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AMMAN WATER MANAGEMENT/ COMMERCIALIZATION ASSESSMENT

PHASE TWO REPORT: FEASIBILITY ANALYSIS OF NEW
COMPANY

Volume 1* – Main Section

JULY 2006

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The following individuals, listed alphabetically, comprised the professional team that participated in the preparation of this report: Ibrahim Alqam (Financial Analyst), Patricia Bakir (Public Relations), Vince Byrne (Utility Specialist), Paul Cumiskey (CPA), Jerome Donovan (Legal Counsel), Bernardo Gomez (Financial Analyst), Loay Hidmi (Water Engineer), Ala Khalifeh (Legal Counsel), Zaid Qursha (Legal Counsel), Klas Ringskog (Economist), Jorge Segura (Economist), Tarek Tarawneh (Engineer), Kenneth Wright (Human Resources), Guillermo Yepes (Project Lead Technical Advisor), and Jose Valdez (Resident Chief of Party).



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DISCLAIMER

In preparing this report, the authors relied on information and data supplied by officials of the Government of Jordan and LEMA; the authors have not independently verified this information and data. The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

* The annexes section is in Volume 2.

Acronyms

AIC	average incremental cost
ASEZ	Aqaba Special Economic Zone
ASEZA	Aqaba Special Economic Zone Authority
AWC	Aqaba Water Company
BOT	build, operate and transfer
CAPEX	capital expenditure program (also referred to as CIP)
CIP	capital investment program
DBO	design, build and operate
DZ	district zone
FAS	financial accounting system
GAM	Greater Amman Municipality
GIS	geographic information systems
HR	human resources
IT	information technology
JD	Jordanian Dinar
JVA	Jordan Valley Authority
LEMA	Suez Lyonnaise, Montgomery Watson Arabtech, private consortium management contract in Amman
MCC	mixed capital company
MIS	management information systems
MOL	Ministry of Labor
MWI	Ministry of Water and Irrigation
NEWCO	New Company
NRW	non-revenue water
O&M	operation and maintenance
OPEX	operation and maintenance expenditure program
PSP	private sector participation
PDT	Project Development Team
QIZ	qualified industrial zone (industrial parks)
UFW	unaccounted-for water
SCADA	Supervisory Control and Data Acquisition
USAID	Agency for International Development of the United States
WAJ	Water Authority of Jordan

Units

km ²	square kilometer
kw-h	kilowatt-hour
l/cd	liters/capita per day
mm ³	million cubic meters
mm ³ /year	million cubic meters per year
24/7	24 hours/seven days per week

Currency equivalents (2006)

JD1	=	US\$1.43
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EXECUTIVE SUMMARY

This is the second report submitted by SEGURA-IP3 to the United States Agency for International Development (USAID), the Jordanian Ministry of Water and Irrigation (MWI), and the Water Authority of Jordan (WAJ) as part of the technical assistance to analyze and recommend alternative organizational models for the provision of water and wastewater services in Greater Amman, and to assist the government in implementing the recommendations, as adopted by the government.

The technical assistance includes three phases. The first phase, evaluation of alternative organizational models and recommendation of a model was concluded in January 2006 with the presentation of the Consultants' first report.¹ This second phase corresponds to the planning process and feasibility study. The third phase will cover the implementation and management transfer.

MWI/WAJ, on the basis of the recommendations of the Consultants (phase one report), decided to establish a new company (NEWCO) to provide water supply and wastewater collection services in the Amman Governorate and LEMA's current service area. MWI/WAJ also decided that WAJ will continue to be responsible for the supply of bulk water supply and wastewater treatment from outside the service area.

The main organizational and operational characteristics of NEWCO are outlined in the Memorandum of Understanding (MOU) signed by MWI/WAJ and USAID on April 13, 2006. This report responds then to the mandate given to the Consultants in the MOU. This Executive Summary follows the presentational order of the main report.

NEWCO's mandate and legal aspects

The government is keen in creating a company able to provide excellent, efficient and continuous services to the whole population in NEWCO's service area. NEWCO must quickly establish its credibility as a competent successor to LEMA in line with the expectations of the general public and must gain the trust of external funding agencies that may help finance its investment program, including the start-up project. It will be of the essence for NEWCO to start its activities with clear objectives that address widely felt needs in the service area.

MWI/WAJ's intention is that NEWCO operates as a financially viable, self-sustaining entity, managed under modern commercial principles and private sector practices. Moreover, the intention is also to create a modern corporate governance structure that will allow effective stakeholder participation and operational autonomy. NEWCO's draft Articles and Memorandum of Association and Bylaws contain structures and procedures that reflect modern principles of corporate governance that have been developed in the past ten years largely as a result of corporate scandals in the United States, the European Union, and developing countries.

¹ Amman Water Management/Commercialization Assessment. Phase one report: Comparative evaluation and recommended organizational model. January, 2006

According to the MOU, NEWCO will be a limited liability company organized under the relevant provisions of the Companies Law (Law No. 22 for the year 1997). WAJ will be the majority owner of NEWCO, and it envisions establishing a partnership with Greater Amman Municipality.

WAJ should not have an input into the day-to-day operation of NEWCO and should act mainly as: shareholder, provider of bulk water and of wastewater treatment services, and responsible for major capital improvements.

The Program Management Unit (PMU) under WAJ will monitor NEWCO's performance to ensure the quality and standards of service as defined in the Assignment Agreement to be signed between WAJ and NEWCO. This monitoring is part of a transition process for PMU to achieve in the future a more independent status towards more formal regulatory responsibilities of water and sewerage companies and agencies across the country.

NEWCO's organizational and managerial aspects

There are many alternative approaches to the design of an organizational structure that best fits an organization's objectives but, ultimately, the General Manager and the senior management team are the ones who should decide on the structure that best fits their management style and the needs of the organization to fulfill its mission.

The Consultants consider that LEMA's organization, for the most part, is adequate to respond to NEWCO's initial challenges. In order not to overload the new administration, the Consultants recommend implementing a new organization in two stages:

- Stage 1, to be implemented by January 2007 represents minimal changes to the existing LEMA organization. This stage entails the addition of four key functions and positions to the current organizational structure. This change has a small impact on existing operations, and addresses key organizational issues confronting NEWCO – it is considered a “bare bones” approach to creating a successfully functioning organization. The additional positions/responsibilities envisioned include a human resources officer, a legal coordinator, a capital improvement program coordinator, and a chief financial officer.
- Stage 2, recommended for full implementation by early 2008 represents a more comprehensive reorganization. It increases the number of senior management positions, thereby providing an opportunity to add personnel from the private sector with broad commercial company experience.

NEWCO's Management Committee and senior management face challenges and opportunities inherent in the development of the company's mission, goals, objectives and work ethic. Moreover, the management group should strive to bolster stakeholder and community confidence through the application of transparent practices. Additional challenges include development and implementation of:

- An equitable and fair personnel management system, to gain staff acceptance and willingness to work hard for the company.
- A comprehensive asset management system to improve operations and maintenance.
- A comprehensive strategy for improving all aspects of the organization's operation to ensure excellent services to all.

NEWCO's human resources

The establishment of NEWCO provides a window of opportunity to shape and direct new human resources policies within the statutory provisions in compliance with the Labor Law. The challenge is to establish the critical transformation by the management and staff from a Civil Service mode of operations to a model that is more in keeping with "private sector practices", to unify the pay scales and staff classification system, and to implement responsive training programs.

The fact that the ex-WAJ staff was seconded directly from the Civil Service and occupies most key positions in NEWCO, would make the transformation a bit more challenging since by and large they would not only have to be the agents of change but also would have to change their modus operandi with regard to management in general and human resource development in particular.

The move towards a private sector service model can be hampered by the Human Resources Department rigidly applying public/civil service human resources policies. This has been the case in other utilities who have tried to make the transition; they incurred the cost and not the desired performance results to date.

NEWCO's operational aspects

A significant increase in water supply will bring a net addition of 40 Mm³/year, once the Zara Ma'een project becomes operational in late 2006. This additional water supply provides a unique opportunity to offer continuous service to almost all the population in the service area, provided that Non Revenue Water (NRW) –water losses- is substantially brought under control (45% to 35%) through an aggressive program to reduce pipe breaks/leak and illegal connections and a close supervision program to reduce even further NRW.

As defined in the MOU, WAJ will continue to be responsible for bulk water supply and wastewater treatment services outside the service area. NEWCO will be responsible for the operation of the water supply, including Zai KAC supply system and wells in the operational area. NEWCO will also be responsible for the wastewater collection system and the operation of two small wastewater treatment plants in the area of service.

To effectively discharge its mandate, NEWCO should develop and implement a comprehensive asset management system to supervise the operations and make optimal use of its assets and WAJ assets under its responsibility. This system should be built on the asset inventory system developed by LEMA, and expand the existing SCADA system to optimize operations.

The MOU clearly defines that NEWCO will be “responsible for all preventive and routine maintenance of all assets under its management, including those entrusted to the Company by WAJ” (Article 11). Moreover, the MOU provides a pragmatic and useful allocation of Capital Investment (CIP) responsibilities (Articles 12 and 13).

The assignment of capital investment responsibilities poses a challenge to both NEWCO and WAJ as there are gaps in the understanding of the physical condition of most fixed assets (in particular underground water and sewerage pipes)².

There is no a common accepted allocation of capital investment responsibilities; however the consultants, based on best practices in lease/affermage contracts where this distinction is important to the operator and the owner of the service, recommend:

- Maintenance: NEWCO will be responsible for all maintenance responsibilities within the service area including:
 - Water distribution and wastewater collections systems, including the primary water distribution system (pumping stations, storage tanks and pipelines ≥ 400 mm),
 - Water treatment/wastewater treatment plants and own wells operated by the new company.
 - Significant maintenance programs that will exceed the budget allocated to maintenance could be dealt as a capital expense.

NEWCO’s maintenance responsibilities should have an annual cap of JD 2.5 million; a cap dictated by the availability of financial resources. This cap should be revised periodically starting in 2009.

- Investment: NEWCO will be responsible for developing and executing an integrated and comprehensive CIP related to the expansion of water and wastewater systems including:
 - The water distribution system (pipelines, pumping stations, SCADA system, storage, valves and appurtenances)
 - Wastewater collection system
 - House connections (water and sewerage) and water meters.

² The proposed Start- Up project would provide the resources and software/hardware to have a more satisfactory understanding of the condition of these assets.

- Major Investments: WAJ will be responsible for major capital expenditures related to the rehabilitation and expansion of the water and wastewater systems including:
 - New bulk water supplies, including treatment, to timely satisfy the demand in the service area.
 - New wastewater treatment plants and related conveyance facilities.
 - Primary water distribution system and additions to it or replacements to augment its capacity.
 - Transport of bulk water to areas outside service area.

Another factor that should influence the allocation of maintenance/CIP expenditures is the Start-Up project. If this project, as recommended, is timely carried out (beginning in mid 2007) NEWCO will be able to assume the above financial responsibilities. If the Start-Up Project does not materialize as planned, then more modest targets should be set for NEWCO.

NEWCO's Start-up Project

A significant investment program carried out by WAJ has been a contributing factor to improvements, particularly in water supply services. However, there is still an urgent need to substantially reduce the number of leaks/bursts in the water distribution system and blockages in the wastewater collection system as they both exceed, and by an ample margin, acceptable operational practices in service companies of similar characteristics.

The Consultants recommend that NEWCO's management implementing a project - Start-up Project - addressing issues mentioned in the previous paragraph. The Start-up Project has been conceptualized as a means to: restore continuous service within the entire Amman service area, improve the reliability of wastewater collection system, improve operational efficiency and provide a reliable asset management system. The total project cost is estimated at JD 50 million in 2006 prices.

The Start-up Project is attractive through the simplicity of its design and through its clear focus on reducing leakage in order to restore continuous service to Amman, improving living conditions by the reduction of sewerage blockages, and providing more agile management operation software/hardware facilities. It is likely that there will wide interest from external agencies to finance the entire Start-up Project or some of its components (for instance technical assistance in GIS and SCADA). MWI/WAJ would service the loans for this project.

Pricing bulk water, services and subsidies

- It is recommended that WAJ should consider charging NEWCO an optimal bulk water tariff of at least JD 0.300 per cubic meter. The charge should be irrespective of the origin of the bulk water. However, this charge should be revised once Disi becomes operational. WAJ would then be free to consider the optimal dispatch of

bulk water from its various sources, beginning with the cheapest and ending with the more expensive.

- The current pricing of services results in a substantial level of subsidies (economic cost less price paid by the operating company or final consumer) to the water company and end consumers. Subsidies to end consumers amount to about JD 56 million per year as compared to the water company's operational revenue of JD 52 million (LEMA's 2006 budget).
- Subsidies are not well targeted. Poor consumers (with consumption less than 20 m³/quarter) representing about 30% of residential users receive only 9% of the subsidies while mid and upper class residential users receive over 90% of the subsidies (Annex 5). Moreover, the absolute level of subsidies to residential users tends to increase as consumption increases.

The consequences of these subsidies are:

- They deprive WAJ and NEWCO of needed resources to provide adequate maintenance and timely expand wastewater services.
- They give a weak signal to the operator and end users to conserve water resources. To the former, in the form of high level of non revenue water and to the latter in promoting wasteful consumption.
- The Consultants recommend an in-depth revision of pricing and subsidy policies to improve cost recovery and reducing subsidies to better-off consumers.

NEWCO's financial aspects

MWI/WAJ should ensure that NEWCO starts operations in a robust financial position. Two critical aspects leading to NEWCO's robust financial positions are the following:

- MWI/WAJ providing NEWCO with adequate working capital.
- MWI/WAJ providing NEWCO with sufficient and predictable revenues for the medium- and long-term operations. The decision on revenues should take into account that NEWCO should have enough resources to finance its day-to-day operations, the rehabilitation of the existing infrastructure and the expansion of services.

The Consultants recommend that WAJ provides NEWCO with the required working capital according to the approach below³:

³ The figures are based on available estimates but should be updated during the transition from LEMA to NEWCO.

- WAJ transfers to NEWCO as capital contribution (paid-in capital) the current assets of the water and sewerage service at the end of LEMA's contract, so as to provide the company with adequate liquidity to carry out its operations. These current assets are currently estimated at JD 18 million, which include JD 16 million in accounts receivable (net of provision for doubtful receivables), and JD 2 million in inventories and other current assets at the end of LEMA' contract.
- WAJ opens a JD 2 million line credit to NEWCO to start operations. NEWCO would reimburse the loan during the first one to two years of its operations.
- WAJ clears-up all LEMA's account payables in arrears. The accounts payable not in arrears could be assumed by NEWCO. These accounts, including WAJ's JD 2 million loan would amount to about JD 10 million.

The above arrangements would allow NEWCO to start operations with a positive net working capital (current assets less current liabilities) of about JD 10 million.

The financial scenario estimated by the Consultants for the 2007-11-period shows that NEWCO's cash flows would be adequate to cover its operational expenditures and investments while at the same time maintaining a satisfactory cash position. The sources of funds considered for the scenario include NEWCO's current operational revenues, without adjustment to compensate for inflation, plus WAJ financial revenues generated by the 3% contribution on buildings and land in Greater Amman (Law No. 18 of 1988, Article 21).

NEWCO's management should periodically update the scenarios taking into account actual cash flows and up-to-date management plans. NEWCO's up-to-date scenarios should also take into account aspects like the implications of the entrance in operation of DISI around 2012, government and WAJ's decisions regarding pricing of services and subsidies, and actual inflation rates.

Creating NEWCO

The departure of LEMA and its Suez personnel by the end of 2006 requires the urgent appointment of NEWCO's executive staff to make critical decisions including NEWCO's organization and staff appointments, introduction of new areas of responsibility in the new entity and the transfer of assets and services from WAJ.

As indicated in the Minister letter of June 6, 2006, the Minister of Water and Irrigation will appoint NEWCO's General Manager. The Consultants consider it is critical to have the General Manager identified, at the latest, by early August, 2006.

In the same letter the Minister confirmed the participation of the Consultants in the identification of suitable candidates to fill the following positions:

1. Finance and Administrative Director

2. Human Resources Officer
3. Technical Services/CIP Director

All these positions will be publicly announced and the competitive selection process will consider candidates from inside and outside MWI. The selection process will be managed by a local recruitment firm based on responsibilities and qualifications discussed and agreed between the PDT and the Consultants. Interviews will be jointly managed by a special task group with representatives from MWI, WAJ and the consultants. NEWCO's General Manager will make the final selection.

It is expected that successful candidates will be offered the position by mid August 2006 so they can start work in early September. These professionals will be transitionally hired by USAID through the SEGURA/IP3 contract, with MWI/WAJ commitment that NEWCO will retain them at the beginning of operations.

The consultants recommend that NEWCO's senior management concentrate their initial effort in the following areas:

- Organization. The organizational proposal contained in this report should be validated or amended as necessary.
- Human resources. As detailed in the report, and in line with the decision on the organization, there is a need to develop a new system of staff classification, unified remuneration system and bonus package.
- Procurement procedures. NEWCO will have procurement procedures different to the ones from LEMA. The consultants will work closely with NEWCO's senior management in developing these procedures.
- Business plan. This plan captures the goals of the new company in terms of objectives, and defines the resources, financial and manpower, needed to implement it. The consultants will provide support to NEWCO's management in the development of this plan.
- Initial budget. There is a need to develop a detailed first year budget and sources of funds and a similar, less detailed one for the next two years. The consultants will work closely with NEWCO's senior management to develop these budgets, within the context of the Business Plan.
- Opening balance. This document needs to receive close attention from NEWCO's senior management. The consultants will work closely with NEWCO's senior management in developing this balance.
- Communication plan. To reach staff and the general public to help develop and reinforce NEWCO's corporate identity

- Operating procedures. While initially the consultants recommend continuing using LEMA's applicable procedures, there is a need to revise and update them as necessary. The consultants will make recommendations to NEWCO's senior management particularly on the following areas:
 - Customer services. To improve and enhance NEWCO's interaction with its customer base.
 - Finance and accounting. A new FAS system, financed by USAID will be implemented with the help of consultants. It is expected to be fully operational by mid 2008.
 - Standard operations. These procedures need to reflect the new organizational structure.
 - Transfer of rights and responsibilities. NEWCO's senior management need to be actively involved in this transfer as well as in the transfer of assets (fixed and movable) from WAJ to NEWCO.
 - Start-Up project. NEWCO's senior management should review the project and participate in the dialogue with donors to canvass their support and internally designate the professional team that will be responsible for its implementation.

A timeline of the expected work program for the above mentioned task is presented below:

NEWCO's incorporation process has already started with the development of draft versions of the Articles of Association (Annex 1B) and the Memorandum of Association (Annex 1C), which were discussed with PDT on several meetings. These documents are required to register the company (limited liability) in Jordan.

MWI/WAJ should submit the above drafts to the Greater Amman Municipality (GAM), the potential shareholder, and reach agreement with them as they would be the basis for the shareholder agreement between the two parties. As this agreement is a critical step in the process of incorporating NEWCO, MWI/WAJ should seek to reach agreement with GAM *by the beginning of August 2006*.

MWI/WAJ will present to the Cabinet the agreed versions, as part of the communications process that the MWI has established regarding the creation of the future company in Amman. Endorsement by the Cabinet is expected by the *end of November 2006*.

NEWCO's registration process will include the presentation of the foundation documents to the Company's Comptroller to obtain the Registration Certificate. In order to meet the timeline proposed, this Certificate should be obtained by the *middle of September 2006*.

Once NEWCO obtains its registration certificate and is fully incorporated as a limited liability company, the start of operations process begins with the shareholder's call for the General Assembly. The purpose of this meeting is to approve the decisions that will allow the company to start operations and to appoint the Management Committee and executive staff.

The deadline for this set of appointments is the beginning of *October 2006*. The consultants recommend that the members of the Management Committee be selected in advance to its formal nomination. This would permit them to participate in the review of documents that later they need to formally approve. It would be advisable to have these nominations completed in *early September 2006*.

Once formally appointed, the MC needs to review and approve the following set of documents.

- A first group includes: the organizational structure, staff compensation plan and human resource procedures, finance and accounting procedures and standard operating procedures.
- A second group includes: opening balance, the one-year budget and the business plan.

These approvals should take place not later than the end of *November 2006*.

SECTION 1 NEW WATER AND SANITATION COMPANY

Based on our recommendation in the Phase One Report, the Ministry of Water and Irrigation (MWI) and USAID agreed on the main characteristics of the new water and sanitation company (NEWCO) and the process to establish it. This agreement is reflected in the Memorandum of Understanding (MOU) signed on April 13, 2006 (Annex 1A). This report assesses NEWCO's feasibility according to the terms defined in the MOU and highlights critical components to start operations in January 2007.

NEWCO

NEWCO will be charged with providing water distribution and wastewater collection services in the Amman Governorate and the current service area operated by LEMA that extends beyond the governorate. The Water Authority of Jordan (WAJ) will continue to supply bulk water and wastewater treatment.

NEWCO will be a limited liability company, operated as a financially viable, self-sustaining entity, and managed under modern commercial principles and private sector practices. WAJ will be the majority owner of NEWCO and envisions establishing a partnership with Greater Amman Municipality (GAM). A modern corporate governance structure will allow effective stakeholder participation in NEWCO.

As a government-owned company and utility service provider, NEWCO will be under the aegis of the MWI and interface closely with its agencies, in particular the:

- Water Authority of Jordan. As a main shareholder of the company, WAJ will control the general assembly and will have a strong participation in the management committee, with the right to appoint key managerial staff. WAJ should seek stakeholder participation of the GAM. It will be the main supplier of bulk water to the service area and will also determine the maximum water extraction/deliveries in the service area. WAJ will receive wastewater at specific points of delivery for treatment in the As-Samra wastewater treatment plant and future wastewater treatment plants.
- Program Management Unit. The PMU will monitor NEWCO's performance to ensure the quality of services and efficiency of operations as defined in the Assignment Agreement. Its monitoring role is part of transitioning for PMU to more independence and more formal regulatory responsibilities of companies and agencies across the country.

NEWCO's Main Characteristics

NEWCO's main characteristics and desired outcomes, as outlined in the MOU and discussed in various PDT meetings, are summarized below. Its main goal is to provide the best possible and most efficient services to its customer base.

Shareholders. WAJ is considering the participation of the GAM as minority shareholder. We consider this participation highly beneficial and endorse it wholeheartedly as it will help improve coordinating:

- Water, wastewater, and urban development master plans for the metropolitan area.
- Operation of sewerage and drainage systems operated by NEWCO and the municipality, respectively, to reduce illegal connections and overflows from one system to the other.
- Collection of municipal sewerage contribution tax, which will be transferred to NEWCO.
- Public works that require municipality approvals or supervision.

Organization. To accomplish its mission, NEWCO will implement a structure to promote efficient operations and a decentralized system to respond to user needs and provide excellent customer services and communication with its customer base.

Management. While a public company, NEWCO will be managed under private sector principles, with revenues covering all costs related to its operation. The entity will be free of governmental intervention in its day-to-day operations. As a public utility fully owned by the government, however, it will look for the best possible ways to advance government goals in its development.

Operations. NEWCO will be vested with full rights and responsibilities to plan, manage, and operate assets. The company will be responsible for expanding water distribution and wastewater collection systems in the area of operations. It will also be responsible for all preventive and routine maintenance of assets under its management, including those assets entrusted by WAJ.

Operating and non operating revenues. NEWCO should have adequate operating revenues to discharge its responsibilities and to pay WAJ for bulk water and wastewater treatment. WAJ will transfer to NEWCO the 3 percent contribution for sewerage services, collected by the GAM. Please see Section 8 for further discussion.

Starting capital. As discussed in Section 8, WAJ will contribute to NEWCO's capital, all current assets and liabilities, and movable assets, including vehicles, furniture and equipment, now entrusted to LEMA.

Fixed assets. WAJ will continue to own all fixed assets and will entrust most of them to NEWCO who will be responsible for their operation and maintenance. See Section 5.

Capital investment program. NEWCO will develop and implement the CIP to provision services in the service area. Section 5 discusses WAJ's responsibilities for major capital expenses.

Business plan. The company will develop an annual business plan, at a minimum, on a five-year horizon and discussed it at least annually with WAJ and PMU.

A key component of the program distinct from the technical and financial viability of NEWCO is the start-up project we propose in Section 5. It is to be implemented by the company to support significant service improvements - particularly continuous water supply and reducing non-revenue water (NRW) in the service area during the initial years of the NEWCO's operations.

SECTION 2 LEGAL FRAMEWORK

This section identifies the legal framework that governs the transfer of rights, assets, and other necessary legal powers from WAJ to NEWCO. We highlight the specific laws and regulations that are directly applicable to the transaction. We also discuss the legal agreements that will implement the transaction pursuant to the applicable Jordanian laws.

Applicable Laws

The law authorizing the transfer of part of WAJ's authority and assets to a limited-liability company (NEWCO) is the Water Authority of Jordan Law No. 18 (1988) (hereinafter the WAJ Law).

Law No. 62 (2001) added to the WAJ Law Article 28, which provides, in part:

The Council of Ministers upon the recommendation of the Minister [of Water and Irrigation] may assign any of [WAJ's] duties or projects or the execution of any stage or part thereof to any other body from the public or private sector [...] or to a limited liability company owned totally by WAJ or in which WAJ contributed to the capital. Such assignment may include the transfer of the management of these projects or the lease thereof, or the transfer of ownership to any of these bodies, in accordance with the conditions and for the durations to be set in the contracts that shall be concluded for this purpose, provided that they shall abide with [conform to] the legal provisions in force relating to leases and transfer of ownership. (Emphasis added.)

The Companies Law No. 22, Article 8 (1997) contains the procedures by which a government agency, such as WAJ, may assign to specified, separate legal entities those rights and responsibilities referred to in Article 28 of the WAJ Law. Article 8 of the Companies Law also sets out the overall framework for this exercise, in part, as follows:

Notwithstanding anything stipulated in this Law:

(a) Any institute, authority, public official body or public utility or any part of it may be converted by virtue of a decision of the Council of Ministers, upon the recommendation of the Minister, the Minister of Finance, and the appropriate Minister, into a [...] limited liability company operating in pursuance to commercial basis where the government owns all of its shares.

(b) The capital of such company shall be determined by re-evaluating the moveable and immovable [fixed] assets of the corporation, authority or body in accordance with the provisions of the Law, provided that the members of the re-evaluation committee shall include at least one licensed auditor. The value of such assets shall be considered cash shares in the company capital.

(c) The Council of Ministers shall appoint a special committee that shall prepare the company articles and memorandum of association, including the method of selling and trading its shares and completing the procedures for converting the corporation, authority or public official body into a public shareholding company and the registration thereof in such capacity, the Council of Ministers shall appoint its board of directors to conduct the affairs thereof in such capacity in accordance with the provisions of this Law.

(d) Upon conversion of the corporation [...] the Council of Ministers shall appoint its board of directors to conduct the affairs thereof and to carry out all powers entrusted thereto under this Law.

(e) The company established [...] shall be subject to the provisions and conditions stipulated in this Law in the circumstances and issues not provided for in its articles and memorandum of association and shall appoint its independent auditor.

(f) The company established [...] shall be considered a general successor for the corporation, authority or public official body which has been converted and shall supersede it legally and practically in all its rights and obligations.

As to limited liability companies, such as NEWCO, Temporary Law No. 40 (2002) Supplemented Part 4, (Limited Liability Company, Articles 53 to 76 of the Companies Law), provides a detailed procedure to establish and operate of a limited-liability company in Jordan. WAJ will follow this procedure to establish NEWCO and assign its rights and obligations under Article 28 of the WAJ Law. Some representative provisions of Part Four of the Companies Law are as follows:

Article 57 (b) and (c): The Articles and Memorandum of Association of the Company should include the basic information, including the manner of distributing profits and losses to the shareholders.

Articles 61 and 62: The manager and management committee of the company should, within three (3) months of the company's new fiscal year, prepare the company's balance sheet and final accounts, including the profit-and-loss statement, necessary clarifications, and cash-flow statement fully audited, in addition to the annual report of the company's activities, and submit the same to the company's general assembly during its annual ordinary general assembly meeting.

Article (66). The agenda of the annual ordinary general assembly meeting should include a decision by the general assembly to approve the balance sheet, profit-and-loss account, and the cash-flow statement.

Article (70). The company shall deposit ten percent (10%) of its net profits in the statutory reserve. The company may deposit twenty percent (20%) of its net profit

to its voluntary-reserve account, and the general assembly may resolve that such reserve be used for the company's objectives or be distributed as dividends to its shareholders. The right to distribute profits rests with the General Assembly; moreover, the company's Articles and Memorandum of Association may stipulate that a certain percentage of the net profit may be used for the company's expansion activities or capital expenditure

Shareholders

As a government office within the definition of the WAJ Law, WAJ is eligible to be a shareholder in NEWCO. Pursuant to MOU Article 7 (a), "The company's ownership structure shall be agreed upon by WAJ and other potential public and private partners, if any, based on the recommendations of the feasibility study." Following the structure of the Aqaba Water Company LLC, the consensus of the planners of the current project is that WAJ shall be the majority shareholder.

WAJ is considering inviting the GAM to be a minority shareholder. The GAM is presently a shareholder in Jordanian Biotical Gas Company LLC and in Dead Sea Company for Exhibitions and Conferences PSC. There appear to be no legal impediments to the GAM becoming a shareholder NEWCO as well.

Corporate Governance

Modern corporate governance principles will be introduced in NEWCO's Articles, Memorandum of Association, and Bylaws. The latest drafts of NEWCO's Articles of Association and Memorandum of Association, which were reviewed by the PDT, are attached as Annexes 1B and 1C, respectively. NEWCO's Bylaws have yet to be drafted.

These foundation documents contain provisions that reflect modern principles of corporate governance that have been developed in the past ten years in the United States, the European Union, and other developing countries. The following illustrate the basic principles to promote integrity and transparency in NEWCO's operations and activities.

Management committee (board of directors)

- Number of members and officers as members. The number of members shall be seven (7). The general manager shall be a non-voting, ex officio member. No other officer shall at any time be a member.
- Election of Members. The election of members shall be determined by the General assembly at its Annual Meeting, provided that, pursuant to Article 135 of the Companies Law, the first members shall be appointed by the general assembly.
- Terms of office and vacancies. The members shall be elected to terms of office by the general assembly in any annual meeting provided that any term of office shall be for four (4) years or less as determined by the same.

- Eligibility for re-election. Every retiring member shall be eligible for re-election provided that no member shall serve for more than ten (10) consecutive years without an absence of at least three (3) years before being eligible for any further election as a member.
- Compensation of Members. the general assembly shall by extraordinary resolution determine from time to time the compensation of the members, if any.

Additional Corporate Governance Safeguards

We recommend that other safeguards be included in the Bylaws and other operational documents as a means to:

- Provide a valuable example for other companies in Jordan to emulate.
- Instill pride and professionalism in NEWCO’s staff and workforce.
- Instill confidence in consumers of NEWCO’s services that they are paying a fair price.
- Show to potential investors, domestic and foreign, that Jordan is serious about making its business sector transparent and modern who will help promote investment in the Jordanian economy.

In other developing countries, the corporate-governance codes of Malaysia, Hong Kong, and South Africa are instructive. From Jordan’s perspective, the example of South Africa is particularly useful. Like Jordan, South Africa expresses concern for the welfare not just of a company’s owners – its shareholders – but also for its stakeholders. South Africa’s *King Report on Corporate Governance* states: Directors must act with enterprise and always strive to increase the shareholders’ value while having regard for the interests of all stakeholders.

WAJ is keenly aware of stakeholders needs and of its obligation to try to meet them. It is at the vanguard of a growing international consensus that companies that deliver a nation’s essential services must look beyond the needs of their shareholders to the needs of the broader community – the other stakeholders.

Asset Ownership

Articles 4 and 8 of the MOU (Annex 1A) contain the basic decisions of MWI and WAJ to the transaction regarding the transfer of WAJ and LEMA assets to NEWCO.

Legal Documents

The legal documents required to structure and officially register NEWCO are the Articles of Association (Annex 1B) and the Memorandum of Association (Annex 1C). To the extent that these documents are official documents, open to public scrutiny, they may not be among the company’s “internal documents.” Insofar as they affect NEWCO’s

organization and management functions, we have here designated them as “internal documents,” along with its bylaws, asset management plan, CIP, business plan, bulk water charge, and shareholders agreement – if another entity becomes a shareholder in the company. The previous five documents have not yet been drafted.

NEWCO’s External Documents

- Memorandum of Understanding. This document delineates the main agreements reached between MWI and WAJ leading to the creation of NEWCO (Annex 1A).
- Assignment Agreement (AA). This document has yet to be drafted but will closely track the successful assignment agreement between WAJ and Aqaba Water Company LLC, which provides water and wastewater services in the Aqaba Special Economic Zone (ASEZ) and parts of Aqaba Governorate situated outside the zone.⁴ The MOU Article 2 defines the AA as: the agreement to be signed by WAJ and NEWCO and approved by the Council of Ministers in accordance with Article 28 of the WAJ Law to assign rights and responsibilities for the provision of water and wastewater services. This agreement will set the WAJ assets, authority, and obligations to be transferred to NEWCO and their respective restrictions.
- Bulk water and wastewater purchase agreement. MOU Article 22 (b) refers to this document. While it may be a separate agreement between WAJ and NEWCO, in all likelihood will be an appendix to the AA.

PMU Regulation of NEWCO’s Performance

Article 2 of the MOU defines the PMU as an official entity established within WAJ to monitor the LEMA management contract, Northern Governorates management contract, As-Samra BOT project, the Madaba Micro PSP billing and collection system, and the AWC. It oversees the capital investment program for the Amman area.

WAJ’s objective is to develop the PMU into an effective national regulatory agency in the water/wastewater sector. With support from the EU, the PMU is a highly professional office that has gained valuable experience monitoring the LEMA management contract. We are working closely with PMU staff to assure a smooth transition from LEMA to NEWCO. We will also work with PMU to determine the precise role that it will play in regulating and monitoring NEWCO’s performance.

As with the AWC, it is anticipated that the regulation of NEWCO’s performance will be accomplished by contract. The regulatory functions will be identified in the AA, i.e., the

⁴ The assignment agreement in the AWC/ASEZ transaction was supplemented by a development agreement. Through it, the Aqaba Special Economic Zone Authority (ASEZA) - the official body charged with the responsibility and authority to develop the ASEZ across the board - transferred to AWC its authority and duty to provide water and wastewater services in the zone. Although NEWCO does not involve a separate official development authority such as ASEZA, the development agreement in the AWC project contains some provisions that may be useful to incorporate into the AA. We will suggest additional provisions when drafting of the AA begins in earnest.

contract, and assigned to the party most appropriate to perform specific functions. With the AWC, for example, WAJ performs the functions most closely identified with national standards such as water quality and ASEZ performs those most closely identified with customer service.

SECTION 3 INSTITUTIONAL AND MANAGEMENT ANALYSIS

This section highlights key strategic and organizational issues confronting NEWCO and describes several approaches to address them. We expand on the following concepts and provide our recommendations based on our institutional analysis:

- Improvements to LEMA's organization
- Organizational approach for NEWCO
- Challenges for NEWCO's management
- NEWCO's relationship with WAJ and PMU
- Decentralization of operations
- Management committee

Improvements to LEMA's Organization

This subsection provides an overview of LEMA's organization and NEWCO's responsibilities and functions that would augment LEMA's. These concerns were of primary importance in developing a new organizational structure, i.e., addressing LEMA's attributes and integrating new and expanded functions into NEWCO.

LEMA's organizational structure and senior management. As of May 2006, LEMA's organization features an executive director, an assistant executive director (also functioning as director of water production and quality), a public information officer, and five division directors. The organizational structure is depicted at the end of this section.

The five divisions and their associated number of employees are:

- Finance and administration (62)
- Technical services (76)
- Water production and quality (127)
- Customer services (398)
- Operations (607)

An imbalance in the number of people per division - from the fewest to the most - should be addressed when considering NEWCO's organizational structure. With the exception of the assistant executive director, each of the positions is headed by an expatriate who will leave at the end of the first quarter of 2007. It is essential for the MWI and WAJ to fill these positions promptly.

LEMA's middle management. One of the serious issues with LEMA's organization is the shortage of qualified middle management personnel. This problem was often mentioned during interviews with LEMA's top management, who also reported that the shortage of sufficiently trained and capable managers was a constraint to decentralize LEMA into three operating regions. Low salaries were cited as a reason for not being able to attract and retain mid-level managers.

Human resources. LEMA's HR function is limited. The personnel department, which reports to the director of finance and administration, administers payroll, employee benefits, and other personnel issues and policies. The executive director and top management retain the HR planning and implementation function at the executive level. We discuss in further detail in Section 4 the important HR issues NEWCO will face, particularly during the start-up of its operations.

Asset management and financial planning. LEMA does not address capital improvement planning comprehensively. As a result of its relationship with WAJ, LEMA is responsible for day-to-day operations and WAJ is responsible for developing, implementing and financing the CIP, including major repairs.

In 1999, LEMA purchased an asset management system purchased from Custom Maintenance Systems (CMS). It is being used by the facilities maintenance unit to track work orders, contractor invoices, and maintenance history of above-ground assets under LEMA's operational control. Underground assets, however, are not part of the automated maintenance tracking system nor does the technical services division have ready access to the data.

In contrast with current practice, NEWCO will be responsible for capital improvement planning and implementation. Thus, the organizational approach we proposed in Section 4 addresses the need for NEWCO to establish this function.

Legal services. LEMA does not have a specific legal function. The director of finance and administration coordinates and handles legal matters pertaining to contractor, vendor, and customer disputes; corporate legal matters come under WAJ's purview.

Under NEWCO's new corporate structure, it is likely that in administrative and corporate matters involving legal counsel may consume the time of the general manager and the management committee. We addressed this topic in the proposed organizational model and recommend the positions of a legal coordinator and retaining external legal counsel.

Public relations. The existing public relations function is handled by a public relations officer who reports to the assistant general manager. Most public relation issues currently fall under the category of operational and not corporate issues, which are now handled by WAJ.

Under NEWCO, public relations will have greater significance and relevance and will become crucial to creating public and stakeholder awareness regarding the success of NEWCO. Therefore, we recommend that a professional public relations specialist be retained to assist NEWCO's top management during and after the transition.

Organizational Approach for NEWCO

There are many alternative approaches to designing an organizational structure that best fits an organization's objectives. Ultimately, it will be the general manager and the senior

management team at NEWCO that decide on the structure that best fits their management style and the organization's needs.

Based on our analysis of LEMA's organization and NEWCO's expected new responsibilities, we recommend NEWCO's management to consider an organizational approach to be implemented in two stages. Stage 1 to be implemented in January 2007 represents minimal changes to the existing LEMA organization. Stage 2, recommended for full implementation in 2008, represents a more comprehensive reorganization. Our recommendation addresses the top management of the company; it does not intend to assess every division, department, and unit of the organization. The job descriptions and the minimum qualifications for the recommended positions are shown in Annex 2D. The two stages are outlined below and the organizational charts are presented at the end of the section.

Stage 1: January 2007. This stage entails addition of four key functions and positions to the current organizational structure, as described below. This change has a small impact on existing operations, and only addresses key organizational issues confronting NEWCO. We consider it a "bare bones" approach to creating a successfully functioning organization. The organizational alternative is depicted at the end of this section.

- Human resources officer is a senior level officer who reports to the general manager and the assistant general manager. The new HR officer is tasked with developing strategies and policies related to organizational development; developing and updating personnel policies, personnel classification and pay system; and employee development programs.
- Legal coordinator is a new position in recognition of NEWCO's increased legal needs, particularly in the early year(s) of operation. We recommend that NEWCO appoint a lawyer or person with a legal background who would work closely with NEWCO's external legal counsel.
- CIP coordinator is another new position that requires a senior engineer familiar with developing and monitoring of sophisticated CIP. The CIP coordinator would report to the director of technical services or be the responsible director for that division.
- Chief financial officer would have greater responsibilities than the current director of finance and administration. Under the NEWCO's legal structure, it will be important to have a very senior finance person who is familiar with financial modeling of an entire company's finances and who can relate to the investment and donor communities. In addition, the CFO may establish a centralized IT function within the division that may later be moved to a separate division as suggested in Stage 2. We also propose that NEWCO establish a separate group of three to five people to handle financial planning, reporting, and budgeting for the entire company. A more detailed description of the nature and function of this group are contained in Stage 2.

Stage 2: January 2008. This stage encompasses changes recommended in the Stage 1 and expands other functions and divisions. It considers NEWCO's legal status and the functions it must perform. Increases in the number of senior management positions provide an opportunity to add personnel from the private sector with broad commercial experience. The existing and new top positions/responsibilities envisioned during Stage No. 2 are outlined below. The resulting organizational structure is depicted at the end of this section.

- General manager is the chief executive officer of the company with the authority to hire and fire all employees, including key officers and directors. The General Manager will have a staff of three and two deputy general managers to assist in managing the company. The three staff positions include a human resources officer, public relations officer, and legal coordinator as described in Stage 1.
- Deputy general manager of financial operations would serve as the company's chief financial officer and oversee the divisions of finance and administration, customer services, information technology (IT), and planning and budget. The primary functions of this cluster will involve: preparing, updating and monitoring NEWCO's business plan; preparing and monitoring annual budgets; preparing external reports that include operational and financial information; conducting cost-of-service studies for all groups within the company; and serving as internal auditors to evaluate NEWCO's efficiency. The divisions under the deputy general manager are:
 - Director, finance and administration would have a similar function as the current function within LEMA. The director is tasked with day-to-day supervision of accounting, purchasing and inventory, and facilities management. Since external reporting, budgeting and financial planning will be performed by other groups: the director would be able to concentrate on improving systems such as FAS and recommending actions and programs to increase productivity.
 - Director, customer services would have same role as current position in LEMA - essentially managing about 360 people attending to customer service. We expect that one of NEWCO's first tasks will be to implement new procedures that improve service and make it easier for customers to interact with the company, e.g., decreasing the time to provide new service to a customer after the initial request, which currently takes about three months.
 - Director, information technology, a function is currently under the administrative control of the technical services division and responsible for network maintenance and supporting existing software systems. We recommend that NEWCO's management elevate this function to division level to consolidate all systems in operation, and that it entrust managing this operation to a high-level professional with skills in system design and implementation.
 - Director, planning and budget, is a new function recommended to be implemented in two parts. First, we recommend creating this position under the director of

finance and administration. This strategy will enable the group to begin to form and carry out selected functions before creating a separate division. Second, we recommend that the position achieve division-level status.

- Director, technical services is to remain the same as the current position at LEMA. This position needs to be strengthened to perform additional critical functions for the company, including coordinating capital facility planning, such as network extension activities and policies. The director will draft an annual comprehensive capital improvement plan.
- Director, asset maintenance, is a new position and is created by splitting the current operations division at LEMA into distinct divisions. This division would be responsible for maintenance of above-ground company assets. It would include the LEMA's facilities management unit.
- Director, network operations and maintenance, derived from the LEMA's former the operations division, the director would be responsible for network O&M and would supervise the groups that currently carry out this function under LEMA.
- Director, water production and quality, functions remain the same.

Challenges for NEWCO's Management

The key challenges confronting NEWCO's management include the following:

- Organizational development and change management
- Human resources and personnel management
- Asset management
- Strategic and financial planning

Organizational development and change management. At the core of organizational development and change management is the organization - defined as two or more people working together toward one or more shared goals. Development in this context is the ability of the organization to become more effective at achieving its goals over time and to change its beliefs, attitudes, values, and structure so that it can better adapt to new technologies and challenges.

Within the context of the above definition, NEWCO is faced with challenges inherent in the development of a company mission, goals, objectives and work ethic. The function of "organizational development" should be considered as a critical management function demanding the attention of the topmost level of NEWCO management. Accordingly, NEWCO's general and senior managers should consider adopting an organizational development strategy that includes the following major elements.

- *Company work ethic.* One of the most crucial elements for success in NEWCO will be to develop a work ethic that promotes customer orientation, professionalism, and

efficiency. NEWCO management should strive to develop policies that work toward that goal.

- *Company mission and goals.* A mission statement should be promulgated as NEWCO's long-term mission or purpose, e.g., "to provide the highest quality of service at the lowest possible price while being respectful of the customer's right to fair and impartial treatment by all members of the Company's staff." We suggest that NEWCO adopt short-term objectives and long-term goals. Short-term objectives should be developed to support long-term goals. Examples of short-term objectives include providing continuous service to a percentage of the customers for the following year or selecting a number of districts to isolate and provide continuous service in the next year. Examples of long-term goals include providing continuous service, separating service area into districts, and introducing technological improvements, i.e. SCADA system.
- *Stakeholder confidence.* Early recognition of the importance of stakeholder confidence will greatly improve NEWCO's chances of success as an independent company. The MWI, WAJ, and PMU must be convinced that NEWCO has established a framework for success that includes a transparent operation that enables external agencies to monitor NEWCO's progress. The results of NEWCO's operation must be accurately presented to those agencies for them to develop confidence in NEWCO's management.
- *Community outreach.* Effective communication with the GAM and its citizens will also greatly improve NEWCO's chances of success as an independent company. The community will be watching very closely how NEWCO begins its operation and or if it changes its attitude regarding the provision of service to customers. Management should consider options for making an immediate impact on customers, e.g, guaranteeing delivery when promised or reducing the bill if the bill is delivered late.
- *Policy development and promulgation.* During the early months, NEWCO's top management team should devote time to review and develop policies that will govern operations. Effective policies will be the backbone of NEWCO including those involving personnel, procurement, finance, and operations.
- *Data reliability and reporting.* A cornerstone in improving an organization is the availability of accurate data. We found this function to be lacking in the current operation, mainly because there is no organizational unit within LEMA responsible for to control quality of financial and operational data. While financial data is audited, there is minimal consistency involving operational data. In addition, consistent and accurate reporting can be problematic if there is no organizational unit within NEWCO responsible for external reporting.
- *Human resources and personnel management.* Another important challenge facing NEWCO management will be to develop and implement an equitable personnel management system. If employees believe that all are treated under the same rules

and policies, they will be more willing to work hard. The recommended personnel management system should include the elements described in Section 4.

- *Organizational development.* Organizational development necessitates policies and directives that promote a commercial atmosphere. One such organizational change that would have a significant impact would adopt a policy to reward productive employees and to terminate those that are not. This action would send a clear message to all employees that NEWCO's has high performance standards.
- *Employee classification and pay system.* Detailed employee classification and pay is included in Section 4. The activity should be undertaken after NEWCO management adopts the company's organizational structure. Therefore, one of the first tasks of NEWCO management will be to adopt an organizational structure upon which a classification and pay system can be developed, as shown at the end of this section.
- *Management training programs.* Another crucial element of a successful transition to NEWCO will be to develop management training programs for senior- and mid-level management, supervisors, and foremen. The type of training programs, which should address skill gaps, is outlined in Annex 2.
- *Asset management and capital improvement planning.* NEWCO's management will be challenged to develop and implement a comprehensive asset management system to ensure that NEWCO's assets are properly operated, maintained, and replaced. Planning for new assets must come under the umbrella of asset management whether those new assets involve system extension or new plant and equipment involving production, transmission and collection facilities. A successful asset management system integrates all functions under one umbrella - it can be accomplished even when multiple personnel and several departments are involved in the overall function. Integration would be facilitated through an electronic asset management system that is fully integrated into the FAS system and capable of providing more functions than the current CMMS system. It would also be highly desirable for the new system to include network assets that the current system does not. In addition to examining the modules offered by Oracle (FAS system), NEWCO should analyze several other systems used by many utilities for this purpose, including Hansen, Maximo, and Data Stream. An integrated asset management system would allow the exchange of data from several departments:
 - Custodianship, which would assign custody of the asset, including date purchased vendor and cost. The basic financial input would be entered from this section.
 - Operation and maintenance, which would contain maintenance history of the asset, including costs for preventive and corrective maintenance. It would also control vendor invoices related to work performance for maintenance that is subcontracted. It is managed by the operations division.

- Condition assessment, which provides a vehicle for quality control related to the performance of the operations division in properly caring for the asset. The CIP coordinator would use it to assist in developing a schedule for replacement of the asset.
- Replacement/enhancement program would be used by the operations and technical services divisions to assist in developing a program to enhance, maintain, or replace the asset.
- Capital improvement planning would tie together all potential asset replacements, enhancements, and additional capital improvements over a ten-year period. The asset management system will be a valuable tool in performing the function of capital improvement planning and development.
- *Strategic and financial planning.* NEWCO's management will face the challenging task of developing and implementing a comprehensive strategy to improve all aspects of the organization's operation. Planning should be viewed by NEWCO's top management as a crucial, annual activity. The activities described below should be accomplished annually in the following order:
 - Corporate strategic planning. Early in each fiscal year, NEWCO's top management should meet off-site to review the company's performance and set broad goals for the coming three to five years. The general manager, in consultation with the senior managers, should set the agenda for this meeting. The outcome of the meeting will be the adoption of broad company goals, e.g. continuous service for all customers within five years.
 - Develop objectives. Following the adoption of broad company goals, the general manager and key staff, including the assistant to the general manager and division directors should meet. The general manager should develop the agenda for the off-site meeting whose results will be specific company objectives that meet the goals defined in the previous step, e.g., continuous service in 60 operating districts by a certain date. These objectives should be short term, easily monitored, and realistic.
 - Develop business plan. A business plan provides a unified approach to meeting company goals and objectives in compliance with regulatory provisions; achieving quantified performance goals; and establishing the means to monitor progress against plan. Following the formulation of company objectives for the ensuing three to five years, a business plan can be developed. We suggest that the business plan be for three years since with each succeeding step in the planning process, the event horizon should be shortened. The business plan is performance-oriented and should include performance targets to meet NEWCO's broader and operational goals and objectives. The business plan should touch upon all aspects of the company's performance as it carries out its operation.

- Capital improvement plan and financial model. A capital improvement plan categorizes needed capital facilities over a timeframe of at least 10 years. It includes the type of project required, e.g. pump stations; expected project cost; and date project is needed. It will also display the required cash flow to be paid to design and construct the project asset. The financial model will contain NEWCO’s foreseeable revenue and expenses, including expenses identified by the CIP to predict cash shortages. The financial model can be used also to predict the need for tariff increase(s) or the effect of borrowing. Once the business plan has been developed, updating NEWCO’s capital improvement and financial plans can be accomplished. Meeting NEWCO’s objectives will usually result in the need for new capital facilities. The extent, nature and cost of those facilities will result from updating of the CIP.

- Annual budget. After developing a three-year business plan with performance targets for each fiscal year, an annual budget can be developed. This is a relatively straightforward exercise that LEMA has been doing regularly and should pose no issues in its continuation.

- Performance monitoring. Equally as important as the others, the last step is to collect information and report performance results accurately. This activity is normally accomplished early in the fiscal year based on prior fiscal year operational and financial results. It does not have to wait for the annual audit and should be completed to provide essential input into the first step of the planning cycle – corporate strategic planning.

NEWCO’s Relationship with WAJ and PMU

A new relationship with WAJ will occur as a result of incorporating NEWCO. WAJ will no longer have input into its day-to-day operations and will function mainly as:

- Shareholder
- Provider of bulk water and of wastewater treatment services
- Entity responsible for major capital improvement.

The relationship with PMU should continue as currently conceived, with PMU monitoring NEWCO’s performance according to agreed-upon service standards. PMU expertise in dealing with the donor community will also continue to be of great help to NEWCO.

Decentralization

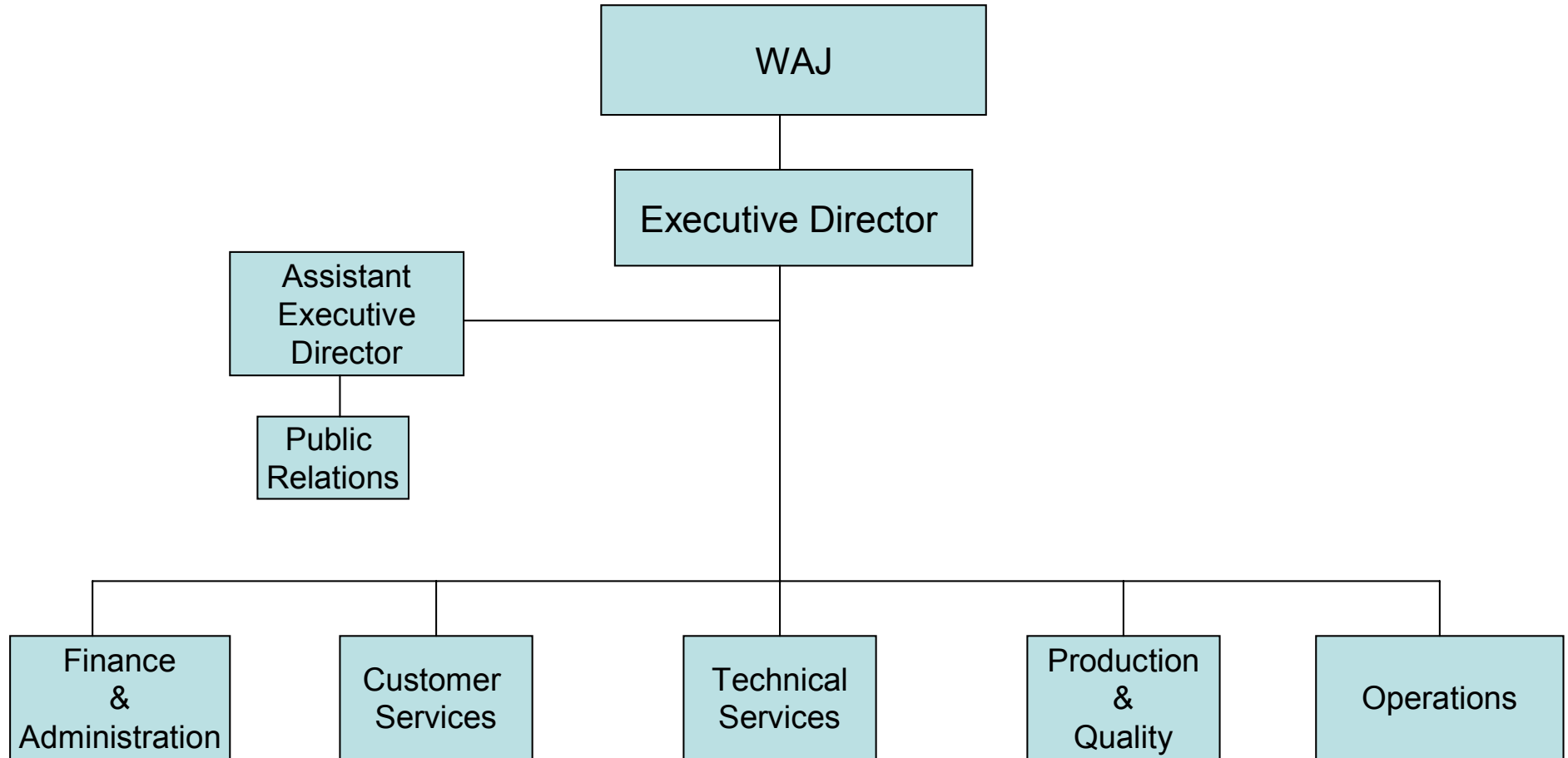
LEMA was considering the feasibility of decentralizing its organization into three districts that would encompass major functions related to servicing the customer - handling customer inquiries, resolving billing problems, and processing requests for new service. The possibility of three “mini-companies” was considered to respond more efficiently to customers, thereby enabling LEMA to provide a higher level of service.

The district concept would likely provide benefits to the customer but its cost has not been determined. We recommend an analysis of the costs and benefits of decentralization as it would have far-reaching effects on NEWCO – preferably by the new management team at NEWCO after January 2007.

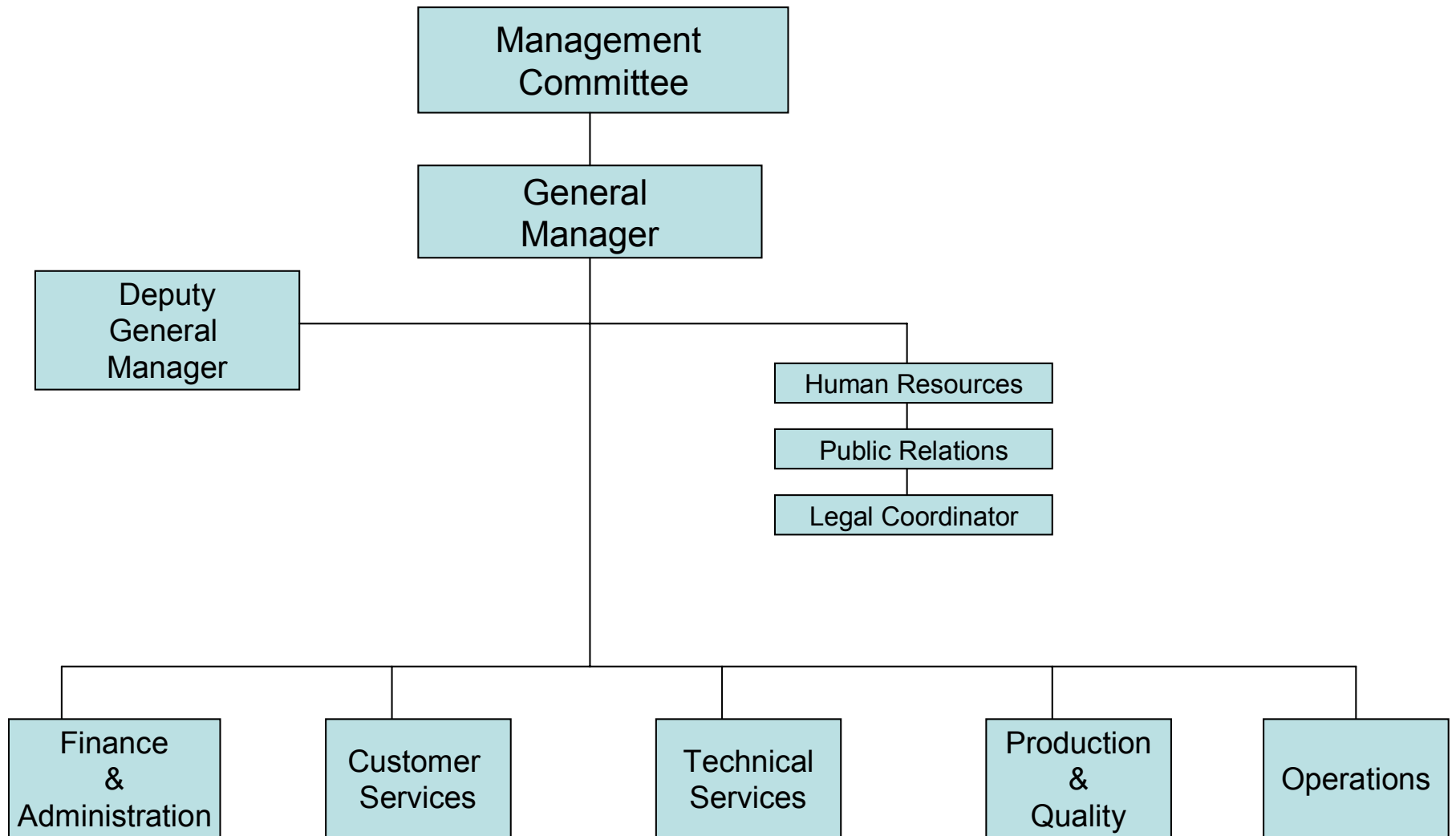
Management Committee

In addition to a discussion of alternative organizational models, we recognize that the composition of the management committee is a significant contributor to NEWCO's success. Potential members that could have a beneficial effect on NEWCO should include representatives of the business community who can bring their private sector perspective.

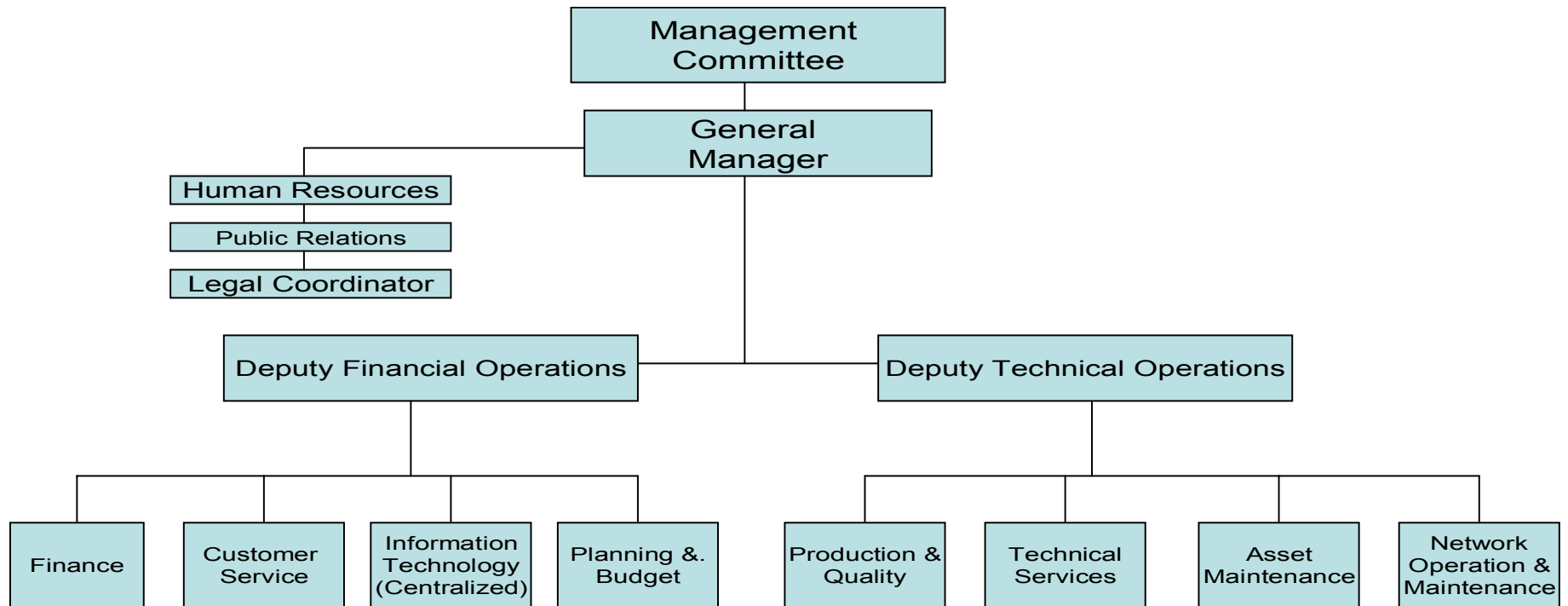
Current LEMA Organizational Structure: Senior Management



NEWCO Organizational Structure Stage 1, January 2007: Senior Management



NEWCO Organizational Structure Stage 2, January 2008: Senior Management



SECTION 4 HUMAN RESOURCES

This chapter analyses the present situation of human resources in the Amman water & sanitation utility, recommends human resources management (HRM) improvements, and sets out foundations for a training program.

The proposed approach to human resources was partly based on a review of compensation levels in the following Jordanian utility companies:

- Aqaba Water Company (AWC)
- Electricity Distribution Company (EDCO)
- Jordan Electricity Power Company (JEPCO) and,
- Irbid Electricity Distribution Co.

Relevant data from these reviews is included in Appendix 6 of this report.

Key HRM challenges to be addressed in the transition include:

- Inconsistencies and inequities in compensation between (and sometimes within) WAJ and LEMA pay scales
- Need to demonstrate company commitment to employee career progression in order to attract and retain qualified staff
- Limited scope and capacity of current utility human resource planning, management, and development functions.

It should be mentioned that the establishment of the NEWCO provides a window of opportunity to shape and direct new HR policies in compliance with Jordanian labor laws, and to transform the civil service mentality into a customer-service-oriented and commercial mindset. As WAJ staff were seconded directly from the civil service and may occupy most of the key positions in NEWCO, the transformation to NEWCO may be challenging since they would have to be agents of change and they would have to change their own mindset with regard to management and HR development.

Current Staffing in LEMA

During the nearly 7 years of implementation of the management contract, LEMA implemented a flexible approach towards employment of personnel from the private sector. LEMA has evolved from an organization with total number of employees coming from the government sector to what is now, a mixed form with employees belonging to two types of employment systems, the government civil service and the private sector labor law.

Almost 60% of total employees are WAJ employees seconded to the company, more than one third are LEMA direct hires from the private sector and less than 6% are temporary workers. Half of the employees work in operations, one third in the customer service

section, one tenth in the water production and quality sections and with a similar participation the supporting services in finance, administration and engineering technical services (Table 4.1).

Table 4.1 Employment Types, by Department (April 2006)

Department	Seconded from WAJ	LEMA direct hires	Temporary	TOTAL
Operations/Water	353	129	31	513
Operations/Sewerage	83	10	1	94
Technical Services	33	41	2	76
Finance & Administration	24	35	3	62
Customer Services	148	216	34	398
Water Production & Quality	102	22	3	127
TOTAL	743	453	74	1270

The majority of employees in technical services, finance and administration and customer services have been recruited by LEMA from the private sector.

With 385,000 water connections, the Amman water utility operates at a reasonable staff efficiency level. By the benchmark of 1000 water and sewerage connections, Amman’s staffing ratio is about 2, (compared to Aqaba’s 7). The retrenchment authorized by WAJ in the management contract provides Amman with a unique opportunity to rapidly reduce labor costs by reducing further this benchmark.

LEMA does not have a unified position classification and salary structure. There are two types of employment systems, the Civil Service for WAJ-seconded employees with the governmental classification system and direct a system for LEMA direct hires which shares some aspects of the governmental classification system but has no fixed salary scales. Additional information on LEMA’s compensation policy is presented in Annex 3.

Since the beginning of the Management Contract, LEMA tried a number of approaches to address limitations on remuneration for WAJ-seconded personnel imposed by governmental restrictions. These approaches executed over the years resulted in a system that is now near the breaking point. The result is indicated in the wide range between salaries for some jobs:

- Drivers salary range from JD187 to 441
- Fitters salary range from JD158 to 351
- Jabis salary range from JD158 to 377
- Mechanics range from JD186 to 404

Position Classification

Neither WAJ nor LEMA utilize modern position classification. Moreover, it is widely acknowledged that many WAJ job titles do not reflect the jobholder's actual work. There are 51 current positions in LEMA that have many different titles; while only reflecting the prescribed role, they seldom indicate rank or status.

In a position classification system, jobs are grouped according to technical subject matter and broad skill areas, and within each group, they are ranked or graded in terms of skill or responsibility levels to form a series which constitutes a potential career path, with defined requirements or qualifications for movement up the ladder of positions in the group.

A position classification system supports staff in balances analysis (shortages and surpluses), needs planning and projections, personal development planning, and training needs analysis. The 2007 reorganization process recommended in Chapter 3 will provide an excellent context for position classification and for personnel appraisal to determine who is best suited for which position.

The position classification process should be an integral part of the reorganization process. During the detailed reorganization planning, each supervisor, assisted by the Human Resources Officer, will set out his/her required positions, position responsibilities, the expected workload, and normative staffing levels for each position. These normative staffing plans will be reviewed by managers. This exercise will be followed by an employee-by-employee personal appraisal process in which employees are slotted to the position(s) for which they are best qualified. (In cases of candidates qualified or potentially qualified for higher level positions which are vacant, the appraisal can include a first personal development planning exercise). Another benefit of position classification is to facilitate lateral transfer of staff from departments where they are surplus to departments where there is shortage.

Based on the proposed unitary system, the consulting team recommends that a human resources review committee be formed not later than August 2006 to review the grading system and NEWCO salary policy and execute the realignment, which should be for all 51 position levels presently in LEMA and reduced to approximately 30. The proposed grade classification before the alignment exercise is presented in Table 4.2.

Table 4.2 Proposed Grade Classifications

Grade	Positions as Reference
1 Manager	
2 Head of Section	
3 Senior Professional Specialist I	(senior engineers)
4 Senior Professional Specialist II	(engineers)
5 Technical Supervisor I	(graduate/ junior engineers, accountants, cartographers)
6 Technical Supervisor II	(foremen inspectors, technical specialists)
7 Senior Support	(senior secretaries, cashiers, storekeeper, data entry, jabi, clerks I)
8 Skilled Manual I	(machinery drivers, electricians, fitters, welders, mechanic operators)
9 Skilled Manual II	(machinery drivers, electricians, fitters, welders, mechanic operators)
10 Junior Support Staff	(telephone operators, receptionists, clerks II, office trainee)
11 General	(car drivers, workers, messengers, cleaners)

At the management level, the new structure recommends reducing the number of levels from six to three as shown in Table 4.3.

Table 4.3 Actual and Proposed Management Structures

CURRENT LEMA MANAGEMENT STRUCTURE

1. Managers (29)
2. Assistant Managers (5)
 - a. Coordinating Manager (1)
 - b. Coordinators (2)
3. Heads of Sections (24)
4. Sub-heads of Sections (3)
5. Supervisors (95)
 - a. Foreman (5)
 - b. Inspectors (3)
6. Assistant Supervisors (5)

PROPOSED NEWCO MANAGEMENT STRUCTURE

1. Managers
2. Heads of Sections
3. Supervisors of X activity

Job Evaluation

While a position classification system is oriented to identifying similarities in the technical characteristics of jobs, a job evaluation system is oriented to identifying the worth of a job. The purpose of job evaluation is to set out a basic benchmark salary structure comprehending all the jobs in an organization. It is extremely important to note that job evaluation assesses the worth of a job or position to an organization, not the competence or performance of the job holder.

The two principles which should govern job evaluation are external parity and internal equity. External parity is found when the salary an organization offers for a position is close so that offered by comparable organizations in comparable locations for comparable positions. Internal equity relates to the relative values given to jobs within an organization. Internal equity is found when employees believe that salary differentials between positions reflect real differences in the difficulty or importance of the jobs.

In terms of external parity, it is likely that the salaries of the LEMA local hires represent market levels quite accurately; this will greatly facilitate that step in the job evaluation process, at least in the administrative and customer service related occupations, where LEMA hires predominate. Once the position classification is completed, LEMA rates can be used to set benchmark salary ranges for all occupational groups and grades.

Compensation and Benefits

It is expected that the unified compensation structure of the new Company will be comprised of four basic elements:

1. Salaries
2. Allowances
3. Performance-based pay (“bonuses”)
4. Benefits

Salaries

Salaries are the basic element in compensation. They are the largest element in compensation and often the basis on which other elements, such as allowances, are calculated. The new company will develop a benchmark salary structure based on the job evaluation exercise and oriented to making the company a competitive employer in the local and national labor market.

However, application of the benchmark salary structure will have to be gradual. The primary problem is that due to the cumulative effects of seniority on pay levels for WAJ employees, many of the lower-grade WAJ employees are receiving higher than market rates, but the Jordanian civil service regulations forbid that an employee should suffer financially from a corporatization of a formerly governmental department or authority. With the exception of employees who choose not to join the new company, the legacy of

excessive salaries is a burden which the company will have to endure until processes of natural attrition through retirement and early mortality bring average salaries into alignment with benchmark salaries. In the near term, the primary use of the job evaluation will be to identify and correct cases in which qualified diligent WAJ employees, there may be some WAJ have been receiving egregiously below-market salaries⁵. Also, the benchmark salaries should be the basis for salary negotiations with new hires.

It is recommended that NEWCO introduces the concept of maximum and minimum salary ranges. Current pay scales at LEMA do not follow this approach. During the realignment to be carried out by the HR review committee, the salary level should be reviewed in more detail for different categories, including simulations to ensure that total salary load is consistent with NEWCO's financial resources.

An option proposed by some members of the Segura/IP3 team is to hire the top managers on performance contract. While this approach has obvious attractions in term of providing incentives for performance and should be considered by the Project Development Team, note should also be made of potential drawbacks, namely:

- This approach does not seem to be customary in the other Jordanian utility companies
- New candidates may feel they do not know enough about the organization to promise the expected results and hence may require a "risk premium" to be built into the compensation level.

Annual increases should be made up of two separate elements which should be separately accounted. Merit increases are a form of performance-based pay and will be discussed in Section 4.4.3 below. In addition to merit increases, the company should provide an annual cost-of-living increase based on a reliable, official consumer price index. The cost-of-living increase should be reflected in the company's tariff-setting regulations. Basic salary levels in the benchmark structure would be adjusted every three years to register cost-of-living trends; this has not always been done in the cases of the other utility companies.

Allowances

The Segura/IP3 team sees little need for most of the current allowances. As noted earlier and in TAPS Project Aqaba HR work, the vast majority of the allowances are simply supplemental basic pay---either directly related to the employee's qualifications or grade or else the results of several GOJ stratagem to compensate for low basic salaries without having to reform the basic civil revise salary scale---and we propose to fold these allowances into the basic salary of the employee, if only to simplify payroll calculation and make salary levels more comparable and transparent.

⁵ For job evaluation purposes, a WAJ employee's current basic salary will be understood to include most of the many allowances which are used under the GOJ civil service system to supplement low basic salary levels without altering the civil service pay scale.

Such an approach was adopted successfully in the Aqaba corporatization. We believe matters can be simplified even further in the Amman case. Various relocation and remote work location allowances were necessary in AWC to attract professionals to relocate to Aqaba and to motivate supervisors and technicians to work in the remote rural areas of Aqaba Governorate. These allowances are not likely to be necessary in Amman. We would also recommend dispensing with the wastewater work allowance, simply folding the allowance into the salaries of the relevant jobs. However, the TAPS experience was that the wastewater allowance has a strong customary basis and therefore may be difficult to remove.

Overtime payments are not, strictly speaking, allowances at all. In the Jordanian civil service, there have been two types of overtime payment. First is a standard, across-the-board overtime allowance applied throughout an organization on the understanding that each employee will work an additional amount per week. Another is actual individual overtime payments.

Excessive overtime is typically an indicator of your organizational health---typically, excessive overtime reflects a staffing shortage in one or more labor categories. Moreover, unless strictly budgeted, it can constitute a financial liability to the organization, especially as overtime rates are set at a multiple of normal wage rates. It is our understanding that in WAJ (and under the Amman management contract), overtime payments have been used to compensate for low salaries---in this case, it reflects shortcomings in the salary structure while also obfuscating the estimation of real staffing needs. In any case, the WAJ standard, across-the-board overtime allowance should be discontinued (or incorporated as appropriate into the basic salary). A cap of approximately 10% of total salaries should be set on overtime, and the overall overtime pool allocated among departments in accordance with agreed and broadly objective criteria and needs.

Performance-Based Pay

The basic concept of performance-based pay (PBP) or “bonus” pay is to relate part of an employee’s pay to performance in his/her job. The PBP concept is not new and has been applied in both market-based and command economies. This section reviews PBP design issues in three dimensions:

1. Distribution
2. Size
3. Source.

It is difficult to design an effective PBP scheme. Experience in many countries and organizations have shown PBP schemes can rapidly become distorted, losing any relationship to effort, and thus lose their effectiveness and become merely additional labor cost. This effect occurs for either of two reasons:

- When an employee's bonus rate is based on his/her supervisor's rating in organizational units which have either highly face-to-face relations between supervisor and subordinate, the supervisor's wish for stress-free workplace interactions leads to an averaging of bonus rates. The desire for good relationships with subordinates is especially strong where laws or regulations strongly limit supervisory authority.
- Where departments compete for shares of the organization bonus pool, or where collective bargaining arrangements are in place, there will be a tendency for the competing managers or the union to seek to negotiate "soft" targets with top management.

Another consideration in PBP design is that the effectiveness of PBP varies from one type of job to another.

Performance-based pay is most effective as a productivity incentive when applied to jobs with the following characteristics:

- The jobholder's performance can be easily and objectively measured.
- Performance level is responsive to the intensification of individual effort.
- Job performance is relatively independent of the performance of other team members.
- The job is carried out in relative isolation---the supervisor can not easily observe the worker at work.

Obviously, very few jobs meet all these conditions. In a water utility, the following jobs are well-suited for PBP:

- Field-based billing and collection.
- Extensive data entry tasks (e.g., billing data).
- Systematic field-based leak detection and/or manhole inspection.
- Network repair.

In all cases, the application of quantitative performance measurements must also take work-quality into consideration.

Although PBP is most conducive to productivity in the types of individualistic and routine jobs noted above, it may also be applied to teams. Again, this is most effective when there are teams *within* a business unit which do equivalent work and so can be compassed.

A third approach to PBP is to allocate PDP primarily to the corporate or departmental level, related to corporate or departmental business plan targets or indicators.

The Jordanian utilities surveyed for this study (see Annex 6) use a variety of PBP approaches. Except for EDCO, which applies PBP only at the individual level & which bases the rate on the annual employee evaluation, most of the utilities are mixed

approaches, using allocating some portion of the bonus pool to each level of the organization---the whole organization, the department or team, and the individual.

All other things being equal, the simpler a PBP scheme is the better. Not only do complex schemes increase the cost of administration (not least in terms of time), but the use of multiple criteria may confuse the ordinary worker as to precisely which behaviors are being rewarded.

What percentage of compensation should be made up of PBP, as opposed to basic salary? Our survey of Jordanian utilities showed great variation in this regard, ranging from an average bonus rate of 3% in EDCO to 25% for WAJ employees in LEMA.

Although the high rate paid by LEMA to its WAJ employees is blatantly a measure to compensate for low basic salaries, it has regrettably accustomed Amman water utility personnel to expect large bonus payments. Even LEMA direct hires get an average 16%. Given the fact that the evidence of relationship between PBP and productivity is far from certain, we feel that the Aqaba Water Company Management Committee decided wisely in keeping the total bonus to around one month's salary (8.33% of the basic salary). LEMA has also made matters more difficult for WAJ, which may now have to apply different bonus rates in its two companies, possibly with the effect of drawing specialists from AWC to Amman.

An effective PBP scheme might have the following components:

Company Bonus. A Company bonus might be approved on an annual or semi-annual basis by the Management Committee. The size of the bonus pool would be "indexed" to Company performance relative to: a) expected profit, b) rate of improvement on a productivity index (e.g., "increase in billed water x (budgeted/actual wage costs), or c) a composite index based on several business plan targets. The AWC management committee has adopted this type of approach, using a sliding scale in which the total size of the bonus pool is indexed to the level of Company performance relative to targets. The distribution could be weighted by the Committee in favor of departments, sections, or special-purpose teams as the Committee sees fit. Distribution within departments would be made on the basis of Department-specific criteria developed during the business planning process with the participation of all job groups in the department.

Exceptional Performance Awards. These would be discretionary funds allocated to each department or division to reward individuals or teams which have made exceptional achievements or "breakthroughs", such as design or implementation of an innovative or improved work process).

Special Incentive Programs. There are types of job noted above in which individual performance is easily measured and productivity responds to an intensification of individual effort, such as meter reading, collection of aged receivables, and illegal use detection.

Benefits

The benefits package should include:

- Social insurance
- Life insurance
- Health insurance
- Savings fund.

These benefits are financed through varying combinations of payroll deduction and Company contribution.

Social Insurance. The Jordanian Social Security system provides retirement and disability insurance. The Company would contribute 10.5% percent of gross salaries excluding overtime pay, and a 5.5% percent payroll deduction constitutes the employee's contribution.

Life Insurance. Not provided to civil service employees, life insurance is provided by most private companies in the AWC labor market. The premium is one percent of gross salary excluding overtime pay, and is paid by Company contribution.

Health Insurance. It is understood that the government will continue to allow Company employees seconded from WAJ to participate in the governmental health insurance program, subject of course to the payment of the relevant premiums. For LEMA direct hires, a private carrier will need to be found.

Savings Fund. Savings funds (or provident funds) are extremely popular in Jordan; they are found in most of the Jordanian utility companies surveyed. These funds combine features of a US 401K program and a credit union. The fund is sourced by Company contributions and payroll deductions at equal rates of 5% of basic salary. One part of the fund capital is used to provide zero-interest loans to employees; the other part is used for short-term financial investments. Investment choices are made by a committee of employees, and investment proceeds are distributed annually. At the end of service, the employee receives his/her "principal" (total of deductions and company contributions).

Employee Development

"Employee development" refers to policies and practices implemented by an organization to make work in the organization personally rewarding to the employee. Employee development is not primarily oriented to providing increased financial compensation, though this may be a consequence. It is primarily concerned with job satisfaction and the employee's sense of personal and professional growth through acquisition of new knowledge and skills, exposure to varied work environments and collegial relationships, increased responsibility and autonomy, and the conviction that one's work benefits others in the organization and in the wider society.

The sources of satisfaction at work are highly variable and depend in no small measure on the personality, inclinations, and aptitudes of the individual. For this reason, successful employee development requires managers and supervisors to understand each subordinate as an individual through conversation and observation. Hence employee development begins with managers.

Employee development measures are also extremely varied and can include:

- training
- mentoring with an aim to promotion
- job rotation
- job enrichment (diversifying job content)
- quality circles, task forces, etc.

The very breadth and depth of employee development requires that each company design employee development programs which dovetail with the organization's staffing needs and business objectives. Employee development measures must be balanced against other objectives. For example, an employee-friendly measure such as a preference for material recruitment must be balanced against the need for a highly qualified jobholder, e.g., when a specialist is sought for pivotal new programs areas. (Similarly, the benefits of job rotation must be weighed against the potential job efficiency losses.) It is recommended the new company propose an employee development policy as the new organization structure is refined and the business plan is prepared.

Even though policy development should be given careful thought and preparation, the new company can and should make an early commitment to employee development in principle. The most efficient and least "pre-emptive" may be begin is with a company-wide staff appraisal process. This would involve one-on-one, questionnaire-guided interviews between supervisors and subordinates covering:

- the subordinate's educational training, and history
- review of strengths and weaknesses in current and recent positions and tasks
- assessment of interest and aptitudes for other jobs
- subordinate's feeling regarding collegial relationships and the work environment.

The appraisals can be expected to convey a change in organizational culture; moreover, they will provide a wealth of useful information for the processes of reorganization, staff placement, and training needs assessment.

Subsequent appraisal cycles would support more targeted and specific employee development measures. Virtually all business-oriented employee development involves some type of employee streaming into "potentiality" categories, e.g.

- employees suited for promotion or lateral transfer
- employees suited for additional responsibilities

- employees well-suited to their current jobs
- employees who have the capacity to “grow into” their current jobs
- marginal employees.

The measures appropriate to each category can be deduced easily from the category; prioritization depends on organizational needs. Employee development aims at a convergence of individual and organizational goals, but the organization’s goals take precedence. Appraisals should be carried out confidentially but openly, with the results being shown to and discussed with the employee.

Personnel Procedures

Personnel policies and procedures need development. Three representative areas are:

Grievance Procedures

Current LEMA human resource procedures do not include a section related to grievance procedures as an option when normal communication processes fail. The consultants recommend that the NEWCO grievance procedure should consider including the steps below as a way to provide workers with a reasonable environment to proceed with internal complaints:

- The two parties, the employee and their immediate supervisor must attempt to resolve the problem directly by themselves. If this stage fails the aggrieved person(s) can bring the matter to the next level of Management. After ‘Step One’ all complaints and outcomes from the procedures should be confirmed in writing within 5 working days.
- The persons involved and the next level of Management, will attempt to resolve the problem within three working days. If this step fails, the matter shall be referred to the next most senior manager person at Director level.
- The director will attempt to resolve the problem within three working days if this is not possible, the company will appoint an external third party in such circumstances and it will be handled in a manner similar to the Appeals Procedure below.

Appeal Procedure

The final level of appeal will be to the General Manager or agreed third party. A final decision should be given within 10 working days.

Recruitment

Policies and criteria should be set to decide whether a vacancy should be filled through interval or external recruitment and to set the membership of selection committees. While an HR Office member should be represented on all selection committees, it is not necessary that the General Manager be involved in selection of Lower-Level staff types. Professional search agencies may be useful for some types of external recruitment.

Outsourcing

Since its inception and as part of the continued process of performance improvement, NEWCO management should analyze the possibilities of outsourcing certain key areas of their business where significant improvements of the service or cost savings can be achieved, particularly where a given technical program requires highly specialized equipment or skills. Likely areas to evaluate the potential for outsourcing include:

- Cartography: *to meet changing technology needs and cross co-operation with other utilities such as telecoms and electricity.*
- IT services support; *possible payroll etc*
- Workshop services: *many of these are already contracted; vehicle and meter replacement / repairs*
- Major planned maintenance and overhaul
- Building & facilities management
- Security.

In other areas, a mix of contractors and in-house provision can promote competition (e.g., billing and collection).

- Overhaul of the public service management & HR model to one of the best in utility companies.
- Ensure the levels of competency are appropriate to NEWCO organizational needs.
- Enlightened HR policies with the opportunity for individual development and advancement.

Training

As NEWCO is formed and moves from the LEMA contract, it needs to give a lot of attention to training and development needs. Training interventions will help staff feel positive about the new company looking forward; support change management and aid the need for communication directly with staff during the period of transition. In addition there are extensive proposals to introduce new systems; especially in 'information technology (IT) management information systems (MIS)'.

Four areas of 'skill needs' will need to be addressed in the new organization:

- Management
- Technical
- Support Services and
- Personal development

Building a training plan

Training within the NEWCO needs to be set out for the next three years. This will give management staff a view of the level of competencies required to secure advancement

within NEWCO and support individual continuous learning and development. There is currently an active training and development program within LEMA which has served the basic organizational purposes reasonably well over the years. The main emphasis to date has been on technical training based on formal 'identification of training needs' conducted in consultation with line management. While the past training plans are basic they have been extensive. The focus has been on:

- Basic computer skills and system training: mainly within the Finance and Admin Department.
- Customer service training: very large program targeted for customer service staff
- Health & Safety across the whole organization
- Language skills
- Plant management for each area according to responsibility
- Basic management skills & supervision training

These programs should continue but must be integrated within a three year training and development plan across the whole organization. There is need to place more emphasis on cross organization core competencies; and the 'softer' management and organizational needs of performance management, delegation, empowerment, project management, communications and decision making, moving beyond technical inputs.

Staff and management will need to assess their own personal training with support against core competencies identified. In addition there is need to assess and certify existing skills and aptitude of many of the skilled and semi-skilled workers. This will help and energize them to seek certification for their skills sets; supporting their development within the company.

In addition any members of staff who wish to develop IT and computer skills should be able to sign on for a certification program. For example, in order to ensure the basic level of competencies for IT/ computer skills staff can undertake the equivalent of the 'European Computer Driving Licensing' (ECDL) training modules. ECDL can be completed on-line in the staff's own time and then he/she is examined to receive this level of certification. This type of training will be critical as IT systems are introduced across aspects of NEWCO operations and are now an acceptable international standard.

Adopting basic competencies

Currently training is based on an ad hoc identification of training needs by staff supervisors; without one general overview of organizational or management development needs. However, there must be a strong and direct linkage to the business development needs of NEWCO, namely:

- Agreed NEWCO core common competencies
- Link to actual Business Plans for the next 12-36 months
- Training should be identified by individual interviews based on the proposed Performance Planning Review (PPR) system

Based on training records, NEWCO members of staff in general have received extensive exposure to technical and basic workshops. After reviewing records, it seems that there is a need for practical exposure to activities that will develop project management and teamwork skills. These should be provided in-house to support a common understanding across the whole organization. The six core NEWCO competencies identified need to be addressed at least across all supervisory and management positions are:

- Common management and supervisory development
- Supporting NEWCO Management Information Systems (MIS) & Decision-making
- Project Management & Team skills, including performance monitoring & feedback
- Delegation; empowerment, role clarification; including job analysis & enrichment
- Presentations, communications internal & external and
- Specialist technical & professional know-how (job related)

Training needs and management role

It is critical to the long-term and continued success of the whole organization to have an integrated and short to medium training plan (3 years). The management approach is the most critical factor in making the transition from the LEMA O & M operation contract to an ‘asset management’ company with improved corporatization and commercialization while meeting the needs of the poor sectors of Jordan society by providing affordable access to clean drinking water.

Over the next three years there will be extensive changes to be implemented in NEWCO; the following table outlines the range of topics which can be offered in the coming years.

Table 4.4 Potential training & development plan for the next three years

Level of Staff	Year I 2007	Year II 2008	Year III 2009
Directors & Management	<ul style="list-style-type: none"> • Management development • Leadership & change Management (2006) • Identifying and Mapping proposed IT systems requirements (FAS) 2007 	<ul style="list-style-type: none"> • Business & strategic planning • Advanced IT systems • Core management competencies 	<ul style="list-style-type: none"> • Performance management • MIS & Benchmarking

<p>Technical & Professional</p>	<ul style="list-style-type: none"> • Asset Management • Maintenance Systems • Operational Standards • IT systems mapping • Project Management • Communication & • Decision-making 	<ul style="list-style-type: none"> • IT systems implementation • Data management & information systems • Decision-making 	<ul style="list-style-type: none"> • Management & staff development
<p>Support Services</p>	<ul style="list-style-type: none"> • Empowerment • Role responsibilities • Communication & • Decision-making • IT & computers • Customer service 	<ul style="list-style-type: none"> • Advanced IT Systems • Computer skills • Project support 	<ul style="list-style-type: none"> • Supervision and supporting roles • Personal Development • Self- help development options
<p>Manual Skilled & Semi – Skilled</p>	<ul style="list-style-type: none"> • Certification of skills sets • Career planning & progression • Company ‘values’ 	<ul style="list-style-type: none"> • Self-supervision • Team working • Communications • Best practices 	<ul style="list-style-type: none"> • Part II Self-help development options & education

SECTION 5 OPERATIONS

This section considers the operational aspects derived from the MOU signed March 13, 2006, affecting NEWCO and WAJ and their operational arrangements and investment obligations. Detailed information about the service area and the water supply and wastewater systems in Amman is presented in Annex 4.

Population projections are based on an annual growth of 2.5 percent; it is slightly higher than the reported 2.1 percent inter-census rate. Recent migration trends from neighboring countries were included. On this basis, total population in the service area is expected to grow from about 2 million (2004) to 3.3 million (2025). By 2025, service coverage ratios are projected to reach 99 percent and 90 percent for water supply and wastewater collection, respectively.

A significant increase in water supply will bring a net addition of 40 mm³/year, once the Zara Ma'een project becomes operational in late 2006. This additional water supply provides a unique opportunity to offer continuous service to almost all the population in the service area, provided that NRW (water losses) is substantially brought under control (45 percent to 35 percent) through an aggressive program to reduce pipe breaks, leaks, and illegal connections and a close supervision program to reduce even further NRW. Reducing NRW to such levels can be reached in less than five years with the proposed start-up project provided that it is timely implemented along the lines recommended in this report.

Around 2012, NEWCO will need additional water supply to satisfy the growing demand; WAJ is currently actively working on the development of the Disi project that could increase production by about 100 mm³/year.

Water and Wastewater Purchase Agreements

Water supply. The MOU clearly defines that WAJ will continue to be responsible for bulk water supply to the service area. NEWCO in turn will be responsible for prompt payment to WAJ of the water delivered and will continue to operate the ZAI-KAC water supply system and well fields within the service areas. The sources of water and transfer prices including extraction fees are listed in Table 5.1.

Table 5.1 Water Supply Sources

Source	Capacity (mm ³ /year)	Volume used (2004) (mm ³ /year)	Location	Operator	Payment by NEWCO (2005) JD m ³
Deir-Alla	70	54.7	Jordan Valley	NEWCO (LEMA)	E.F. 0.0055 + Electricity
Khaw	18	16.4	Zarqa Governorate	WAJ	0.138
Walla	10	6.6	Madaba Governorate	WAJ	0.115
Lajjun	15	12.8	Karak Governorate	WAJ	0.115
Wells (16 fields)	36	35.6	LEMA area	NEWCO (LEMA)	
Zara-Mee'n	47 a/ (40 b/)	n.a.	Jordan Valley	WAJ- under a DBO with Morganty Grp.	0.150
Total	196	126			

a/ Expected to be commissioned in the second half of 2006

b/ Net volume to be supplied to NEWCO

n.a. not applicable

EF extraction fee

Bulk water prices are heavily subsidized. Therefore, it is highly desirable to begin an orderly process to substantially reduce, if not abolish, these subsidies. (See also Section 7). Realigning bulk water prices demands, however, that the corresponding price increases be transferred to the final consumer so as to not compromise NEWCO's financial viability. While the responsibility of NEWCO depends on the relative price of each water source, under normal conditions, NEWCO would fully use the least expensive source and gradually move to more expensive ones. Optimizing water supply in the distribution system, particularly the primary network, should take into account bulk water pricing and demand in different areas of the city, within the limitations of conveyance capacity of the different pumping systems.

To use efficiently different water sources, we recommend that WAJ and NEWCO should enter into a purchase agreement that clearly states:

- A medium-term (5 to 10 years) delivery plan of volume and price of each bulk supply. This plan should be updated at least on a yearly basis.
- The normal conditions for each bulk water supply, namely, point of delivery, flow conditions (maximum volume, pressure and water quality) and bulk metering arrangements.
- Notification arrangements in case of emergencies.
- Alternative bulk water supply arrangements in the event that a particular bulk water source cannot deliver the agreed upon flows.

Wastewater. The As Samra wastewater treatment plant will become operational toward the end of 2006 or early 2007. The volumes to be treated (including drainage water from

illegal connections and storm water infiltration) at this plant are controlled by the BOT operator. In the medium term two more wastewater treatment plants will become operational: Giza-Talbiea secondary treatment plant (capacity of 2,300 m³/day or 0.8 mm³/year) expected to become operational by mid-2007 and South Amman secondary wastewater treatment plant with (capacity of 31,000 m³/day or 11.3 mm³/year) expected to be operational in early 2008.

We recommend WAJ and NEWCO to enter into a purchase agreement that clearly states:

- A medium-term (5 to 10 years) delivery plan of wastewater to indicated reception points and the treatment price. This plan should be updated on an annual basis.
- The normal conditions for each wastewater discharge, point of delivery, flow conditions (maximum volume), water quality and flow metering arrangements.
- Notification arrangements in case of emergency situations.

Operational Responsibilities

As defined in the MOU, NEWCO will be fully responsible for operating the water distribution and wastewater collection system. Operational responsibilities include, but are not limited to the following.

Water supply. NEWCO must ensure that the water quality in the Zai water production facility and well fields within the service area meets Jordanian standards. NEWCO will also be responsible for the operation of primary, secondary, and tertiary water distribution system (Annex 4); which entails:

- Monitoring water demand and needed system expansion.
- Monitoring water production and water transfers to each of the distribution tanks to respond to demand changes in the service area; deciding, as appropriate, operation of pumps, setting in and out pressures to each of the district areas, water supply restrictions to manage water availability equitably or during emergencies.
- Monitoring condition of all assets and defining replacement, maintenance, rehabilitation needs.
- Diligence in monitoring and controlling water quality within the distribution system.
- Strict control to minimize NRW losses and illegal connections.

Wastewater collection system. NEWCO must ensure:

- Due diligence in operating the Abu Nsseir and Wadi Essier treatment plants to meet effluent standards set by Jordanian laws and minimize obnoxious odors and vermin within the plant sites.
- Monitoring sewerage growth and the need to expand the system.
- Installing new wastewater connections.
- Monitoring the condition of all assets and defining replacement, maintenance, and rehabilitation needs.

- Due diligence in controlling wastewater discharges that could be detrimental to the wastewater treatment processes.

Customer service. In addition to creating public awareness to promote water conservation, NEWCO must respond timely to:

- Notify final users in the event of water quality/supply problems that could affect their well being.
- Install new water/sewerage connections.
- Billing and collecting users' fees.
- Consumer's complaints.
- Repair pipe or connection leaks and breaks.

Asset management. Within the first two years of operation, NEWCO will develop and implement a comprehensive asset management system (AMS) to supervise the operation and optimal use of fixed and movable assets. The AMS should build on the existing asset inventory and GIS operated by LEMA. The quality of the information, in particular underground assets, should be enhanced by comprehensive surveys of the water and wastewater systems, which will be undertaken under the proposed start-up project. At a minimum, the AMS should track:

- Inventory of all assets, including, location, linked to a GIS system; physical characteristics (pipe lengths/diameters, pump/motors capacity, technical specifications and maintenance manuals; spare parts) and operating conditions; age of installation and history of repairs.
- Routine maintenance programs.
- Value of assets and depreciation charges.

Maintenance and Capital Investment

Article 11 of the MOU entrusts NEWCO to be “responsible for all preventive and routine maintenance of all assets under its management, including those entrusted to the Company by WAJ.” Moreover, the MOU provides a pragmatic and useful allocation of capital investment responsibilities (Articles 12 and 13). Assigning maintenance and capital investment responsibilities poses a challenge to both NEWCO and WAJ as there are substantial gaps in the understanding of the physical condition of most fixed assets, in particular underground water and sewerage pipes.⁶

There is no accepted definition of what constitutes maintenance or a capital investment. It is useful, however, to review the maintenance or CIP expenditure allocation practices in affermage/lease contracts where the distinction is important to the service operator and owner. The allocation of expenditures in these contracts is based on a combination of the

⁶ The proposed start-up project would provide the resources and software/hardware to have a more satisfactory understanding of the condition of these assets.

physical attributes, e.g., replacing less than x meters of pipes per event is defined as maintenance; and *expenditure amount per event*, e.g., an expenditure of less than y JDs is considered maintenance. Physical quantities pose intractable definitional problems (for instance, how to apply them to equipment such as pumps and motors). Therefore, the consultants recommend using a monetary figure instead in all cases. Often the total maintenance expenditure in a year is subject to an annual ceiling, linked to the financial condition of the company.

Another factor that should influence the definition of maintenance/CIP expenditures is the start-up project. If this project does begin in mid-2007, NEWCO will be able to assume more financial responsibilities. If the project does not materialize, then more modest responsibilities should be assigned to NEWCO. Table 5.2 presents a proposed matrix to allocate maintenance and CIP responsibilities assuming that the start-up project is implemented. Recommendations presented should be reviewed once the start-up project is substantially completed and periodically every five years.

Table 5.2 Maintenance and Capital investment Responsibilities (MOU Articles 11, 12, and 13)

Reference	Topic	Recommendations
Article 11	Maintenance	<p>Within this context no differentiation is made between maintenance, renewal and rehabilitation. NEWCO will be responsible for all maintenance responsibilities within the service area including water and wastewater systems, primary water distribution system (pumping stations, storage tanks and pipelines ≥400 mm), water treatment/wastewater treatment plants and own wells operated by the new company. Significant maintenance programs that exceed the total budget allocated to maintenance (JD 2.5 million per year – Chapter 8, table 8.6) could be dealt as a capital expense. This budget cap should be revised periodically, starting in 2009. <i>NEWCO should be given full authority to deal with emergency situations in the most effective way.</i></p>
Article 12 (a)	Capital Investment Program	<p>NEWCO will be responsible for developing integrated and comprehensive CIP which should cover at least 5 years into the future and preferably 10 years or more when large works (larger than JD10 million are envisaged). NEWCO should update this plan annually and formally discuss it with WAJ as part of the budget discussion. NEWCO will timely inform WAJ of any important deviation of the CIP to allow adequate response time.</p>
Article 12 (b)	Capital Investment Program execution	<p>NEWCO will be responsible for the CIP related to the maintenance, renewal and rehabilitation of the water distribution and wastewater collection systems. Resources from user fees, real state developers, and the three percent contribution for sewerage services (collected by the Municipality of Amman) will be fully available to NEWCO to discharge these responsibilities. NEWCO responsibilities for capital expenditures related to the expansion of water and wastewater systems include:</p> <ul style="list-style-type: none"> • Secondary and tertiary water distribution system (pipelines, pumping stations, SCADA system, storage, valves and appurtenances) • Wastewater collection system • House connections (water and sewerage) and water meters.
Article 13	Major capital expenses	<p>WAJ will be responsible for major capital expenditures related to the expansion of the water and wastewater systems including:</p> <ul style="list-style-type: none"> • New bulk water supplies, including treatment, to timely satisfy the demand in the service area. • New wastewater treatment plants and related conveyance facilities. • Additions/expansions to the primary water distribution system or replacements to augment its capacity. • Transport of bulk water to areas outside service area. • Significant rehabilitation programs (in excess of NEWCO's total budget cap)

SECTION 6 START-UP PROJECT

This section elaborates on the proposed start-up project, which seeks to *restore continuous service within the entire Amman service area*, - a concept readily understood by the public. As the LEMA's contract to manage water and wastewater services in Amman will expire on December 31, 2006, NEWCO must quickly establish its credibility as a competent successor to LEMA in line with the expectations of the general public and gain the trust of external funding agencies that may help finance its investment program. NEWCO must also start operations with clear objectives that address user's needs in the Greater Amman service area.

Way's investment program has contributed to improvements, particularly in water supply services; however there is still an urgent need to reduce substantially the number of leaks or bursts in the water distribution system and stoppages in wastewater collection system as they exceed acceptable standards in service companies with similar characteristics (Annex 4). To provide continuous services, NEWCO must reduce leaks, which in turn, will increase net supply to meet demand and reduce operating costs. The ability to meet additional demand would allow NEWCO to generate operational surpluses that could be applied to finance other capital works, such as expanding water supply system and rehabilitating and expanding the sewerage system.

If the Zara Mee'n scheme begins in October 2006 to supply water to Amman by a gross 40 mm³ per year, NEWCO will be on the road to achieving it's the objective of *24/7 service*. The expected reduction in water losses and available supplies (Annex 4) would provide adequate water resources to meet expected demand until about 2012, when the proposed Disi project is likely to become operational.

Table 6.1 Water Supply Schemes for the Greater Amman Area (Mm³/year)

Supply Scheme	Gross Supply	Likely Changes 2006-2010	Net Supply by 2011
Zai-KAC	55		55
Khaw	16	-7 for Zarqa	9
Lajjoun	13		13
Walla	7		7
Zara Mee'n	47	-7 for Dead Sea area	40
Own wells	36	-6 to reduce production or close down wells	30
Total Gross	174	-20	154

The annual gross supply for Amman could decrease due to planned deliveries of water to the Northern Directorates as a number of wells in the South Area of Amman are retired in this aquifer due to over-exploitation and falling groundwater levels. For these reasons, it is expected that the net supply to the Amman service area could decrease to 154 mm³ by 2011. Assuming a leakage rate of 35 percent, this net water supply corresponds to a per

capita supply of 128 lcd - considering a population of 2.15 million (2010) - with which a continuous supply should be possible.

Immediately following the return of continuous service in Amman, it is likely that the leakage rate will exceed 35 percent. A sustained vigorous effort, however, should reduce leakage to more reasonable levels. At no time will NEWCO be able to relax its campaign to find and repair leaks and control unauthorized water users. The ability to minimize leakage will help minimize the use of the most expensive sources, such as Disi, which may cost of JD 0.800 per cubic meter delivered.

Reliability of Wastewater Collection System

Wastewater collection is operating under stress as sewerage investments were fewer as compared to those in water supply. As a consequence, the number of sewerage stoppages far exceeds international best practices. Stoppages also pose a public health hazard as back-ups often spill over into streets or buildings. Inadequate sewer capacity could also affect timely implementation of ambitious real-state developments (Annex 4) and orderly urban expansion.

Reliability of Asset Management System

Available asset information systems are insufficient to manage and operate the water distribution and wastewater collection system. In particular, there is a need to:

- Develop water distribution and wastewater collection models to help optimize operations and identify expansion/reinforcement needs to meet demand in different areas of the city.
- Complete the GIS for water and wastewater collection.
- Complete the SCADA system to allow centralized dispatch water supply system, including pressure (inlet/outlet) and flow controls to each district area.
- Update information on the user's connections to reduce illegal connections and on water pipes in the distribution system, in particular the tertiary system.
- Update information of the wastewater collection, i.e., elevations, location, diameters, and materials.

Sequencing

As noted earlier, Way's investment program has improved the major part of the primary and secondary water supply pipe networks. Therefore, these subsystems have a sufficient capacity to transport treated water from entry points to main and terminal reservoirs and from terminals to 43 local service reservoirs. Each reservoir, in turn, feeds a distribution zone (DZ) that comprises 330 distribution districts (DD) where individual households are supplied by gravity from the tertiary network.

LEMA has made a concerted effort to install and replace most water meters. Approximately 380,000 individual customers now have working water meters. The stage

is now set for the start-up project to reduce leakage within each DD to a minimum. The sequencing of needed actions is as follows:

- Complete connection census of all buildings to map how each building receives water (legally or illegally) and how wastewater exits from it.
- Delineate and isolate all the 330 DD.
- The water balance for each area must be estimated for each DD to create the baseline for water supply, leakage, and water consumption.
- Continuing to locate and remove redundant *live* water pipes within each DD. Pipe segments that remain must be rehabilitated or replaced as necessary. In LEMA's parlance, this effort is called "establishing" a DZ.
- Calibrating pressures to each DD and preparing the whole network for 24/7 supply. This would also allow simulations of the potential to reduce leakage further through reducing water pressure in each DD.
- As continuous service is gradually restored, SCADA is completed and implemented to improve efficiency.
- Rigorous control and surveillance of leaks in the distribution system through routine leak surveys and of water losses in each DD.

Estimated Cost and Financing

Total costs of the start-up project are summarized in Table 6.2 below and detailed in Table 6.3. The start-up project offers a simple design and a clear focus: reduce leakage to restore continuous service to Amman; improve living conditions by reducing sewerage stoppages; and provide more agile management operation software/hardware facilities. Therefore, it is likely there will be wide interest from external agencies to finance the start-up project in its entirety or some of its components, e.g., technical assistance in GIS and SCADA. Possible financing sources include the European Investment Bank (EIB), Kreditanstalt fuer Wiederaufbau (KfW), USAID, the World Bank, and other regional development banks. The loan recipient for this project should be MWI/WAJ.

**Table 6.2 Estimated Cost of Start-up Project (2007-2010)
(JD millions, 2006 prices)**

Phase	Estimated Cost
Connection census	0.8
GIS mapping	1.5
Isolating District Zones (DZ)	0.2
Creating DZ baseline flows	1.2
Establishing DZs	20.0
Upgrading meters B to C	0.5
Completing SCADA	4.0
Calibrating and developing network model	0.2
Water and wastewater master plan	2.0
Pressure reduction program	0.3
Asset maintenance management plan	0.5
Urgent sewerage works	10.0
Unallocated and contingencies	8.8
Total	50.0

Implementation

It is proposed that NEWCO’s staff manage and implement the start-up project. This approach would help to build ownership and sustainability. In-house capacity to conclude the project within a reasonable time is, however, insufficient. Therefore, most of the ongoing activities will have to be scaled up by outsourcing to small subcontractors such tasks as the connection census, the creation of the baseline, and the establishment of DD. Subcontractors can be tightly supervised by NEWCO’ staff who has gained the know-how during LEMA’s tenure. NEWCO will also require substantial outside technical assistance to select and implement the water distribution and wastewater collection models during this effort which may be available as part of an externally funded project.

Economic Justification

The high returns that reducing leakage offers show the economic justification for the start-up project. The program cost of reducing water losses itself (excluding sewerage works, technical assistance, and unallocated) may be approximately JD30 million, or an annuitized capital cost of JD 4.5 million (10 percent, 10 years). Adding about JD 1 million per year for associated operating costs, the total annual costs rise to about JD 5.5 million.

Demand projections (Annex 4) indicate that the net available capacity, including Zara Mee’n, will use all existing capacity to the fullest. The with- and without-project situation implies a net reduction in water losses of 10 percent (from about 45 percent to 35 percent). Assuming an average production of 150 mm³/year over the next ten years, the corresponding savings are 15 mm³/year. Based on an average incremental cost for Zara Mee’n of about JD 0.50, the annual costs savings are JD 7.5 million. Additional benefits would include the incremental sales from water savings (JD 9.3 million/year at present rates [15 x 0.62 = 9.3 million]).

Therefore, the proposed water losses reduction program is fully justified, even if no additional water is sold. In a more distant future, benefits will increase as the reduction in water losses would help minimize the use of the future Disi, which is even more expensive than Zara Mee'n.

Table 6.3 Detailed Estimated Costs of Start-up Project (2007-2010)

Phase	Quantity	Unit Cost	Total Cost, JD Million	Outsourced Share
Connection census	380,000 water connections	JD 2	0.8	99 %
GIS mapping	15 % of water network; 95 % of sewerage network		0.5 water 1.0 wastewater	99 %
Isolating DZs	9,000 man-days civil works	JD 10	0.1 0.1	90 %
Creating DZ's baseline flows	270*15*4=16,000 man-days; external consultants	JD 10+2 sets of equipment @ JD 40,000+ 6 vehicles at JD 10,000 each	0.3 0.9	50 % 100% external consultants
Establishing DZs	270; replace 10% of tertiary 2000 km; and 33% of house connections 1,500 km	JD 50/m for tertiary network; JD 20/m of house connection pipe	10.0 10.0	Own forces plus subcontractors
Upgrading meters B to C	Upgrade 35% of 380,000 meters	JD 40	0.5	100 % external consultants
Completing SCADA	Lump sum			100 % External consultants
Calibration and development of network model	Lump sum		0.2	100 % External consultants
Water and wastewater master plan	Lump sum		2.0	100% External consultants
Pressure reduction program	Lump sum		0.3	100% External consultants
Asset maintenance management plan	Lump sum		0.5	90% External consultants
Urgent sewerage works	Replace about 15% of collection network		10.0	100% contractors
Unallocated and contingencies			8.8	
Total			50.0	

SECTION 7 PRICING BULK WATER, SERVICES, AND SUBSIDIES

This section analyses current pricing policies for bulk and retail water and presents recommendations to improve the allocation of subsidies and the efficiency of operations as to promote social equity and water conservation. Additional information of pricing policies, willingness, and capacity to pay are presented in Annex 5.

National Water Supply Management

Jordan's water resources are both scarce and highly variable from year to year. The authority to manage the scarce water is vested with the WAJ, which allocates available water between users informally on the basis of rainfall and the balance between supply and demand in each region. The informality of the allocation is illustrated by the fact that WAJ does not commit to supplying an annual quantity of raw water in a given year at a fixed tariff, and hence the supply and financial risks are borne by the ultimate users. At the same time, the lack of any firm delivery commitment from WAJ reduces its accountability as a bulk water supplier and that of any water retail distributor such as NEWCO. The absence of any firm bulk water delivery commitments also makes operations and optimization of investments difficult. It is therefore essential to develop more formal water delivery arrangements since WAJ is best placed to manage the bulk water supply risk.

Water Sources for Greater Amman

The bulk water supply for Greater Amman is particularly delicate and complex, given the size of the city, its high elevation and the scarcity of nearby water sources. Amman receives water from five main sources:

- King Abdullah Canal (KAC) through the Zai conveyor and treatment system in competition with irrigation uses in the Jordan Valley.
- Khaw well system in competition with users in the Northern Directorates.
- Lajjoun well system without any present competitive demand.
- Walla wells in future competition with the growing demand of the Madaba area.
- Wells within the Amman governorate with no competitive demand except the need to reduce overexploitation of these aquifers.

With the annual volumes indicated in Table 7.1, the present supply to Amman is in the order of 127 mm³/year, equivalent to a per capita supply of some 170 lcd. With the present levels of non-revenue water of about 45 percent, the present consumption level is around 95 lcd. In theory, this supply level could be sufficient to guarantee continuous supply to Amman's population. In practice, it is not, as there are shortcomings, particularly in pressure control in the district areas and the tertiary water distribution system. Moreover, illegal connections represent uncontrolled consumption and contribute to wasteful consumption. Water supply is rationed on a rotating basis with an equivalent average supply of about 9 hours per day.

Additional bulk water supplies to Amman are forthcoming. The Zara Mee'n system intercepts brackish water from wells near the Dead Sea and treats it in a reverse osmosis plant. The associated conveyor system to bring the water up to Jordan is already completed. From September 2006, the system could produce 47 mm³ per year, of which 40 mm³ would be available for Greater Amman and 7 mm³ for local needs around the Dead Sea.

In the more distant future, Amman expects another 100 mm³ from the Disi project. The waters from Disi will require, however, substantial investments in about 65 wells and in constructing and operating a 325 km-long conveyor system and pumping stations. The cost of Disi project will be high as will be further detailed.

Present and Future Bulk Water Supply Costs

The economic and financial costs of the different schemes are detailed in Table 7.1 below. The economic costs are the original costs of each scheme, where the total capital investment costs expenditures have then been annuitized.

**Table 7.1 Bulk Water Supply Schemes and Costs
(mm³/year and JD)**

Supply Scheme	Annual Supply	Economic costs of Bulk Supply				Financial Costs to LEMA, JD/m ³		
		CAPEX JD million	Annuitized CAPEX (1), JD/m ³	OPEX JD/m ³	Total JD/m ³	EF JD/m ³	OPEX D/m ³	Total
Zai-KAC	55	60	0.130/ m ³	0.200	0.330	0.055	0.230	0.285
Khaw	16	NA	0.170/ m ³	0.110	0.280			0.138
Lajjoun	13	18.5	0.170/ m ³	0.110	0.280			0.110
Walla	7	NA	0.170/ m ³	0.110	0.280			0.110
Own wells	36	NA	0.170/ m ³	0.140	0.310			0.140
Sub-total present sources	127				0.310			0.198
Zara Mee'n	47	121	0.302	0.233	0.535	NA	NA	NA
Disi	100	NA	NA	NA	0.760	NA	NA	NA

Source: WAJ (2006).

NA, not available; EF, extraction fee; CAPEX, Capital Investment Expenditure; OPEX, Operations and Maintenance Expenditure in JD millions

1. The annuitized capital cost is calculated as the capital investment cost (CAPEX) multiplied by the capital recovery factor of 0.117 corresponding to a discount rate of 10 percent and a lifetime of the investment of 20 years. The annuitized CAPEX for the Khaw, Lajjoun and Walla systems have been assumed to be equal and are based on the recorded CAPEX of the Lajjoun scheme.

2. The cost of the Disi scheme has been taken from estimates in the National Water Master Plan, Volume VIII, Water Sector Economics, where costs are expressed in mid-2002 prices. It is likely that the costs in 2006 prices will be considerably higher than this estimate because of higher energy costs of pumping.

The economic costs represent the total cost to Jordan's economy, at the time of the investment or at a future date when the installations will have to be replaced due to wear and tear. The financial costs are those that LEMA actually has been paying WAJ for bulk water delivered at agreed supply points.

With the entry of the Zara Mee'n scheme, bulk water costs will escalate rapidly from the historical average economic cost of JD 0.310/m³ to around JD 0.540/ m³. These costs will spike again when the Disi scheme enters. The economic costs will likely be approximately JD 0.800/m³ since water will have to be pumped over large distances.

Recommended Pricing Policies for Bulk Water

Economic theory posits that water users - both intermediate consumers, such as LEMA or NEWCO in the future, and final consumers in homes or businesses – should pay tariffs that reflect future costs of water. The economic rationale is that users should be made aware of future costs of water as to minimize present wasteful or low-priority consumption. In so doing, they defer future, more costly water consumption. The assumption is that intermediate and final consumers will be motivated to consume, invest, and operate in the most economically sound way only if they are fully aware of the full economic costs of water.

Applying the logic of economic theory, it would be optimal to charge bulk water tariffs to LEMA (and its successor NEWCO) that would equal the short-term, variable costs of the Zara Mee'n scheme, or JD (0.240+0.060)/m³ of bulk water supply, or a total of JD 0.300/m³.⁷ The variable operational costs of the Zara Mee'n scheme are about JD 0.240/m³ and the extraction costs of JD 0.060/m³ approximate the environmental costs of taking water away from the Dead Sea.

We recommend that WAJ charge NEWCO a bulk water tariff of at least JD 0.300/m³. This optimal bulk water tariff should be charged for all bulk supplies, irrespective of the origin of the bulk water. WAJ would then be free to consider the optimal dispatch of bulk water from its various sources, beginning with the cheapest and ending with the more expensive Zara Mee'n water; slightly more expensive than water from the Zai/KAC scheme. This charge should be revised once Disi becomes operational.

Contractual Forms for Bulk Water

Water supply companies benefit from being able to count on predictable supplies and future costs, including those of bulk water. For this reason, we recommend that WAJ price future bulk supplies over the medium-term of five years, with the annual contractual deliveries and the corresponding bulk water tariffs indicated. Ad hoc pricing policies that characterize the current system have created uncertainty and harmed decisions to invest in alternative supplies and water-saving devices. Explicit medium-term bulk water supply contracts would also favor future private sector participation.

⁷ The variable operational costs of the Zara Mee'n scheme are about JD0.240/m³ and the extraction costs of JD0.060/m³ approximate the environmental costs of taking water away from the Dead Sea.

Present Pricing Policies for Retail Customers

Intermediate bulk water users such as LEMA or NEWCO should pass on to final consumers the bulk water tariff of JD 0.300/m³ paid to WAJ. This pass-through, however, needs to take into account the level of NRW resulting from leakage and commercial losses, such as illegal connections. Assuming that the operator is able to reduce the share of NRW from the present 45 percent to 35 percent, it would have to charge its final users JD 0.300/(1-0.35) or JD 0.46/m³ to pay a net of JD 0.300/m³ of bulk water supply.

In addition, NEWCO should also charge for costs of treating and distributing water and for the costs of collecting, treating, and disposing wastewater. The associated costs have been calculated over the long term as shown in Annex 5 and summarized in Table 7.2.

Table 7.2 Cost of Water Distribution and Wastewater Collection

Concept	Costs JD/m ³	
	Water distribution	Wastewater collection
Operation and maintenance	0.42	0.04
Capital costs	0.10	0.14
Total	0.52	0.18

The cost of operation and maintenance is greater in relation to capital costs since maintenance of the present infrastructure has been deferred for a long time, notwithstanding the need to reach an annual level of maintenance equivalent to 2.5 percent of the value of the assets.

Cost of Wastewater Treatment and Final Disposal

In addition to the costs of bulk water and of water distribution and wastewater collection, the costs of wastewater treatment and final disposal should be charged to those retail users who are connected to the sewerage system and where the wastewater is then treated. The wastewater treatment costs can be estimated based on the costs of the As-Samra wastewater treatment plant that is being completed under a BOT contract. The total As-Samra CAPEX quoted by the BOT-operator is US\$ 170 million for a flow of 267,000 m³/day. Applying the same capital recovery factor of 0.117, the resulting economic cost of wastewater treatment can be estimated at JD 0.14/m³⁸. In addition to the annuitized CAPEX O&M costs of JD 0.05 per cubic meter should be added resulting in an economic cost of treating wastewater in As-Samra of about JD 0.19/m³.

In practice, the costs will be higher per cubic meter because the As Samra plant will possibly not be treating water at full capacity throughout the year as wastewater collection may lag. An allowance should also be made for water infiltrating into the

⁸ The financial cost to LEMA or the successor NEWCO is lower because the CAPEX of US\$170 million has been partially paid with a grant of US\$14 million from the MWI and a USAID grant of US\$78 million.

wastewater collection system during the rainy season when rainwater is drained through the sanitary sewerage system (Annex 4). For these reasons, the wastewater treatment tariff charged on those water connections that also have sewerage connections should be higher. It is assumed that the equivalent charge per each cubic meter of water of revenue water would be JD 0.32/m³, applying the 35 percent of overall NRW.

Aggregate Cost of Supply and Wastewater Services

The total economic cost of each cubic meter of water is JD (0.500+0.70+0.32), or JD1.52 per cubic meter of revenue water, i.e. the water that is billed. We recommend that this cost, rounded to JD 1.50 per cubic meter billed, be the tariff for all consumption above the socially necessary minimum quarterly consumption.

Subsidies, Cost Recovery, and Tariff Structure

This subsection outlines our recommendations to realign the present level of subsidies to improve cost recovery and target them better to the poor.

Subsidies. The current level of subsidies, which is the economic cost minus the price paid by the operating company or final consumer, is substantial. They amount to about JD 56 million per year as compared to operational revenue of JD 52 million (2006 budget). Subsidies are not well targeted. Although poor consumers, who consume less than 20 m³/quarter, represent about 30 percent of residential users, they receive only 9 percent of the subsidies. Middle- and upper-class residential users receive more than 90 percent of the subsidies (Annex 5). Moreover, the absolute level of subsidies to residential users tends to increase as consumption increases (Annex 5, Table 9).

These subsidies deprive WAJ and will deprive NEWCO of needed resources to provide adequate maintenance and timely expand wastewater services. They give a weak signal to the operator and end users to conserve water resources to the former, in the form of high level of NRW and to the latter in promoting wasteful consumption.

Cost recovery. Clearly defined cost recovery objectives will help to frame a comprehensive pricing policy. This policy should consider the potential sources of revenue, their impact, and the signals sent to users to promote water conservation and to the operator to promote efficiency. These sources are:

- Tariff level and structure
- Capital contributions, such as non operational sources of revenue contributions from developers
- Other contributions, including taxes such as the 3 percent sewerage tax levied by the City of Amman.

Tariff structure. The recommended tariff structure to final users seeks to reconcile economic efficiency, financial viability and social objectives (Annex 5). Therefore a revised pricing policy should:

- Include initial steps to move to full cost recovery by charging families consuming 20 to 130 m³/quarter the AIC for water distribution and wastewater collection (JD 0.70/m³) and charging the full AIC cost (JD 1.50 /m³) to non-residential users and families using more than 130 m³/quarter. These actions will generate about JD 26 million per year, after the 5 year implementation period (Annex 5). They will also improve WAJ's and NEWCO's financial position.
- Improve targeting subsidies by limiting them to the poorest families consuming 0-20 m³/quarter and by removing subsidies to residential and non-residential users consuming more than 20 m³/quarter. Charges to all users should include a fixed fee to cover metering and billing costs plus a variable charge for consumption.
- Recover the subsidy to the poorest families from other users. This recovery can be easily done through an adjustment of the fixed charge to other users. As the subsidy to the 0-20 m³/quarter residential group is about JD 2 million/year, the surcharge on the rest of users would be about JD 1.90/user/quarter.

Tariff should be adjusted gradually over five years to coincide with improvements in the provision of services brought about by the proposed start-up project. The tariff realignment should be accompanied by an awareness campaign to inform the public of efforts on improved services, associated costs, and beneficial effects on water conservation.

SECTION 8 FINANCIAL VIABILITY

This section analyzes the conditions promoting NEWCO's financial viability. We evaluate the financial resources the government should provide to NEWCO in the form of tariffs, non-operational revenues, and initial working capital as to enable NEWCO's management to discharge its responsibilities. Our evaluation is based on LEMA's financial data complemented by assumptions regarding the market for water and sewerage services in Greater Amman and NEWCO's potential revenues, costs and efficiency gains. In line with this approach, this section includes our analysis of NEWCO's:

- Operational revenues and costs
- Main financial policies and initial financial condition
- Operational and financial scenarios for 2007-2011

The five-year scenarios are useful to inform the decisions that the MWI and WAJ must make. We use the term *operational scenario* to encapsulate basic information regarding population in the service area, service coverage targets, water sales, water production, and wastewater disposal and treatment. For the future, NEWCO's management should periodically update the scenarios taking into account its cash-flows and updated management plans. NEWCO's up-to-date scenarios should also take into account the implications of Disi's entry into operations, government's decisions regarding pricing of services and subsidies and actual inflation rates.

Operational Revenues and Costs

Operational revenues. On the basis of LEMA's experience, we assume that the bulk of NEWCO's operational revenues would be generated by

- Water and sewerage tariffs, including meter fees
- Water and sewerage connection fees
- Water sales to other governorates
- Other miscellaneous revenues.

Current water and sewerage tariff structure and levels have been in place, with minor changes, since the beginning of 2001. The first change, which took place in September 2003, was the implementation of the electricity surcharge (0.500 fils for quarterly consumption per connection up to 20 m³ and JD1.500 for connections with quarterly consumption of 21 m³ or more). The second change, which took place in October 2005, was the implementation of an additional surcharge of JD 1.650 for quarterly consumption up to 20 m³ per connection; JD 2.650 for quarterly consumption up to 40 m³; and JD3.650 for consumption more than 41 m³. Section 7 of this report discusses the rationale for the water and sewerage tariffs and recommended actions.

Current fees for new water and sewerage connections have been in place since June 2004. Fees vary according to type of customer (residential or non-residential) and property size. The minimum water fee in Greater Amman is JD180 for domestic properties up to 150 m²; for larger properties there is an additional charge of JD 1 per additional m². Fees for new water connections cover the right to connect to the water supply system and the labor and materials for the connection. Between June and December 2005, the water company obtained a very small margin (JD 28) between the average fee per water connection (JD 240) and the average direct cost per connection (JD 212).⁹

In the case of new water connections, customers pay for labor and materials required for the sewerage connection, while connection fees cover only the right to connect to the system. The fees, which vary according to property size, would constitute then a net source of revenue for NEWCO. They range from JD4 to JD18 per m² of property size. Between June and December 2005, LEMA reported the average revenue from this source amounted to about JD 330 per new connection.

Non-operational revenues. In preparing this feasibility study and in light of the estimated NEWCO's financial requirements to meet its operational targets, WAJ decided to transfer to NEWCO its financial revenues generated by the 3 percent contribution on buildings and land in Greater Amman. This contribution, which was established by Law No. 18 of 1988, Article 21, is currently levied by the Greater Amman Municipality and transferred to WAJ as part of its financial revenues. The total contribution in the country amounted to JD 11 million (2005), of which JD 9 million correspond to Greater Amman.

We recommend that WAJ include in the Assignment Agreement its commitment to transfer to NEWCO the product of the 3 percent contribution. This transfer could be done by WAJ requesting GAM to transfer the contribution directly to NEWCO or to a WAJ's bank account with specific destination to NEWCO.

Operational costs. The bulk of NEWCO's operational costs during its initial years are likely to be concentrated in four items, which represent about 85 percent of the total operational costs according to LEMA's 2006 budget. These costs are electricity (45 percent); external water sources (16 percent); personnel (13 percent); and new water connections and network maintenance (11 percent). Other costs include chemicals and fuels, meters, vehicle maintenance, and others. This cost structure should change over time as NEWCO's management implements our recommendation to increase the resources allocated to infrastructure maintenance and rehabilitation.

The cost structure cited above includes highly subsidized bulk water prices, and to lesser extent electricity prices. Given the weight of electricity and water costs in NEWCO's cost structure, any significant increase in the price of these inputs would have to be compensated by raising the tariff level.

⁹ LEMA is the source for the data on average water and sewerage revenues and costs.

Initial Financial Position

The MWI and WAJ should ensure that NEWCO starts operations in a robust financial position. Two critical pre-conditions leading to this are that MWI and WAJ provide NEWCO *adequate working capital* and *sufficient and predictable revenues for medium- and long-term operations*. The decision on revenues should take into account that NEWCO's ability to finance its day-to-day operations, rehabilitate existing infrastructure, and expand services.

Article 4 of the MOU sets WAJ's contribution to NEWCO's capital in the form of certain movable assets, i.e., vehicles, furniture, and equipment. These assets would be valued as indicated in the asset inventory transferred from LEMA to WAJ before the end of the management contract. For the purposes of the current scenario, we assumed that the value of the movable assets would be JD 35 million. This amount would be adjusted on the basis of the asset inventory, but the value finally adopted has no significant implications on NEWCO's financial prospects.¹⁰ Under Article 5, WAJ is to provide NEWCO with initial working capital required to begin operations. The amount and conditions of payment and repayment of the working capital would be determined in light of recommendations of this feasibility study.

In line with the above, we recommend a practical approach consisting of MWI/WAJ providing NEWCO with the required working capital. This framework is outlined below together with the tentative figures based on currently available information. The final figures would be the ones available at the time of the transition from NEWCO to LEMA. The approach is as follows:

- WAJ transfers to NEWCO as capital contribution (paid-in capital) the current assets of the water and sewerage service at the end of LEMA's contract. The capital contribution would provide NEWCO with adequate liquidity to carry out its operations. These current assets are estimated at JD18 million, which include JD 16 million in accounts receivable (net of provision for doubtful receivable) and JD 2 million in inventories and other current assets at the end of LEMA's contract.
- WAJ opens a JD 2 million line of credit to NEWCO to start operations. NEWCO would reimburse the loan during the first one to two years of operations.
- WAJ clears all LEMA's account payable in arrears and all employment liabilities. The accounts payable not in arrears (less than 30 days) could be assumed by NEWCO. These accounts, including WAJ's JD 2 million loan would amount to about JD 10 million.

The above approach would allow NEWCO to start operations with a positive net working capital (current assets less current liabilities) of about JD 10 million. Table 8.1 below presents a summary of the estimated composition of NEWCO's Opening Balance Sheet.

¹⁰ The main implication would be the impact on income taxes as a result of the depreciation charges, but it is unlikely to be significant within the context of NEWCO's operations.

Table 8.1 NEWCO's Opening Balance Sheet (JD million)

Assets	Amount	Liabilities & Net Worth	Amount
Current assets		Current liabilities	
Cash and banks	2	Accounts payable to suppliers	5
Accounts receivable (net)	16	Other accounts payable	3
Inventories and other	2	WAJ short-term loan	2
Total current assets	20	Total current liabilities	10
Fixed Assets¹	35	Net Worth	45
TOTAL	55	TOTAL	55

¹ "Movable" assets transferred from WAJ. Total WAJ fixed assets in Greater Amman 397 mill JD.

Operational Scenario (2007-2011)

We summarize below the operational scenario. Further details are presented in Annex 6.

Market and selected operational variables. Our starting point to estimate the operational scenario is the projected population in Greater Amman, as it constitutes the potential market for NEWCO's services. It is estimated to grow at 2.5 percent per year.¹¹

The scenario assumes that NEWCO's management will assign priority to the required actions to satisfy more effectively the demand for sewerage services. Accordingly, the sewerage service coverage would increase from 78 percent of the population served with house connections in 2007 to 82 percent in 2011.

Water supply coverage with household connections is already high – estimated at 98 percent in 2007 – and, thus, the increase in coverage is not significant – 99 percent. Table 8.2 summarizes the market and recommended service targets for the period covered by the scenario, which also assumes a gradual reduction in non-revenue water.

Table 8.2 Market and Selected Variables

Item	2006	2007	2008	2009	2010	2011
Total population (million)	2.1	2.1	2.1	2.2	2.3	2.3
Population served with water (percent)	98	98	99	99	99	99
Population served with sewer (percent)	78	78	79	80	81	82
Water sales per connection/month(m ³)(1)	14	15	16	17	18	19
Total volume sold to customers (million m ³)	64	68	75	82	89	97
(2)						
Water sold to other governorates (million m ³)	8	8	8	8	8	8
Water production (million m ³)	129	133	143	150	157	163
Wastewater (million m ³)	N.A.	55	60	66	72	78
Non-revenue water (percent)	44	43	42	40	38	36

Source: For 2006, LEMA's budget 2006; NA, not available.

1. Sales to retail customers. Excludes sales to other governorates.

2. Sales to subscribers. Excludes sales to other governorates.

¹¹ The Hashemite Kingdom of Jordan. Department of Statistics.

Meeting the growing demand for water supply and wastewater treatment will require substantial increases in raw water production and wastewater treatment plants, which the scenario assumes would be supplied by WAJ (See Section 5).

Financial Scenario (2007-2011)

Our estimated financial scenario for this period shows that NEWCO's cash flows are adequate to cover its operational expenditures and investments while at the same time allow it to maintain a satisfactory cash position. A summary of the cash flows is presented Table 8.3 below. Further details are included in Annex 6.

Table 8.3 NEWCO's Cash Flows (Current JD million)

Item	2007	2008	2009	2010	2011	Total
Revenues	49	54	60	63	67	294
Cash expenditures	46	51	55	59	64	276
3 percent sewerage contribution	9	9	9	10	10	47
Less debt service and changes in working capital	0	0	0	1	1	1
Funds for investments	12	12	14	14	14	66
Investments system expansion	10	12	15	14	13	64
Net increase (decrease) in cash	2	0	-1	0	1	1
Cash balance - January 1	2	4	4	3	3	
Cash balance - December 31	4	3	3	3	3	

Source for 2006: LEMA's budget 2006; NA, not applicable

Selected financial indicators. Table 8.4 presents a set of broad indicators to measure NEWCO's overall financial performance.

Table 8.4 Financial Indicators

Item	Unit	2007	2008	2009	2010	2011
Current ratio 1/	Number of times	2.41	2.36	2.15	2.06	2.00
Profit margin 2/	Percent of revenues	6.21	5.59	7.70	5.95	4.86
Cost per m ³ sold (excluding dep. charges)	JD/ m ³ sold - current prices	0.61	0.61	0.61	0.61	0.61
Revenue per m ³ sold	JD/ m ³ sold – current prices	0.65	0.65	0.66	0.65	0.64
Bill collection	Percent amounts billed	96.00	96.00	96.00	96.00	96.00

1. Current assets divided by current liabilities. 2. Operating income as a percentage of total revenues.

Our basic assumptions behind the above cash flows and financial indicators are summarized below.

Revenues. Two sources of revenues are the current operational revenues of the service and additional revenues generated by the 3 percent contribution for sewerage services.

NEWCO’s operational revenues would consist of water and sewerage tariffs, water and sewerage subscription fees, and other revenues, including water sales to other governorates. The average tariffs and other charges would be as shown in Table 8.5 below.

Table 8.5 Average Tariffs and Other Charges

Item	Amount
Water supply (JD/m ³)	0.48
Sewerage services (JD/ m ³ sewerage)	0.15
Water sales to other governorates (JD/ m ³)	0.24
Water connection fees (JD/connection)	212
Sewerage connection fees (JD/connection)	330

The scenario assumes no tariff adjustments to compensate for inflation. Based on the above tariffs and prices, the average revenue per m³ sold (total revenues divided by the m³ sold) ranges from 660 to 680 fils.

WAJ’s transfer of revenues to NEWCO from the 3 percent contribution for sewerage is estimated at JD 9 million (2007) and growing at 2 percent per year. This growth is conservative as it includes inflation and population increases.

Operational costs. Complete details of the cost assumptions used to estimate the financial scenario are included in Annex 6, Table 8.6. In this section, we analyze the main cost components.

The scenario considers that NEWCO management should increase the budgetary allocations for maintenance, rehabilitation, and repairs from 0.4 percent of gross fixed assets estimated for 2007 to 0.8 percent of gross fixed assets in 2011. The corresponding budget allocations are estimated on the basis of WAJ- and NEWCO-owned fixed assets, and are accounted for as current expenditures. In practice, part of the actual expenditures would be capitalized while others would be considered as current expenditures.

The Consultants recommend that NEWCO’s management, in agreement with its external auditors establish detailed criteria for distinguishing between current and capital expenditures. These criteria should take into account a number of factors, including materiality and tax implications. In the case of pipes, for example the consultants suggest to capitalize expenses above JD 10,000 per event, or when pipe diameter is increased.¹²

Projected NEWCO’s budget allocations for maintenance, rehabilitation, and repairs are shown in Table 8.6.¹³

¹² This criteria is adapted from the current arrangements between WAJ and LEMA

¹³ The figures in current prices include an adjustment of 2.8 percent per year corresponding to the assumed inflation. The average increase in the cost of living index for 2002-2005 was 2.8 percent. Source: Kingdom of Jordan, Ministry of Finance, *General Government Finance Bulletin*, April 2006.

**Table 8.6 NEWCO’s Maintenance and Rehabilitation Budget
(JD millions)**

Year	Budget		
	Amount	Percent(1)	Percent(2)
2007	2.0	4.3%	0.5%
2008	2.3	4.5%	0.5%
2009	2.9	5.3%	0.6%
2010	3.6	6.1%	0.7%
2011	4.4	6.8%	0.9%

1. Percent of operational expenditures.
2. Percent of fixed assets.

In addition to the above allocation to maintenance and rehabilitation, NEWCO would allocate to infrastructure rehabilitation and improvements the amounts provided by the start-up project during the initial years of its operations (Section 5).

It is also important to highlight the assumptions regarding bulk water and energy costs. The water sources would be as shown in Table 8.7 below. A key assumption in the model consists in a gradual introduction of Zara Mee’n water to the system.

Table 8.7 Bulk Water Production (million cubic meters)

Source	2007	2008	2009	2010	2011
Zai/KAC	55	55	55	55	55
Own wells	36	36	36	36	36
Other governorates	42	42	42	42	42
Sub-total	133	133	133	133	133
Zara Mee’n	0	10	17	24	30
Total	133	143	150	157	163

Other governorates are: Khaw (18), Wala (9), and Lajjoun (15).

The fee and energy costs are as shown in Table 8.8. The cells without a value correspond to items for which there is no specific charge to NEWCO.

Table 8.8 Bulk Water Costs

Source	KWH/m ³	Fees	Energy	Total
		(JD per m ³)		
Zai/KAC	5.3	0.055	0.230	0.285
Own wells	2.4	0	0.103	0.103
Khaw		0.138		0.138
Wala		0.115		0.115
Lajjoun		0.115		0.115
Zara Mee'n		0.150		0.150
Water distribution	0.7			0.029

Cost for KWH is JD0.043. Source: LEMA (2006).

It is recommended that the MWI and WAJ include in the Assignment Agreement its commitment to provide the required volumes of water at agreed upon prices. Any change in the terms of this agreement should be reflected in the level of tariffs and levels of service expected from NEWCO.

Investments. NEWCO's investments to expand the distribution system to achieve proposed service targets over the 2007-2011 are shown in Table 8.9. These estimates are based on our estimated average cost of serving an additional customer: JD 500 for water and JD 600 for sewerage (2007 prices). These costs include the direct cost of the connection plus investments in other parts of the water distribution and wastewater collection systems.

**Table 8.9 Investments in System Expansion
(JD million, 2006)**

Year	Water	Sewerage	Total
2007	4.9	4.7	9.6
2008	6.3	6.0	12.3
2009	6.4	9.0	15.4
2010	5.6	8.2	13.8
2011	5.9	7.3	13.2
Total	29.1	35.2	64.3

As the MWI, WAJ, and USAID are considering a sewerage program for South Amman, the program may allow NEWCO either to accelerate expansion of the sewerage system in other parts of Greater Amman or to allocate additional resources to system rehabilitation, upgrading, and replacement. The proposed Start-Up project would be financed by WAJ.

Working capital. The scenario considers a significant increase in NEWCO's working capital to allow it to make payments to contractors and suppliers, including the energy company, within 45 days on average. The scenario also assumes that NEWCO would gradually reduce the account receivable from the equivalent to about 3.7 months estimated for 2007 to about 2.6 months by 2011. Inventories would be maintained at the equivalent to 2.4 months of relevant costs estimated for 2007 months. This working

capital targets would allow NEWCO a reasonable liquidity position, as reflected in a current ratio close to 3.

Transition from LEMA to NEWCO

The transition from LEMA to NEWCO involves four main tasks from the financial point of view:

- WAJ and LEMA arrange transferring of assets from LEMA to NEWCO.
- WAJ clears LEMA's liabilities according to the terms of the leasing contract.
- WAJ formalizes its contribution to NEWCO's paid-in capital (net working capital plus movable fixed assets).
- NEWCO's management drafts the company's first year budget within the context of a three-year business.

SECTION 9 CREATING NEW WATER AND SANITATION COMPANY

This section outlines the tasks required to establish NEWCO legally, transfer all necessary rights and responsibilities, and complete all technical, organizational and financial steps to allow NEWCO to become fully operational by January 1st of 2007. Each of the main activities discussed below are considered as the most critical, particularly where actions by the MWI and WAJ are urgently needed.

Table 9.1 Timetable for Creating NEWCO

ID	Task Name	2007									
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
1	Newco Implementation	[Gantt bar from May to Jan]									
2	Appointment of Senior Management	[Gantt bar from Jun to Sep]									
3	Appointment of General Manager	[Milestone diamond at 7/30]									
4	Selection of Top Executives	[Blue shaded bar from Jun to Jul]									
5	Appointment of Top Executives	[Milestone diamond at 8/30]									
6	Company Incorporation	[Gantt bar from May to Sep]									
13	Development of Key Deliverables	[Gantt bar from Jun to Oct]									
26	Newco's Corporate Decisions	[Gantt bar from Aug to Dec]									
70	Communication	[Gantt bar from Jul to Jan]									
76	START DATE	[Milestone diamond at 1/1]									

Appointment of NEWCO's Senior Management

The departure of LEMA and its Suez personnel by the end of 2006 requires the urgent appointment of NEWCO's executive staff to make critical decisions including NEWCO's organization and staff appointments, introducing new areas of responsibility in the new entity, and transferring assets and services from WAJ.

As defined in the letter of June 6, 2006, the MWI will appoint NEWCO's general manager. In the same letter, the minister confirmed the participation of the consultants to help identify suitable candidates for finance and administration director, technical services/CIP director, and human resources officer.

These positions will be publicly advertised and the competitive selection will consider candidates from inside and outside MWI. Selection will be managed by a local recruitment firm based on responsibilities and qualifications discussed and agreed with the PDT. Interviews will be jointly managed by a special task group from representatives from the MWI, WAJ, and the consultants. NEWCO's general manager should select the successful candidate.

Successful candidates will be offered the position by mid -August 2006, so they can start work in early September. These professionals will be transitionally hired by USAID through the SEGURA/IP3 contract, with MWI/WAJ commitment that NEWCO will

retain them at the beginning of operations. As a consequence, it is critical to have the general manager identified, at the latest, by early August 2006

Senior Management Priorities

We recommend that NEWCO's senior management concentrate its initial effort in the following areas:

- *Organization.* Our organizational proposal needs to be validated or amended as necessary.
- *Human resources.* As detailed in Section 3 and in line with decision on the organization, there is a need to develop a new system of staff classification and a unitary remuneration and bonus package.
- *Procurement.* NEWCO will have significantly different procurement procedures. The consultants will work closely with NEWCO's senior management to develop these procedures.
- *Business plan.* The plan captures the goals of the new company in terms of objectives, and defines the resources, financial and manpower, needed to implement it. The consultants will provide support to develop of the business plan.
- *Initial budget.* The consultants will work closely with NEWCO's senior management to develop a detailed first year budget and sources of funds and a similar, less detailed budget for the next two years.
- *Opening balance.* The consultants will work closely with NEWCO's senior management to develop the opening balance.
- *Communication plan.* The plan will reach staff and the general public to help develop and reinforce NEWCO's corporate identity.
- *Operating procedures.* While initially, we recommend continuing using LEMA's applicable procedures, there is a need to revise and update them. We recommend to NEWCO's senior management on ways to improve and enhance NEWCO's interaction with its customer base; implement and operate the new FAS financed by USAID; and establish standard operation procedures to reflect the new organizational structure.
- *Transfer of rights and responsibilities.* NEWCO's senior management need to be actively involved in this transfer as well as in the transfer of assets (fixed and movable) from WAJ to NEWCO.
- *Start-up project.* NEWCO's senior management should review our proposed start-up project, participate in the dialogue with donors to gauge their support, and internally designate the professional team that will be responsible for its implementation.

Exhibit 4 is a timeline of the expected work program for the above-mentioned tasks.

Table 9.2 Proposed Activities Timeline for Senior Management

ID	Task Name							
		May	Jun	Jul	Aug	Sep	Oct	Nov
13	Senior Management Priorities							
14	Organizational Structure							
15	Assignment Agreement							
16	Human Resource Procedures							
17	Procurement Procedures							
18	Business Plan							
19	Initial Budget							
20	Opening Balance							
21	Communication Plan							
22	Operating Procedures							
23	Customer Service Procedures							
24	Finance and Accounting Procedures							
25	Start-up Project							

Incorporation and Registration

NEWCO’s incorporation has already started with the development of draft versions of the Articles of Association (Annex 1B) and the Memorandum of Association (Annex 1C), which were discussed with PDT in several meetings. These documents are required to register the limited liability company in Jordan.

The MWI and WAJ should submit these drafts for the GAM’s review and reach agreement with the potential shareholder as these documents would be the basis for the shareholder agreement between the two parties. The MWI and WAJ should seek to reach agreement with GAM *by the beginning of August 2006*. These entities will present to the Cabinet the agreed versions, as part of the communications process that the MWI has established regarding the creation of NEWCO. Endorsement by the Cabinet is expected by the *end of November 2006*.

NEWCO’s registration will include the presentation of the foundation documents to the Company’s Comptroller to obtain the registration certificate. To meet the timeline proposed, this certificate should be obtained by the *middle of September 2006*.

Corporate Decisions

Once NEWCO obtains its registration certificate and is fully incorporated as a limited liability company, the start of operations begins with the general assembly making a number of critical decisions - among the most important - the nomination of the management committee.

First general assembly. The first step after the company’s formation is the call for a general assembly. Its purpose is to approve the decisions that will allow the company to

start operations and to appoint the management committee and the executive staff. The deadline for this set of appointments is the beginning of *October 2006*.

Table 9.3 Timetable for Corporate Decisions

ID	Task Name					
		Aug	Sep	Oct	Nov	Dec
26	Newco's Corporate Decisions	▬				
27	Selection of MC members		■			
28	Announcement for General Assembly		◆ 9/20			
29	General Assembly Approvals			▬		
33	Management Committee Approvals				▬	

Selection of management committees. We recommend that the members be selected in advance of the committee’s formal nomination. This would permit them to participate in the review of documents later needed for formal approval. *We advise these nominations completed in early September 2006.*

Approvals of management committee. Once formally appointed, the committee must review and approve the following: the organizational structure, staff compensation plan and human resource, finance and accounting, and standard operating procedures, opening balance, one-year budget, and business plan. *These approvals should take place no later than the end of November 2006.*

Transition

The contractual transfer of services from LEMA back to WAJ and then from WAJ to NEWCO will be conducted simultaneously until January 1, 2007. In some areas, these two transfers overlap and should be coordinated. The consultants are ready to assist both WAJ and NEWCO in this process.

Table 9.4 Transition Timetable

ID	Task Name						2007
		Aug	Sep	Oct	Nov	Dec	Jan
48	Transition Issues	▬					
49	Labor issues		▬				
54	Procurement		▬				
58	Systems Transfer Process		▬				
63	Inventories		▬				
67	Insurance		▬				
71	Records transfer		▬				

Labor. According with LEMA’s management contract, all employees working under its administration should be terminated; those WAJ seconded would return to WAJ; and contracts with those hired directly by LEMA will be terminated by January 1st. The vast majority of these employees are well qualified; therefore, we recommend that NEWCO

offer both WAJ-seconded and LEMA-direct hired staff a permanent position in the new entity under a unitary payroll system. *We recommend that this process be communicated to the employees by the beginning of October 2006.*

Procurement. Many services required to maintain the quality of service are outsourced by LEMA. A list of these contracts will be submitted by LEMA to WAJ. These services must not be interrupted. Therefore, we recommend renewing or renegotiating them until then a final decision is made by NEWCO management. The consultants will provide support top NEWCO's management in identifying contracting alternatives, assessing liabilities, and budgeting of payments.

Inventory. An inventory list of all fixed and movable assets will be transferred to WAJ. It will be made available by LEMA in July. After it is reviewed and approved by WAJ, the inventory list it will be passed to NEWCO.

Insurance. Insurance on property and equipment must be properly identified in coordination with the WAJ, PMU, and LEMA. The consultants will assist in this review and provide recommendations as necessary.

Records. Retaining most of LEMA staff in the NEWCO's operation will facilitate the transfer of records; nonetheless, it is important to have an orderly process to ensure and expedite verification.

Communications. Change creates uncertainty to employees, customers, and other stakeholders such as WAJ, GAM, and the private sector. From the onset of the new company, it is imperative to create a positive image. Between July and December 2006, the initial focus on communications should be the employees, with an increasing focus on customers toward October-December. Recommended specific activities include:

- Keeping the MWI, WAJ, and LEMA staff informed of progress, especially on HR issues.
- Coordinating closely with HR staff in communicating to employees their choices in NEWCO.
- Assessing customer perception of services and areas for improvement.
- Developing and disseminating new corporate name and logo.
- Informing staff and public regularly basis, through different media, of NEWCO's vision and of specific milestone events, e.g., signing Assignment Agreement.

Staff, customers, and stakeholders will have a positive image not just through advertising and media activities but through actions and results. In the short term, it is important to solidify staff's commitment and improved service in one or two highly visible areas to generate customer commitment. In the medium term, the proposed start-up project will provide the resources to significantly improve quality of services. The public will also benefit from timely notification of water availability in their area and with a program to advise them on proper maintenance of household water tanks to improve water quality and on water conservation practices.