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PADCO

PLANNING AND DEVELOPMENT COLLABORATIVE INTERNATIONAL, INC.

Albanian — Urban Infrastructure Investment and Development Privatization Pilot Program for Water Enterprises

Prepared for

Office of Environment and Urban Development
United States Agency for International Development

In Cooperation with

The Ministry of Construction, Housing and
Territorial Adjustment — Republic of Albania

Prepared by

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Under contract with

PADCO, Inc.
1025 Thomas Jefferson Street, NW, Suite 170
Washington, DC 20007-5209

Contract No. EUR-0034-C-00-2032-00, RFS 59

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1 Executive Summary

Introduction

The Government of Albania (GOA) has made a commitment to improving the quality of water service delivery. It is interested in pursuing private sector participation as a strategy and requested United States Agency for International Development (USAID) assistance to assess options and help develop a strategy. This report presents an analysis of privatization options and recommendations for implementation as it relates to the water supply and distribution systems of the Durres and Tirana District Water Works. It also provides recommendations as to considerations for applying privatization concepts for water supply and distribution systems throughout Albania. In addition, the report identifies the need to assess water and wastewater simultaneously.

The study team, working under a USAID technical assistance contract with PADCO, Inc. (PADCO) conducted field trips and interviews with various senior managers at the Ministry of Construction and Tourism (MoCT), the Institute of Infrastructure Design, the Ministry of Health (Committee for Environmental Protection and Preservation), and the Tirana and Durres District Water Works. In addition, meetings were held and information was obtained from the Italian Embassy and the World Bank.

As a summary conclusion, this report advocates a definite role for the private sector in the improvement of the quality of water service delivery. This report recommends that a concession privatization option be applied to the Tirana and Durres water systems as a pilot. In addition, the GOA needs to establish a strong regulatory system that can monitor the role of the private sector concessionaire. The GOA will need to make a capital investment in these water systems and will have to continue providing State subsidy to this municipal sector during the initial start-up years of the concession contract. Finally, to achieve a self-sustaining sector, the strategy for water needs to include wastewater.

Assessment of Existing Durres and Tirana Systems

In general, the level of service in both the Durres and Tirana systems is inadequate and, in light of the significant population growth being experienced, the systems are near the point of physical collapse. The following is a summary of the physical and operational condition of each of the systems.

Durres District Water Works

Durres has good sources of water supply from well fields at Fushe Kuqe and Fushe Kruja, and these sources, particularly Fushe Kuqe, can be developed further. The transmission mains from the well fields are in good condition although additional lines will be needed in the future to carry increased flows.

The serious facility issues in the Durres District are associated with the distribution network, which, under reduced service (2-4 hours per day) and greatly reduced pressure, still experiences losses totaling 50 percent of the quantity of water produced at the well fields. The water system is overstaffed and undermaintained with repair and replacement on an *ad hoc* basis when parts and materials are available.

The current estimate of the capital investment needed to bring the Durres system to 24-hour service at acceptable pressures to meet demands on the system is US$18 million. The Durres system showed an operating loss of nearly US$380,000 (30 percent) for 1994 with a minimum of repair and maintenance being performed.

Tirana District Water Works

Tirana's sources of water supply come from both well fields and natural springs. The natural springs are greater producers but experience a seasonal drop-off in flow in the summer months. Population growth in the Tirana metropolitan area, which exceeded 100,000 people over the last four years, has made the current sources of water supply inadequate in the summer months.

For the current sources of water supply, the existing transmission mains and service water ground storage reservoirs appear to be adequate. The major problems in the existing Tirana District system is associated with the distribution network. Like Durres, over 50 percent of the produced water is lost or wasted. Service in the Tirana District is only available 0-6 hours per day, and, due to inadequate pressure, the area where this service is available above the second floor level is limited.

Similar to Durres, the Tirana District is overstaffed and undermaintained, with repair and replacement on an *ad hoc* basis. In addition, there is no comprehensive, current engineering analysis of the Tirana system, as there is for the Durres system, to accurately define the problems and the recommended improvement needs. Such an analysis would be essential prior to investing in improvements in the Tirana distribution system to include storage reservoirs and pumping stations.

The authors of the report developed a capital investment needs estimate, based on a variety of inputs, that totals US$51 million. Of this total, US$23 million is for a new dam, a reservoir, a treatment plant, and transmission mains associated with a new source of water supply at Buvilla and US$18 million is for distribution network repairs and improvements.

The Tirana system showed an operating profit of approximately US$900,000 for 1994 with nearly half of this coming from charges to the Albanian Power Company (KESH) for the use of the hydraulic drop of the water flowing from the natural springs water supply sources.

Privatization Options

Privatization of essential infrastructure is the contractual delegation of authority and responsibility for the provision of a public service to a private sector service company. It is not a concession of failure on the part of government, but merely an alternative management strategy.

Privatization is both a financing and a management concept. As a financing concept, it is a method for using private sources of capital rather than public funds to finance facilities and

services. As a management concept, it is a method of delivering quality services to the public consumer and is an alternative to the use of public resources, offices, and personnel.

GOA Control under Privatization

To effect a successful privatization program, the GOA should transfer authority and responsibility for the water systems to appropriate levels of local government, who would in turn enter into privatization agreements.

Combined with this delegation of authority, the GOA should develop a countrywide assessment of water supply needs and current delivery systems to assist and encourage the consolidation of systems into more regional service areas, which would, in turn, provide opportunities of economy of scale.

The GOA should change its role to one of setting standards and enforcing regulations, but should continue to pay for some capital investment to maintain affordable rates, while providing oversight to the initial privatization transactions. This initial oversight role is appropriate since sovereign guaranties will most likely be needed on the first few privatizations.

For the GOA, the following policy imperatives must be understood in controlling an essential resource.

- The GOA owns the nation's water resources and, under the proposed Water Resources Law, specifies how the resources may be used and are to be protected.
- Under the concepts developed for Albania in this study, the GOA will maintain health and environmental oversight, assuring proper stewardship and protection of all water quality. This role allows for the enforcement of regulations and compliance with standards through enforcement powers, both criminal and civil.
- The GOA would also have a continuing project oversight and monitoring role, which will assure that contractors are performing in compliance with laws, regulations, and specific contract terms and conditions.
- Privatization contracts would have penalty, default, termination, and other provisions that would enable local agencies (and the GOA, in the case of a lack of enforcement by the local agencies) to enforce specific contract terms and conditions. This would include the power to remove and replace contractors, or terminate privatization altogether and return to public operations.
- As the GOA's role regarding water supply is in transition, the GOA should also address the impacts that this will have on wastewater issues. How to address the wastewater issue needs to be incorporated into the regulatory/enforcement role.

Privatization Structure, Rationale for Selection, and Implementation Considerations

The study selected the following privatization structures to consider for their application to the water supply needs in Albania.

- Turnkey
- Build. Own, Operate, Transfer (BOOT)
- Concession
- Lease
- Contract Operations
- Contract Management
- Service Contract

The study team was influenced in its evaluation of these optional privatization structures by several factors.

- The current condition of the facilities, and the need for major investment up front, particularly when there is no private investment experience in the country.
- The Albanian urban water systems are in critical condition and demand improvement in the near term.
- A rapid move to private ownership of assets does not appear to fit with the current public policy and perception. Privatization options that bring many of the benefits of private sector participation without the sale of current assets were given more weight in the analysis. A move at the outset to sell assets to a private sector company would increase user costs with no related service improvements.

There were several issues given consideration in terms of the implementation of a privatization option, including:

- the scale of the project, population density in the service area, and nature of the current delivery system in place are very important. The worldwide experience with privatization has demonstrated that privatization techniques can be effectively applied in urban and similar high-density areas.
- the size of the initial investment capital, the sources of this capital, and how it would get repaid. Related to this is the impact on tariffs to the users and the capacity to pay.
- the recognition that the goal of considering a privatization option is to improve service quality and not just move to a privatized infrastructure for its own sake.
- the political and cultural fit must match the extent of privatization that will actually be in the scope of services. Political issues, such as who controls the sources of supply, and cultural issues, as to whether a private or public employee reads the meter and collects the tariff, are not small issues in a successful implementation.
- the human resources capacity of the GOA and its local units of government to implement, monitor, and enforce a successful privatization program is very limited, and even with outside technical assistance, will still require a more moderate, less accelerated move

to privatization. Relative to the Durres and Tirana situation, a common privatization approach, conducted simultaneously, would minimize the demand on human resources to implement and oversee the program.

- the need to incorporate wastewater in the strategy, as this is the only way to create an eventually self-sustaining sector.

Regulatory and Legal Issues

The GOA must continue its parallel programs to establish, in law, the necessary legal and regulatory infrastructure to support any and all strategies for improving Albania's water supply infrastructure.

The National Water Strategy, the Water Resources Law, and the Concessions Law will need to be in place so that the risk climate for private participation is minimized. The report presents a Legal Issues Checklist to be considered by the GOA as it sets about the task of developing the necessary legal/regulatory framework.

Financing Issues and Sustainability of Enterprise Structures

The study team's analysis indicates that while rates and revenues for the Durres and Tirana systems come close to addressing the direct operations costs, as presently accounted and funded, they are not adequate when, in applying conventional utility accounting practices, all costs associated with water supply are considered.

Where today the Durres and Tirana systems both show operating costs of approximately US$1.9 million, when full amortization of debt, and maintenance, repair, and replacement costs are accounted, total annual costs may approach US$4.3 million for Durres and US$8.6 million for Tirana. Therefore, there will be a continuing need to implement a stepped tariff (rate) increase tied to growth in the economy and individual incomes.

Since "full cost" accounting is essential to managing a utility, there will be a need, based on the above, for the GOA to provide for a transitional subsidy for the water systems of Durres and Tirana. This subsidy could be as much as 40 percent of the initial year's budgets.

Based on the pro forma developed for the rehabilitated systems, the rate structures for Durres and Tirana will have to be modified to more than double the current revenue from the system users in the first year, even with a 40 percent subsidy from the GOA.

Maximizing grants and loans from international lending institutions will be critical to leveraging Albania's ability to repair and rehabilitate its water systems during the early stages of the economy's growth.

Recommendations for Durres and Tirana District Water Works

The recommendations presented considered the specific social, economic, and political situation in Albania, in terms of the adaptation of a privatization option, as well as the need to effect immediate improvements to the system and service to the users.

Maintain Public Ownership of the Systems

An asset sale at the outset of the privatization process would only complicate the issue of attracting responsible privatization contractors, further increase the cost of services to the users, and provide no additional socio-political, economic, or service quality advantages over other privatization options.

Enact the Water Resource and Concession Laws as Soon as Possible

A firm statutory, regulatory, and institutional base is needed to implement most forms of privatization. Albania lacks both the essential foundations in law and regulation, and has no history to demonstrate fair and consistent behavior toward private investors. Formal procurement activities should not begin until that base is in place.

Prepare a Water Supply and Wastewater Master Plan for the Tirana Metropolitan Area

There should be only a minimal amount of capital expenditure made in the Tirana system until a comprehensive water supply engineering study is conducted and a master plan is developed to ensure that whatever capital funds are available are being cost-effectively applied to the priority problem areas. In addition, and simultaneously with the water supply analysis, a master plan for the wastewater system is also needed or the problems will only be compounded in this critical element of infrastructure.

In another USAID project for the MoCT, the Land Management Task Force (LMTF) completed a prefeasibility analysis on the water supply and distribution systems and the wastewater collection and treatment systems. The reader of this report is advised to refer to the information prepared for that project. In addition, an EU-funded team from Marseilles, France has also completed studies in this area and the reader should review this team's findings as well.

Implement Privatization Forms Aimed at Both Financial and Management Benefits

The forms of privatization best suited to Albania's needs are those that provide some level of capital financing participation by the privatization contractor, as well as management and operational expertise and, first and foremost, that improve the quality and delivery of service.

Select a Privatization Form that Supports Technology/Skills Transfer into Albania

Albania should manage the privatization process so that, over time, the capacity to provide water and wastewater privatization and contract operations services becomes more and more available as a domestic industry with direct Albanian ownership interests.

Target the Tirana and Durres Systems as Priority Pilot Project Areas

Albania should build its way to privatization by concentrating all of its available human resources on a successful initial project. The Tirana and Durres pilot is more than can be expected to be accomplished in a first effort and it is strongly recommended that no other privatizations be undertaken until this program begins to indicate success.

Implement One Privatization Arrangement for Both the Tirana and Durres Systems

The first water privatization project in Albania should be the most attractive one that can be structured in terms of creating interest in the minds of potential privatization contractors. It should also be as simplified as possible for the Albanian officials who will have to tender, negotiate, and monitor the performance of the services. A common contract form, and possibly a single award of both systems, would move to achieve these objectives.

Review Current World Bank Arrangements for Compatibility with Privatization Options Selected

Albania should move rapidly to develop and share its privatization strategy with the World Bank so that there are no unnecessary loan structuring problems created. In addition, the offer of the Italian Trust Fund to finance a privatization implementation program for Durres should be renegotiated into a combined Durres/Tirana program to ensure that adequate technical assistance, during the procurement planning and implementation process, is made available to the responsible Albania officials.

Maximize International Funding/Loan Sources to Meet Current Needs

The current and near-term revenue-generating capacity of the Durres and Tirana systems demands that the absolute cheapest cost of capital be used. International loans and grants should be maximized, while they are available, to "jump start" these systems and minimize the tariff burden on the users and the subsidy burden on the GOA.

Provide Subsidy Appropriation in National Budget for Tirana and Durres

The GOA should recognize the near-term financial needs of the Tirana and Durres systems during this period of transition and provide for adequate subsidies to these systems in the National budget. Such an action will also provide confidence in the minds of privatization contractors as they assess their risk in doing business in Albania.

Recommended Privatization Structure: Concession

It is recommended that Albania implement the concession form of privatization discussed in detail in the report. This form of privatization will effect immediate improvements in the operation of the systems, allow for the infusion of private sector capital for future system improvements, and facilitate the development of a domestic water and wastewater service industry.

This recommended form of privatization and its customization to the Albanian situation is outlined below.

Water Supply Operations Concession Concept Outline for Albania

Element	Requirement
Ownership	The systems would remain publicly owned, with policy, rate, and service delivery standards set and controlled by the implementing agency.
Basic Terms	The term of the concession would be defined as long-term (15-30 years), with reasonable termination and "buy-out" options for the agency. The concessionaire would assume full day-to-day operations and maintenance responsibilities. The concessionaire would assume complete management and administration of the water system, including billing and collection. The concessionaire would establish a cost-effective staffing level for system operation, maintenance, management, and administration. Initially, all existing employees would become employees of the concessionaire. The concessionaire would be contractually bound to a limited work force reduction rate that would be linear and over a defined period (e.g., 3-4 years). The concessionaire would be required to manage the implementation of near-term and future capital improvements. For an initial period (e.g., five years), those capital improvements would be funded as now anticipated. After that, outside funding would cease and the concessionaire would fund and own all future capital improvements, which would be transferred at no cost to the agency at the end of the concession term.
Concessionaire	The concessionaire would be required to be a joint venture between a foreign privatization contractor and Albanian interests. The Albanian interests would be required to "invest" human and professional resources in the joint venture, but would not be required to invest hard equity. The foreign partner would need to meet certain financial and experience standards to be considered qualified. A "passive" investor role would not be allowed. Initially, the concessionaire would be foreign-controlled (assumed to be approximately 80 percent ownership share). Over a scheduled period, ownership would gradually change to the point at which the Albanian interests would be at least equal to that of the foreign investor/partner. The foreign investor/partner would be required to retain a perpetual interest in the joint venture at no less than 20 percent ownership share until the end of the pilot contracts. At the point during the scheduled ownership transition period that 50/50 ownership sharing was realized, the concessionaire would be chartered to sell similar services within Albania.
Training and Development	In addition to operations, maintenance, and capital services, the concessionaire would be required to fully train all system operators to an extent equivalent to the operator certification levels existing in other countries and/or as mutually agreed.

Element	Requirement
Operations Risk	Consistent with established international standards, the concessionaire would assume virtually all cost and performance risks associated with day-to-day operations and management. Uncontrollable risks, including *force majeure* and change-in-law, would remain with the public sector. Operations risk would include labor and employee risks to the extent that the concessionaire has control over personnel.
Capital Risk	After the donor-agency-funded improvement work is completed and placed in service, the concessionaire would bear the risk associated with investing capital to fund planned, scheduled, and agreed-to capital improvements. The concessionaire would be responsible for procuring and managing the construction/installation of improvements and for their subsequent operation. At the end of the term of the concession, all privately financed improvements would be transferred to the responsible public agency identified in the agreement, at no cost.
Revenue Risk	The concessionaire would not bear revenue risk, either that associated with the collection of user rates and/or GOA subsidies or that associated with the payment of its annual service charges and fees by the public agency. Although the concessionaire would be responsible for the administrative aspects of rate collection, it would not be liable for collection efficiency, unless low efficiency was demonstrated to result from its negligence. Initially, the annual service charges and fees due to the concessionaire would be guarantied. Depending on the outcome of negotiations, that guaranty would be by way of a World Bank (or other international organization) or sovereign guaranty from the GOA. Over time, such guaranties would be reduced and eventually eliminated. Although the concessionaire would continue to operate on the basis of an annual service charge to the public agency, not based on collections themselves, the payment of that charge would then become an agency obligation, not a World Bank or sovereign responsibility.

Recommendations for Applying Privatization Countrywide

The recommendations presented below for the application of privatization on a countrywide basis are made with the strong caution that the pilot program for Durres and Tirana be initiated first and taken to a point that success is indicated. One option in this regard would be to identify a second pilot program that would address a dispersed, multi-system (less urban) area that could be integrated along management and administrative lines to form a cost-effective service scope for possible private sector participation.

Focus on Tirana and Durres First

The GOA should prove success on the Tirana and Durres projects and build an experience base at the GOA and local government levels before proceeding to any form of countrywide privatization.

Capital Improvement and Privatization Decisions Are Independent

Albania should maintain as aggressive a capital improvement program as possible, using international loans and grants, and not feel that privatization decisions need to be made first in every situation. Timing privatizations to follow a major capital improvement program is

logical in terms of ensuring that the new facilities will be operated and maintained at a desired standard and level of service. The goal of privatization is the improvement of system service; therefore, the GOA needs to assess how privatization addresses this in each case.

Success of Pilot Program Will Help Implementation of Urban Privatization Model

Once the urban privatization model is proven in the Durres/Tirana pilot, it will be relatively easy to structure other privatization deals for urban systems with similar population densities and levels of service. It will also serve to attract more interest from the privatization contractors who will have the benefit of assessing the first effort.

Start Privatization Planning in Parallel with Tirana and Durres Pilot Program

While privatization of the Durres and Tirana systems is underway and no other privatization projects are being implemented, the GOA can and should begin planning and prioritizing for other systems, adapting those plans as experience on Durres and Tirana is gained.

As planning proceeds, the following general guidelines should be considered:

- Non-Piped Systems: continue public ownership, contract out immediate improvements, contract out operations and maintenance services (e.g., scheduled maintenance, testing).
- Smaller Systems: consolidate to realize economies of scale, continue public ownership, contract out full operations and maintenance, fund improvements by government (local and GOA).
- Large Systems: continue public ownership, but position for private ownership if so desired in future years, contract out full operations and maintenance through long-term concession arrangements that include the private funding of system improvements, alone or in conjunction with funding from international institutions.

Conduct Privatization Planning along with National Water Planning Program

Privatization is not a solution option for improved water supply services that can exist in isolation from all of the other elements needed to implement a national water supply program. The GOA should move with all haste to implement its water planning program and put a National Water Strategy in place, so that all of the necessary regulations and institutional structures can be created to properly support and manage these solution options.

Consolidate Smaller Water Systems into Larger Administrative and Management Units

The GOA should also begin a consolidation planning process for smaller systems by using the basin management concepts contained in the draft Water Resources Law. This will either create the foundation for future privatization/contract operations opportunities or at least lead to more cost-effective operation by the public sector.

2 Introduction

The Government of Albania, and its various municipal and district local units of government, are facing a number of serious infrastructure issues that are placing great hardship on, if not endangering, a large number of citizens of the country. One specific area that has serious public health implications is that of the water supply and distribution systems, particularly in the major urban areas that are experiencing significant population growth due to migration of people from the rural countryside.

This particular infrastructure sector in Albania is near the point of physical collapse in terms of its ability to supply even the minimum needs of the urbanized society. The current condition of the water infrastructure sector in the urbanized areas of Albania can be attributed to the following:

- inadequate long-range planning and capital system investment;
- inadequate investment in maintenance, repair, and replacement of the installed system;
- inadequate and/or absent water use/conservation policies and procedures;
- total breakdown in the regulation and control of illegal connections to the transmission/ distribution systems; and
- absence of a full cost recovery tariff (user charge) system that would reflect true market costs of the commodity and stimulate societal behavior changes in the use (misuse) of supplied water.

Although Albania is considered a very poor country by world economic standards (average annual per capita income of less than US$500), its urban areas have a relatively high level of service coverage in terms of piped water supply with an estimated 93 percent of the population served. In a way, this only compounds the water sector problem and the risk to the urban population, since the growing urban centers are highly dependent on a piped system, which is increasingly at risk of failure.

2.1 Purpose of the Study

The purpose of this study is to present an analysis of privatization options that might be implemented by the GOA, by specific water authorities, or by local units of government as a means of capturing some of the benefits that have been demonstrated, in practice, to be derived from a privatized water utility operations. These benefits include, but are not limited to:

- reduced costs of operation;
- increased efficiency of operation;
- alternative capital investment options based on sound cost/benefit considerations;
- improved management control systems and procedures;
- improved customer service and service satisfaction; and
- improved water and water service to the customers.

The study was specifically limited to the unique characteristics and needs of the water systems of the cities of Tirana and Durres, with an added overview consideration as to how the Tirana and Durres framework might be applied to other areas of the country.

2.2 Approach to the Study

Although the study that lead to the options analysis required an assessment of the physical systems and their operation and maintenance, this report is not an engineering study, but merely uses the outputs of existing engineering studies as direct inputs in structuring the privatization options analysis.

In addition to the review of documentation and reports that existed on the two cities' water systems, emphasis was placed on meetings and discussions regarding the current operations and needs of the systems with diverse individuals at the MoCT and at water district and municipal levels. This process not only provided specific technical information that was needed to understand the systems, but it also provided for a better understanding of the political, social, and bureaucratic views of the privatization concepts and how they might be received and supported.

3 Assessment of the Durres District Water Works

The basis for making an assessment of the Durres District Water Works (DDWW) centers on a report titled *"Durres Water Supply Rehabilitation and Demand Management Project — Feasibility Study,"* dated December 1993, prepared for the MoCT, Housing and Territorial Adjustment of the Republic of Albania by C. Lotti & Associates of Rome and funded by the Commission of the European Communities. In addition, a document titled, *"Staff Appraisal Report — Albania-Durres Water Supply Rehabilitation Project,"* dated April 12, 1994 and prepared by the World Bank, was also used.

The existence of these two reports was invaluable in assessing the water enterprise in Durres, and selected data resulting from customer surveys in Durres were also used in the assessment of the water enterprise in Tirana, where similar data did not exist.

The assessment involved a thorough review of these reports, a meeting with the senior management of the water enterprise, and selected on-site visits to visible elements of the system.

3.1 Existing Condition of the System

3.1.1 Sources of Supply

The water supplies for the Durres water system are two major groundwater sources (Fushe Kuqe and Fushe Kruja) and one surface source (Erzen River). The Fushe Kuqe source is the most important of these, accounting for 80 percent of the overall capacity of the system, and the major source of any future needs for water in this area. Total water production from these sources is 68,760 cubic meters per day.

The Lotti report has identified specific needs at the well fields in terms of new well pumps, as well as new pumps at the Fushe Kuqe pump station.

The electrical and control systems at both locations need major upgrading as well as provision for secondary sources for electric power, either from an alternative feed or from installed, on-site emergency generators.

It is generally accepted that the Erzen River source will be phased out soon. It is more cost effective to increase the supply from the well fields than to properly treat the Erzen River, which carries untreated wastewater from the Tirana metropolitan area.

3.1.2 Transmission Mains

The transmission mains from the Fushe Kuqe and the Fushe Kruja well fields to the storage reservoirs in Durres are considered to be in generally good condition with the only major improvement needs being a new auxiliary parallel main from the Fushe Kruja well field to fully exploit the potential of that well field.

3.1.3 Storage Reservoirs

The four existing water storage reservoirs for the Durres water service area have a total storage capacity of 12,200 cubic meters, are all ground storage reservoirs, and are constructed of reinforced concrete. This storage capacity represents only five (5) hours of daily average production, which is below the normally desired level of eight (8) hours.

The Lotti report recommends an immediate addition of 2,000 cubic meters of storage at Reservoir No. 2.

All of the reservoirs are uninstrumented, with no inlet or outlet flow measurement devices, or water level indicating or recording instruments.

3.1.4 Distribution System

The water distribution system, including the service mains and the service connections to the users, is in a poor state of repair and is the major source of produced water loss. Of the total water production of 60,940 cubic meters per day delivered to the Durres system, roughly half (30,691) is lost to leakage and wastage. This amount of loss is experienced with service limited to 2-4 hours per day and at greatly reduced pressure. If service were 24 hours per day and at standard pressure, this loss would increase to as much as 80 percent of produced water.

A major rehabilitation project for the distribution system has been identified as a high priority in any program to increase and improve water service in Durres.

3.2 Operation, Maintenance, and Management

The water sector for the Durres metropolitan area is under the direction of the DDWW. The DDWW is responsible for the entire sector, from the operation of the well fields at Fushe Kuqe and Fushe Kruja and the Erzen treatment plant, through transmission and distribution to the urban areas of Durres and Shijak, as well as 55 villages in the Durres Municipal District, 3 villages in the southern part of the Tirana Municipal District, and a bulk supply of potable water to the Kavaja District Water Works.

3.2.1 Organization and Authority of the Durres District Water Works

The DDWW reports directly to the Ministry of Construction and Tourism through the Directorate of Water Supply and Sewerage Services in the MoCT. In this regard, it is not accountable to any local authorities, such as the Durres District, the Durres Municipality, or the Shijak Municipality. The DDWW has no Board of Directors as such and is managed, day to day, by a Managing Director, who is a qualified engineer with experience gained on the job in the operation of the water utility.

The DDWW does not direct its own capital programs nor does it have any authority over the setting of tariffs (water rates). Its capital expenditure decisions are made by the MoCT and the project management of capital programs is under the Institute for Infrastructure Design.

Within this type of organization, the DDWW is charged with maximizing the effectiveness of the available operations and maintenance budget and collecting the tariffs allowed under the national water rate structure.

3.2.2 Staffing and Skill Levels

The DDWW employs a total staff of 312 people, with 227 performing various technical/ operations/maintenance activities, 41 performing security activities, 36 performing billing, collection, accounting, and finance activities, and 8 performing Director and engineering activities. This is a large number of employees by Western standards for a comparably sized system. The Staff Appraisal Report by the World Bank presents the following comparative table to support that point.

Durres District Water Works Productivity

Indicator	DDWW	Western Std.
Employees/1,000 Connections	7.8	3.0
Employees/1,000 Population	1.8	0.8
Personnel Cost as Percent of Total Costs	10*	25-50

* Operation and maintenance cost data for 1994 would suggest that, on an actual cost basis, this figure is 18 percent.

The reasons provided by the World Bank report for the discrepancy included:

- the areal extent of the system (40 kms x 20 kms) makes it more costly and logistically difficult to transport employees between locations than to have them living in the area, even though they may not be fully used;
- low salary cost as compared to the cost of automation;
- pressure on GOA to provide employment; and
- low worker efficiency.

Although the educational standards of the various staff are generally satisfactory, there are no resources for formal training programs in the specific areas of water utility operation, maintenance, and management. Therefore, all training is *ad hoc*, on-the-job training which is not satisfactory in meeting the skill level needs of a growing and complex system.

3.2.3 Operations and Maintenance Performance

Operations and maintenance performance must be viewed in the context of a utility that does not generate the necessary revenues to support a planned maintenance program of both preventive and repair-and-repiacement maintenance. All work is done on an *ad hoc* basis, with staff responding to breaks and other emergencies as available repair materials, spare parts, and transport allow.

The net effect of this type of situation is a continuing decline in the level of maintenance, a degradation of the water supply assets, and a low level of service to the consumer.

3.3 Capital Investment Needs

The near-, intermediate-, and long-term needs of the Durres District Water Works, in terms of capital needs for repair, rehabilitation, and new assets, as well as institutional strengthening and water loss reduction programs, have been fully identified in the Lotti report and further analyzed in the Staff Appraisal Report of the World Bank. The World Bank report considered water supply, transmission and distribution, and a limited amount of sewerage needs in the Durres service area. The total amount of the investment needed to meet the Phase 1 near-term needs was US$19.5 million. The water portion of this investment was approximately US$18.0 million and half of this amount (US$9.4 million) was for urban network rehabilitation, which is critical to the restoration of normal service in the system.

The general consensus is that with this level of investment and with the successful implementation of the water loss reduction and institutional strengthening programs, a 24-hour-per-day water supply could be achieved by the Durres District Water Works.

3.4 Revenues, P&L, and Cost of Operations

3.4.1 Tariffs and Collections

The tariff for water (user rate) in Albania for domestic use is set by the GOA as a standard rate for all water systems. The tariff schedule for all users of the DDWW is as follows:

Domestic:	If working meter	5 lek per cubic meter
	If no working meter-volume based on the following factors:	
	6-24 hours service — 150 l/cd	
	2-6 hours service — 100 l/cd	
	0-2 hours service — 50 l/cd	
Institutions (government/public)/Commercial		50 lek per cubic meter
Hotels		50 lek per cubic meter
Joint Venture Industries w/Albanian Partner		40 lek per cubic meter
Individual Foreign or Albanian Industries		60 lek per cubic meter
Kavaja — bulk supply		4 lek per cubic meter

Water bills are issued monthly and distributed by hand by the meter reader who calculates the amount due based on the meter reading, where functional, or the known number of inhabitants in the house or apartment.

The DDWW management reported good collection rates with domestic customers at 90 percent, but complained that the payment rate of public institutions and industrial enterprises is

very low (approximately 65 percent). Since industrial users account for 50-60 percent of the operating revenues, this has a serious negative effect on collected revenue.

3.4.2 Financial Performance

The profit and loss statement for Fiscal Year 1993 for the DDWW showed total operating revenues of 119,663,700 lek (US$1.20 million), operating expenses of 105,084,338 lek (US$1.05 million), and, therefore, a reported operating profit of 14,579,362 lek (US$145,794). The reported improvements in financial performance were attributed by DDWW management to the increased tariffs imposed on the users. It would be unwise, however, to view any reported profits as realistic given the repair and replacement needs of the system and the overall low level of customer service.

Preliminary financial reports for 1994 show operating revenues of 92,093,000 lek (US$920,930) and operating expenses (without amortization) of 129,825,727 lek (US$1,298,257) or a loss for the year 1994 of 37,732,727 lek (US$377,327). According to senior management at the DDWW, this loss resulted from higher operating costs, particularly in power.

Clearly, 1994 revenues were down compared to those of 1993, by some 27 million lek (US$270,000) while collection rates, except for institutional/public users of the system, were quite good. Further analysis of this revenue fall-off is needed to completely understand the market dynamics affecting financial performance.

3.4.3 Analysis of Operations and Maintenance Costs

The largest share of the operating expense budget is for electricity, which accounts for 70 percent of the budget. The current power rate charged to DDWW is 2.12 lek per kilo-watt-hour (KWH). DDWW has seen increases in this rate recently, but it is still below the international border price of approximately 2.9 lek per KWH. All future budgeting and rate setting must be based on the market price (border price) for electricity less any discounts that any other large user might enjoy. Emphasis is needed to reduce the current level of power consumption.

Salaries and wages account for 18 percent of direct operating expenses. The staffing levels at the DDWW are significantly higher than Western standards for comparable systems, but the current low salary rates do not make that staffing level a major cost factor. The need to increase salaries to attract, retain, and motivate competent workers will begin to drive this cost up faster than the rate of domestic inflation and, therefore, work force downsizing should be included in the near-term financial plan.

Current monthly salary levels range from engineers at 9,500 lek per month (US$95) to laborers at 6,000 lek per month (US$60).

Maintenance/repair/replacement accounts for less than 5 percent of the direct operating expense budget and that is reflected in the condition of the system assets.

4 Assessment of the Tirana District Water Works

The assessment of the Tirana District Water Works (TDWW) required a significantly greater data development and analysis effort than that required for the Durres District Water Works, since there were no reports available on the system similar to those for the DDWW. Since this study is focused on the development and analysis of privatization options, it was not intended that it would undertake the level of engineering that is necessary to properly develop and estimate the type of rehabilitation and new facility investment program that is needed in the TDWW.

To overcome this lack of a system master plan, facility needs analysis, and capital budget program, the study team had to rely heavily on the perceived needs as identified by various professionals in the MoCT and the TDWW, as well as population data that was being developed by PADCO, a planning firm which is under contract to USAID and which is conducting a land management plan for the Tirana metropolitan area.

To the extent that it was practical, information and observations made in the report for the DDWW were also applied to the TDWW when no other more site-specific data or information was available.

There is little doubt that a feasibility study of the type and detail conducted for the DDWW is needed immediately for the TDWW so that a cost-effective rehabilitation and new facility construction program can be developed and a financing plan decided. Absent such a study, it is impossible to direct a capital program that will properly apply the available funds (grants, loans, TDWW investments) toward the most cost-effective uses.

4.1 Existing Condition of the System

4.1.1 Sources of Supply

The water supplies for the TDWW come from a combination of natural springs at Selita, Shen Meri, and Buvilla and groundwater well sources at Berxulli, Laknasi, and Pishina. The natural springs are the more productive of these two source types but demonstrate significant seasonal flow reduction in the summer months. The following table presents the flow information that could be gathered on these sources of water supply.

Tirana District Water Works - Water Supply Sources

Name	Flow (liters per second)	
	Maximum	Minimum
Selita	447	250
Shen Meri	870	360
Buvilla	391	140
Berxulli	147	147
Laknasi	117	117
Pishina	110	110
	2,082 l/s 182,477 m^3/day	1,124 l/s 97,114 m^3/day

The population data provided by PADCO for 1994 is as follows:

	Registered	Unregistered	Total
City of Tirana	315,111	10,090	325,201
District of Tirana	136,687	12,585	149,272
Total	451,798	22,675	474,473

The agreement among MoCT staff is that the following water usage factors should be used in determining water supply needs of the TDWW.

All uses of water:	250 liters/person/day
Residential/Institutional	150 liters/person/day
Industrial/Commercial	100 liters/person/day

Based on the population figures provided for the City and the District (474,473 people) the daily average water demand under normal supply conditions and 24-hour-per-day service would be approximately 119,000 cubic meters per day. As can be seen from the water supply sources table, this demand could be easily met during an estimated eight months of the year, but would be strained or could not be met during about four months of the year.

Based on the above, and in light of the fact that the population growth in the Tirana metropolitan area will continue for the next several years, driven primarily by population migration from the rural areas, additional sources of supply to the TDWW will be needed, even after a system-wide rehabilitation program has been fully implemented. This need is being addressed by the construction of a new dam and surface water reservoir on the Buvilla River, north of

the City of Tirana. It was stated in meetings with MoCT professionals that this new supply source will be able to produce a dependable average flow of 1,800 liters per second, thereby increasing the current summer water supply production by 150 percent.

The condition of the well pumps and the pump stations at the well fields were described by TDWW senior management as in need of serious repair and/or replacement. It was also mentioned that there is a need for a secondary source of power, either from a different central generation and transmission network or from on-site, stand-by generators at each of the major pump stations.

4.1.2 Transmission Mains

Similar to the Durres District Water Works, the TDWW transmission mains from the sources of supply to the service reservoirs are considered to be in reasonably good condition. However, they also lack any form of flow measurement instrumentation, with all measurement occurring at the service reservoirs where periodic manual measurements are made at inlet weirs to the ground storage reservoirs.

The new supply source that will be available, once the Buvilla dam and reservoir project is completed, will also include a transmission main to a new water treatment plant to treat this surface source, as well as new transmission mains to move the treated water into the TDWW system as follows:

1. New Buvilla Reservoir to New Water Treatment Plant
2. New Water Treatment Plant to Rruga Siri Kodra
3. New Water Treatment Plant to Kinostudio Service Reservoir
4. Kinostudio Service Reservoir to Student Town Service Reservoir

4.1.3 Storage Reservoirs

The TDWW has four ground storage reservoir locations within the City of Tirana system at Kinostudio, Students Town, Pupils Town, and Kombinati Zone, with a total storage capacity of 31,500 cubic meters. If it can be assumed that they are dedicated to service inside the City of Tirana, then the average daily water supply demand for that population is approximately 81,000 cubic meters per day and the rule of thumb of eight hours storage would be satisfied. However, without a proper hydraulic study of the system, the truth of this statement cannot be known.

It was the opinion of senior management at the TDWW that an additional 4,000 cubic meters of service reservoir storage were needed at Nxenesve.

The Buvilla dam and reservoir project will include a 30,000-cubic-meter reservoir at the new water treatment plant. Assuming that the system hydraulics will allow this stored quantity of water to be properly distributed throughout the system network, the TDWW would appear to have more than sufficient storage to meet its water supply demand needs.

All chlorination of the water supply occurs at the ground storage reservoirs. The TDWW is manually batch dissolving hypochlorite and using a very crude dilution and addition technique that can no longer be considered acceptable to meet the public health needs of a growing metropolitan area.

All ground storage reservoirs need to be rehabilitated with state-of-the-art chlorine dosing and mixing systems or alternative disinfection technology.

4.1.4 Water Treatment Plant

Although no water treatment plant exists today in the TDWW system, the Buvilla dam and reservoir project includes a mechanical flocculation and filtration plant at Babru with a design flow of 1,800 liters per second. This facility, which is planned to be on-line by June 1996, will represent a significant technology leap and challenge for the TDWW, since there are no large-scale water treatment plants in the Republic of Albania.

4.1.5 Distribution System

Similar to the DDWW system, the distribution system in the TDWW is in a poor state of repair and is the major source of produced water loss. Even with no available distribution system analysis studies as a reference, it is generally believed that well over 50 percent of the produced and pumped water is lost or illegally taken.

Service is limited to no more than six hours per day and, at that, it is not possible to pressure the system to provide service in many parts of the City above the second floor level of apartment buildings.

Again, it can only be emphasized here that a major distribution system analysis must be performed so that a cost-effective repair and rehabilitation program can be developed, costed, and implemented. Without that, the new water supply source at Buvilla and the new water treatment plant will be of very little real consequence.

4.2 Operation, Maintenance, and Management

The water sector for the Tirana metropolitan area is under the direction of the Tirana District Water Works. The TDWW is responsible for the entire sector, from the operation of the well fields at Berxulli, Laknasi, and Pishina, and the natural springs at Selita, Shen Meri, and Buvilla, through transmission and distribution in the Municipality of Tirana, as well as in the Tirana Municipal District.

4.2.1 Organization and Authority of the Tirana District Water Works

The TDWW reports directly to the Ministry of Construction and Tourism through the Directorate of Water Supply and Sewerage Services in the MoCT. In this regard, it is not accountable to any local authority, such as the Tirana Municipal District or the Municipality of Tirana. The TDWW has no Board of Directors as such and is managed, day to day, by a

Managing Director, who is a qualified engineer with experience gained on the job in the operation of the water utility.

The TDWW does not direct its own capital programs nor does it have any authority over the setting of tariffs (water rates). Its capital expenditure decisions are made by the MoCT and the project management of capital programs is under the Institute for Infrastructure Design.

Within this type of organization, the TDWW is charged with maximizing the effectiveness of the available operations and maintenance budget and collecting the tariffs allowed under the national water rate structure.

4.2.2 Staffing and Skill Levels

The TDWW employs a total of 508 people, with 353 performing various technical/operations/maintenance activities, 61 performing security and miscellaneous activities, 65 performing finance activities, which are largely meter reading, billing, collections, and accounting, and 29 performing management and administrative activities. Using the same criteria of Western standards for productivity used by the World Bank in its Staff Appraisal report for the Durres District Water Works (presented in Section 2 of this report), the following can be determined for the TDWW.

Tirana District Water Works Productivity

Indicator	TDWW	Western Std.
Employees/1,000 Connections	7.4	3.0
Employees/1,000 Population	1.5	0.8
Personnel Cost as Percent of Total Costs	44.7	25-50

The reasons provided by the World Bank in its Appraisal Report for the Durres District Water Works regarding these productivity criteria and their comparison to the Durres ratios could also be applied to the Tirana District Water Works. Restated, these were:

- the areal extent of the system makes it more costly and logistically difficult to transport employees between locations than to have them living in the area, even though they may not be fully used;
- low salary cost as compared to the cost of automation;
- pressure on GOA to provide employment; and
- low worker efficiency.

4.2.3 Operations and Maintenance Performance

Operations and maintenance performance must be viewed in the context of a utility that does not generate the necessary revenues to support a planned maintenance program of both preventive and repair-and-replacement maintenance. All work is done on an *ad hoc* basis, with

staff responding to breaks and other emergencies as available repair materials, spare parts, and transport allow.

The net effect of this type of situation is a continuing decline in the level of maintenance, a degradation of the water supply assets, and a low level of service to the consumer.

In the Tirana metropolitan area, this is particularly compounded and aggravated by the dramatic impact of the population migration to the capital city from the rural areas. Along with this is the nearly uncontrolled development of residential areas, without proper permits and related infrastructure service planning, such that illegal connections to the water system are commonplace with little or no enforcement to prevent this behavior.

This type of environment only further undermines the ability of the TDWW to provide even a minimal degree of operation and maintenance service.

4.3 Capital Investment Needs

As stated earlier in this section, there was no readily available documentation in the form of studies or reports to establish a basis for quantifying the capital needs for the TDWW for repair, rehabilitation, and new assets, as well as institutional strengthening and water loss reduction programs. What will be done in this section is to list the known projects or needs identified by professionals at the MoCT or the TDWW and assign an estimated capital cost to them. In addition, for the general area of distribution network repair and rehabilitation, a correlation will be made between the known, planned expenditure for the Durres District Water Works and the ratio of the two systems.

Tirana District Water Works
Identified Capital Projects/Investments (US$)

1.	Buvilla Dam and Reservoir, Transmission Mains, Treatment Plant, and Storage Reservoir	23 million
2.	Well Pump and Pump Station Repair and Replacement	2 million
3.	Additional Storage Reservoir Capacity and New Chlorination Equipment	2 million
4.	Alternative Power Source or Standby Power	1 million
5.	Distribution Network Repair and Rehabilitation	18 million
6.	Institutional Strengthening and System Master Plan	4 million
7.	Water Loss Reduction	1 million
	Total	51 million

The assumption is that this level of capital investment, along with the successful implementation of the water loss reduction and institutional strengthening programs, will result in 24-hour-per-day water supply throughout the Tirana District Water Works system at the current demand.

4.4 Revenues, P&L, and Cost of Operations

4.4.1 Tariffs and Collections

The tariff for water (user rate) in Albania for domestic use is set by the GOA as a standard rate for all water systems. The tariff schedule for all users of the TDWW was reported as follows:

Domestic:	if working meter	5 lek per cubic meter
	if no working meter-volume based on the following factors: 4.5 cubic meters/month/person (8 months) 2.0 cubic meters/month/person (4 months-summer)	
	Institutions (government/public)/Commercial	20 lek per cubic meter
	Joint Venture Industries w/Albanian Partner	40 lek per cubic meter
	Individual Foreign or Albanian Industries	60 lek per cubic meter

Water bills are issued monthly and distributed by hand by the meter reader who calculates the amount due based on the meter reading, where functional, or the known number of inhabitants in the house or apartment.

The TDWW reported that their records show 65,000 connected and billed dwelling units in the Municipality of Tirana.

The population data for the Municipality of Tirana suggests 325,201 registered and unregistered inhabitants. At an occupancy level of 4.3 people per dwelling unit (the factor being used by the PADCO land management study consultants), this data would suggest that there are 75,628 dwelling units in the Municipality of Tirana, or 10,628 illegal and unbilled connections/users of the water system. Finding a way to bill and collect from these users, illegal or not, would increase domestic water revenues by 16.4 percent.

The TDWW management reported good collection rates with the domestic customers at 90 percent or above, but, similar to the Durres District Water Works, complained that the payment rate of public institutions and industrial enterprises was very low.

4.4.2 Financial Performance

At the time of the study, official profit and loss statements for Fiscal Year 1993 for the TDWW were not available. Preliminary financial reports for 1994 were made available and they showed operating revenues of 216,680,000 (US$2.17 million). This figure includes 45,000,000 lek in revenue from the Albanian Power Company (KESH) for use of water (hydraulic drop), coming from high elevation natural springs, to generate power. The revenues from actual billings, therefore, is estimated to be 171,680,000 lek (US$1.72 million).

Operating expense data provided for 1994 totals 126,246,462 lek (US$1.26 million), which results in an operating profit of 90,433,538 lek (US$0.90 million).

More work is needed to fully understand the revenue and expense accounting for the TDWW. Clearly, this would be part of the scope of conducting a system-wide analysis and developing a capital improvement program. The profitability of the system is not reflected in the condition of the system and the operating service to the customer.

4.4.3 Analysis of Operations and Maintenance Costs

Unlike the DDWW, where electricity is its major cost since Durres must pump all of its water from wells and then on to the distribution system, Tirana enjoys substantial natural spring water supply sources at high elevations such that the water is conveyed to the city by gravity. Therefore, the labor and power costs are about equal for the year at 56,000,000 lek.

Salaries at the TDWW are, on average, nearly 50 percent higher than those at the DDWW (7,480 lek per month versus 4,714 lek per month), which reflects the higher salaries in the more urbanized areas.

Repair and maintenance is currently at 9.6 percent of the operating budget and that is reflected in the condition of the system assets.

5 Financial Analysis of Upgraded Systems

This section of the report attempts to establish a financial starting point for upgraded water systems in Durres and Tirana that would meet the current user demand. As defined in previous sections of this report, this would be a system with sufficient capital improvements to deliver the current daily demand flow on a 24-hour-per-day basis, and at a pressure sufficient to be available at all end-user taps (faucets, etc.).

A number of assumptions have been made in this section of the report, based on existing, known data, to arrive at an operating and maintenance cost for the improved systems. These assumptions have not been established by consensus with MoCT and Water District management, but rather reflect the best estimates of the authors of this report.

5.1 Durres District Water Works

5.1.1 Timing of Capital Needs

The capital improvement program for Durres, to meet the current needs, will take place over a four-year time span. The consumption of this capital (draw down), as well as the servicing of the debt, are used in Section 6.7, Financial Issues and Financial Plan, of this report to analyze the issues facing the DDWW in its efforts to be a self-financing utility. The following reflects the capital improvements needs program as presented in the Lotti report for Durres, as well as estimates developed and presented in the World Bank Staff Appraisal Report.

Durres District Water Works
Capital Improvement Program Timing
(US$000)

1994	1995	1996	1997	Total
3,017	7,778	5,334	1,871	18,000

Although it is recognized that additional capital investment in the system will be needed in the future, it is assumed at this time that these capital needs will be based on additional users or operating cost efficiencies, which would justify the capital investment. Consequently, these future capital needs are not a part of this report.

5.1.2 Operations and Maintenance Costs

As stated earlier, a series of assumptions was needed to establish a basis for future operations and maintenance costs. These assumptions are stated as follows:

- The work force will be reduced by 40 percent (from 306 people down to 184 people).
- The average annual wage will be increased by 20 percent (from US$754 to US$905).

- Power consumption will remain constant, but power costs will be 90 percent of border prices (2.9 lek per KWH) or 2.61 lek per KWH, versus the current cost of 2.12 lek per KWH.
- Disinfection chemicals will be held constant at 1994 usage.
- The annual budget for maintenance, repair, and replacement will be 1 percent of the replacement value of the asset base after the currently planned capital improvements. The study used the World Bank estimate of existing asset replacement value at US$47.8 million plus the US$18.0 million in currently planned improvements.

Based on the assumptions above, the following operations and maintenance budget has been estimated for the DDWW going forward.

Durres District Water Works
Estimated Annual Operations and Maintenance Budget
(US$)

Labor (including social costs)	167,000	(8.2%)
Power	1,094,000	(53.8%)
Disinfection Chemicals	64,000	(3.1%)
Maintenance/Repair/Replacement	658,000	(32.4%)
Other	50,000	(2.5%)
Total	2,033,000	(100.0%)

5.2 Tirana District Water Works

5.2.1 Timing of Capital Needs

The capital improvement program for Tirana, to meet the current conditions, is estimated to take place over a six-year time span. The consumption of this capital (draw down), as well as the cost of capital (debt service), are used in Section 6.7, Financial Issues and Financial Plan, of this report to analyze the issues facing the TDWW in its efforts to be a self-financing utility.

As stated in Section 4, Assessment of the Tirana District Water Works, there were no comprehensive engineering reports on the TDWW system to identify the specific facility needs of the system and to quantify a capital investment program. The authors of this report have used the input of various professionals at the MoCT and the TDWW, as well as personal assessment, to establish a use of capital funds schedule as follows:

Tirana District Water Works
Capital Improvement Program Timing
(US$000)

1995	1996	1997	1998	1999	2000	Total
11,000	20,000	8,000	6,000	3,000	3,000	51,000

Although it is recognized that additional capital improvements in the system will be needed in the future, it is assumed at this time that these capital needs, and the associated investments, will be justified by additional users or operating cost efficiencies. Consequently, these future capital needs are not a part of this study.

As stated above, until a thorough engineering analysis is made of the current demands of the system, and the specific facility needs to meet those demands are identified and quantified, the capital program presented above can only be a general estimate.

5.2.2 Operations and Maintenance Costs

As stated earlier in this report, a series of assumptions was needed to establish a basis for future operations and maintenance costs. These assumptions are stated as follows for the TDWW system:

- The current work force level will be reduced by 30 percent (from 508 people down to 356 people). This assumed reduction is less than that used for the Durres system to reflect the need for new staffing that is estimated to be needed at the new Buvilla water treatment plant.
- The average wage will be increased by 20 percent.
- Power consumption will be increased by 10 percent to reflect the new water treatment plant and the power cost will be at 90 percent of the border price of 2.9 lek per KWH (2.61 lek versus current cost of 2.3 lek).
- Disinfection chemicals will be doubled over 1994 usage.
- The annual budget for maintenance, repair, and replacement will be 1 percent of the asset base of the system, after the capital improvements. For purposes of this report, the assumption for asset replacement value of the existing system is US$80 million plus US$51 million in estimated capital improvement needs.

Based on the assumptions above, the following operations and maintenance budget has been estimated for the TDWW going forward.

Tirana District Water Works
Estimated Annual Operations and Maintenance Budget
(US$)

Labor (including social costs)		474,000	(17.7%)
Power		698,000	(26.0%)
Disinfection Chemicals		100,000	(3.7%)
Maintenance/Repair/Replacement		1,310,000	(48.9%)
Other		100,000	(3.7%)
	Total	2,682,000	(100%)

6 Privatization Options Analysis

6.1 Scope Definition

The manner in which any form of privatization will be implemented will be influenced by the scope of the project(s) that are subject to privatization. The final scope will in turn be influenced by two aspects:

- the organization for the direction of the project(s); and
- the extent of privatization within the project(s) or service areas.

6.1.1 Organization

The following considerations are based on the study team's understanding that a prime objective of the GOA is to relieve the national government of the burden of water supply financing and management, country-wide and over time, to transfer authority and responsibility to governmental levels that are closer to the water-consuming public, and, most importantly, to improve the quality of water and the level of service delivery. In the specific cases of Durres and Tirana, a related objective is to achieve this transition in the near term and to use the cases as models for the transition of other systems to local control. An integral part of this is the GOA's retention of regulatory powers.

Transfer of Authority and Responsibility to More Local Units of Government

If the GOA is going to move principally to a standards-setting, compliance, and enforcement role relative to the water supply systems of Albania, it is critical that there be a transfer of authority and responsibility for water supply from the GOA to more local units of government. These units of government may be the current municipal or district units or special purpose units of government as proposed in the draft Water Resources Law. This law has been drafted and needs to be enacted by the Albanian government. The draft law contains a basin management structure that would be very helpful in delegating authority and responsibility down from the state level and for planning and overseeing the implementation of any privatization options.

This transfer should be codified in statutes rather than implemented by way of decrees or directives. The National Water Council should retain sufficient latitude to adjust the boundaries and delineations of the systems over time as needs would dictate.

The essential element of this transfer is the adequate empowering of those local units of government. In addition to authority and responsibility, they should be granted, in law, the full power to implement and manage water supply, to borrow money (issue debt), to construct, manage, and operate systems, to enter into contracts (including privatization arrangements), to enforce local water use regulations and standards, and to set, change, collect, and manage revenues.

Efficient Consolidation of Water Supply Systems

As the GOA, or its more local units of government, consider privatization options more broadly in application, serious thought must be given to the consolidation of systems in somewhat close proximity to each other so that various efficiencies and economies of scale can be achieved. This consolidation need not suggest that systems need be physically connected *per se*, but rather that integration in terms of financing, administration, and management, rate setting and collection, contracting operations, and similar financial and management functions will improve efficiency, and also make the overall service scope attractive to a potential private operator.

Consolidation will:

- reduce costs and improve management through the application of centralized management and administration techniques, which both reduces overhead costs by eliminating duplication and enhances control;
- enable the application of operating practices, such as highly mobile teams of highly trained operators for operations, preventive maintenance, and emergency repairs, which can reduce the need for fully staffed operations at each plant or system component site; and
- facilitate the maximum use of computers, remote operational system controls, centralized and more efficient billing, record keeping, etc.

The Government of Albania's Water Supply Responsibility in Transition

The GOA's transition in its role in water supply, from that of managing virtually all supply-related activities in the country to acting as the health and environmental regulator and setting water quality-related standards and enforcing them, will not occur overnight and will be different for various parts of the country as responsibilities shift and options, such as privatization, are implemented.

For the pilot projects in Durres and Tirana, this transition will need to be addressed more immediately. Until the nationwide planning is more complete and alternative management and financing approaches, if any, are adopted for other areas and systems, the GOA would probably continue its current functions and responsibilities.

In its regulatory role, the GOA would set standards for the quality of potable water and water supply service, which would become terms of any procurement process, and would establish adequate monitoring mechanisms, but would not dictate the specific technology, design, or operational strategies that the various units of government would apply to achieve them. It would also not set or control rates and revenues, which would also become a local function. The GOA should establish its regulatory policies and strategies independent of selecting a privatization option. Good regulatory policies and strategies are required no matter which privatization option is selected.

However, since it is assumed that the GOA will have a guaranty role regarding the capital financing and revenue risk of systems that choose to privatize their operations in the near future, some continuing near-term oversight over rates will be appropriate. This oversight role could take the form of monitoring the local implementing agency or unit of government to ensure that it adheres to agreed-to rate formulas, rather than the direct GOA setting and adjustment of rates. This could be achieved through a GOA approval process under which an agency, such as the National Water Council, would approve contract terms and conditions, including rates, in the first instance. Therefore, before a privatization contract could come into effect, it would be GOA approved. However, once that approval was obtained (including formulas and criteria for setting and changing rates), there would be no more direct GOA involvement (for example, no annual reviews) unless there were material changes to the contract.

GOA oversight of this nature may also be reasonable since there is no experience in Albania with privatization concepts, and this type of approach would give some level of GOA control over projects, without a continuing, direct role in project specifics. If such GOA involvement is desired, there will need to be some balancing between, on the one hand, the primary objective of transferring authority to local levels and, on the other, any withholding of the power needed at those levels to effectively deal with water supply matters.

6.1.2 Extent of Privatization and the Subsystem Work Scope

As the GOA assesses its options in the application of privatization for the country's water systems, it will need to consider the scope of privatization as it applies to the entire system's structure, the investment needs and sources, the adequate provision of water, and the waste-water impacts. For a variety of socio-political and technical reasons, which can only be determined by officials of the GOA, there may be sound reasons for elements of various systems to stay under the direct operational control of the GOA. For purposes of considering this issue by the GOA, a water system can be viewed as a series of discrete elements that include: sources of supply (wells, natural springs, rivers, and surface reservoirs), treatment facilities, pumping stations, transmission mains, service storage reservoirs, and distributions networks.

There are both policy and logistical considerations regarding this issue, which can be summarized as follows:

- From a policy perspective, given the public health and critical nature of water supply, it is important to determine whether certain elements of the system are too critical to be totally under the operational control of a private service provider. For example, should the sources of supply be privatized or managed more as a strategic national resource?
- From a logistical standpoint, it is important to consider what management and operational problems will arise if the systems are not under a single management. The key issue here is how well operations can be controlled if the public sector is responsible for and operates some elements of a system, while a private contractor operates other elements within the same system, with both functions ultimately integrated in an operational sense.

It is axiomatic that maximum benefits from privatization will accrue from the unified management and operation of a system. As consolidation leads to efficiencies of scale and improved management, so too does the inclusion of all system elements under one point of day-to-day management and operations control and responsibility.

The ability to impose responsibility and authority on a private contractor, and to extract strong and meaningful cost and performance guarantees, will diminish as fewer system elements are assigned to the contractor. The issue is simply one of control. The less control that a contractor has over a system, the weaker will be the guarantees it will be willing to provide. Day-to-day operations and maintenance coordination and problem solving will also suffer when two (or more) separate entities have responsibility over system elements.

The policy imperative relative to the GOA and the control of essential public resources can be effectively addressed at several levels as follows:

- The GOA owns the nation's water resources and, under the Water Law, specifies how the resources may be used and are to be protected.
- Under the concepts developed for Albania in this study, the GOA will maintain health and environmental oversight, assuring proper stewardship and protection of all water quality. This role allows for the enforcement of regulations and compliance with standards through enforcement powers, both criminal and civil.
- The GOA would also have a continuing project oversight and monitoring role, which will assure that contractors are performing in compliance with laws, regulations, and specific contract terms and conditions.
- Privatization contracts would have penalty, default, termination, and other provisions that would enable local agencies (and the GOA, in the case of a lack of enforcement by the local agencies) to enforce specific contract terms and conditions. This would include the power to remove and replace contractors, or terminate privatization altogether and return to public operations.

The issues related to the extent of privatization can be minimized as long as the GOA has a comprehensive National Water Strategy and Water Law in place and the necessary permitting regulations to allow for the proper control and protection of its water resources.

6.2 Service Scope Structures

6.2.1 Privatization Definition

Privatization has become a broadly applied term. While it was initially understood to mean the private ownership of what traditionally was a public facility or service, in practice the term has come to denote a wide range of approaches for private sector involvement in the provision of public services. This involvement can range from very limited participation, such as providing technical assistance and advice to a government agency, to the significant involvement found in private ownership and operation of a public service, such as water supply or waste management. Because privatization concepts are no longer limited to private ownership, the term "public/private partnership" (P/3) is often used.

Privatization is both a financing and a management concept. As a financing concept, it is a method for using private sources of capital rather than public funds to finance facilities and services. As a management concept, it is a method of delivering services to the public consumer, and is an alternative to the use of public resources, offices, and personnel to deliver the services. The management aspect of privatization is based on the philosophy that while government is responsible for assuring that certain services are provided reliably, it is not necessarily obligated to be the direct provider of such services.

The following matrix presents the principal privatization techniques and suggests various individual characteristics. The descriptions have been tailored to meet expected conditions specific to Albania. There are variations within each type and each can be tailored to meet the specific needs, conditions, and policies of the GOA. Following the matrix, there is a more in depth description of the selected approaches that are considered appropriate for the systems being studied.

Matrix of Principal Privatization Approaches

Privatization Approach	Initial Development and Financing	Ownership	Operations Risk/Cost and Performance	Management Risk	Billing and Revenue Risk	Capital Sources
Turnkey*	Private	Public	Public	Public	Public	Private development; public purchase at start-up
BOOT**	Private	Private	Private	Private	Negotiable; often public	Private for development and during contract term
Concession	Public	Public	Private	Private	Public	Private for capital improvements
Lease	Public	Public	Private	Private	Private	Private for capital improvements
Contract Operations	Public	Public	Private	Private	Public	Public
Contract Management	Public	Public	Shared	Shared	Public	Public
Service Contract***	Public	Public	Public	Public	Public	Public

Matrix notes:

* **Turnkey:** A private firm would design, finance, build, and start up a facility. Upon acceptance and commencement of operations, the public agency would purchase the facility for a pre-agreed contract price and operate it as a public project. A variation of this is "Build, Transfer, Operate," under which the private firm would finance and build the facility, transfer/sell it upon acceptance by the public agency, and then provide operations services under contract.

** **BOOT:** This term denotes "Build, Own, Operate, Transfer" (sometimes shortened to BOT — Build, Operate, Transfer) under which a private firm would design, finance, own, and operate a facility,

providing service under contract to a public agency. At a future date set in the contract, the owner would transfer the facility at no cost to the public agency, at which time the agency could assume operations or the private firm could continue to operate it under contract.

*** **Service Contracts:** These are short-term arrangements under which a public agency would engage a contractor to provide specified technical or management assistance services and, occasionally, limited operating services, such as billing and collection, construction planning, and program management, or the operation of discrete facilities, such as pumping stations. The contractor's risk is extremely limited, and the contracts do not involve any capital financing. Service contracts are attractive where the need for technical assistance or highly specialized operating services can be precisely and narrowly defined, and the period during which such services are needed can be defined. Compensation is usually on a time, lump sum, or cost-plus basis.

6.2.2 Primary Service Scope Options

Based on the approaches presented above, the following service scope options are considered to be most appropriate to the conditions prevailing in and the policies of Albania.

6.2.2.1 Contract Management

Under contract management, a governmental entity, such as a water district, would engage a professional firm to provide management services. The firm would act as the senior management of the system, but might also provide some engineering and technical services. Operations and administrative employees would remain public employees, but would work under the management, guidance, training, and direction of the professional manager. The public agency structure associated with the system would remain in place. Whether the manager or the agency would retain employee discipline and hiring/firing authority would be a negotiable item. The contract manager would oversee day-to-day system operations, and advise on planning and capital improvement issues. The arrangement could also include the contract manager's provision of management-oriented technology, such as computerized record keeping and maintenance scheduling, performance recording and reporting, and billing and collection.

The length of contract term under this option is open. Because no capital investment by the contractor is involved, contract terms can be as short as one year. Contract management arrangements may be very attractive where the purpose of private involvement is to provide a transition period during which staff development and operational improvements can be achieved in anticipation of the reintroduction of full public management and operations. Compensation is usually an annual fixed fee that is not based on technical factors such as supply volume or resource consumption, although incentives to the contract manager tied to technical parameters can be built into the contract.

Contract management represents the simplest and least intrusive approach to private sector involvement. The principal advantage is that it is a technique for benefitting from the capabilities of an experienced firm that is not disruptive in terms of employment practices and labor relations, administrative practices, and intra-governmental oversight and accountability. A key disadvantage is that because only senior management is private, the practicable ability to control and direct employees and to fully control aspects such as main-

tenance and repairs is limited. Because the contractor-manager would not have extensive control over operations, it would not be willing to provide the type of cost and performance guarantees that are possible under other approaches, and the public agency would bear more of the risks of costs and operations. However, even without such control, incentives for improved performance and cost reduction can be incorporated to some extent. Also, under the limited management role, the manager would not be responsible for funding capital works, and therefore the full cost of capital funding would fall on the agency. The agency would also bear all commercial risk regarding billing, collection and revenue flows, and adequacy.

6.2.2.2 Contract Operations

Under contract operations, a governmental entity, such as a water district, would engage a professional firm to provide complete system operations and maintenance services. The operator could also provide "back office" services, such as billing and collection, accounting, and financial management. While the system would remain publicly owned, all employees would normally become employees of the private operator, who would be totally responsible for their training, management, work assignment, direction, and discipline. The public agency would be relieved of all employment and personnel obligations. The operator would have the authority and responsibility to make all day-to-day operations and maintenance decisions, and would usually have a formal role in determining and implementing capital improvements and major repairs and replacements. Given the extensive control it would have over day-to-day operations (but not policy and financial matters), the operator would provide broad guarantees regarding the annual and long-term costs of operation and maintenance, as well as performance (i.e., quality of service parameters such as the reliability of water delivery and of water quality). In practice, contract operations arrangements typically include financial incentives for improved performance and cost reductions.

The length of contract terms is open. Because no capital investment by the contractor is involved, contract terms can be as short as one year, yet terms of 5–10 years are more common given the usual front-end costs of mobilization, training, management system installation, etc. Contract operations arrangements may be very attractive where the purpose of private involvement is to relieve the public agency of most of the burdens of day-to-day operations and maintenance. As with contract management, contract operations can also provide a transition period during which staff development and operational improvements can be achieved in anticipation of a reintroduction of full public management and operations. The arrangement could also include the provision of management-oriented technology, such as computerized record keeping and maintenance scheduling, performance recording and reporting, and billing and collection.

Compensation can be either an annual fixed fee or a combination of a fixed fee and charges based on technical parameters, such as supply volume, gallonage delivered, etc. **In the case of the systems under study, given the present state of water supply and distribution, it is anticipated that an annual fixed fee arrangement would be the appropriate compensation method, at least initially.** The contract could include provisions that would provide for

a transition to some technical parameter compensation as certain milestones were reached, such as scheduled capital improvements which lead to supply and distribution improvements, reliability, and predictability.

Contract operations is also similar to contract management in that the operator would not take commercial risk or assume capital funding obligations, both of which would remain with the public sector. However, the types of realizable guarantees are broader than those under contract management. Contract operations requires a more intensive transition period than does contract management because it involves the complete turnover of system responsibilities and employees to the contractor. In the case of the two systems, Tirana and Durres, this would include a transition period during which it is assumed that wages and salaries would be gradually increased to reflect prevailing private sector levels. Particularly, because of the transfer of employees to a private employer, the later transition back to public operations would be more difficult than under a contract management arrangement. In practice, contract operations represents a longer-term commitment to private sector involvement than does the simpler contract management approach.

6.2.2.3 Concession

The concession is an expansion of the basic contract operations approach. In addition to assuming all operational and management obligations, the concessionaire would have another obligation: that of financing (and owning) capital improvements and major repairs and replacements done over time. In the case of the Tirana and Durres systems, this obligation could include financing some of the capital improvements that are needed immediately to bring each system up to some minimum performance and operational level as a supplement to, or substitute for, the other financing sources anticipated. Concessions have certain aspects of BOOT transactions because the concessionaire would own the improvements it financed, transferring ownership at no cost to the public agency at some scheduled date in the future (somewhere between 15 and 30 years). As with contract operations, compensation could be a fixed fee or a fixed fee/technical parameter combination, but would also include an element for the recovery of the capital funded by the concessionaire.

The concession model offers all of the benefits of contract operation with the additional significant benefit of shifting the capital funding burden away from the public agency. However, the concessionaire's capital recovery need also places an added burden on the rate base and it usually becomes necessary to change a system to "full cost pricing" under which user rates and revenues cover all costs, both operating and capital. **In the absence of a proven, strong, reliable, and adequate rate base, the concessionaire may demand GOA or other guaranties on system revenues or directly on its annual compensation.** Because they involve private capital investment in addition to a full takeover of operations and personnel, concessions generally have longer terms than contract operation arrangements, and are more difficult to "unwind." They are usually 15 years at a minimum and can be as long as 30 years, and include requirements that, if the sponsoring government elects to terminate prior to expiration, a "buy-out" provision will come into effect that requires the government

to repay all unrecovered private capital invested. It may also require compensation to the concessionaire for lost future profits.

6.2.2.4 Lease

Lease arrangements are a variation of concessions. Under leases, the private operator would lease the system from the public agency and, in addition to assuming all operations and management obligations, pay annual rentals to the agency. Typically, the public agency would continue to finance capital improvements, but the lessee would take some commercial risk in terms of billing and collecting rates and revenues. The tariff level would be specified and controlled by the public agency. The terms of leases are generally somewhat shorter than those for concessions, but tend to have renewal options.

The lease payment could be sized, as a minimum, to fund future capital needs of the system plus any water utility functions that are still required but are not part of the initial scope of work of the lessee (private operator).

No privatization approach is risk-free to the public sector. Privatization contractors and their lenders and investors typically expect the public sector to bear certain risks, such as *force majeure*, change in law, and certain uncontrollable circumstances. While considering various potential approaches, the GOA must be aware that, while risks can be minimized through private sector involvement, they cannot be totally eliminated.

6.3 Candidate Selection Rationales

In focusing on the approaches described in detail above, the study team was influenced by several factors that are considered to be unique to the situation in Tirana and Durres, and in Albania in general.

6.3.1 Current Condition of Facilities Discourage Asset Sale

In their present physical state and economic condition, the systems are not suitable for private ownership through an asset sale. When viewed as an investment opportunity, the seriously deteriorated condition of many system elements and the still-questionable economic viability of the systems as stand-alone operations, particularly after needed capital improvements are made, makes an ownership investment unattractive at this time. The absence of a private investment experience base in the country would also be a detriment.

6.3.2 Private Sector Could Help "Jump Start" Turnaround

Although the systems are not suitable for sales, there are capital, service, and performance improvement needs that are immediate and substantial. Thus, the private sector involvement approach might be one that can "jump start" that improvement process and from which benefits can be realized in the very near term.

Related to this topic is the question of how to start the process. The draft Water Resources Law provides emergency powers that enable the National Water Council to mandate certain

actions. It might be prudent to designate the Tirana and Durres situations as emergencies, and then for the Council to mandate privatization as a way to expedite the implementation of capital and operational improvements to both systems.

6.3.3 Limited Current Interest in Private Ownership

Private ownership does not comply with GOA public policy at this time and there is no compelling need to amend that policy. Although private ownership may be of interest in the future, it is not so now. However, should the GOA so elect, it can implement other forms of privatization and realize the benefits of private sector involvement (including many of the financial and capital investment benefits that would normally be associated with private ownership) without an asset sale.

In fact, proceeding now with such other forms would not preclude private ownership in the future. No privatization option implemented now would be irrevocable or unchangeable. Because any approach would be controlled and overseen by agencies of the GOA, policy changes in later years could be reflected in changes negotiated to the terms or types of privatization undertaken.

6.3.4 Private Ownership Could Increase Current Cost to Users

Private ownership, in fact, might result in higher costs in the near term. In addition to the costs of improvements to the systems that must be made immediately, the systems would incur the additional costs accounted for by the debt and equity used to purchase the systems in the first place. These could be as high as US$48 million for Durres and US$80 million for Tirana. Thus, the real potential for initially higher costs exists under private ownership scenarios, and this is counter to the policies of the GOA and its supportive financial institutions, such as the World Bank and the Mediterranean Environmental Technical Assistance Program (METAP).

6.4 Implementation Considerations

6.4.1 Project Scale

The ability to apply privatization techniques is influenced by the scope of a service or facility, and by related factors, such as geographic area served, population density, and prevailing service delivery techniques (for example, in areas that still get water from non-piped sources, privatization techniques could not be readily applied). These techniques may also not work effectively in areas of small population or low-population density or areas where individual points of service are distant from one another. **The worldwide experience with privatization has demonstrated that privatization techniques can be effectively applied in urban and similar high-density areas.** Rural applications, particularly in infrastructure services, may not be feasible.

A part of this influence of size and scale is the question of whether construction and capital investment are involved. It is often difficult to earn a reasonable rate of return on investments in very small projects or operations, which, as independent operations, may not be

economically viable without continued government intervention. Mobilizing construction and investment resources can be very expensive for investors, and it is difficult for small systems to provide adequate returns to warrant this exposure. **The availability of local capital, or the potential for the customer base to grow and the system to expand in the near term, or the ability to consolidate many small systems into one larger management and economic entity, even without physical integration, may mitigate this effect somewhat.**

The privatization approach that works well in one area or under one set of conditions may not be applicable in another context. If some form of privatization is selected for the Tirana and Durres systems, it should not be assumed that approach will apply to other municipalities and districts. While it may serve as a model of the effectiveness of privatization, the specific approach applied may not be appropriate to other areas.

6.4.2 Local Considerations

Depending upon local circumstances, there may be differences in the extent of a service or project that is subject to privatization. For example, it may prove out that the privatization of treatment, storage, and distribution facilities is feasible but that extending privatization at the same time to the sources of water supply is more difficult, or it may be shown that privatizing both supply and distribution is feasible, but that, while privatizing administrative functions, such as billing and collection and customer relations, is feasible, for local sociopolitical reasons, it is not desirable or achievable in the near future. The "cultural fit" of the privatization option must be appropriate. For example, it may be publicly acceptable for a private firm to operate facilities and handle technologies, but the public may demand that the "human element," such as billing or customer relations, remain with the government. These types of local conditions and imperatives can usually be accommodated and need not be obstacles to privatization.

Privatization applications may also differ based upon the type and extent of regulation that the government decides to impose. In some Western countries, the type of regulation and oversight imposed on privatized operations that involve entire water systems, from supply through to distribution to individual customers, is more extensive than that imposed on privatized operations that include, for example, only supply and treatment works.

6.4.3 Simultaneous Implementation

Given the pressing nature of the capital and operational needs of both the Tirana and Durres systems, the probability that the GOA will deal with many of the same lending sources for both, the newness of the concepts to the GOA, and the lack of in-country experience with their implementation, it seems prudent that the same approach be applied to both the Tirana and Durres systems, including basic loan and investment terms and conditions and system improvement and performance parameters. **Thus, it is important that, in addition to selecting an option that complies with GOA policies and resource capabilities, the selection be of an approach that, in its fundamental characteristics, is applicable to both systems, and, at least intuitively, more broadly applicable to other municipalities and districts.**

The simultaneous implementation of two different privatization approaches may overtax the resource capabilities of the GOA.

6.4.4 Governmental Resources

In considering the use of privatization, the GOA should perform an honest appraisal of its human resource and professional and technical capabilities and knowledge, as well as those of municipalities and districts, to undertake privatization. Is the training and knowledge base adequate to support implementation and long-term oversight and control, or is there is need for institution building and training prior to, or as the first step in, actual privatization implementation? Is the skill and experience level sufficient that implementation can proceed while additional training is done? A part of this capability is perception and philosophy. In addition to being adequately equipped, the governmental units and agencies involved need to have a supportive intellectual and policy orientation. Also, resources for long-term oversight and monitoring are essential. Given the extent of infrastructure needs country-wide, the GOA may, for example, decide that its management resources are better applied to contractor oversight and management in certain sectors, such as water supply, that, in turn, would lead it in the direction of some form of privatization in that sector rather than direct governmental involvement in development and operation.

Given available resources and the state of institutional development, the implementation of the first privatization projects may need to be managed at the State level, rather than the municipal or district level, until the necessary institutional and legal bases have been created and tested.

6.4.5 Public Acceptance

A critically important consideration is the public's attitudes, perceptions, and acceptance of privatization concepts. Regardless of economic and other benefits, privatization will be not be effective in the long term if the public does not accept the idea and support its use. Public opposition, if any, must be taken into account.

6.4.6 Institutional Timing Considerations

A critical ingredient in successful privatization projects is the private contractor's confidence that it will be dealing in a stable political and institutional environment. To demonstrate the existence of this environment, it would be prudent to formally adopt the National Water Strategy before any form of privatization is procured. This will accomplish two ends:

- The Strategy will set the foundation for water development nationwide, including the parameters for privatized projects. Privatization transactions can then be specifically tailored to comply with the requirements of the Strategy.
- The existence of the Strategy will be a very strong indication of the firmness of the institutional foundation for privatization, and will give potential contractors a high confidence level in the viability of the projects they will be proposing on, and that, in fact, the GOA is committed to project implementation.

6.5 Legal Issues

The timing of this privatization options analysis study conveniently coincides with the GOA's deliberations regarding two laws that are central to the consideration of privatization for the water systems: the Law on Concessions and Private Sector Participation and the Law on Water Resources. Included in this section is an inventory of threshold issues that will need to be addressed in the laws to support the application of privatization concepts. While they relate specifically to the water systems, generally they address the statutory and regulatory needs for privatization across a number of infrastructure sectors.

Because public policies regarding private sector involvement are still being deliberated, it would be prudent to establish as much latitude as possible in the enabling legislation so that a variety of privatization formats could be adopted, depending upon the specific circumstances associated with any one project. Enabling legislation that is now being considered should be as broadly applicable as possible, to preclude the need to amend it over time to accommodate different privatization formats that may gain favor. It should be noted that:

- making the law broadly applicable does not imply diluting government control; even legislation that provides for a wide range of approaches can — and should — still provide for adequate government oversight and control; and
- enacting legislation that enables privatization does simply that: it enables the State or municipal governments to undertake privatization transactions if the adopted policy is to do so. It does not mandate or direct privatization or any specific format. It simply enables transactions when and if a governmental consensus is reached to undertake them.

The following are offered for reference only. The extent to which they are already addressed in the draft laws, or are being deliberated now, is not reviewed. If they are not yet included, their inclusion should be seriously considered. They are provided in the format of a checklist so that during GOA deliberations, it can be readily determined whether individual rights, powers, authorities, or responsibilities have been addressed or need to be addressed. **The absence of these types of legal and regulatory infrastructure will discourage private sector participation based on a risk management assessment.**

The issues relate for the most part to contracting, finance, procurement, employment, and contract oversight and oversight matters. Issues related more specifically to environmental protection and public health are not addressed. Most are provisions that are essential to facilitate and support privatization transactions; others are powers and rights that the State may desire to have, to exercise at its discretion, but that are not, *per se,* essential to establishing an institutional foundation for privatization.

Legal Issues Checklist

Legal Basis	Addressed in Draft	Partially Addressed	Not Addressed
1. The ability of foreign-owned companies to do business in Albania and conditions placed on that (e.g., ability to do business on their own; ability to work through joint ventures with domestic firms; requirements for joint ventures with domestic companies; "local content" standards).			
2. The ability of foreign interests to invest private capital in projects and businesses in Albania and to repatriate returns and profits.			
3. The ability of foreign insurers to underwrite policies in Albania and to pay out proceeds directly to foreign firms (and domestic firms and joint ventures) in the event of losses.			
4. The ability of designated implementing entities (i.e., municipalities, districts, State agencies) to contract with private firms for the provision by those firms of water supply (and other infrastructure) services.			
5. The ability of designated entities to enter into long-term (i.e., 15-30 years) contracts with private firms and to bind and obligate succeeding administrations to the terms of such contracts.			
6. The ability of designated entities, under the terms of such contracts, to provide and honor "full faith and credit" guarantees, such as the payment of fees and charges to the private contractor or the availability of supplies (such as water) and to indemnify the private firm regarding such guarantees.			
7. The ability of designated entities to borrow money and incur long-term debt to pay for infrastructure construction, including the ability to borrow money for relending to a private firm.			
8. The ability of the State to provide both actual and contingent financial guaranties on the payment by designated agencies of service fees and charges due private firms for services provided and to provide "performance" guarantees and indemnifications.			
9. The ability to pay a private firm financial incentives for the achievement of service cost reductions or service quality improvements and/or enable a private firm to share in cost reductions achieved.			
10. The ability of foreign firms, both alone and through joint ventures with domestic companies, to finance, acquire, and/or own tangible and intangible property in Albania and to have their property rights fully protected under law.			

Legal Basis	Addressed in Draft	Partially Addressed	Not Addressed
11. The ability to apply and have accepted by the State internationally accepted accounting principles, through their codification in Albanian law.			
12. The ability of a designated agency to set rates and revenues for the provision of services (including services provided on behalf of the agency by private firms), to impose rates and revenues on residential, commercial, industrial, and institutional/government users, and to collect and adjust these rates and revenues from time to time.			
13. The ability of the designated agency to require connections to supply systems, withhold service as a penalty for nonpayment, levy other penalties, and pursue legal actions against illegal connections and theft of service.			
14. The ability of the designated agency to agree, through a contract with a private service provider, to set and adjust rates and revenues according to standards and levels contained in the contract.			
15. The ability of the State and/or the designated agency to delegate rate setting and collection to the private service provider and, if so negotiated, to guarantee to the provider, for a specified period, the level of rate and revenue collection.			
16. The ability of the State and/or the designated agency to dedicate specific revenues and revenue sources, both tax-based and non-tax-based, to the payment of fees and charges due private service providers.			
17. The identification of the State agency, **if any,** that will oversee and monitor the rate setting activities of designated agencies and establish public policies regarding the factors and circumstances under which rates may be adjusted over time.			
18. The ability of the State to grant tax incentives, such as property tax and income tax deferrals and franchise and sales tax exemptions, to private service providers, both domestic and foreign.			
19. The avoidance of negative tax (and/or accounting) consequences at the time when a private service provider transfers ownership of an infrastructure asset to a designated agency or the State (i.e., being either "tax neutral" or "tax positive").			
20. The ability of the State and/or the designated agencies to procure a spectrum of privatized goods, services, and facilities, and to do so through competitive negotiation rather than exclusively via sealed "lowest cost" bidding, and to procure services, including long-term contracts, under emergency, urgency, or other special conditions.			

Legal Basis	Addressed in Draft	Partially Addressed	Not Addressed
21. Clear description of any requirements or limitations placed on a private contractor regarding subcontracting for goods and services, including whether or not bids are required, "local content" is required and for what percentage of the value of a service being provided, and the requirements of the private contractor to guarantee the performance and obligations of its subcontractors.			
22. Clear differentiation of specific procurement procedures for different forms of privatization.			
23. Explicit power and authority of the State to provide water supply services, and at its discretion to enter into privatization arrangements to do so, and the power and authority of the State to delegate this power and authority to do both to other named levels of government (municipalities, villages, districts, multi-municipal entities, etc.)			
24. The ability of the State and/or designated agencies to "assign" water supply assets and obligations already in place or underway to private service providers, including the undertakings of international financing and development institutions and foreign governments.			
25. Explicit public/private dispute resolution procedures that comply with international standards, including rights to sue and be sued under an independent judiciary system.			
27. The ability of the State and/or designated agencies to exercise condemnation powers in order to construct and/or expand systems and provide service, and protection of private firms from unfairly compensated condemned or expropriated property and assets.			
28. The exemption of privatization arrangements from designations as illegal monopolies or from unfair competition or restraint of trade classifications.			
29. Procedures for the negotiated transfer of ownership of facilities from the private sector to the public sector.			
30. Provisions that enable the transfer of public sector employees to private employers, with appropriate protection of employee rights, including collective bargaining and pension vesting, including the ability of private firms to "lease" public sector employees, with no adverse impacts on the status or benefits associated with public employment.			
31. The ability of and procedures for the State and/or designated agencies to sell assets to private firms that will, in turn, use those assets to provide services to the public.			

Legal Basis	Addressed in Draft	Partially Addressed	Not Addressed
32. Consistency among State laws in terms of definitions and the granting of powers, authority, rights, and responsibilities regarding specific infrastructure services and facilities.			

6.6 Financial Sustainability of Enterprise Structures

6.6.1 Current Rate Structure Situation

Currently, revenues from both the Tirana and Durres systems are based on a rate structure that includes differing meter-based flat rates for differing classes of users, and includes a type of "equivalent dwelling unit" (EDU) charge where meters are not installed or working. Although these structures are not as complex as those frequently associated with systems in other countries, they are adequate for present purposes and represent a base on which a more complex structure can be built, if so decided. Although a more complex system would allow for greater "fine tuning" of rates for individual types of users, this is not necessary to assure a sound management basis for the systems. The structure in place is adequate and, unless a part of established loan agreement terms, there is no near-term need to adjust or expand it.

The questions of both the "technology" (e.g., meters, data processing) and the management capability of the systems' administrators to implement and administer a more complex rate structure are part of the considerations of whether to refine and further complicate the structure. **If some form of privatization is elected, however, one of the responsibilities of the private contractor could be to design, implement, and manage a new rate structure, including technology, while the implementing agency continues to set and adjust rates.** The contractor could provide the technical and management assistance needed, but would not have a role in the policy decisions regarding rate levels.

Of greater concern than the actual structure is the level of revenues raised through the rates levied. The study team's analysis indicates that while rates and revenues may be adequate to cover direct operations costs, as presently accounted, they are not adequate when, in applying conventional utility accounting practices, all costs associated with water supply are considered. That is, in addition to direct operating costs, the revenue from rates does not cover preventive maintenance, scheduled replacements and rehabilitation, and the already incurred capital costs for construction and future capital investments. Over time, this has resulted in a heavy subsidy from the GOA or the continuing degradation of the system. Thus, the systems are not stand-alone, self-sufficient (often called "self-liquidating") utility operations. Without substantial changes in the level of the rates, this will continue to be the case, and will draw GOA financial resources away from other infrastructure needs that, unlike water supply, do not have potential revenue bases.

The improvement of the systems in Durres and Tirana will significantly increase total system costs and revenue needs. Whereas today, primarily operating costs are accounted for, in time the cost structure will account for operations, capital, and repair and replacement costs. Cur-

rently, system costs are accounted for as US$1.3 million per year for both the Durres and Tirana systems based on 1994 preliminary financial results. According to the financial models developed for this study, when the full amortization of debt and repair and replacement costs are accounted for, total annual costs may approach US$4.3 million for Durres and US$8.6 million for Tirana. Over time, rates may need to be increased materially. The effect of increased per household consumption, while favorably benefitting rates, will also increase total per household spending for water, regardless of rate structure and rate levels. The timing of the gradual elimination of GOA subsidies and evolution to full cost pricing at higher rates needs to be considered in light of these factors.

A second concern is the "collection efficiency," the percentage of revenues that is actually collected from the rates charged. Although it is difficult to precisely determine current collection efficiency, there is a consensus among GOA officials that it is low, particularly in the area of public institutional and industrial users. Even though penalties for nonpayment are in force, that enforcement is not pursued. In part, this is an informal policy based on the belief that because service is not adequate, strict enforcement of rate collection would not be equitable. Until continuous service quality and reliability is established, this policy seems to be reasonable.

The question of which governmental levels will determine and manage rates will become pertinent as the GOA moves, as is planned, from a more centralized authority to a more decentralized, water-basin-based, authority structure. Particularly if some form of privatization is pursued, there will need to be a clear identification of the authorized levels of government and a clear articulation of the specific powers and authorities of those levels. **Ideally, the level of government that negotiates and enters into the privatization contract should also be the level with rate-setting power and authority.** This delegation should be broad, i.e., the designated agency should have the latitude to set and adjust rates as local conditions and specific local system needs dictate, without the need to comply with statutorily set arbitrary standards or parameters. As the responsibility for water supply is more and more delegated to lower levels of government, the authority to control rates and system economics should be comparably delegated.

6.6.2 Rate Structure and Rate Level Concerns

Given current system conditions and the uncertainty of the consumption patterns among various user classes that will be realized once supply quality is improved, it makes it difficult to postulate a future rate structure. As mentioned above, significant changes to the structure are not needed in the near future to implement programs, including privatization, that are aimed at water supply improvements. If changes and refinements to the structure are contemplated in the future, they should be made first to rates for large-volume commercial, industrial, and institutional users. For present purposes, there is no compelling reason to change the residential, commercial, and industrial user class structure.

Once supply reliability has been improved and attains a continuous level, and resulting user patterns can be predicted, it would be prudent to implement user fee structure elements

aimed at water conservation. For example, seasonal variances under which summer rates are higher than those in winter would encourage conservation. While premature now, in time, and without disrupting the basic structure for domestic use, it would be possible to amend industrial, commercial, and institutional rate structures to more accurately reflect consumption volumes.

It would also be possible in the future to apply innovative concepts, such as selling "water futures" or using special "tourist taxes" in high tourist areas, as sources of water supply revenues. Under a "water futures" scheme, the water supply agency would sell future capacity in the system; for an up-front payment from a private interest, such as an industry, it would dedicate a certain water volume to the futures buyer and would guarantee the availability of the supply in some future year. The up-front payment could be used for system capital purposes or other purposes. The tourist tax could be a small per room tax on hotels or a meals tax in restaurants. While small enough that it would not discourage tourism, it would be a way of shifting some of the direct cost responsibility to nonresident users, such as tourists and visitors.

Equity and affordability of rates is of greater immediate concern than is the rate structure itself. Several factors influence this consideration.

- There is a need in practicable terms to balance system economics and GOA policies regarding rate levels and affordability with the simple fact of the substantial and costly system improvements needed. Notwithstanding cost issues, the immediate improvement of water quality service is imperative and is of the highest priority. For the immediate future, potential policies regarding economic issues, such as rate levels, system self-sufficiency, and rate equity may need to be given a lower priority.
- The World Bank, one of the anticipated central participants in the funding of system improvements, generally sets a standard of affordability for water and sanitation service at 5 percent of disposable household income. While the Bank's study of the Durres system indicates that moving toward system self-sufficiency would not produce rates above that threshold, it does not reflect the potential that rates for wastewater service may be introduced. This might affect the Bank's conclusions regarding affordability. Also, while the study is comprehensive, the actual impact on rates will not be known until a procurement is undertaken that results in firm cost proposals and/or bids. This is particularly true when the privatizer will be required to provide equity for new facilities. The concern is whether there is any flexibility in that 5 percent standard, as one of the several requirements imposed on Bank lending, and in the timing for the scheduled transition to system self-sufficiency. Moreover, the results of surveys that indicate "willingness to pay" may be somewhat misleading in that they were conducted in the absence of a reliable high-quality water supply. Reality may be expected to be somewhat different.

6.6.3 Full Cost Pricing

The discussion of rate structures and issues leads to the consideration of full cost pricing, or the setting of rates so that they cover the full cost of water supply: capital, operations and maintenance, replacements, and rehabilitations over time. Full cost pricing is not in effect today on the systems, which are to a major degree subsidized by the GOA. Given present physical and economic conditions, State subsidies are not unreasonable. However, it is expected that in time public policy, as incorporated in the Water Resources and Concession laws, and GOA Directives, and as called for by key international lending institutions, will be to implement full cost pricing so that infrastructure sectors, such as water supply, will become self-supporting. In contemplating this, the very practical obstacles that will be encountered must be acknowledged. Given the magnitude of capital and operational improvements that are called for, the implementation of full cost pricing will, by necessity, be an evolutionary process.

It should be expected that, even if some form of privatization is applied, GOA subsidies will be required for the near term. This reflects both the economic realities of the need to gradually introduce rate increases in parallel with expected income stabilization and growth, and public acceptance issues. **Sudden and major rate increases may not result in increased collection revenues if the public resists them through nonpayment and collection efficiency suffers.** If some form of privatization is applied, continued subsidies will be needed in the early years (and longer-term GOA guaranties may be called for) until contractor comfort in the strength and reliability of the rate base can be justified through experience. Conversely, immediate full cost pricing is not necessary to implement privatization. From the contractor's perspective, the availability of GOA or other subsidies and guaranties would be an acceptable alternative to a strong rate base.

One unknown factor at this time is the affect of the assumed pent-up demand for water on water system revenues. It can be assumed that improved and reliable water supplies will create a demand for more water than is now consumed, especially for domestic and residential use. This should positively affect revenues by increasing consumption and thus revenue generation. However, if users cannot afford current user charges, then increased consumption will merely result in a decline in percent collections with little or no increase in revenues.

GOA subsidies would decline in direct proportion to the success of implementing full cost pricing. Each year, as rates were increased, collections under the new rates were stabilized, and the users' capacity to pay was demonstrated, the degree of subsidies or guarantees could be proportionately reduced. It could be during this evolution that refinements to the rate structure could also be implemented. **However, it should be noted that even as this transition is occurring over time, it may be several years before conditions are reached under which conventional project financing and privatization investment techniques can be applied without some form of financial guaranty from the GOA or another party.** The actual schedule for the gradual transition should not be determined without consultation with lenders and potential private contractors and investors. In the end, it will be their perspec-

tives regarding the economic viability of the systems and the rate bases that will influence such matters.

6.7 Financing Issues and Financing Plan

For the purposes of the pro forma analyses, it was assumed that the lending and grant arrangements contemplated for Durres would be implemented, and would also be replicated for the Tirana improvements. As envisioned, the financing plan for each system would consist of: 1) a World Bank loan (or equivalent) to the GOA, which, in turn, would be on-lent to the project (both transactions pursuant to the terms set out in the World Bank Staff Appraisal Report for Durres), 2) a loan by the GOA to the project, 3) small grant allocations from both the GOA and METAP, and 4) "retained earnings" from the respective system utility (e.g., funds identified in the World Bank Staff Appraisal report as "DDWW Cash"). The study team understands that, for Tirana, the specific breakdown of capital contributions may not parallel those for Durres. However, the assumptions used are adequate for the purposes of this study. Moreover, because the bulk of the financing will be debt, overall economics may not change materially if somewhat different assumptions are applied.

The sources of funds for the financial plans for Durres and Tirana break down as follows:

Financing Source	Durres (US$ millions)	Tirana (US$ millions)
World Bank/IDA Loans	11.6	32.7
GOA Loan	3.6	10.2
GOA/METAP Grants, Cash	2.8	8.2
Total	**18.0**	**51.0**

Pro forma analyses were performed specifically to:

- project total revenue needs for each system, assuming a gradual transition to full cost pricing and the inclusion of all project costs, including debt, into the rate base;
- indicate the initial GOA subsidies required, as well as the timing of subsidy reduction and ultimate elimination;
- reflect operating cost efficiencies of a concession arrangement, compared to continued public operation;
- indicate revenue needs associated with funding alternatives to planned World Bank and GOA lending; and
- determine debt service requirements.

The result of the analyses is to produce a "picture" in two ways:

- first, in terms of what can be expected from the rehabilitation of the systems and the commencement of 24-hour/day water service (financial performance during the construc

tion and rehabilitation period, which corresponds to the lending grace period, is not considered); and

- second, at the **project** level; thus, payment requirements and other financial arrangements between the GOA and the World Bank are not taken into account at this time.

The detailed pro formas for Durres and Tirana are included in the Appendix of this report.

6.7.1 Parameters and Assumptions

A number of parameters were established and assumptions made to be able to undertake the analyses. It is important to understand these in the context of this study and to appreciate the potential impact of changes in any of these parameters or assumptions.

- The capital costs for the Durres system were derived from the Lotti report and the World Bank's Staff Appraisal Report dated April 1994. For Tirana, the capital costs were developed by the study team based on a combination of meetings with senior management of the MoCT and the TDWW, as well as the extrapolation of costs from the Durres report and judgments made by the authors of this report.
- The revenue analyses begin with the "start-up year" for each system, which is defined as the year in which 24-hour/day service is available system-wide. The start-up year is also the year in which debt amortization begins. For Durres, this was assumed to be 1998 (given improvement work underway) and, for Tirana, 2001. Prior to those years (i.e., the World Bank grace period), the only capital costs associated with the system are the commitment and service fees payable under the loan agreement. These total a maximum of 1.25 percent annually, and for simplicity are assumed to be fully chargeable each year of the grace period.
- The analyses reflect the effect of pent-up demand, which will increase per capita water consumption, and therefore operating costs, once 24-hour/day service is achieved.
- The analyses project total needs, and do not reach the level of detail of individual residential, industrial, or institutional user rates. This does not mean to imply that rate structures and formulas are not important issues. However, as they involve policy questions, they should be considered separate from the straightforward, system-specific revenue needs analyses.
- The analyses assume, for both systems, the combined World Bank/GOA lending arrangement contemplated for Durres in the World Bank's Staff Appraisal Report dated April 1994. Thus, it is assumed that a World Bank (or similar) loan comparable to that for Durres will also be available for Tirana. **Material differences in terms and conditions between such loans will affect the revenue analyses.** They also assume that the GOA loans to the projects will carry the same terms and conditions (e.g., grace periods, level principal amortization, etc.) as do the World Bank loans. The limited METAP and GOA grant funds now committed to the Durres system have also been reflected to apply to the Tirana system in a proportionate way. Privatization has not been applied as an initial financing technique, although it is assumed that subsequent capital needs will be financed by the private contractor.

- Although the World Bank Staff Appraisal Report assumed a tax burden on the Durres system, these analyses do not. It is recommended that, as privatization is being evaluated, the benefit of tax concessions and incentives be considered, especially in the early stages of the contract period.
- Although the integration of the management and administration of the two systems has been recommended in this report, it is assumed for these analyses that rates and revenues will be separately set, adjusted, and collected.
- It is assumed that substantial GOA subsidies will continue for the near term. The analyses illustrate the "working ratio" of 60 percent achieved by each system upon the start-up of 24-hour/day service (i.e., with a GOA subsidy of 40 percent), and increasing to a "working ratio" of 100 percent by the end of the fifth year. It appears equitable that the full burden of system costs not be transferred to the rate payers until an acceptable minimum level of service is achieved.
- The annual operating budgets reflect the operations and maintenance costs projected in Section 4, as well as additional management fees and profit to the concessionaire. The analyses do not reflect capital cost recovery by the concessionaire for capital investments in later years, since these cannot be reasonably projected at this time. Such expenditures, however, should be offset by new demands, which would also produce new revenues.

6.7.2 Pro Forma Summaries

The following tables summarize the pro formas for each system. The numbers may not add properly due to rounding.

Item	Durres (US$ millions)	Tirana (US$ million)
Total Debt Capital	15.20	42.80
Annual Grace Period Interest	0.19	0.54
First Year's Debt Service at "Start-Up"	1.90	5.30
Operating Costs	2.20	2.90
Total Revenue Need	4.30	8.60
Collection Efficiency	95%	95%
First-Year GOA Subsidy	1.70	3.50
First-Year Rate Revenues	2.60	5.20

Based on this pro forma, **the rate structure for Durres and Tirana will have to be modified to more than double the current revenue from the system users in the first year, even with a 40 percent subsidy from the GOA.** In addition, a rate/revenue increase program will have to be maintained so that there is no need for a GOA subsidy by the fifth year of the program.

The viability of using private capital to fund the near-term system improvements to achieve the objective of 24-hour/day service at the current demand was evaluated as a sensitivity analysis. The analysis applied general IFC standards regarding debt and equity ratios (40 percent equity and 60 percent debt). In this analysis, the expected return on equity was assumed to be 20 percent and on debt to be 11 percent. At the stated ratio, this yields a blended interest rate of 14.6 percent. Only the Durres project was considered, to illustrate the effect, but it can be assumed that a similar approximate order of magnitude increase would also apply to the Tirana system. The following table presents this analysis for the Durres system:

Item	World Bank (US$ million)	Concessionaire (US$ million)
Annual Grace Period Interest	0.19	1.70
First Year's Debt Service at "Start-Up"	1.90	2.50
Total Debt Service Over 20 Years	26.70	38.70
Revenue Need (Including Contractor Profit/ROE)	4.30	5.30
Revenue Increase Need	-	±25%

6.7.3 Financing Considerations

The GOA should assume that even under World Bank financing scenarios, the private contractor will require some degree of guaranty on its annual service charges. Although it would be preferable for that to be a sovereign guaranty, the contractor may insist upon a third party guaranty from the World Bank or an associated institution, at least during the first few years of the arrangement. The availability and extent of such guaranties may in part be influenced by whether the projects are characterized as infrastructure investments or as corporate investments made in a new business in Albania.

The potential flexibility of the World Bank regarding the already-negotiated loan requirements for Durres and its potential arrangements for Tirana should be explored. If the GOA elects to proceed with the concession arrangement recommended by this study, it would be worth exploring whether the World Bank and other parties involved in the projects would be willing to renegotiate certain financing and other conditions if such were warranted under the privatization agreement. For example, the selected concessionaire may desire a deep role in the project and construction management during the improvement work, or may be willing to apply its own proprietary technologies and professional resources where others are now specified. The GOA's ability to implement a concession may be influenced by the degree of such flexibility.

The pro forma analyses do not make particularly aggressive assumptions regarding economic growth and industrial development and resulting rate base expansion. However, as system planning progresses, it may be seen that industrial development can play a role in system

financing. For example, if near-term growth is forecast, it may be possible to leverage that growth to help fund system capital needs. Growth-based financing concepts, such as impact fees levied up front on major new consumers at the time of issuance of building permits, may be applicable.

7 Recommendations for Durres and Tirana District Water Works

The following recommendations are made based on the assessments and analyses made in the preceding sections, and on the experience of the authors of this report in the application of various privatization options to specific social, economic, and political situations and goals. As such, they are recommendations from a range of possible options. The information on options provided in this report can support alternatives and modifications based on political, social, and economic factors that were not known to the authors.

7.1 Maintain Public Ownership of the Systems

The transfer of ownership to the private sector through an asset sale by the GOA would not further any current or anticipated State policies regarding infrastructure, would not appear to comply with existing socio-political and cultural dynamics, and, at least in the near term, would not produce economic or service delivery quality benefits that could not be realized through other forms of privatization. The implementation of private ownership would be more disruptive than that of other forms of privatization and the initial costs of private ownership could conceivably exceed those of continued public ownership, without any additional socio-political, economic, or service quality advantages.

7.2 Enact the Water Resource and Concession Laws as Soon as Possible

A firm statutory and institutional base is needed to implement most forms of privatization. In addition to simply creating the framework under which the GOA and its agencies can proceed to improve water supply conditions, the existence of an adequate statutory and institutional base is necessary to give potential privatization contractors confidence in the long-term commitment of the GOA to privatization and in the presence of an environment that will be amenable to and supportive of privatization. Codified statutes, procedures, and regulations are required to include the current draft Water Resources Law and Concessions Law. Formal procurement activities should not begin until that base is in place.

7.3 Prepare a Water Supply Master Plan for the Tirana Metropolitan Area

It is imperative that a comprehensive water supply master plan be prepared for the Tirana metropolitan area similar to that done for Durres. Any current capital expenditures in the system may not represent the most cost-effective use of funds until a thorough engineering analysis is made of the current demands of the Tirana system and the specific facility needs to meet those demands are identified and quantified. The capital needs for Tirana, presented in this report, are very general estimates developed only to be able to support the privatization analysis.

7.4 Implement Privatization Forms Aimed at Both Financial and Management Benefits

The GOA should consider only those forms of privatization that offer both financial and management benefits. For example, although contract management and contract operations can provide a range of significant management and operational benefits, their financial advantages do not extend beyond operating cost savings. Options such as BOTs, concessions,

and leases provide the full range of contract management and contract operations advantages, but extend farther by also offering financial benefits, such as the private financing of system improvements.

7.5 Select a Privatization Form that Supports Technology/Skills Transfer into Albania

The implementation of virtually any form of privatization will require that the GOA initially deal with foreign companies. In terms of both the State policy and the desire to strengthen Albania's economy, it is prudent to avoid a long-term overreliance on such nondomestic interests, particularly when a critical public service is involved. Any privatization transaction should provide for the transfer of technology, training, and skills from the foreign contractor to Albanian interests by providing for a material role for local interests in the privatization arrangement.

The privatization arrangement should go beyond simply providing for "local content" (which might typically be done through subcontracting arrangements) and provide for meaningful participation through ownership and management of the arrangement. This role, in turn, should be the foundation on which a domestic water (and wastewater) industry can be built over time so that, in time, most of the commercial benefits of privatization will accrue to Albanian business interests. The privatization arrangement selected should be used to "jump start" a new Albanian industrial sector. With such a domestically based industrial sector established, privatization of smaller systems can become more feasible.

7.6 Target the Tirana and Durres Systems as Priority Pilot Project Areas

Privatization of public services, as both a financing and a management concept, has no prior experience history in Albania. Although worldwide experience can give the GOA an extremely high level of confidence in the efficacy of privatization, the success of privatization is always influenced by country-specific conditions and circumstances. Before committing to privatization as policy for the country as a whole, the GOA first needs demonstrated evidence of its value. As pilot projects, Tirana and Durres will enable the GOA to test privatization concepts, determine their validity to Albania, and tailor internationally applied formats to Albanian conditions.

The World Bank, with assistance from the Italian Trust Fund, is prepared to support this pilot program and the GOA should move quickly to assess its options and use this support to demonstrate privatization in Albania.

7.7 Implement One Privatization Arrangement for Both the Tirana and Durres Systems

The efficiencies possible through economies of scale strongly influence the success of privatization. Given their respectively similar conditions and needs, to maximize potential benefits, the same arrangement should be structured for both the Tirana and Durres systems and, to further the advantages of scale, strong consideration should be given to awarding both systems to a single contractor. The sizes of the systems would make it extremely expensive

for any contractor to mobilize the level of resources that would be needed to compete in a separate procurement for each system, and then, if awarded, to mobilize and maintain the capital and management resources needed to effectively undertake either system alone. The risk of being awarded only one system might not justify the cost of procurement and the dedication of resources needed to adequately fund, manage, and operate only one of the systems.

This integration of the systems would be for procurement, financing, and management purposes only. In terms of their physical needs, engineering, capital improvements, and the like, the systems would, of course, be considered separately, and project-specific parameters would be set for each independently of the other. However, the terms of the privatization structure — performance standards, contractor investments, personnel and employment matters, guarantees, fee bases and payment arrangements, etc. — would encompass both systems. Although separate contract documentation might be entered into for each, with the exception of technical parameters, the documentation would be identical.

7.8 Review Current Bank Arrangements for Fit with Privatization Option Selected

Given economic and financial realities, outside funding of improvements for both systems is required, and, given the state of institutional experience in the country, it cannot be reasonably expected that significant amounts of private capital can be attracted in the near future. Thus, the continued involvement of international agencies is essential, even while some degree of private investment can be attracted through the privatization approach recommended below. In fact, it is reasonable, as a measure of good faith, to require some minimum level of private investment. Moreover, it would not be prudent to lose the value of the progress that has been made to date on Durres and the applicability of that to Tirana.

Significant progress has been made regarding design and financing arrangements for the Durres system. Although no particularly troublesome terms or conditions are expected, it would be prudent to review those arrangements in light of the specific privatization structure recommended by this study. Given the recommendation that privatization of both systems be integrated, it would also be prudent to seek to replicate the terms and conditions from the Durres system to the Tirana system.

The offer of the Italian Trust Fund to finance a privatization implementation program for Durres should be revisited with the suggestion of a Tirana/Durres combined arrangement. This investment will ensure that adequate technical assistance is available to the responsible Albanian officials during the procurement planning and implementation.

7.9 Maximize International Funding/Loan Sources to Meet Current Needs

The repair and rehabilitation needs for the water systems in Durres and Tirana to bring the systems up to a condition to serve the current demands are significant. The GOA must maximize the use of the World Bank, EBRD, and METAP, as well as individual donor countries, to minimize the debt service impact on current user tariffs.

The strategy for the GOA in presenting its funding needs to these various sources should be one that demonstrates, through a documented program plan, that the capital requested will become operating assets in an infrastructure system that supports economic development. By then linking these assets to a program of privatization for the operation, maintenance, and later continuing investment in the systems, the lending organizations will see a serious commitment on the part of the GOA to sustain the initial investment going forward.

7.10 Provide Subsidy Appropriation in National Budget for Tirana and Durres

This study suggests that there will be a need to subsidize the budgets of the Durres and Tirana water systems in the near term, as the systems make the transition to full cost pricing. It is recommended that the GOA appropriate funds in its national budget to address this need, which is expected to be approximately 40 percent of the water systems budgets in the first year and to decline to 0 percent over five years. Further economic and cost analyses are needed to refine the 40 percent and five years, but some level of declining subsidy must be recognized.

7.11 Recommended Privatization Structure: Concession

The recommendation of this report is that the concession structure of privatization be used for the Tirana and Durres water systems. While it is neither inappropriate nor unreasonable to procure extensive foreign private resources, there are clear policy and economic advantages in building in-country capability and in structuring arrangements that, over time, enable a substantial portion of the economic and management benefits of privatization to remain in-country. The concession concept that is recommended reflects the philosophy that, while water system problems represent immediate needs, they also represent potential economic development opportunities. While near-term needs may call for the involvement of foreign contractors, the long-term perspective should be one of creating economic opportunity in Albania.

The recommended application of the operations concession structure is outlined below.

Water Supply Operations Concession Concept Outline For Albania

Element	Requirement
Ownership	The systems would remain publicly owned, with policy, rate, and service delivery standards set and controlled by the implementing agency.
Basic Terms	The term of the concession would be defined as long term (15-30 years), with reasonable termination and "buy-out" options for the agency. The concessionaire would assume full day-to-day operations and maintenance responsibilities. The concessionaire would assume complete management and administration of the water system, to include billing and collection. The concessionaire would establish a cost-effective staffing level for system operation, maintenance, management, and administration. Initially, all existing employees would become employees of the concessionaire. The concessionaire would be contractually bound to a limited work force reduction rate that would be linear and over a defined period (say 3-4 years). The concessionaire would be required to manage the implementation of near-term and future capital improvements. For an initial period (e.g., five years), those capital improvements would be funded as now anticipated. After that, outside funding would cease and the concessionaire would fund and own all future capital improvements, which would be transferred at no cost to the agency at the end of the concession term. (See Note 1.)
Concessionaire	The concessionaire would be required to be a joint venture between a foreign privatization contractor and Albanian interests. The Albanian interests would be required to "invest" human and professional resources in the joint venture, but would not be required to invest hard equity. The foreign partner would need to meet certain financial and experience standards to be considered qualified. A "passive" investor role would not be allowed. Initially, the concessionaire would be foreign controlled (assumed to be approximately 80 percent ownership share). Over a scheduled period, ownership would gradually change to the point at which the Albanian interests would be at least equal to that of the foreign investor/partner. The foreign investor/partner would be required to retain a perpetual interest in the joint venture at no less than 20 percent ownership share until the end of the pilot contracts. At the point during the scheduled ownership transition period that 50/50 ownership sharing was realized, the concessionaire would be chartered to sell similar services within Albania.
Training and Development	In addition to operations, maintenance, and capital services, the concessionaire would be required to fully train all system operators to an extent equivalent to the operator certification levels existing in other countries and/or as mutually agreed. (See Note 2.)

Element	Requirement
Operations Risk	Consistent with established international standards, the concessionaire would assume virtually all cost and performance risks associated with day-to-day operations and management. Uncontrollable risks, including *force majeure* and change-in-law, would remain with the public sector. Operations risk would include labor and employee risks to the extent that the concessionaire has control over personnel.
Capital Risk	After the donor-agency-funded improvement work is completed and placed in service, the concessionaire would bear the risk associated with investing capital to fund planned, scheduled, and agreed-to capital improvements. The concessionaire would be responsible for procuring and managing the construction/installation of improvements, and for their subsequent operation. At the end of the term of the concession, all privately financed improvements would be transferred to the responsible public agency identified in the agreement, at no cost. (See Note 1.)
Revenue Risk	The concessionaire would not bear revenue risk, either that associated with the collection of user rates and/or GOA subsidies, or that associated with the payment of its annual service charges and fees by the public agency. Although the concessionaire would be responsible for the administrative aspects of rate collection, it would not be liable for collection efficiency unless low efficiency was demonstrated to result from its negligence. Initially, the annual service charges and fees due to the concessionaire would be guaranteed. Depending on the outcome of negotiations, that guaranty would be by way of a World Bank (or other international organization) or sovereign guaranty from the GOA. Over time, such guaranties would be reduced and in time eliminated. Although the concessionaire would continue to operate on the basis of an annual service charge to the public agency, not based on collections themselves, the payment of that charge would then become an agency obligation, not a World Bank or sovereign responsibility.

Notes:

1. The entire area of capital financing needs to be explored with the World Bank and its associates. Although it is conceivable that financing from the foreign partner in the concessionaire could completely substitute for anticipated World Bank financing, the comparative World Bank vs. private cost of capital appears to make private financing initially unaffordable. It seems more prudent to continue with the initial capital improvement financing as now planned and require the concessionaire to fund capital improvements after the initial period of upgrading is complete. However, if it is decided that the concessionaire should finance some or all of the initial planned improvements, it should be understood that it will likely require some form of World Bank guaranty on its investment.

2. One of the purposes in requiring training is to train employees who, while affected by the work force reduction, may be assigned to other, publicly operated systems in Albania. Through this required training, a core of professional operators and managers would be developed. It might not be unreasonable to require the foreign partner in the concessionaire to establish a formal training institute in Albania. Precedents for this exist. The concession procurement could include a requirement that the concessionaire establish such an institute. The training itself would be one part of creating the new Albanian water/wastewater industry. As an incentive for the funding of the institute, the foreign partner could be given shares or equity interest in the new industry created through the training exercise.

8 Recommendations for Applying Privatization Country-Wide

The purpose of this study was to develop privatization options that would first be considered for application to the water systems in Durres and Tirana, as a pilot program, and then to use that practical experience in the application of privatization concepts for water, and potentially wastewater systems, throughout Albania. The following recommendations are made as a first step in that country-wide process, but do not presume that a more country-wide program would be initiated until a pilot program is well underway

It may be appropriate to consider defining another water system situation in Albania (a second pilot) where the privatization concept could be structured to address a dispersed, multi-system area (less urban) that would be integrated along management and administrative lines to form a cost- effective service scope for possible private sector participation.

8.1 Focus on Durres and Tirana First

It is critical that if the implementation of a privatization option is going to take place, that it be applied in Durres and Tirana first as pilot projects. It is recommended that no further commitment to a broad application of privatization be undertaken until success has been indicated. This will provide the experience base and the institutional infrastructure at both the GOA and local government levels that will be needed to implement and manage privatization in other areas.

8.2 Capital Improvement and Privatization Decisions Are Mutually Exclusive

If improvement work is immediately needed at other water systems to upgrade them to minimally acceptable standards, such improvements should be publicly funded, even in advance of possible privatization. Even if improvements are underway, privatization techniques can be subsequently added. For example, a concession could be arranged under which the contractor paid an up-front concession fee to GOA for the "right" to operate the system. Such a fee could be used to compensate the GOA for the improvements already funded.

8.3 Success of Pilot Program Will Help Implementation of Urban Privatization Model

Based on success with the pilot program, it can be assumed that privatization techniques will be applicable to other urbanized and/or piped systems. The issue will be a function of size, since, at some level, and with no domestically based private sector water and wastewater service industry at this time, systems could be too small to support privatization through the involvement of foreign partners, particularly if private capital is involved. However, contract operations could work on small systems, if enough systems were combined into a single service offering (often referred to as "bundling of multiple systems"). In large measure, especially until a local industry is built, the utility and applicability of privatization will be influenced by economies of scale as they affect the need for foreign contractors to mobilize and dedicate resources to Albania. If a local industry can be built, this dynamic changes and smaller systems can then become good candidates for privatization.

In the end, although there may be numerous individual sources of supply as well as treatment and distribution systems, there may actually be only a small number of privatization deals, because each deal could take in several systems. Again, if and when a local industry develops, this dynamic changes. This needs to be considered from a policy perspective as privatization and water supply planning proceeds.

It also needs to be acknowledged that privatization may not, in all instances or areas, be acceptable due to local socio-political factors, even when the financial and management benefits are evident.

8.4 Start Privatization Planning in Parallel with Tirana and Durres Pilot Program

While privatization of the Durres and Tirana systems is underway and no other privatization projects are being implemented, the GOA can and should begin planning and prioritizing for other systems, adapting those plans as experience on Durres and Tirana is gained.

While privatization should be expressly enabled in law, it should not be established as a firm requirement for water supply in the country. Even if in time, privatization becomes GOA policy, it should remain as an option for all systems, not a requirement. Privatization techniques are not always feasible or prudent, and should be implemented on a case-by-case basis, considering local conditions, capabilities, and resources.

However, while not mandating it, privatization can be encouraged by requiring that it at least be considered by local implementing agencies for all systems, along with other options. Local agencies could discard privatization concepts with sufficient GAO-accepted rationales. Thus, privatization options would be given fair hearing and would be tested against other approaches, but would not be GOA-imposed mandates on local governmental levels.

As planning proceeds, the following general guidelines should be considered:

- Non-Piped Systems: continue public ownership, contract out immediate improvements, contract out operations and maintenance services (e.g., scheduled maintenance, testing).
- Smaller Systems: consolidate to realize economies of scale, continue public ownership, contract out full operations and maintenance, fund improvements by government (local and GOA).
- Large Systems: continue public ownership, but position for private ownership if so desired in future years, contract out full operations and maintenance through long-term concession arrangements that include the private funding of system improvements, alone or in conjunction with funding from international institutions.

8.5 Conduct Privatization Planning along with National Water Planning Program

Privatization planning cannot be performed in isolation from overall nationwide planning for water supply organization, management, financing, and operation. As indicated in Section 5.4, the institutional recommendations suggested for the Durres and Tirana systems should be taken into account as nationwide planning progresses.

Whether or not privatization finally becomes the chosen option, there are key issues that must be resolved before significant progress toward the improvement of water supply conditions can be made. In general, these issues involve the GOA's function making the transition from virtually one of total water supply authority and responsibility, to one of health and environmental regulation and enforcement, and establishing laws that grant local levels of government the full authority, responsibility, and power to manage water system issues, including entering into privatization arrangements.

8.6 Consolidate Smaller Water Systems into Larger Administrative and Management Units

Even though smaller water sources and supply systems are not physically related or integrated, they can be integrated in terms of finance, administration and management, rate setting, billing and collection, contracting of operations, and similar financial and management functions.

There are no general criteria regarding aspects, such as size, the number of systems to consolidate into larger units, or proper management staffing for each newly consolidated unit. Qualitative factors as well as physical logistics will influence the ultimate arrangements, configurations, and number of new units.

Consolidation planning for all affected systems should be simultaneous and nationwide. As with the transfer downward of the water supply function, the basin management concept contained in the draft Water Resources Law offers a sound starting point for the planning process. Whether within any one basin a single consolidated unit would be sufficient, or whether conditions warrant multiple units, the resulting scheme would depend on the individual conditions prevailing in each basin.

APPENDIX

Detailed Pro Formas for Durres and Tirana

Durres World Bank/GOA Project Loan Amortization

World Bank	11,600,000	GOA	3,638,000	1.25%		
			5.26%	7.00%		
Year	Period	Beg. Bal.	Principal	Interest	Payment	End Bal.
1994	0	15,238,000	0	190,475	190,475	15,238,000
1995	0	15,238,000	0	190,475	190,475	15,238,000
1996	0	15,238,000	0	190,475	190,475	15,238,000
1997	0	15,238,000	0	190,475	190,475	15,238,000
1998	1	15,238,000	801,991	1,066,660	1,868,651	14,436,009
1999	2	14,436,009	801,991	1,010,521	1,812,512	13,634,018
2000	3	13,634,018	801,991	954,381	1,756,372	12,832,026
2001	4	12,832,026	801,991	898,242	1,700,233	12,030,035
2002	5	12,030,035	801,991	842,102	1,644,094	11,228,044
2003	6	11,228,044	801,991	785,963	1,587,954	10,426,053
2004	7	10,426,053	801,991	729,824	1,531,815	9,624,062
2005	8	9,624,062	801,991	673,684	1,475,676	8,822,071
2006	9	8,822,071	801,991	617,545	1,419,536	8,020,079
2007	10	8,020,079	801,991	561,406	1,363,397	7,218,088
2008	11	7,218,088	801,991	505,266	1,307,257	6,416,097
2009	12	6,416,097	801,991	449,127	1,251,118	5,614,106
2010	13	5,614,106	801,991	392,987	1,194,979	4,812,115
2011	14	4,812,115	801,991	336,848	1,138,839	4,010,124
2012	15	4,010,124	801,991	280,709	1,082,700	3,208,132
2013	16	3,208,132	801,991	224,569	1,026,560	2,406,141
2014	17	2,406,141	801,991	168,430	970,421	1,604,150
2015	18	1,604,150	801,991	112,290	914,282	802,159
2016	19	802,159	802,159	56,151	858,310	0
					26,666,606	

Note: DDWW cash, METAP grant and certain GOA grant funds not amortized.
World Bank and GOA loan funds amortized on same basis.

DURRES PROJECT ANALYSIS

Durres Pro Forma

Project Year		1	2	3	4	5	6	7	8	9	10
Calender Year		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Inflation	3.10%	1									
Labor		167,000	172,177	177,514	183,017	188,691	194,540	200,571	206,789	213,199	219,808
Power		1,094,000	1,127,914	1,162,879	1,198,929	1,236,095	1,274,414	1,313,921	1,354,653	1,396,647	1,439,943
Chemicals		64,000	65,984	68,030	70,138	72,313	74,554	76,866	79,248	81,705	84,238
Depreciation		658,000	678,398	699,428	721,111	743,465	766,512	790,274	814,773	840,031	866,072
Other (Inc. Mgt. Costs)		250,000	257,750	265,740	273,978	282,472	291,228	300,256	309,564	319,161	329,055
Subtotal		2,233,000	2,302,223	2,373,592	2,447,173	2,523,036	2,601,250	2,681,888	2,765,027	2,850,743	2,939,116
Debt Service		1,868,651	1,812,512	1,756,372	1,700,233	1,644,094	1,587,954	1,531,815	1,475,676	1,419,536	1,363,397
Revenue Need		4,101,651	4,114,735	4,129,964	4,147,406	4,167,129	4,189,204	4,213,703	4,240,703	4,270,279	4,302,513
Bad Debts	5.00%	205,083	205,737	206,498	207,370	208,356	209,460	210,685	212,035	213,514	215,126
Other Revenues		0	0	0	0	0	0	0	0	0	0
Total Revenue Need		4,306,734	4,320,472	4,336,463	4,354,777	4,375,486	4,398,664	4,424,389	4,452,738	4,483,793	4,517,638
			0.08								
GOA Subsidy		40.00%	32.00%	24.00%	16.00%	8.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Working Ratio		60.00%	68.00%	76.00%	84.00%	92.00%	100.00%	100.00%	100.00%	100.00%	100.00%
GOA Subsidy		1 722,693	1,382,551	1,040,751	696,764	350,039	0	0	0	0	0
From Rates		2,584,040	2,937,921	3,295,712	3,658,012	4,025,447	4,398,664	4,424,389	4,452,738	4,483,793	4,517,638
Total		4,306,734	4,320,472	4,336,463	4,354,777	4,375,486	4,398,664	4,424,389	4,452,738	4,483,793	4,517,638

TIRANA PROJECT ANALYSIS

Tirana World Bank/GOA Project Loan Amortization

World Bank	32,640,000		GOA	10,200,000		1.25%
				5.26%		7.00%
Year	Period	Beg. Bal.		Principal	Interest	Payment	End Bal.
1995	0	42,840,000		0	535,500	535,500	42,840,000
1996	0	42,840,000		0	535,500	535,500	42,840,000
1997	0	42,840,000		0	535,500	535,500	42,840,000
1998	0	42,840,000		0	535,500	535,500	42,840,000
1999	0	42,840,000		0	535,500	535,500	42,840,000
2000	0	42,840,000		0	535,500	535,500	42,840,000
2001	1	42,840,000		2,254,712	2,998,800	5,253,512	40,585,288
2002	2	40,585,288		2,254,712	2,840,970	5,095,682	38,330,576
2003	3	38,330,576		2,254,712	2,683,140	4,937,852	36,075,864
2004	4	36,075,864		2,254,712	2,525,310	4,780,023	33,821,152
2005	5	33,821,152		2,254,712	2,367,481	4,622,193	31,566,440
2006	6	31,566,440		2,254,712	2,209,651	4,464,363	29,311,728
2007	7	29,311,728		2,254,712	2,051,821	4,306,533	27,057,016
2008	8	27,057,016		2,254,712	1,893,991	4,148,703	24,802,304
2009	9	24,802,304		2,254,712	1,736,161	3,990,873	22,547,592
2010	10	22,547,592		2,254,712	1,578,331	3,833,043	20,292,880
2011	11	20,292,880		2,254,712	1,420,502	3,675,214	18,038,168
2012	12	18,038,168		2,254,712	1,262,672	3,517,384	15,783,456
2013	13	15,783,456		2,254,712	1,104,842	3,359,554	13,528,743
2014	14	13,528,743		2,254,712	947,012	3,201,724	11,274,031
2015	15	11,274,031		2,254,712	789,182	3,043,894	9,019,319
2016	16	9,019,319		2,254,712	631,352	2,886,064	6,764,607
2017	17	6,764,607		2,254,712	473,523	2,728,235	4,509,895
2018	18	4,509,895		2,254,712	315,693	2,570,405	2,255,183
2019	19	2,255,183		2,255,183	157,863	2,413,046	0
						76,041,297	

Note:	World Bank portion:	64.00%	32,640,000
	GOA portion:	20.00%	10,200,000
	Misc. grants:	16.00%	8,160,000
	Total Capital	51,000,000	

TIRANA PROJECT ANALYSIS

Tirana Pro Forma

Project Year		1	2	3	4	5	6	7	8	9	10
Calender Year		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Inflation		3.10%	1.031								
Labor		474,000	488,694	503,844	519,463	535,566	552,169	569,286	586,934	605,129	623,888
Power		698,000	719,638	741,947	764,947	788,660	813,109	838,315	864,303	891,097	918,721
Chemicals		100,000	103,100	106,296	109,591	112,989	116,491	120,102	123,826	127,664	131,622
Depreciation		1,310,000	1,350,610	1,392,479	1,435,646	1,480,151	1,526,035	1,573,343	1,622,116	1,672,402	1,724,246
Other (Inc. Mgt. Costs)		400,000	412,400	425,184	438,365	451,954	465,965	480,410	495,303	510,657	526,487
Subtotal		2,982,000	3,074,442	3,169,750	3,268,012	3,369,320	3,473,769	3,581,456	3,692,481	3,806,948	3,924,964
Debt Service		5,253,512	5,095,682	4,937,852	4,780,023	4,622,193	4,464,363	4,306,533	4,148,703	3,990,873	3,833,043
Revenue Need		8,235,512	8,170,124	8,107,602	8,048,034	7,991,513	7,938,132	7,887,989	7,841,184	7,797,821	7,758,007
Bad Debts	5.00%	411,776	408,506	405,380	402,402	399,576	396,907	394,399	392,059	389,891	387,900
Other Revenues		0	0	0	0	0	0	0	0	0	0
Total Revenue Need		8,647,288	8,578,630	8,512,982	8,450,436	8,391,089	8,335,039	8,282,389	8,233,244	8,187,713	8,145,907
			0.08								
GOA Subsidy		40.00%	32.00%	24.00%	16.00%	8.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Working Ratio		60.00%	68.00%	76.00%	84.00%	92.00%	100.00%	100.00%	100.00%	100.00%	100.00%
GOA Subsidy		3,458,915	2,745,162	2,043,116	1,352,070	671,287	0	0	0	0	0
From Rates		5,188,373	5,833,469	6,469,866	7,098,366	7,719,802	8,335,039	8,282,389	8,233,244	8,187,713	8,145,907
Total		8,647,288	8,578,630	8,512,982	8,450,436	8,391,089	8,335,039	8,282,389	8,233,244	8,187,713	8,145,907

DURRES SENSITIVITY: 100% PRIVATE FINANCING

Durres Commercial Project Loan Amortization

Phase 1	11,600,000	Phase 2	3,638,000	11.00%		
			5.26%	11.00%		
Year	Period	Beg. Bal.	Principal	Interest	Payment	End Bal.
1994	0	9,142,800	0	1,005,708	1,005,708	9,142,800
1995	0	9,142,800	0	1,005,708	1,005,708	9,142,800
1996	0	9,142,800	0	1,005,708	1,005,708	9,142,800
1997	0	9,142,800	0	1,005,708	1,005,708	9,142,800
1998	1	9,142,800	481,195	1,005,708	1,485,903	8,661,605
1999	2	8,661,605	481,195	952,777	1,433,971	8,180,411
2000	3	8,180,411	481,195	899,845	1,381,040	7,699,216
2001	4	7,699,216	481,195	846,914	1,328,108	7,218,021
2002	5	7,218,021	481,195	793,982	1,275,177	6,736,826
2003	6	6,736,826	481,195	741,051	1,222,246	6,255,632
2004	7	6,255,632	481,195	688,119	1,169,314	5,774,437
2005	8	5,774,437	481,195	635,188	1,116,383	5,293,242
2006	9	5,293,242	481,195	582,257	1,063,451	4,812,048
2007	10	4,812,048	481,195	529,325	1,010,520	4,330,853
2008	11	4,330,853	481,195	476,394	957,589	3,849,658
2009	12	3,849,658	481,195	423,462	904,657	3,368,464
2010	13	3,368,464	481,195	370,531	851,726	2,887,269
2011	14	2,887,269	481,195	317,600	798,794	2,406,074
2012	15	2,406,074	481,195	264,668	745,863	1,924,879
2013	16	1,924,879	481,195	211,737	692,931	1,443,685
2014	17	1,443,685	481,195	158,805	640,000	962,490
2015	18	962,490	481,195	105,874	587,069	481,295
2016	19	481,295	481,295	52,942	534,238	0
					23,222,812	

Note: Total debt equals 60% of project costs. Balance of financing is concessionaire equity (40%).

DURRES SENSITIVITY: 100% PRIVATE FINANCING

Durres Pro Forma

Project Year		1	2	3	4	5	6	7	8	9	10
Calender Year		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Inflation	3.10%	1									
Labor		167,000	172,177	177,514	183,017	188,691	194,540	200,571	206,789	213,199	219,808
Power		1,094,000	1,127,914	1,162,879	1,198,929	1,236,095	1,274,414	1,313,921	1,354,653	1,396,647	1,439,943
Chemicals		64,000	65,984	68,030	70,138	72,313	74,554	76,866	79,248	81,705	84,238
Depreciation		658,000	678,398	699,428	721,111	743,465	766,512	790,274	814,773	840,031	866,072
Other (Inc. Mgt. Costs)		250,000	257,750	265,740	273,978	282,472	291,228	300,256	309,564	319,161	329,055
Subtotal		2,233,000	2,302,223	2,373,592	2,447,173	2,523,036	2,601,250	2,681,888	2,765,027	2,850,743	2,939,116
Debt Service		1,486,903	1,433,971	1,381,040	1,328,108	1,275,177	1,222,246	1,169,314	1,116,383	1,063,451	1,010,520
Equity Return		1,350,000	1,350,000	1,350,000	1,350,000	1,350,000	1,350,000	1,350,000	1,350,000	1,350,000	1,350,000
Revenue Need		5,069,903	5,086,194	5,104,632	5,125,282	5,148,213	5,173,495	5,201,203	5,231,410	5,264,194	5,299,636
Bad Debts	5.00%	253,495	254,310	255,232	256,264	257,411	258,675	260,060	261,570	263,210	264,982
Other Revenues		0	0	0	0	0	0	0	0	0	0
Total Revenue Need		5,323,398	5,340,504	5,359,863	5,381,546	5,405,623	5,432,170	5,461,263	5,492,980	5,527,404	5,564,618
			0.08								
GOA Subsidy		40.00%	32.00%	24.00%	16.00%	8.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Working Ratio		60.00%	68.00%	76.00%	84.00%	92.00%	100.00%	100.00%	100.00%	100.00%	100.00%
GOA Subsidy		2,129,359	1,708,961	1,296,367	861,047	432,450	0	0	0	0	0
From Rates		3,194,039	3,631,543	4,073,496	4,520,498	4,973,173	5,432,170	5,461,263	5,492,980	5,527,404	5,564,618
Total		5,323,398	5,340,504	5,359,863	5,381,546	5,405,623	5,432,170	5,461,263	5,492,980	5,527,404	5,564,618
Concessionaire IRR		21.71%									