactivate sustained economic growth with an eye to improving income distribution and significantly alleviating poverty, (iii) move forward with social sector reform in order to build human capital and reduce poverty levels, (iv) protect the environment and ensure efficient use of natural resources, and (v) support efficient modernization and decentralization of the State and of public management. To achieve these objectives, the strategy looks to the public sector to perform a support function, making public service delivery more efficient through broader private-sector participation and institutional reform in priority sectors. The present operation fits in with this strategy since it seeks to upgrade the delivery of a public service that is in very poor condition, and it will do so by using the services of a private operator under a concession agreement in a sector that has social and environmental priority.

**SPECIAL
CONTRACTUAL
CONDITIONS:**

As a condition for the first disbursement, the executing agency is to present evidence to the Bank's satisfaction that:

- a. The program execution unit has been set up and that its director, administrative/finance officer, and coordinators for water supply services, sewerage services, and personnel have been hired (see paragraph 3.1).
- b. An interagency agreement has been signed by ECAPAG and Fundación Ecuador to provide career guidance and retraining for ECAPAG employees (see paragraph 3.10).
- c. An agreement has been signed by the Ministry of Finance and ECAPAG whereby the loan proceeds and the local counterpart contribution will be transferred to the executing agency (see paragraph 4.1).

The following special conditions will also be included in the contract:

- a. Prior to issuing the call for the second package of rehabilitation works (water supply), ECAPAG is to present evidence to the Bank that it has invited the prequalified firms to participate in the competitive process for the concession (see paragraph 3.12).
- b. Program funds may not be used to cover indemnities for employees terminated under the first

stage prior to the prequalification of firms to participate in the competitive process. Loan proceeds may not be used for employee indemnities under the second stage before the concession agreement has been signed (see paragraph 3.6). Funds may not be disbursed for this subcomponent until the severance audit has been commissioned and verification has been received of the amounts and use made of these resources (see paragraph 3.10).

- c. Before disbursements can be made under the oversight agency subcomponent, ECAPAG is to present, to the Bank's satisfaction, the proposed structure and makeup of the agency (see paragraph 3.8).
- d. Before issuing tender documents for the concession, ECAPAG is to present evidence to the Bank's satisfaction that the environmental issues identified in the studies conducted by the comprehensive consulting services have been addressed in the tender documents; and that agreements have been signed with the cantons and are part of said documents (see paragraph 3.4).
- e. The tender documents and the concession agreement are to clearly stipulate the concessionaire's responsibility for the operation and maintenance of all system facilities, including program works and equipment. Should any delays occur in the concession process, the operation and maintenance of program works and equipment will continue to be the responsibility of ECAPAG (see paragraph 3.21).
- f. All concession-related reports prepared by the comprehensive consulting services are to be submitted to the Bank for information purposes. The following documents that are to be prepared by those consulting services need to be approved by the Bank: (i) model for private-sector participation; (ii) model or scenarios for technical, economic, and financial viability; (iii) conditions for prequalification; (iv) tender conditions and documents; and (v) draft concession agreement (see paragraph 3.5).

I. FRAME OF REFERENCE

A. Macroeconomic setting

- 1.1 Throughout 1996, a climate of uncertainty and low confidence levels reigned over Ecuador's economy. With higher inflation (25.5%) and lower growth (1.8%) than in 1995, the situation had taken a turn for the worse. Things have not improved in 1997: in January, inflation was at 6.4%, which translates into a 30.5% year-on-year increase. A mounting fiscal deficit coupled with the lack of a coherent economic policy are at the root of these difficulties.
- 1.2 The country's GDP is growing at an annual rate of less than two percent. High real interest rates have dampened domestic demand, especially in the areas of consumer spending and construction which were the engines of the short-lived economic boom of 1994.
- 1.3 The balance of payments on current account has improved somewhat, and, if current trends continue, will rise from -5% of GDP to -3.5%. This improvement stems essentially from the country's trade balance situation, since net capital inflows are below 1996 levels, owing to the drop in foreign direct investment.
- 1.4 The economic downturn is also mirrored in gradual deterioration of the country's physical infrastructure, e.g., power blackouts, poor condition of roads, drinking water shortages, not enough telephone lines, etc. Lacking funds of its own, the government will inevitably be looking into the possibility of privatization, new rate structures, more adequate regulation, and institutional reform.

B. The basic sanitation sector in Ecuador

1. Technical analysis

- 1.5 Ecuador's water supply and sanitation sector suffers from a series of problems that keep it from meeting the population's needs. According to data from the 1990 national census, service coverage rates are low for both water supply (61%) and sanitation (53%). In other words, over 4 million people have no access to running water and over 5 million lack sanitary sewerage services.
- 1.6 Aggregate figures conceal some yawning disparities between urban and rural areas. While coverage in cities is around 78% for drinking water and 70% for sewerage services, in rural areas these figures drop to 39% and 31% respectively. There are also coverage disparities between Ecuador's highland areas, which have relatively high coverage levels (73% and 59%), and the coast (52% and 49%).
- 1.7 Low coverage levels and faulty service delivery are also key factors in the high incidence of water-borne diseases.

Environmental pollution from the discharge of raw sewage into water courses is another serious problem.

- 1.8 Furthermore, the systems themselves are very inefficient, with high volumes of unaccounted-for water (40%-75%), frequent service interruptions, poor water quality, significant levels of unmetered consumption, inadequate rate policy, lack of preventive maintenance programs and resources, and limited technical capacity for decision-making on budget and cost-control issues.

2. Institutional analysis and legal framework

- 1.9 The delivery of water and sewerage services is perhaps the most important instance of a decentralized public utility in Ecuador: in urban areas, these services constitute one of the municipal governments' main responsibilities. Even so, the legal, institutional, and regulatory frameworks suffer from shortcomings, and results have been, accordingly, very poor. The current service delivery model - whereby local governments are responsible for service management, administration, and investments although the funding comes mainly from the central government - has proven not to work. Most service providers are inefficient, institutionally weak, and subject to considerable political intervention, and they are not financially self-supporting, i.e., service delivery costs are not being covered by the low levels of local contributions and customer revenues.
- 1.10 Moreover, the country is lacking a clearly organized body of laws, regulations, and rules governing sector agencies. There is, for example, no regulatory framework governing the relationship between service providers and service users. General supervision, control, and support for service providers is also lacking. This has led to very inconsistent operating and rate criteria and, more importantly, represents a major obstacle to bringing in the private sector.
- 1.11 The three main pieces of legislation that relate to the water and sanitation sector and to private-sector involvement are: (i) the Modernization of the State Act, which sets the legal bases for concessioning out and privatizing public utilities; (ii) the Municipal Governments Act, which stipulates that municipal governments are responsible for authorizing public utilities programs, regulating public utility service delivery, and approving specifications and standards for the setup, supply, and use of such services; and (iii) the Health Code, which contains provisions on the supply of water for human consumption and on sewage disposal.
- 1.12 The Municipal Governments Act assigns responsibility for service delivery directly to the municipal governments. Regrettably, most of these governments are very weak and lack the ability to assume fully and independently the functions assigned to them by this law.

As a result, political considerations tend to overshadow financial criteria in decisions on operations, investments, and rates.

- 1.13 To address this problem, and as part of the process of modernization of the State, the national government issued an executive decree setting up the Temporary Commission on Modernization of the Water Supply and Sanitation Sector in 1995. The commission is made up of the executive director of CONAM (who is the presiding officer), the Minister of Urban Development and Housing, the general manager of Banco del Estado, and the president of the Ecuadorian Association of Municipalities.
- 1.14 In pursuit of the objective of modernizing the sector, the commission - working through a technical group of experts and consultants - is carrying out a sweeping sector-reform program to define new legal, regulatory, and institutional frameworks, promote private-sector participation, and specify responsibilities of the national and subnational governments. The technical group's work has received support from the Multilateral Investment Fund through technical-cooperation operation ATN/MT-4960-EC, which was approved by the Donors Committee in July 1995. The operation was designed to assist with the preparation of sector legislation that would provide an adequate legal framework to encourage greater private-sector participation while respecting municipal autonomy in the delivery of services. A draft bill has been prepared and is being discussed at different levels in the country, and is expected to be submitted for approval by the Congress in the coming months.
- 1.15 The foregoing notwithstanding, the strategy of concessioning out water supply and sanitation services to the private sector has its legal basis, as was mentioned earlier, in the Modernization of the State Act and the Municipal Governments Act, as well as in the current version of ECAPAG's bylaws.

C. Guayaquil's sanitation sector

1. Background and status

- 1.16 Guayaquil, a city of some two million inhabitants, is the main hub of Ecuador's economic activity and also of its most serious urban and environmental problems. According to data from the Pan American Health Organization, drinking water and sanitary sewerage coverage stand at 63% and 52% respectively. Service delivery is plagued by a number of problems that have culminated in poor service quality, unsatisfied customers, and public health risks. The national and the municipal government have both had to provide financial support on a continuous basis.
- 1.17 Until February 1996, Guayaquil's water supply services had been provided by Empresa Provincial de Agua Potable del Guayas (EPAP-G), whose service area included the canton of Guayaquil and 11 neighboring cantons. Sanitary sewerage services were provided by a

different company, Empresa Municipal de Alcantarillado de Guayaquil (EMAG). Given the problems with service delivery and the need to coordinate the operations of the two companies, a new company was formed, Empresa Cantonal de Agua Potable y Alcantarillado de Guayaquil (ECAPAG). As stated in its bylaws, ECAPAG is a company organized under public law having independent administrative, financial, and operating authority and its own assets and capital. Pursuant to article 3 of the law that created ECAPAG, it is authorized to undertake all such actions and enter into all such contracts as are permitted by law, including the hiring of private-sector companies to perform activities as it deems appropriate. The law also stipulates that ECAPAG is to transfer to the 11 neighboring cantons all assets used in the delivery of water supply services in its service area. ECAPAG is currently drawing up agreements that will allow it to transfer these assets and, in certain cases, to continue providing services under contract to customers who so require.

- 1.18 Although the IDB and the World Bank have lent significant support to Guayaquil's sanitation sector over the years, services have not improved as much as was anticipated. The problems are focused in four areas: weak commercial operations, rapid deterioration of physical infrastructure, need for large-scale capital investments to expand systems, and inadequate rate structure.

- a. Commercial operations. ECAPAG has inherited the commercial operations problems of the defunct EPAP-G and EMAG, specifically: inefficient collection system (55% of invoices are six months past due, on average); high volume of unaccounted-for water (70%, very high compared with the 25% level of well-managed systems elsewhere in Latin America); inadequate metering of consumption; outdated consumer census; lack of internal controls; and overstaffing (8 employees per 1,000 connections, compared with 2 to 3 employees per 1,000 in well-managed systems).
- b. Physical infrastructure. Although the water supply system has sufficient production capacity, there are problems with the distribution system. The southern section of the city, for instance, which is home to 40% of the population (mostly low-income residents), receives only 3% of the system's output. There are also clandestine connections running between the sanitary sewerage and the storm sewer systems. A number of treatment plants are inoperative owing to poor equipment maintenance. The sewerage system's operating capacity is also below optimal levels, since: the system has no means for dealing with infiltrations of rain- or groundwater; illegal connections with the storm sewer system exacerbate the sanitary sewerage system's capacity problem; large volumes of water are wasted; and many pumping stations are out of service.

- c. Capital investment needs. In the water supply system, new capital investments will have to focus on storage, distribution, and sealing leaks; in the sanitary sewerage system, investments would need to go toward overhauling the sanitary and storm sewer systems, expanding system coverage, and setting up a sewage treatment program. Investments in the sector over the next 10 years are estimated to total US\$700 million.
- d. Rate structure. Under the Municipal Governments Act, authority for setting rates lies with the municipal governments and, in Guayaquil, this authority has been delegated to ECAPAG's board of directors. While the average rate for water supply and sewerage services (US\$0.65/m³) is sufficient for covering the company's operating costs and generating a surplus to help finance system expansion, low collection levels (55% of the invoiced amounts) keep effective system maintenance from being performed. The rate structure also displays significant disparities in the prices charged to the various user categories: small-scale residential users pay very low rates, while large industrial users pay very high rates. The system thus does not give small consumers any incentive not to waste water, and promotes fraud and efforts to seek alternative sources among the larger consumers.

2. Improvement and future operation of water and sewer systems

- 1.19 Past reform efforts have run into problems and point up the difficulty of successfully implementing less-than-comprehensive reforms. As a result, ECAPAG's board and the municipal authorities decided in 1995 that the solution to their water supply and sewerage problems lay in a strategy of radical structural change. A series of studies were conducted, and the decision was made to bring the private sector in to manage and fund sector services.
- 1.20 To assist the local authorities in developing this new strategy, the IDB and the World Bank provided advisory services in early 1995 for the preparation of an institutional action plan that included private-sector participation. After prolonged discussions and analysis, the local authorities and ECAPAG's board decided to go with a strategy of concessioning the services out to the private sector.
- 1.21 The strategy includes preparing tender documents for the concession, selecting and contracting the concessionaire, defining what institutional structure ECAPAG should have during the transition phase until the services are concessioned out, as well as its structure thereafter as oversight agency for the concession, devising a staff downsizing strategy, and identifying what investments need to be made in infrastructure during the transition phase in order to prevent any serious deterioration in the systems before they are transferred to the private operator. Although not

included in the final strategy, thought had originally been given to the idea of hiring a separate company to perform all the commercial operations, i.e., meter reading, invoicing, collection, metering, customer census, and client services, in order to boost collection levels and update the customer census prior to the transfer.

- 1.22 An investment bank has been hired to provide comprehensive consulting services, such as supplying technical, legal, and financial information needed for tender documents; advising ECAPAG throughout the process of bid evaluation and selection and contract negotiation; and specifying what support will be needed in order to convert ECAPAG into the oversight agency for the concession. In this connection, a Concession Unit has been set up at ECAPAG and its institutional structure has been defined for the transition phase. Staff downsizing options have been studied, and the necessary emergency construction work has been defined. As for the consulting services on commercial operations, a series of setbacks in the contracting process prompted a decision to abandon the process so as to avoid any delay in the concession schedule. Most of these consulting services were funded by the IDB, while the World Bank financed the preparation of terms of reference for hiring the investment bank and setting up the Concession Unit.

D. The Bank's strategy in Ecuador

- 1.23 The Bank's strategy in Ecuador outlines five critical courses of action for development in the country: (i) consolidate macroeconomic stability, (ii) reactivate sustained economic growth with an eye to improving income distribution and significantly alleviating poverty, (iii) move forward with social sector reform in order to build human capital and reduce poverty levels, (iv) protect the environment and ensure efficient use of natural resources, and (v) support efficient modernization and decentralization of the State and of public management. To achieve these objectives, the strategy looks to the public sector to perform a support function, making public service delivery more efficient through broader private-sector participation. Making public services more productive is in fact one way of combating poverty. The present operation dovetails with this strategy since it seeks to upgrade the delivery of a public service that is in very poor condition, and it will do so by using the services of a private operator under a concession agreement in a sector that has social and environmental priority.
- 1.24 Given the size of the investments that need to be made in Guayaquil and the fact that the private sector will not be able to cover them entirely through tariffs, the Bank could lend support to the Municipality by funding capital investments that cannot be included in the concession. These investments will most likely be to expand the sewerage system to serve marginal neighborhoods and build

sewage treatment plants to improve water quality in the Salado and Guayas Rivers.

E. The proposed operation

- 1.25 The program has been designed to expedite the concessioning out of Guayaquil's water supply and sewerage services. Accordingly, three basic support components have been identified: first, the necessary studies will be carried out, with ECAPAG receiving assistance for the selection, award, and contracting process; second, ECAPAG will receive support for its staff downsizing plans and its conversion to oversight agency for the concession; and third, the necessary capital investments will be made for rehabilitating the systems in order to prevent further deterioration prior to their transfer.
- 1.26 As mentioned earlier, the present program is a continuation of the first stage of support provided to ECAPAG. The second stage entails concessioning out the services and identifying capital investments that - owing to their size or the difficulty in fully recouping them - cannot be funded out of rate revenues.
- 1.27 Bearing in mind the fundamental objective of this operation, which is to bring in private-sector participation in the sanitation sector, disbursements under the staff downsizing and rehabilitation work components will be subject to the attainment of specific milestones during the concession process, i.e., prequalification of prospective concessionaires and signature of the concession agreement.

II. THE PROGRAM

A. Objectives

- 2.1 The general objective of the program is to improve water and sewer services in the canton of Guayaquil through a long-term concession agreement with the private sector. The specific objectives are as follows:
- a. Concession out Guayaquil's water supply and sewerage services to a private operator.
 - b. Ensure that sufficient staff with appropriate skills levels are available to implement and administer the concession.
 - c. Upgrade the operation and maintenance of the canton's water and sewerage systems.

B. Program targets

- 2.2 The following targets are expected to be met through implementation of this program:
- a. Guayaquil's water and sewer services are to be concessioned out to a private operator within an estimated 21 months of startup of the comprehensive consulting services.
 - b. ECAPAG's staff levels are to be pared back, in accordance with Ecuadorian legislation, as part of the transfer of services to the private operator. This should occur within 30 months of startup of the comprehensive consulting services.
 - c. The water distribution system for marginal neighborhoods in particular is to be upgraded by laying approximately five kilometers of water mains and rehabilitating some 37 kilometers of sewer mains in downtown Guayaquil. This work should be completed within 36 months as from June 1997.

C. Program description

- 2.3 To achieve the aforementioned objectives, the program has been divided into three components:
- 1. Concession component (US\$2 million)
- 2.4 Under this component, water and sanitation services will be transferred to the private sector through a tender process with support for ECAPAG in awarding the concession. Other activities related to the concession process will also be carried out. There are two subcomponents:

- a. Comprehensive consulting services (US\$1.9 million), comprising a review of the legal and institutional frameworks; demand forecasting; evaluation of existing systems; plans for expansion and improvements; options for private-sector participation; preparation of promotional materials for the concession; drafting of prequalification and contract award conditions; modeling of technical, economical, and financial viability; plans for risk mitigation; prequalification of firms; bid conditions and other tender documents; plan for preparing and setting up the oversight agency for the concession; drafting of model concession agreement; support for ECAPAG in the selection and negotiation process; signature of the concession agreement; and transfer of the services to the private operator.
 - b. Additional consulting services (US\$100,000), to be provided in two groups which will be identified after the call has been issued for the comprehensive consulting services, for the purpose of remedying problems with the company's accounting information and rate structure. The first group will upgrade the accounting system so that consolidated financial statements can be prepared for the water supply and sewerage units. The second group will make specific recommendations on ECAPAG's commercial operations with an eye to boosting collection levels during the transition phase and correcting distortions in the current rate structure.
2. Reconfiguration of ECAPAG (US\$15.9 million)
- 2.5 This component will support the reconfiguration of ECAPAG to enable it to perform the oversight functions associated with the concession process. There are three subcomponents: first, reduce the company's obligations vis-à-vis sector employees; second, conduct an actuarial study of the pension fund and arrangements for transferring it to a fiduciary; and third, strengthen the newly formed concession oversight agency in accordance with the recommendations of the comprehensive consulting services.
- a. Downsizing of staff and mitigation of social costs (US\$14.8 million). Ecuadorian legislation stipulates that workers employed prior to the concessioning out of a service to the private sector are entitled to an indemnity, even if they are subsequently hired by the concessionaire. Furthermore, ECAPAG's staff are governed by two separate collective agreements, one for employees of the former EPAP-G and another for former EMAG employees; this makes it very difficult to consolidate these employees under the new company that will provide services under the concession. Accordingly, this subcomponent will seek to relieve ECAPAG of its labor-related obligations for active staff, while minimizing the related social costs. Activities will be carried out in two areas in particular:

- (i) Staff downsizing. The staffing situation needs to be entirely revamped for the concession. Staff will be downsized through a two-stage process. The first stage will consist of voluntary terminations and retirements and will take place once companies have been preselected to take part in the concession process. The second stage will take place between the signing of the concession agreement and the actual transfer of services to the concessionaire. To support this process and guarantee transparency, an outside auditing firm will be hired to certify definitive termination of the employment relationship and the amount of the respective indemnities.
 - (ii) Mitigation of social costs. With an eye to minimizing the social costs associated with the staff downsizing subcomponent, an agreement will be signed with Fundación Ecuador, a nonprofit NGO established in 1991 to promote socioeconomic development in Ecuador. Fundación Ecuador is currently involved in a nationwide pilot manpower adjustment program (PROLABOR) with MIF financing (ATN/MH-4907-EC). The project offers support services to workers who have been displaced by privatization to help them enter the private-sector work force. Some of the services offered are preparation of individual skills profiles, career guidance, specific technical training, and help seeking employment in the private sector. The project currently has enough financial capacity to handle the demand that would be created under the ECAPAG reconfiguration component.
- b. Actuarial study of the ECAPAG pension fund (US\$100,000). ECAPAG currently has a pension liability to roughly 270 employees, with 100 more expected to be added over the coming years. However, the company has no actuarial quantification of the funds that will be needed to cover these obligations in the future. Since these obligations can no longer fall to ECAPAG once the concession has been awarded, an actuarial study will be conducted to determine the retirement-pension liability and present options for its financing, transfer, and administration by an entity other than ECAPAG.
- c. Establishment of an oversight agency for the concession (US\$1 million). The activities called for in this component cannot be defined until the comprehensive consulting services have identified what functions the oversight agency is to perform. Based on experience elsewhere in setting up similar agencies, the component will probably involve selection and recruitment of staff, training, outfitting, drafting a procedures manual, and public information campaigns. The plan will include training at various institutional levels with

emphasis on regulatory rather than exclusively technical considerations.

3. Rehabilitation of water and sewer systems (US\$19.8 million)

2.6 Under this component, emergency work will be done to rehabilitate existing systems to the extent that is strictly necessary to prevent serious deterioration of existing infrastructure and to keep the systems in operation and make them less vulnerable. There are two subcomponents, one for water supply and one for sewerage.

a. Water supply. To ensure continued operation of the city's water supply systems under minimum acceptable conditions, the following capital investments will be made: new pipes will be installed in order to eliminate bottlenecks in the macronetwork; equipment and parts will be replaced at a water treatment plant; outdated systems and storage tanks will be taken out of service; and leaks will be sealed.

b. Sewerage. Work will focus on cleaning and repairing 37 kilometers of sewer mains; rehabilitating equipment, pumping stations, and treatment plants, including replacement of equipment at 12 pumping stations; placing additional motors at three sewage treatment plants; and repairing or replacing corroded or damaged pipes (tertiary networks), including rehabilitation of sewer lines over a total of 320 hectares in 25 sectors of the city.

D. Cost and financing

2.7 The total cost of the program is estimated at US\$50 million equivalent. The following table presents a summary by expenditure category and source of financing.

Cost and Financing (in thousands of U.S. dollars)				
	IDB	Local counterpart 1/	Total	%
I. Administration and supervision	2,386.3	929.3	3,315.6	6.6
1.1 Program Execution Unit	1,218.3	698.3	1,916.6	3.8
1.2 Supervision	1,168.0	231.0	1,339.0	2.8
II. Direct costs	30,089.1	7,611.4	37,700.5	75.4
2.1 Concession component	1,292.1	695.2	1,987.3	4.0
2.2 ECAPAG reconfiguration	11,880.4	3,986.8	15,867.2	31.7
2.3 Rehabilitation work	16,916.6	2,929.4	19,846.0	39.7
III. Unallocated	4,865.3	1,018.4	5,883.7	11.8
3.1 Contingencies	4,047.4	948.6	4,996.0	10.0
3.2 Cost escalation	817.9	69.8	887.7	1.8
IV. Financial costs	2,659.3	440.9	3,100.2	6.2
4.1 Interest	2,259.3	0.0	2,259.3	4.5
4.2 Credit fee	0.0	440.9	440.9	0.9
4.3 Inspection and supervision	400.0	0.0	400.0	0.8
Total	40,000.0	10,000.0	50,000.0	100.0
Percentage	80%	20%		

2.8 The following paragraphs describe the expenditure categories that will be financed under the program.

1. Administration and supervision (US\$3.3 million)

2.9 This category, which represents 6.6% of the total program cost, will fund the personnel expenditures, outfitting, and operating expenses of the Program Execution Unit (US\$1.9 million); and works supervision (US\$1.4 million), covering the cost of hiring a specialized consulting firm to supervise the program's rehabilitation works.

2. Direct costs (US\$37.7 million)

2.10 This category, which represents 75.4% of the total program cost, will fund the following activities:

1/ Includes World Bank funding for US\$911,000 (US\$116,000 for the Concession Unit within the Program Execution Unit, US\$695,000 for the concession component, and US\$100,000 for reconfiguration of ECAPAG).

- a. Concession process (US\$2 million): hiring of the comprehensive consulting services (US\$1.9 million) and two groups of additional consulting services (US\$100,000).
 - b. Reconfiguration of ECAPAG (US\$15.9 million): indemnity packages (US\$14.8 million), the actuarial study (US\$100,000), and setup of the concession oversight agency (US\$1 million).
 - c. Rehabilitation work (US\$19.8 million): waterworks (US\$9.8 million) and the sewer system (US\$10 million).
 - 3. Unallocated (US\$5.9 million)
- 2.11 This category will cover contingencies for unforeseen expenses and cost escalation.
4. Financial costs (US\$3.1 million)
- 2.12 Program funds will be used to cover: (i) interest on the Bank loan during the implementation period (US\$2.3 million); (ii) the credit fee (US\$400,000); and (iii) the contribution to the Bank's inspection and supervision fund (US\$400,000).
- E. Program financing
- 2.13 The Bank will finance 80% (US\$40 million) of the total program cost out of its ordinary capital under the Intermediate Financing Facility. The local counterpart contribution of US\$10 million equivalent (20% of the program total) will be provided by the Republic of Ecuador; the US\$911,000 equivalent in funding from the World Bank may be accepted as part of the local counterpart.
- 2.14 The following terms and conditions would apply to the prospective Bank loan:
- | | |
|-----------------------------|--|
| Annual interest rate: | variable (IFF) |
| Credit fee: | 0.75% |
| Inspection and supervision: | 1% |
| Disbursement period: | 3 years |
| Amortization period: | 25 years |
| Currency: | U.S. dollars, under the Single Currency Facility |

III. PROGRAM IMPLEMENTATION

A. Implementation arrangements

- 3.1 The program will be carried out by ECAPAG through a program execution unit (PEU) under the supervision of ECAPAG's general manager. The PEU will comply with the policies and instructions of ECAPAG's board of directors under an arrangement whereby the unit enjoys administrative, budget, and financial independence. The PEU is to report regularly to the general manager and to the board on progress made and problems encountered in program implementation. The PEU will have an Office of the Director, an administrative and financial support unit, and three operations units, one for each of the program's components (see organization chart in Annex III-1). Each unit will be headed by a coordinator who will report to the PEU director. Prior to the first disbursement, ECAPAG is to present evidence that it has set up the PEU and hired its director, administrative/financial officer, and coordinators for water supply services, sewerage services, and personnel.
- 3.2 In accordance with the program implementation schedule (see logical framework in Annex III-2) as approved by ECAPAG's board, the PEU will be headed by a director charged with overseeing implementation of the program's three components. The director is to: provide guidance to the three coordinators and to PEU staff on how to pursue the program's objectives; request disbursements and authorize expenses in accordance with rules and procedures agreed by ECAPAG and the IDB; coordinate and authorize the contracting of services and procurement of goods in accordance with the rules and procedures of the government and the IDB; prepare yearly budgets; produce reports that are required by the Bank; and ensure compliance with loan targets and conditionalities. The director will be assisted by an administrative/financial officer and an accountant. Each of the three operations units will have an organizational structure in keeping with the requirements of the respective components.

B. Implementation of program components

1. Concession component

- 3.3 The unit in charge of the concession component will be headed by a unit chief who will oversee a team made up of a technical, a financial, and a legal advisor, who will be counterparts for the comprehensive consulting services. The unit will be responsible for all matters related to monitoring the studies conducted by the comprehensive consulting services and the concession tender process. The unit chief will report directly to the PEU's director. Two additional studies will be conducted under this component, one on accounting improvements and one to review the

rate structure. Contracts have already been signed for these studies, following procedures acceptable to the Bank. The comprehensive consulting services started up in mid-May, with the selection of the international firm of Banque Paribas under a competition involving combined technical and price evaluation of bids.

- 3.4 As was noted above, the asset-transfer agreements with the cantons will be crucial to the success of the concession process. Prior to issuing tender documents for the concession, ECAPAG is to demonstrate to the Bank that the agreements have been signed, and that the environmental issues identified in the studies by the comprehensive consulting services have been addressed in the tender documents.
- 3.5 All concession-related reports prepared by the comprehensive consulting services are to be submitted to the Bank for information purposes. The following documents that are to be prepared by those consulting services need to be approved by the Bank: (i) model for private-sector participation; (ii) model or scenarios for technical, economic, and financial viability; (iii) conditions for prequalification; (iv) tender conditions and documents; and (v) draft concession agreement.

2. Reconfiguration of ECAPAG

- 3.6 The ECAPAG unit responsible for this component will be headed by a coordinator who will chair a committee that will carry out the staff downsizing and worker retraining activities. The committee's members will be appointed by ECAPAG's board of directors in conjunction with Fundación Ecuador, and will coordinate their work with ECAPAG's general manager and the administrative/financial department. The committee members are to be employees who enjoy the full trust of the manager and ECAPAG's board, to ensure that their recommendations will be implemented. The unit will receive support from Fundación Ecuador in carrying out the worker retraining plan for displaced staff. The staff downsizing subcomponent will be carried out in two stages. The first stage will begin after the selection of operating firms for the concession; the second stage will begin once the concession agreement has been signed. Fundación Ecuador's participation will begin at least three months prior to the startup of each stage. The unit will also receive support from (a) a severance audit, to ensure that indemnities are paid as established by law and to maintain a roster of company employees, and (b) consulting services to calculate the retirement-pension liability and possible arrangements for transferring it to a fiduciary.
- 3.7 Prior to the first stage of downsizing, Fundación Ecuador will prepare a diagnostic study of the company's staffing situation and draw up a detailed action plan for manpower adjustment based on the two-stage staff downsizing process agreed with ECAPAG. Fundación

Ecuador will carry out the action plan with technical-cooperation support as described earlier.

- 3.8 The subcomponent to establish an oversight agency for the concession will be implemented on the basis of recommendations from the comprehensive consulting services. As a condition for disbursements under this subcomponent, ECAPAG is to present, to the Bank's satisfaction, the proposed structure and makeup of the oversight agency.
- 3.9 Work is currently under way to draft the agreement between Fundación Ecuador (the PROLABOR program) and ECAPAG, and to hire the company that will conduct the actuarial study on ECAPAG's retirement-pension obligations. The severance audit is to be commissioned as a condition precedent to the first disbursement. Since MIF support for the PROLABOR program was approved only through December 1997, and an additional 18 months will likely be needed for the second indemnity package under this subcomponent, the necessary extension would be processed.
- 3.10 Prior to the first disbursement, ECAPAG is to present evidence to the Bank that it has signed an interagency agreement with Fundación Ecuador. Similarly, before any disbursements are made for indemnity packages, ECAPAG is to demonstrate to the Bank that it has hired the company that will perform the respective severance audit and that the company has verified the amounts and use made of these resources.

3. Rehabilitation work

- 3.11 The unit responsible for this component will have two coordinators, one for water supply projects and one for sewerage projects. These coordinators will be sanitary engineering experts and they will coordinate work under this component with their counterparts in ECAPAG's operations units. Work will be supervised by a specialized consulting firm, which is to be hired one month before the startup of work on the sewer systems.
- 3.12 Two tender processes will be organized. The first one will cover all rehabilitation work for the sanitary sewerage system, to be initiated as soon as possible; the second will cover all work on the water supply system, and will be initiated once ECAPAG has invited firms prequalified for the concession to submit bids.

C. Supervision

- 3.13 Program supervision will be provided by the Bank's Country Office in Ecuador, with support from the project team. Joint meetings will be held every six months with ECAPAG, the Municipality of Guayaquil, the comprehensive consulting services, and the Bank to monitor the progress of the concession process. The status of the staff downsizing and investment components will also be monitored.

- 3.14 Within the 15 days preceding each scheduled meeting, ECAPAG is to submit, by way of the PEU, progress reports on each component. The first meeting will be held six months after approval of the operation by the Bank's Board of Executive Directors.
- 3.15 Since the operation's core objective is to transfer these services to the private sector, the Bank will follow the concession process closely. To this same end, the staff downsizing and investment components are tied to progress on the concession process in accordance with the arrangement outlined above.

D. Implementation and investment schedule

- 3.16 Based on an analysis of each program component, the disbursement period for the loan proceeds has been estimated at three years as of the loan's effective date.
- 3.17 The following table presents a summary disbursement schedule. Details on the schedule are on file with Region 3.

Disbursement schedule (in thousands of U.S. dollars)				
Year	IDB	Counterpart	Total	%
1	12,126	4,971	17,097	30.3
2	16,227	3,063	19,290	40.6
3	11,647	1,966	13,613	29.1
Total	40,000	10,000	50,000	
%	80.0	20.0		

E. Procurement

- 3.18 Goods and services will be procured in accordance with the procedures set forth in Annex B to the loan contract. International competitive bidding will be mandatory for the procurement of goods and services valued at over US\$250,000 and construction work valued at over US\$1 million. See Annex III-3 for the procurement plan.
- 3.19 This notwithstanding, given the high degree of specialization in privatization and concessions required by the comprehensive consulting services (to be provided by a consortium headed up by an investment bank) for amounts over US\$200,000, and owing to the unique nature of the international market for such services, which means that price is a determining factor in contract awards, as an exception it was decided to use a combined technical/price evaluation of bids for hiring the comprehensive consulting services. The bids that were received confirmed the decisive nature of the price factor in the evaluation process. This

decision was made after prior consultation with the Procurement Unit.

F. Recognition of previous expenditures

- 3.20 ECAPAG has asked that a series of expenses incurred in preparing and implementing the program prior to approval of the loan by the Bank's Board of Executive Directors be recognized. Specifically, it has requested that US\$50,000 of these expenses (see table below) be reimbursed with loan proceeds as retroactive financing, and the remaining US\$750,000 be recognized against the local counterpart in keeping with Bank policy. The services in question were hired according to procedures acceptable to the Bank, except for the comprehensive consulting services as explained in the preceding paragraph.

	Amount (US\$000)
Retroactive financing	50,000
Accounting improvements	6,000
PEU	44,000
Local counterpart	750,000
Comprehensive consulting services	630,000
Actuarial study of pensions	100,000
Rate study	20,000

G. Maintenance of works and equipment

- 3.21 Program works and equipment are to operated and maintained by ECAPAG's water supply and sewerage units up to the time the systems are transferred to the private operator. The tender documents and the concession agreement will clearly stipulate the concessionaire's responsibility for the operation and maintenance of all system facilities, including program works and equipment. Should any delays occur in the concession process, the operation and maintenance of program works and equipment will continue to be the responsibility of ECAPAG.

H. External audit

- 3.22 The PEU is to submit consolidated financial statements for the program and for ECAPAG to the Bank throughout the program implementation period. The statements, audited by a firm of independent public accountants acceptable to the Bank, are to be presented within the 120 days following the close of ECAPAG's

fiscal year. ECAPAG will be responsible for consolidating the program's financial statements prior to the audit.

I. Environmental and social impact

- 3.23 The Bank's Environment Committee classified this program as a Category III operation at its June 19, 1996, meeting. The expected environmental impact will be positive overall, especially for human health and the environment, since the objective is to improve Guayaquil's water and sewerage services by bringing in the private sector and upgrading certain sections of the system during the transition phase. The Environment Committee's recommendations on how to mitigate the possible negative impacts of the program and the concession were incorporated into the program's design and implementation plan.
- 3.24 To mitigate the program's negative impact, mainly during the implementation phase, an environmental and social impact study was done and an environmental management plan containing a series of measures and specifications was drawn up for water supply and sewerage projects. Specific terms of reference for environmental auditing were included for incorporation into the work plan of the comprehensive consulting services.

J. Ex post evaluation

- 3.25 Since the executing agency does not wish an ex post evaluation to be done as part of the program, the project team is of the view that an evaluation should be conducted and paid for out of the Bank's budget. The evaluation should focus on the outcome of the privatization process, since experience with problems, accomplishments, and compliance with schedules can provide important input for future concession operations.

IV. THE BORROWER AND THE EXECUTING AGENCY

A. The borrower and the executing agency

- 4.1 The Republic of Ecuador will be the borrower, and the executing agency will be Empresa Cantonal de Agua Potable y Alcantarillado (ECAPAG), which was created pursuant to Decree-Law 8 of August 19, 1994, as a result of the merger of the former water (EPAP-G) and sewerage (EMAG) companies. ECAPAG has two operations units, corresponding to the former companies, which have kept their old structure but now report to a single manager and a single board of directors. This structure was decided on in order to keep from making any major organizational changes that might delay the concession process. As a condition precedent to the first disbursement, an agreement is to have been signed by the Ministry of Finance and ECAPAG for the loan proceeds and the local counterpart contribution to be transferred to the executing agency.

B. Empresa Cantonal de Agua Potable y Alcantarillado (ECAPAG)

1. Institutional considerations

- 4.2 From the time the decree-law was issued creating ECAPAG up to February 1996, the company was unable to exercise effective control over EPAP-G and EMAG owing to political circumstances, specifically because the two units had retained their respective boards and operations managers. For all intents and purposes, ECAPAG's decision-making authority over service delivery matters was minimal. At the initiative of the Municipality of Guayaquil, in February 1996 the two firms (EPAP-G and EMAG) dissolved their boards and became an integral part of ECAPAG under a single board and a single general manager.
- 4.3 Under the law that created ECAPAG, the company has broad authority to transfer services to the private sector; it is to be organized and governed according to stringent criteria of administrative efficiency; it may enter into contracts with private companies for the performance of activities as it sees fit; it is to set compensation and indemnities for staff not hired by the new company for reasons of operations efficiency; its board is authorized to approve rates for the services provided and may petition the municipal government for special assessments to be levied to recoup its investments; and it may take legal action to collect overdue payments.

2. Commercial operations

- 4.4 ECAPAG has 220,000 registered (active) subscribers for household water supply connections and 95,000 paying sewerage customers. Of the active residential users, 40% have meters installed but only

26% have consumption that is effectively metered. The monthly charge for water is calculated using rates set in accordance with applicable water supply regulations. These rates are based on cubic meter consumed or billed, user category, and consumption level. For sewerage services, a direct rate is charged based on the respective water connection account.

- 4.5 ECAPAG has three categories of active customers: residential (90.4%), commercial (8.6%), and industrial (1%). Metered consumption is billed for 26% of residential users, 27% of commercial users, and 50% of industrial users. Based on the analyses done, the unit consumption of metered users is 50% higher than the company's average billing. Although this situation can be explained in part by the policy of installing meters for high-consumption users, it indicates that estimated consumption for the billing of unmetered users is significantly undervalued, considering an average monthly consumption of 15 cubic meters that is estimated for many of them; this also goes a long way in explaining the high volume of unaccounted-for water reported by the company.

3. Structure

- 4.6 ECAPAG has a board made up of five directors (one of whom acts as chair); a general manager's office, headed by a general manager who is appointed by the board from a short-list submitted by the chairman of the board; a legal department; a planning and regulation division, which is charged with preparing the annual operations plan; an administrative/finance division; and two operations units (one for water supply and one for sewerage services). Early in 1996, the Concession Unit was created, with funding from the World Bank, to monitor the concession process with support from comprehensive consulting services, the IDB and the World Bank. The present operation proposes to include the Concession Unit as part of the Program Execution Unit.

4. Rates

- 4.7 In response to a request from ECAPAG's management that the company's board change the rate structure, a new structure was approved and has been in place since January 1997, with the following features:
- a. There are now three rather than four customer categories: residential (subsidized and regular), commercial, and industrial.
 - b. The new rates are viewed as adequate to cover the costs of operation, maintenance, and depreciation and to generate revenue to cover debt service and working capital.
 - c. Rates will be adjusted monthly for all users in nominal terms.

- d. Rates for filling tank trucks at supply points will be increased.
 - e. The "government" category and its respective subsidies were eliminated.
- 4.8 The expected financial impact of the new rate structure on ECAPAG will be an increase equivalent to service billings of US\$64 million in 1997, compared to US\$51 million billed in 1996. Currently, the average rate is 65 cents per cubic meter, which is enough to cover operating, maintenance, and financial costs, and generate revenue to cover debt service and some depreciation. Accordingly, the current rate level appears to be sufficient for the company's requirements. The challenge will lie in boosting collection levels (US\$28 million in 1996) and reducing the volume of unaccounted-for water (71% in 1996), two particularly critical areas.
- 4.9 The new rate structure represents a first step toward gradually implementing rates that will reduce cross-subsidies between the various user categories. It is hoped that this will bring about a significant reduction in wastage by residential consumers, whose rate is subsidized, and the elimination of illegal connections by industrial and commercial users, who pay a rate well above cost.
- 4.10 Rates should continue to be adjusted during the transition phase until the concession process is finalized, in order to deepen the reform launched in January 1997. To this end, a consultant has been hired to examine the rate structure and propose adjustments to the subsidy and indexing arrangements.

5. Concession Unit

- 4.11 The Concession Unit was set up to perform the following functions: (i) prepare the contracting process for the comprehensive consulting services, (ii) monitor that process, (iii) serve as counterpart support for these services while studies are being conducted for the concession process, (iv) oversee the concession process, and (v) help to organize and set up the oversight agency for the concession.
- 4.12 Given the complex and diverse nature of these tasks, the unit will need to be very flexible and creative in a way that will not lend itself to rigid reporting structures. The unit needs to have enough operating autonomy so that administrative hurdles will not interfere with it adjusting to the changing circumstances of the aforementioned tasks.

- 4.13 Most of the unit's specialized staff 2/ are already working under consulting contracts funded out of World Bank loan 2774-EC. To ensure continuity in their work and prevent delays in the process, it is proposed that their contracts be renewed using funds from the present operation, under the original terms and conditions, for as long as is strictly necessary.

2/ Unit chief, financial adviser, legal adviser, and technical adviser.

V. PROGRAM VIABILITY AND RISKS

A. Institutional and financial viability

1. Institutional viability

- 5.1 ECAPAG's board, the Municipality of Guayaquil, and the central government are all aware of the company's institutional weaknesses and the difficulty of upgrading services under the traditional approach to management. They are firmly resolved to support and oversee actions that will lead to the concession being awarded in as short a time as possible.
- 5.2 The company's board recently hired a new general manager with experience in private-sector management and has assigned top priority to transferring services to the private sector as quickly as possible, while making sure operations run smoothly but without proposing any major increases in efficiency during the period. In order to focus on this target, ECAPAG will continue with its structure of two clearly defined operations units (corresponding to the former EPAP-G and EMAG) for running the sector's systems, under the supervision of two unit chiefs who report directly to the general manager.
- 5.3 ECAPAG has sufficient institutional capacity for carrying out activities under this operation, which it will do by way of a program execution unit (PEU) that will perform all contracting and other activities necessary for implementing the program's three components. The PEU has been set up as an autonomous unit, although its work will be coordinated directly with the general manager's office for decisions impinging on program implementation, specifically those dealing with staff downsizing. The PEU will have three units, one for each of the program components. Of the three units, the Concession Unit is the one that needs the most staff in order to supervise the studies and tender documents that are to be prepared by the comprehensive consulting services. Support from the comprehensive consulting services that were hired in May 1997 will be essential to the concession process.

2. Financial viability

- 5.4 Since water and sewer services are being transferred to the private sector and ECAPAG will cease to exist as system operator, the Government of Ecuador has agreed to act as borrower in order to facilitate the concession process. Once ECAPAG has transferred the services to the public sector, it will not obtain any revenue from rates, since this revenue will be collected by the concessionaire. Given the circumstances, and so as not to burden the company with any additional debt, the central government will defray the costs arising from the operation.

- 5.5 The company's unique future circumstances notwithstanding, financial simulations were run to determine the system's viability. Historical data were used up through year-end 1995 and estimated figures were used for 1996. These data are sketchy at best, especially as concerns sewerage services, which confirms the lack of internal control at the company and the lack of basic accounting procedures for properly recording day-to-day operations.
- 5.6 ECAPAG's financial situation has been rather shaky in the past owing to weak commercial operations management and generally inefficient functioning. The company has not been able to properly maintain its physical assets, and the system has thus been allowed to fall into a poor state of repair. Total billing in 1996 stood at US\$51.8 million equivalent (with an average rate of 65 cents per cubic meter), of which only US\$28.5 million was actually collected during the period. The volume of unaccounted-for water reached 71% and the company had operating costs of US\$30 million, with personnel expenditures accounting for over 25% of that amount (8 employees per 1,000 connections). When financial costs and depreciation are factored in, the company posted a loss of US\$14 million.
- 5.7 The basic assumption is that the increase in unaccounted-for water is related to ECAPAG's handling of its commercial operations, and so a good operator could reduce the volume to manageable levels that reflect system losses more accurately. The first row of the following table depicts the current situation with 71% unaccounted-for water, an average of 8 employees per 1,000 connections, collection efficiency (amount collected/amount billed) of only 55%, and a huge receivables portfolio (equivalent to 200 days of sales). Keeping the average rate constant at 65 cents per cubic meter, three scenarios were analyzed as to their impact on the company's financial capacity, according to improvement in the variables for unaccounted-for water, number of employees per connection, collection efficiency, and receivables levels.

	Unaccounted-for water	No. of emp. per connection	Collection efficiency	Receivables (days)
Present (1996)	71%	8	55%	200
Scenario 1	50%	6	70%	90
Scenario 2	40%	5	80%	60
Scenario 3	30%	3	95%	45

- 5.8 Under scenario 1, unaccounted-for water would be reduced by 21%, the number of employees per 1,000 connections would drop to 6, collection efficiency would rise to 70%, and receivables would be brought down to the equivalent of 90 days. The impact of this scenario on the system's financial capacity would be significant.

Operating revenue would increase from negative US\$1.5 million to positive US\$13.4 million, with a slightly negative level of internal cash generation (annual debt service is nearly US\$20 million).

(US\$000)				
	Revenue	Operating costs	Net operating revenue	Internal cash generation
Present (1996)	28.5	30.0	(1.5)	(13.4)
Scenario 1	35.5	22.1	13.4	(0.7)
Scenario 2	40.5	19.2	21.3	8.9
Scenario 3	48.2	14.8	33.3	21.7

- 5.9 As the analysis shows, system management and development is financially viable as long as operations are efficient. This underscores the need to bring in a private operator to implement business and management improvements in the short term and make capital investments over the longer term. In this connection, measures will need to be selected that strengthen the company's financial capacity, e.g., set up a good customer census, boost collections, and deliver good service to clients.

B. Environmental and social viability

- 5.10 The environmental impact of the proposed program is positive overall, especially on human health and the environment, given that the objective is to improve Guayaquil's water and sewer services by bringing in the private sector and rehabilitating certain sections of the system during the transition phase to a concession arrangement.
- 5.11 The main positive impacts of the works component – which includes work to clean mains and improve water supply in marginal urban areas – will be a reduction in flooding and in the health risks that are the result of poor operation, low capacity, and blockages in the sanitary sewerage system. The negative impacts, which will occur mostly during the construction phase, are small-scale in nature and can be mitigated by introducing technical environmental standards in the construction contracts, as part of an environmental management plan that would be included in the tender documents.
- 5.12 The transfer of water and sewerage services to the private sector will carry with it possible environmental risks that are associated with unmitigated environmental problems, such as the city's and the country's lack of institutional capacity to monitor the concessionaire's compliance with environmental standards. With this in mind, the comprehensive consulting services include

specific terms of reference for a detailed environmental audit of the systems that are slated to be concessioned out; the audit will identify existing environmental problems and propose solutions as well as environmental assessment specifications for future projects and institutional arrangements that can be included in the tender documents and the concession agreement.

- 5.13 The main negative social impact will be caused by the letting go of employees (and the direct negative impact on their families), when ECAPAG is converted to an oversight agency. Also, the current problems with sanitary sewerage services that stem from the lack of trained staff at ECAPAG produce a very high environmental, economic, and social impact on virtually the entire city; these problems are the result basically of inefficient administration and excessive bureaucracy.

C. Technical viability

- 5.14 The proposed program represents an integrated, rational solution for rehabilitating water supply and sanitary sewerage systems on an emergency basis. It will help to solve some of the more serious problems by reducing leakage, boosting system capacity, and repairing or replacing damaged pipes. The benefits will be especially noticeable in the sewer systems, which at present cannot handle an adequate flow of sewage, and at inoperative treatment plants and pumping stations, where equipment will be replaced to put them back in service.
- 5.15 ECAPAG has designed the various program components in keeping with adequate technical principles, with support from international consultants specialized in this area. Cost estimates were prepared with the necessary level of detail, based on analyses of unit costs and updated price information. The review undertaken indicates that the costs estimated for the program are both reasonable and adequate.

D. Socioeconomic analysis

- 5.16 The economic analysis was based on a cost-benefit approach and covered the project design period (25 years), discounting flows associated with the economic opportunity cost of capital (estimated at 12 percent). The contingent valuation methodology was used to quantify the economic benefits that the sanitary sewerage project would yield, and a survey was done in April 1996 to determine the community's willingness to pay for better services. To calculate the benefits of the water supply project, other surveys were done to estimate demand curves under the SIMOP model. The economic values are presented in terms of efficiency prices, which were calculated on the basis of the following conversion factors as provided by Banco del Estado: foreign exchange, 1.00; standard, 0.86; fuel, 0.48; skilled labor, 1.00; unskilled labor, 0.15; and

electricity, 1.13. The studies and appendices supporting the findings of the analysis are on file with RE3.

- 5.17 The present analysis took account of investment costs, contingencies, supervision, and incremental maintenance and operating costs that program implementation would entail. The investment costs for rehabilitation work on the sewerage system and upgrading of the water supply system were divided into their main components (skilled labor, unskilled labor, imported inputs, local inputs, and electricity). These costs were then converted into market prices at economic prices using shadow-price factors for each economic resource. A similar conversion was done for the operating and maintenance costs. The investment costs and the maintenance and operating costs converted at efficiency prices make up the economic cost streams, which form the basis on which the program's economic net present value was calculated.
- 5.18 The following table presents the results of the economic evaluation of the rehabilitation component. According to the data obtained, the estimated economic internal rate of return (EIRR) for the rehabilitation work is on the order of 45%, with a present value of US\$21.8 million; in other words, the program is economically viable. A sensitivity analysis was conducted to establish the reliability of the results obtained, and indicated that major changes would have to occur in the costs and benefits for the projects not to yield sound returns. Accordingly, the program is viewed as very viable.

Economic viability (amounts in thousands of U.S. dollars)						
Component	Investments		Oper. & Maint.	Benefits	IRR	Cost/benefit
	Total cost	Present value				
Sewerage						
Cleaning of mains	3,195	3,250	178	6,192	21	1.8
Repair of mains	4,815	3,489	53	6,708	22	1.9
Subtotal	8,010	6,739	231	12,900	22	1.9
Water supply						
Bottlenecks	1,480	1,298	44	6,777	70	5.1
Replacement of pipes	5,686	4,158	142	13,145	42	3.1
System closings	670	594	20	2,208	50	3.6
Subtotal	7,836	6,050	206	22,130	52	3.5
TOTAL	15,846	12,789	437	35,030	45	3.0

E. Program risks

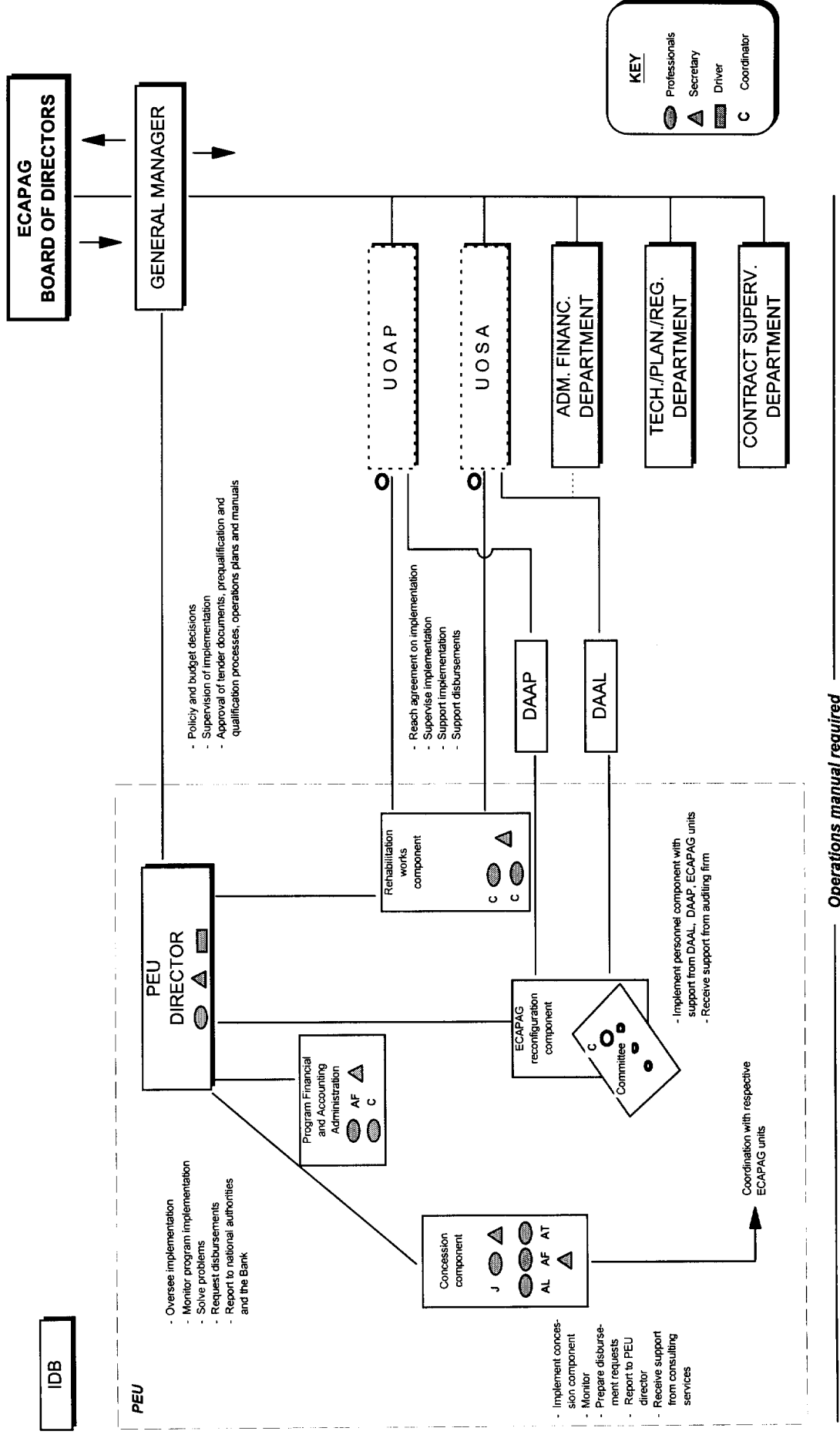
5.19 The main risks that could have an adverse impact on the operation are as follows:

- a. Lack of interest on the part of experienced, solvent operators in participating in the concession arrangement proposed by ECAPAG. This risk is being mitigated by hiring an international investment bank specialized in concessions, which will provide comprehensive consulting services to assist ECAPAG in devising the concession model. One of its key tasks will be to propose an arrangement for private-sector participation that is both attractive to operators and beneficial for the city of Guayaquil. The proposed program will also reduce potential risks for the concessionaire by addressing the labor situation and financing emergency investments that the private operator will be unable to attend to during the initial phase.
- b. Lack of continued political support from the Municipality throughout the process of preparation, award, and transfer of services to the private operator. Since work first began on preparing this operation, the Municipality has provided its firm support through its representative on ECAPAG's board and through statements made by the mayor to the project team on various occasions. The fact that the municipal government's term of office extends to 1999 will help see the process completed within the planned time frame.
- c. Setbacks owing to the country's lack of experience with similar tender processes. Government oversight agencies could issue unfavorable opinions. To prevent this from happening, the process will be kept as transparent as possible and the government control agencies will be involved in the process from the very beginning.
- d. Failure of workers to participate in the voluntary termination program. Workers could refuse to take part in the voluntary termination program, either because they want to stay with ECAPAG or because they want to be hired as a group to work for the concessionaire. To mitigate this risk, a vocational training and guidance program will be offered by Fundación Ecuador, an NGO that is overseeing Ecuador's manpower adjustment program under MIF agreement ATN/MH-4907-EC. The current municipal government has experience with successful staff downsizing programs that it gained when it privatized the city's solid waste collection and disposal services.
- e. The oversight agency for the concession may not have sufficient technical capacity to monitor and supervise the concessionaire. To mitigate this risk, an oversight agency will be organized and strengthened, in keeping with an action plan to be drawn up as part of the comprehensive consulting services.

PRIVATE-SECTOR CONCESSION FOR WATER SUPPLY AND SEWERAGE SERVICES IN GUAYAQUIL

PROGRAM ORGANIZATION CHART

ANNEX III-1



**Private-sector Concession for Water Supply and Sewerage Services in Guayaquil
Logical Framework**

	Targets	Means of Verification	Assumptions
	Situation at program completion (3 years)		
Guayaquil's water supply and sewerage services to be provided with adequate efficiency, quality, and rates.			
For service delivery in the canton of Guayaquil, granting a long-term concession to a private operator.	<p>Concession out Guayaquil's water supply and sewerage services to a private operator.</p> <p>Ensure that sufficient staff with appropriate skills levels are available to implement and administer the concession.</p> <p>Upgrade the operation and maintenance of Guayaquil's water and sewer systems.</p>	<p>Signature of agreement and transfer of services to private operator.</p> <p>Reduction in staff and establishment of oversight agency for the concession contract.</p> <p>Completion of rehabilitation works within set time frames.</p>	<p>Political will at the national and local level.</p> <p>Involvement of government and private agencies from the very beginning.</p> <p>Continued firm support from the Municipality.</p> <p>No delays in the tender process.</p>
Comprehensive consulting services for financial and technical improvements	<p>Signature of concession agreement.</p> <p>Reliable financial statements as of December 1996.</p> <p>Review and adjustment of rate schedule by September 1997.</p>	<p>Official transfer of the services.</p> <p>Financial statements audited by firm of independent auditors.</p> <p>New rate structure approved by ECAPAG's board.</p>	
Duration of ECAPAG			
Plan for downsizing and worker retraining.	<p>Document containing plan for staff downsizing and worker retraining.</p> <p>Downsizing of staff in two stages: 300 once the operating firms have been preselected, and the rest once the concession agreement has been signed.</p>	<p>Document presented by the comprehensive consulting services in coordination with Fundación Ecuador, and approved by the board.</p> <p>Records of settlement; verification by the auditing firm. List of payments made.</p>	<p>Continuation of the concession agreement through completion of the two-stage staff downsizing (preselected firms and signature of agreement).</p>

Private-sector Concession for Water Supply and Sewerage Services in Guayaquil
Logical Framework

	Targets	Means of Verification	Assumptions
<p>of pension liability and for transfer.</p> <p>concession oversight agency.</p>	<p>Document specifying the total liability and arrangements for its transfer to a fiduciary.</p> <p>Document containing a detailed action plan for establishing the concession oversight agency.</p>	<p>Actuarial studies.</p> <p>Reports and evaluation of training. Operations manuals approved. Purchase of equipment. Recruitment of suitable staff. Hiring of specialized consulting services.</p>	<p>Funds are available on a time</p>
<p>ation works</p> <p>pply</p> <p>f bottlenecks</p> <p>es</p> <p>of equipment, pumping stations, and nts</p> <p>n of obsolete systems and storage</p> <p>ealing of leaks</p>	<p>Hookup of 600 mm x 1,050 mm and 600 mm x 1,250 mm pipe.</p> <p>Laying of 16 km of pipes to form pitometric circuits.</p> <p>Laying of 3.3 km of pipes and hookup to the existing network.</p> <p>Laying of 10 km of pipes.</p> <p>Purchase and assembly of mechanical, electrical, and electronic equipment and parts.</p> <p>Sealing of 150 leaks in the central sector, 4 months.</p> <p>Sealing of 150 leaks in the northwest sector, 4 months.</p> <p>Sealing of 150 leaks in the northeast sector, 4 months.</p> <p>Sealing of 150 leaks in the southern sector, 4 months.</p>	<p>PEU report; field inspection.</p> <p>PEU report; field inspection.</p> <p>PEU report; field inspection.</p> <p>PEU report; field inspection.</p>	<p>Municipality will issue permits streets. ECAPAG will invite se to submit bids.</p>

Private-sector Concession for Water Supply and Sewerage Services in Guayaquil
Logical Framework

	Targets	Means of Verification	Assumptions
Repair of mains	Restore capacity along 37 km of sewer mains in the existing system.	Field inspection and respective PEU report.	Municipality will issue permits for streets.
Replacement of equipment, stations, and treatment plants	Replace equipment at 12 pumping stations and install additional motors at 3 sewage treatment plants.	Field inspection and respective PEU report.	
Replacement of damaged pipes	Provide sewage conveyance capacity over an area of 320 hectares. Northern area: 5 sectors Southern area: 9 sectors Central area: 8 sectors Western area: 3 sectors	Field inspection and respective PEU report.	

PROCUREMENT PLAN

Main procurement categories	Financing (US\$000)		Method	Prequalification	Announcement (quarter/year)
	IDB	LOCAL			
Consulting services					
Comprehensive consulting services	1,200	680	ICB	YES	III 96
Accounting improvements	60	0	PC	NO	II 97
Rate study	0	25	PC	NO	II 97
Actuarial study	0	100	PC	NO	III 97
Supervision of works	515	100	ICB	YES	I 98
Construction work and equipment					
Water supply	6,640	1,360	ICB	YES	III 98
Equipment for water treatment plant	1,400	0	ICB	YES	III 98
Sewerage	6,900	1,600	ICB	YES	IV 97
Equipment for sewage treatment plants	1,600	0	ICB	YES	IV 97
Morán de Buitrón aqueduct	360	40	LCB	NO	III 97

ICB: international competitive bidding

PC: public call for proposals

LCB: local competitive bidding