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UNCLASSIFIED

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

78p.

PROJECT PAPER

Proposal and Recommendations
For the Review of the
Development Loan Committee

Syria - Damascus Water (II)

276-010

AID-DLC/P-2154

UNCLASSIFIED

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

UNCLASSIFIED
AID-DLC/P-2154

May 10, 1976

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Syria Damascus Water (II)

Attached for your review are the recommendations for authorization of a loan in an amount not to exceed Fourteen Million Five Hundred Thousand Dollars ($14,500,000) to the Government of the Syrian Arab Republic to assist in financing the foreign exchange costs of goods and services required to support the improvement and extension of the public water supply system in the City of Damascus.

This loan proposal is scheduled for consideration by the Development Loan Staff Committee on Thursday, May 13, 1976 at 2:30 p.m. in Room 3886 NS; please not your concurrence or objection is requested by close of business on Tuesday, May 16, 1976. If you are a voting member a poll sheet has been enclosed for your response.

Development Loan Committee
Office of Development Program Review

Attachments:
Summary & Recommendations
Project Analysis
Annexes 1-15.

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PROJECT PAPER FACESHEET

TO BE COMPLETED BY ORIGINATING OFFICE

1. TRANSACTION CODE ("X" appropriate box)
[X] Original [ ] Change [ ] Add [ ] Delete

PP

DOCUMENT CODE 3

2. COUNTRY/ENTITY: SYRIA NEAR EAST

3. DOCUMENT REVISION NUMBER

4. PROJECT NUMBER

5. BUREAU: a. Symbol: 4 b. Code: SA

6. ESTIMATED FY OF PROJECT COMPLETION: FY 82

7. PROJECT TITLE - SHORT (stay within brackets)
Second Damascus Water Supply Project

8. ESTIMATED FY OF AUTHORIZATION/OBLIGATION
a. INITIAL mo. 6 yr. 76 b. FINAL FY 76

9. ESTIMATED TOTAL COST ($000 or equivalent, $1 = 3.70)

a. FUNDING SOURCE	FIRST YEAR FY			ALL YEARS		
	b. FX	c. L/C	d. Total	e. FX	f. L/C	g. Total
AID APPROPRIATED TOTAL						
(Grant)	( )	( )	( )	( )	( )	( )
(Loan)	(14,500)	( )	(14,500)	(14,500)	( )	(14,500)
Other U.S. 1.						
Other U.S. 2. Loan (FY 75)	48,000		48,000	48,000		48,000
HOST GOVERNMENT	5,400	123,100	128,500	5,400	123,100	128,500
OTHER DONOR(S)	88,000		88,000			88,000
TOTALS	155,900	123,100	279,000	155,900	123,100	279,000

10. ESTIMATED COSTS/AID APPROPRIATED FUNDS ($000)

a. Appropriation (Alpha Code)	b. Primary Purpose Code	c. Primary Tech. Code	FY 76 d. Grant	FY 76 e. Loan	FY 77 f. Grant	FY 77 g. Loan	FY 78 h. Grant	FY 78 i. Loan	ALL YEARS j. Grant	ALL YEARS k. Loan
SA	519	545		14,500						14,500
TOTALS										
11. ESTIMATED EXPENDITURES										

12. PROJECT PURPOSE(S) (stay within brackets) [ ] Check if different from PID/PRP

To support the improvement and expansion of the public water supply system in the city of Damascus.

13. WERE CHANGES MADE IN BLOCKS 12, 13, 14, or 15 OF THE PID FACESHEET? IF YES, ATTACH CHANGED PID FACESHEET.
[ ] Yes [ ] No N/A (No PID or PRP)

14. ORIGINATING OFFICE CLEARANCE

Signature

Title

Date Signed mo. day yr.

15. Date Received in AID/W, or For AID/W Documents, Date of Distribution
mo. 04 day 28 yr. 76

AID 1330-4 (7-75)

SECOND DAMASCUS WATER SUPPLY PROJECT

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PROJECT COMMITTEE

Chairman:	J. DeSousa, NE/CD
Loan Officer:	W. C. Larson, NE/CD
Engineer:	J. Baird, SER/ENGR
Economist:	L. Rosenberg, NE/CD
Counsel:	C. Costello, GC/NE
Desk:	K. Teil, NE/ME

SECOND DAMASCUS WATER SUPPLY PROJECT

I. Summary and Recommendations

1. Borrower: The Government of the Syrian Arab Republic (SARG)

2. Loan:

(a) Amount: Not to exceed $14.5 million

(b) Terms: Repayment within forty (40) years, including a grace period of not to exceed ten (10) years. Interest at the rate of two percent (2%) per annum during the grace period and three percent (3%) per annum thereafter.

3. Project Cost: Total cost of $20.6 million, of which $14.5 million is in foreign exchange and $6.1 million is in local currency. The AID loan will finance the foreign exchange costs; the SARG will finance all local costs.

4. Project Description: The proposed AID project consists of certain discrete elements of a larger project designed to improve and increase the water supply furnished to the distribution system (now being improved and expanded) for the City of Damascus. AID's portion of the project includes engineering, procurement, and construction services required to install a pumping station at the Figeh spring source, distribution pumping stations, and a remote-controlled dispatching system to regulate water flow in the transmission and distribution systems.

5. Project Justification: The proposed AID project, in conjunction with the other elements of the larger water supply project, will contribute to improving health and living conditions for an increasing number of inhabitants of Damascus. Access to a safe and reliable water supply for these inhabitants is becoming increasingly threatened. In recent years, both the quality and quantity of water delivered to consumers have declined because of basic water supply limitations, growing population pressures, and a deteriorating water distribution system in Damascus. Health, sanitation, and fire hazards are becoming more serious each year, particularly in the dry season.

The SARG has traditionally placed a high social and political value on a safe and adequate potable water service. For this reason, SARG has given the Damascus water utility improvement and expansion program high priority in its overall development programing and has requested external assistance for this purpose from several donors.

6. Other Sources of Financing: A 1973 IDA Credit of $15 million of which $13 million is to finance the replacement of the deteriorated distribution system in the Old City of Damascus. A 1975 AID loan of $48 million is financing the improvement and expansion of the distribution system in the newer parts of Damascus. The IBRD, Arab Fund, AID, and SARG will finance the approximately $91 million of foreign exchange costs of the various elements of the Supply Works.

7. AID's Funding Source: Supporting Assistance

8. Mission Views: The Embassy and the AID Representative in Syria strongly support the proposed AID Project.

9. Issues: None

10. Statutory Checklist: All statutory criteria have been met (See Annex 15).

11. Recommendation: That a loan in the amount of $14.5 million be authorized on the terms listed in paragraph 2(b) above.

Note: Exchange Rate Used: $1.00 = LS3.70

II. Introduction

A master plan has been developed by the Government of the Syrian Arab Republic (SARG), assisted by French consultants, for improving and expanding the water supply and distribution system to serve the growing needs of the city of Damascus through 1984. An IDA credit of $15 million dollars was obtained by the SARG in 1973 to cover the foreign exchange costs of the planned expansion program, estimated to cost a total of $32.6 million at that time. Bids received in January, 1975 however, revealed actual construction costs which were considerably higher than ordinary estimate. In discussion with the World Bank Group, and other assistance donors, the program was divided into three main parts, as follows:

--Part 1 consists of construction of an underground cut-off wall at the principal water source, the Figeh spring; a 15 km tunnel to conduct the water to the western edge of Damascus; and related storage, pumping, and control works;

--Part 2 consists of the replacement of about 160 kms of existing distribution mains located in the Old City of Damascus and related works; construction is underway.

--Part 3 consists of the installation of about 370 kms of new supply and distribution mains in the newer parts of the city.

Because of increased construction costs the objectives of the 1973 IDA credit were redefined, and those funds are currently financing work on the part of the distribution system located in the Old City (Part 2), also called the Urgent Phase. Construction began in July 1975.

In June 1975, AID signed a $48 million dollar loan to finance the foreign exchange costs of engineering and construction for the part of the distribution system needed for the newer sections of Damascus (Part 3), also called the General Phase. Construction is expected to begin in late 1976 or early 1977.

At the request of SARG IBRD completed an appraisal report in late 1975 (revised in March 1976) for the remaining portion of the overall expansion program--the supply works (Part 1). SARG and the IBRD have received assurances from the Arab Fund for Social and Economic Development of its willingness to participate in the financing of the supply works. The financial plan of the IBRD's appraisal report No. 938-SYR, March 25, 1976, calls for the IBRD and the Arab Fund to finance $35 and $40 million, respectively, in foreign exchange costs with the remaining foreign exchange to be financed by the Syrian Government (See Financing Plan, Sec. IVB.2). The SARG has now asked AID to finance $14.5 million of foreign exchange costs of certain discrete elements of the Part 1 supply works. In the formal application, a copy of which is attached as Annex 1, SARG also requested AID agreement to using approximately LS 21 million of U.S. owned local currency reserved for country uses to finance local costs of other elements of the supply works. The use of these funds is currently under discussion with SARG, but does not form a part of the AID foreign exchange loan project being proposed in this paper. In this paper the overall plan for expanding the water supply system consisting of the three parts outlined above is referred to as "the expansion program" and certain discrete elements of Part 1, for which an AID loan is proposed, as "the project".

III. Background

A. The Country[1/]

Syria is bounded on the north by Turkey, on the east and south by Iraq and Jordan, and on the west mainly by Lebanon and the Mediterranean Sea. It is about seven-eighths the size of Utah, with a total land area of 185,000 sq. kms (71,000 square miles) of which four-fifths is mountainous, desert or semi-arid. The population of Syria exceeds seven million, of whom roughly a third live in the four largest cities of Damascus, Aleppo, Homs and Hama. Apart from oil fields in the northeast, most of Syria's industrial development is in and around these cities. From available statistics, population growth in Syria has been estimated at 3.3% per year. For purposes of its appraisal and projections, IBRD assumed a long term growth rate for the Damascus area served by Figeh to be 4.5% annually.

The climate varies from a Mediterranean type along the coast to an extreme desert type in the southeast. Rainfall occurs mostly in the winter months, being heaviest in the mountainous coastal region. The country's water resources are well-known and increasingly used. The main river is the Euphrates which along with its tributaries is the principal source of irrigation in the northeast and east. Syria's other rivers are small, the most important being the Orontes (El-Assi), flowing through the cities of Homs and Hama, and the Barada at Damascus. There are a number of important aquifers, mainly in the limestone of the Lebanon and Anti-Lebanon ranges along Syria's western borders.

B. The Water Supply and Sewerage Sector in Syria

Three Ministries exercise jurisdiction over development and allocation of the country's water resources. The Ministry of the Euphrates is responsible for construction of the Tabqa Hydroelectric Dam and future Euphrates irrigation schemes; the Ministry of Public Works and Water Resources for other irrigation schemes and hydroelectric plants and for water resources generally; and the Ministry of Municipal and Rural Affairs for supervision of municipalities' activities including water supply and sewerage. Except in the larger cities, the latter ministry designs water and sewerage systems, the provincial governments construct them, and the municipalities operate them. Pollution control, however, is the responsibility of the Public Works Ministry, which has established a special department for this purpose.

The four major cities and the main port, Latakia, have publicly owned, semi-autonomous water authorities responsible for all aspects of water supply. Elsewhere, all but the smallest urban centers are said to have water distribution systems. Aleppo, Homs and Hama have already embarked on expansion schemes to meet forecast water demand, but Damascus requires major investment for which foreign aid is requested.

1/ The following three sections are based on the original IBRD appraisal (Report No. 106a-SYR, 5/8/73), and on the Second IBRD Project Appraisal (Report No. 938-SYR, 3/25/76).

Urbanization and industrial activity have created serious pollution problems in the larger cities. Fairly comprehensive sewer networks exist in the major cities of Aleppo, Homs and Hama, however, the centuries-old system in Damascus is inadequate. None of these cities nor any large industries have sewage treatment plants. The discharge of untreated sewage into the relatively small rivers, whose dry weather flow is minimal, causes them to be grossly polluted. For this reason, the water supplied from the rivers for down-stream irrigation, industries and towns is deteriorating, at the expense of these users. Although both Homs and Hama lie on the Orontes River, their traditional source of water, the water authority of Homs is currently building a 30 km pipeline to bring groundwater to the city and the Hama authority is considering a similar project. Aleppo has a study under way for the construction of waste water treatment facilities, but only preliminary research has been commenced into pollution of the Barada River (Damascus) and the Orontes (Homs and Hama).

C. Water Supply in the Damascus Area

Damascus is one of the oldest continuously occupied cities in the world. The Barada River gave rise to the Al-Chutta oasis in which Damascus is located and there are remains of a Roman aqueduct which brought water to the city from a source of the Barada, a large natural spring at Ain Figeh, 15 km distant (Map of Expansion Program, Annex 2.) Although updated in subsequent ages, the water supply continued to serve both agriculture and human consumption, and relied heavily on the river flow and on wells until the early 20th century, at which time the Turkish authorities brought water to Damascus directly from Ain Figeh by pipeline. The Ain Figeh waterworks were expanded over the years and in 1932 an aqueduct was completed. Distribution was organized by a communal syndicate, which in 1958 was transformed into a state enterprise known as Establissement Public des Eaux de Figeh (Figeh). The Barada River now mainly provides irrigation for the market gardens around the city. There is an elaborate system, dating back centuries, for allocating agricultural water rights in the Damascus plain, supervised by a hierarchy of committees.

As the capital and focus of government, as well as a large industrial center, Greater Damascus has in recent years experienced population growth of about 4.5 to 5% annually, and the potable water system now serves over a million people (including many refugees from Palestine and the southern war zone). The number of individual water connections is high (about 142,000) There are additionally 305 public taps supplying about one-fifth of the population. The capacity of the transmission system, however, is limited to about 3.0 cubic meters per second (m^3/sec) which is now barely enough to meet peak demand (including losses) and--during the dry season of 1971 and 1972--shortages and restrictions were experienced and are projected to continue and become more serious. The shortages were caused by two factors: (i) limited capacity of the transmission aqueduct from the spring; (ii) Figeh Spring yields has sometimes fallen as low as 2.4 m^3/sec. in drought conditions; and (iii) leaks in the mains and secondary connections of the distribution system in Damascus. The shortages will become more serious unless production and transmission facilities are expanded and losses from leakages and unbilled consumption reduced substantially.

Because the Damascus water supply flows freely to the city by gravity, requiring neither long-distance pumping nor treatment, Figeh has not in the past felt overly concerned with conserving the incoming supply of water; flow measurement and recording have been perfunctory; numerous leaking mains are suspected--especially in the old city where centuries of continuous habitation have caused a build-up of organic and unstable soil and meters have been allowed to fall into disrepair. The number of consumers with defective or inoperative meters is believed to be considerable. Faced now with a shrinking margin of supply over consumption, Figeh accepts that its past performances in these respects requires improvement. The expansion program includes measures to remedy these deficiencies and to imrpove meter testing and repair. Additionally, Figeh has requested AID to provide--on a grant basis--a technical assistance team to help Figeh improve its management, administration and operational procedures. AID has indicated its readiness to assist Figeh in these institutional activities.

IV. The Expansion Program

A. Program Elements

The program is intended to expand the capacity and modernize the water system of Damascus in order to provide an adequate and sanitary supply of water, sufficient to meet the needs of the city through 1984, by: improving the groundwater source, increasing the transmission capacity to the city, and improving reservoir capacity and extending the distribution system. The overall program--with assistance from IDA, AID, IBRD and the Arab Fund--includes the following elements:

(i) an underground cutoff structure to capture the flow of the source (Figeh Spring);

(ii) stress-pumping tests at the Figeh Spring to determine storage characteristics of the aquifer and maximum reliable yield which can be realized by pumping to augment low-season flows, and ultimately the installation of a permanent pumping station at the Figeh Springs;

(iii) a tunnel 15 kilometers (km) in length from the spring to the principal storage reservoirs;

(iv) the principal storage reservoir (underground) at Wali with a capacity of 60,000 cubic meters (m^3);

(v) distribution system reservoirs of 44,800 m^3 total capacity;

(vi) pumping stations (5 new and 6 rehabilitated) to regulate pressures in the distribution system;

(vii) dispatching equipment for data transmission and flow control;

(viii) replacement of existing mains (about 160 km) in the older part of the distribution system; Part 2 of the program--IDA financed;

(ix) installation of new mains (about 370 km); Part 3 of program--AID financed;

(x) engineering services for design and supervision of construction and installation, and to perform studies of pollution in the Barada River and on the need for a sewage system in Damascus;

(xi) training, technical assistance, and management consulting services.

A logical framework matrix for the expansion program is attached as Annex 12.

B. Program Financial Plan

When originally appraised in 1972, the overall expansion program was estimated at $32.6 million equivalent, comprised of $14.8 million equivalent in local costs and $17.8 million in foreign exchange costs. In 1973, an IDA credit of $15 million was granted to finance the major part of the foreign exchange costs. Bids received in January, 1975 reflected costs much higher than the estimates. IDA agreed to revise its project description to use $13 million of its credit to finance that portion of the program described in para 13(viii) above, and $2 million to help finance pollution and other studies.

The re-estimates of costs contained in the IBRD appraisal report[1/] shows both local and foreign exchange financing requirements for the 1976 to 1980 expansion program as follows:

1/ Appraisal of a Second Damascus Water Supply Project--Syria, Report No. 938-SYR of March 25, 1976, p. 21.

1976-1980

FINANCING PLAN

Sources of Funds:	Local Costs	Foreign Exchange	Total Costs
		(U.S. $ millions)	
Borrowings			
IDA Credit (401-SYR (Part II)	$	$ 13.0	$ 13.0
Proposed IBRD Loan (Part I)		35.0	35.0*
Total Borrowings	$	$ 48.0	$ 48.0
Government Equity Investment 1/			
Arab Fund (Part I)	$	$ 40.0	$ 40.0
A.I.D. Loan (Part III)		48.0	48.0
Proposed A.I.D. Loan (Part I)		14.5	14.5
SARG Direct Contribution	89.7	5.4	95.1
Total SARG Equity	$89.7	$107.9	$197.6
Internal Cash Generation			
Cash Generation	$35.4	$	$ 35.4
Water Right Sales	5.9		5.9
Consumer Contribution	1.2		1.2
Decrease in Working Capital	2.3		2.3
	44.8		44.8
Less: Debt Service (IBRD Loan and IDA Credit	11.4		11.4
Net Cash Generation	$33.4	$	$ 33.4
TOTAL SOURCES	$123.1	$155.9	$279.0

* Financing details and elements to be financed still under discussion IBRD/SARG.

1/ Pass-through of SARG external borrowings to Figeh as equity investment.

Uses of Funds:	Local Costs	Foreign Exchange	Total Costs
		(U.S. $ millions)	
Part 1 - Supply Works--(items (i) through (vii) above and appropriate shares of items (x) and (xi))	$ 45.9	$ 91.0	$136.9
Part 2 - Old City Distribution (Urgent Phase--item (viii) above with appropriate shares of items (x) and (xi))	12.8	15.0 1/	27.8
Part 3 - Distribution System--(General Phase--item (ix) above with appropriate shares of items (x) and (xi))	60.1	48.0 2/	108.1
Other Capital Works - On-going installation, connections, etc. self-financed by Figeh	4.3	1.9 3/	6.2
TOTALS	$123.1	$155.9	$279.0

1/ IDA Credit 401-SYR provides $13.0 million; remainder of foreign exchange provided by SARG/Figeh

2/ AID Loan 276-J-008

3/ Foreign exchange costs estimated at 30% of total costs.

C. Present Status - Expansion Program Implementation

A French firm, SOCEA, has begun installation of the distribution mains in the Old City (item viii of para A above); and a construction contract has been awarded to a Greek/French consortium for the underground cutoff structure (item i), tunnel (item iii) and principal storage reservoir (item iv). The French consultant, SEURECA, has completed the design of the new distribution network (item ix), and Figeh is negotiating a contract with a U.S. architectural/engineering firm to modify the bid documents to enable U.S. construction contractors to bid on the project to provide construction and supervision (item x). Another French consultant, SOGREAH, has completed a design brief (preliminary engineering study) for the pumping stations (item vi) and dispatching system (item vii) and has also made detailed recommendations for conducting the trial pumping tests (item ii) at the Figeh spring. Local Syrian consultants are in the process of completing final plans for the remaining distribution reservoirs (item v). Figeh is presently examining process of securing management consultant services (item xi) and exploring financing for distribution reservoirs (item v).

D. Implementing Agency

Establissement Public des Eaux de Figeh - an independent agency of the Ministry of Housing and Utilities, is managed by a Director General (also referred to as President/General Manager) under the direction of a Board of Directors composed of Figeh officers and staff representatives and one Worker's representative. Figeh's organization chart is reproduced in Annex 3. Figeh senior management is of high quality and dedication but the organization suffers from a shortage of professional and technical staff. The IDA credit project included provisions that required Figeh to establish additional positions in order to enlarge the staff of the Project Unit established under the credit and some additional engineers have been hired. There is still a need to upgrade the existing Figeh staff through technical assistance and training programs and to increase the staff proportionally to the new tasks created as a result of the expansion program.

For the last decade, Figeh has relied on engineering consultants for assessing its water resources and finding means of making the best use of them. Using current scientific techniques and equipment for these assessments, Figeh is able to evaluate each recommendation on its technical merits before deciding whether or not to adopt it. Figeh has been resourceful in augmenting the amount of water for distribution--removing strictures and adverse gradients from the old aqueduct, recapturing normal overflow from the headworks for periods of peak demand, and selling well water by tank truck at low cost for gardens and parks to economize the purer spring water. With the present and planned use of consultants, Figeh can be expected to competently use facilities that the expansion program, including this proposed project, would provide.

SARG has endorsed Figeh's request for an AID-financed 3-man technical-assistance team to provide Figeh with managerial, administrative, and operating advisory assistance over a 2½ year period (provided under Project 276-11-995-001, Technical Services and Feasibility Studies). SONEDE (Tunisia's Water Authority) has agreed to help train Figeh technicians. Acting upon recommendation by IBRD, Figeh has employed engineering consultants to provide technical assistance for ongoing works as well as a training program for its intermediate technicians. The cost of a study by consultants has been included as part of the IDA-financed study. The scope of work includes organization and operating procedures of Figeh cost accounting and cost control systems, etc.

For the execution of the original World Bank project, Figeh was provided--as certain other government agencies are--with a Presidentially decreed commission armed with special powers to cut through red tape. The Figeh Project Commission was reconstituted by Presidential Decision No. 6 of 1/30/75, which exempts it "from all the Syrian laws and regulations in force" except those on employment. Figeh, under the guidance of a Project Commission, contracts directly with consultants and construction firms. It relies on engineering consultants for the preparation of specifications, bid documents and cost estimates, but makes its own assessments in evaluating bids and negotiating a final contract price.

In February, 1974, SARG issued decree No. 18 formalizing previously existing customs, procedures, regulations, financial requirements, management, and responsibilities for agencies such as Figeh. Decree No. 18 also specifies that each agency must be chartered by its own individual decree containing agency-specific regulations and provisions. Accordingly, decree No. 252 was issued on May 14, 1975, formally stating Figeh's functions, its capital, sources of funds, and staffing regulations which were already in effect. It also stated that the Ministry of Housing and Utilities (MHU) would be responsible for Figeh. Figeh still retains some measure of independence, e.g.- its Board is composed exclusively of its own staff including one Worker representative.[1/]

Figeh's past financial performance has been sound, with Figeh internally covering all operating costs since 1958 without increasing the water rate, while turning over to SARG's Central Cash Development Fund all cash surpluses above what was required for operations. In 1975, by decree No. 252, Figeh's capital was increased from LS 29.4 million to LS 85.0 million; the equity increase of LS 56 million was met by transferring Figeh's accumulated equity since 1958 in the form of retained earnings to Figeh's capital. Although Figeh's rate of return on average net fixed assets was slightly above 10 percent for the period 1972-1974, new capital investment expenditures relating to the overall expansion program have and will be at such a magnitude that the present water rate of US 0.20/1,000 gallons is completely inadequate to generate sufficient revenues to carry on its operations and to finance the needed program of works. To resolve this problem, Figeh and IBRD have reached an agreement whereby Figeh will set

1/PP 15-16, IBRD Appraisal Report 938-SYR

and maintain a water rate at a level which will at all times allow Figeh to cover operating expenses, debt service, and working capital requirements; and further provide internally generated funds each year sufficient to finance not less than 10 percent of average capital expenditures[1/] for the period 1977-1980, and to finance not less than 35 percent of average capital expenditures thereafter.

To meet the above described cash generation covenants, SARG has indicated its approval of the principle of a stepped progressive water rate structure for Figeh. The proposed stepped rate proposal, to be implemented shortly, would generate the revenues required to satisfy the cash generation covenant while the progressive rate would protect the low-income consumers from the full impact of the stepped rate increase.

[1/] Average capital expenditure is to be based on an actual expenditure for one year and projected expenditures for the two following years.

V. Program Analysis

A. Technical Analysis

The Figeh spring has served as the source for the Damascus water supply for about 5,000 years. Initially, water was delivered by open canals which were, in modern times, replaced by tunnels. The present tunnel, which went into service in 1931, has been hydraulically upgraded to supply 3.2 m^3 of water per second to Damascus. In early 1975, this volume of water was approximately equivalent to the average daily demand, with some localized shortages occurring on days of peak demand. Figeh has awarded a contract to a Greek/French consortium for construction of a new tunnel (portion of Part 1) designed to carry 5.0 m^3/sec. to augment and allow repairs to be made to the existing tunnel. To utilize the increased transmission capacity, the contract also provides for the construction of an underground grout curtain cut-off wall across the alluvium between the Figeh spring and the Barada River. At present, overflow from the spring to the River exceeds the quantity of water captured for transmission to Damascus, and entrapment of this additional water by the cut-off wall is expected to satisfy the average daily demand in Damascus until 1991.

The new tunnel will have a capacity of 5.0 m^3/sec. Once every five years the Figeh spring has an average minimum flow of approximately 3.0 m^3/sec. from June through February. To determine if it is possible to augment this low flow by pumping from the aquifer which feeds the spring, a full-scale trial pumping test will be conducted over the next several years.

The water distribution network in the Old City has deteriorated to the point where it is not economically repairable, and a French construction firm, SOCEA, is now installing new mains (Part 2 of the expansion program) in this section of Damascus. When installation is completed and consumers have been connected to the new mains, the old distribution system will be abandoned. Installation of these new mains is expected to result in the saving of some 11 million cubic meters of water per year now lost through leakage.

The water distribution network in the remainder of Damascus must be strengthened to provide water in adequate quantities and at adequate pressures and extended to cover newer sections of the city. Engineering and construction activities for this portion of the distribution network, referred to as the General Phase (Part 3 of the expansion program), are being financed under A.I.D. Loan 276-J-008.

As the distribution system grows, the principal storage will continue to be located at a high elevation on the western edge of Damascus. The expansion program includes major storage reservoirs near the tunnel outlet terminus which will serve to balance pumping from the source with system demand and to provide a reasonable reserve in the event of problems at the spring source or in the transmission tunnel. Smaller reservoirs will be built throughout the distribution system to maintain pressure during periods of peak demand. By 1979, when the new reservoirs are to be completed, storage in the system will total approximately 152,000 m^3 equal to approximately one-half day's supply.

Expansion of Damascus up the mountainous slopes to the north and west of the city is now being encouraged, as further expansion on the plain involves the removal of agricultural land from production. This expansion requires the construction of additional pumping stations and elevated storage reservoirs to serve the new pressure zones. Six such stations are now in existence, and five additional stations will be constructed as a part of the expansion program.

As noted above, construction contracts have been awarded for the Urgent Phase distribution network and the tunnel cutoff structure. The IBRD's revised cost estimates for the remainder of the supply works (Part 1) are based largely on unit prices bid under these tenders, excalated over the anticipated duration of the construction period for each of the remaining elements. From a review of the cost analysis contained in IBRD Appraisal Report 938-SYR of March 25, 1976, and further discussions with Figeh personnel in Damascus, the estimates are believed to be realistic for Syria under present conditions.

The IDA credit and the IBRD loan also include provisions for upgrading the capabilities of Figeh's intermediate level staff through both on-the-job training in Syria and training abroad. In addition, as mentioned above, A.I.D. has agreed to provide management and technical advisory assistance to be financed under a technical assistance grant. With this assistance, Figeh should be able to develop the capacity to effectively manage, operate, and maintain the expanded system.

Considering the planning and detailed engineering work accomplished to date, A.I.D. concludes that the technology adopted for the expansion program is appropriate, that the operation and maintenance of the proposed facilities are within the capabilities of Figeh, and the program is technically sound.

B. Rate Structure

Water has been regarded as an important social service which the Government of Syria feels must be subsidized; in most parts of the country, water tariffs have not changed for several years. In 1969, the Ministry of Housing and Public Utilities ordered that water charges throughout Syria should not exceed LS 0.40 per m^3 (U.S. $0.41/1000 gal.). In Damascus, Figeh currently charges LS 0.20 per m^3 (U.S. $0.20/1000 gal.).[1/]

The water tariff system in Syria is complicated by the existence of complex water rights in the major cities, including Damascus. According to a law enacted in 1966 (which appears to have been based on the tariff structure long practiced in Damascus), applicants for a supply to premises larger than 100 m^2 have to purchase in advance the right to a fixed allowance of water in perpetuity. The allowance to be purchased depends on the size of the

1/For all practical purposes one Syrian Pound (LS) per m^3 is equivalent to one U.S. $ per 1,000 gallons, based on LS1 = US$0.27 and $1m^3$ = 264.2 US gallons.

premises; the average is 0.5 m^3/day whose cost is fixed by Figeh's tariff at LS1,000 (U.S.$270). Consumption in excess of the allowance is charged at the normal metered rate. The water right allowance represents about 80 litres (20 gals.) per person per day which is more than adequate to meet normal cooking and sanitary needs. The lower water rate in Damascus is due in part to the historically low cost of supplying water to the city consumers since its high quality water from Figeh spring requires no treatment and little pumping due to the high elevation of the spring. The rate has been unchanged since 1949, when it was reduced from LS0.25 per m^3 to its present level.

All new consumers have to pay a capital contribution (minimum of LS 75) to the cost of the mains and certain other fees. In addition to the charge for purchasing a water right all water rights owners pay annual fees representing the amount by which the value of water supplied exceeds the annual value of the water right (derived currently by applying 3% interest to the water right purchase price).

The expansion program will necessarily require a revision in Figeh's historical low-cost relationships and tariff increases. In AID's first loan to Figeh of $48.0 million for distribution facilities in newer parts of the city, AID agreed to concur in an agreement between IDA and SARG that the rate schedule eventually adopted is to meet the original objectives of covering the operating and maintenance costs for the utility system and providing a modest return on fixed assets. It was understood that the agreement would mean a substantial increase in water prices and that, in order to protect the poorer sections of the population, a progressive schedule of water rates (increasing block rates) would be part of the rate formula.[1/]

Subsequent to the initial AID loan, the costs of the expansion program have further increased, domestic inflation in Syria has remained high and the SARG was unable to meet its commitment to increase water rates to the approximate levels projected in the initial AID loan or in the IBRD's current appraisal for their second Damascus water supply loan. An agreement has, however, been reached by the IBRD and SARG which is acceptable to AID. That agreement substitutes a cash generation covenant for the rate of return on net fixed assets covenant (the rate base in 1980 is projected to be 27 times the 1975 level). Figeh has agreed to take all such action as shall be necessary to set its rate for the consumption of water at such levels as shall be required:

(i) to cover in any given year all operating expenses including employee compensation, administrative and overhead costs, adequate maintenance costs, interest and adequate provision for taxes;

(ii) to cover in any given year debt amortization;

1/ The tariff levels agreed to in the original 1973 IDA loan would have increased the annual rate of return during the years 1972 through 1981, so as to reach not less than 7½% in 1982 and the years after on average net fixed assets in operation. With the original estimated project costs (1972) rates would have to increase to LS0.30/m^3 by 1982.

(iii) to provide for adequate amounts of working capital, and

(iv) to finance each year during the period 1977-80 not less than 10%, and beginning with the year 1981 to finance each year not less than 35%, of the annual average of:

(a) the actual investment made by Figeh during the preceding year, and

(b) the investment forecast by Figeh during the year in question and the subsequent year.

The IBRD has calculated the impact of this covenant on Figeh's water rates over the next eight years. It will mean relatively steep increases in the average water tariff, commencing with an increase to LS0.50/m^3 by September 30, 1976. By January 1, 1984, the average water tariff will have to increase to LS1.25/m^3 to meet the cash generation covenant. In addition, the annual fee charged to water right holders is linked to the tariff and will increase correspondingly. For typical water right holders (0.5 m^3/day) the annual fee will increase from its present level of LS7 (US$21.5) in 1980.

In addition to the agreement on the cash generation arrangement, the SARG has indicated its approval for the introduction of a progressive block tariff in Damascus. Not only would a progressive tariff structure assist low income consumers and ensure equitable distribution of the burden of Figeh's internal contribution to projected investments but conservation of a scarce resource would be encouraged. The following proposals to be implemented shortly were discussed by the IBRD-Figeh during negotiations.

First 0.5 m^3/day - LS0.20/m^3

0.5-1.0 m^3/day - LS0.40/m^3

Over 1.0 m^3/day - LS0.60/m^3

The application of these rates would produce an average rate slightly higher than that required to satisfy the cash generation covenant.

C. Financial Analysis

Annexes 4, 5, and 6 present the actuals for 1972-1974 and the projected (1975-1984) Income Statement, Cash Flow and Balance Sheet,respectively,for the program expansion. The financial statements incorporate the relatively substantial equity contribution (including funds borrowed from AID and the Arab Fund) to the expansion program.

The projected Income Statements (Annex 4) show that operating expenses including depreciation are expected to increase by five times in 1980 and

nearly ten times by 1984 from the 1974 level. At the end of the projected construction period in 1980 there will be an increase in total operating income to about six times its 1974 level from LS11.2 million to LS63.5 million, and it is expected to reach about LS150 million in 1984. These projected increases in income result from the assumption of substantially higher water revenues due to increased tariffs (noted above) and production as well as reduction in leakage and unbilled consumption. The effect of the decreased demand for water following the tariff increases has been allowed for in estimating future sales.

The cash flow statements (Annex 5) show large financing requirements in the various projects that would be undertaken by Figeh during the projection period. Figeh's cash generation is projected to finance about 12% of its average capital expenditures for the period 1977-1980 and 35% from 1981-1984. Due to the substantial amount of equity investment Figeh the operating utility will have a high debt service coverage ranging from 2.6 to 5.9 during the period 1976-1984. Of the $279.0 million program expansion, the SARG equity contribution comes to $197.6 million with $102.5 million being AID and Arab Fund loans to SARG passed through to Figeh.

Figeh's financial rate of return on average net fixed assets was 11.8% in 1974. This rate of return is high because Figeh's existing assets are valued at historical cost and their book value is therefore very low. Revaluation of these current fixed assets is planned but in view of the size of the program expansion, the effect on the balance sheet will be minimal. During the execution of the expansion program, far larger fixed assets will be created and the return on assets will therefore decrease sharply to 3.7% in 1980. Due to the planned tariff increases, it will increase to 7.0% in 1984. Though Figeh's projected rates of return are relatively low, sufficient cash will be generated to finance Figeh's anticipated contribution to the projected investment program.

Balance Sheets (Annex 6) project a low debt equity ratio developing (i.e., approximately 10 units of equity for each unit of long-term debt) to 9.91 in 1984 in accordance with assumed equity investment during the projected period. The equity ratio reflects the pass-through of AID and Arab Fund Loans. See also Sec. VI D, "SARG/Figeh Financial Arrangements," p. 29.

D. Economic Analysis

Least Cost Solution--All components of the Supply Works (Part 1) will be constructed at least cost. The only two practical alternatives for increasing the supply of water to the city are (i) a dam on the Barada River upstream from Damascus together with a treatment plant and pipeline to the city, and (ii) increased utilization of the Figeh source with a new tunnel or pipeline to Damascus.

The updated feasibility study prepared by the consultants, SOGREAH, made an economic comparison of these alternatives at discount rates of 8%

(iii) Benefits--The principal economic benefits from the program of investments come from (i) increased sales of water of 1975 levels to both new and existing consumers, since neither type of growth would be possible without the investments in question; (ii) sales in the area of the Old City where the Urgent Phase of distribution works is required since the existing system is already badly corroded and would likely collapse when distribution pressures are restored to normal; hence, no sales would be possible unless it is replaced; and (iii) increased sales resulting from meter replacement and other related measures being financed under the Urgent Phase. The volume of water distributed through public fountains has been excluded from benefits. No adjustment has been made to take account of free water supplied from future water rights sales, this being assumed to be offset by revenues from increased annual fees on the volume supplied free to present consumers. Health and social benefits have also been excluded since no reasonable measure or estimate of those benefits are currently available.

(iv) Economic Rate of Return--Annex 7 (p.5) provides the results of calculating the economic rate of return utilizing three different water tariff rates applied to total water sales beginning in 1976. At LS0.20/m^3, the internal rate of return is negative 2 percent; at LS0.60/m^3 (close to the presumed 1976 average water rate of LS0/50/m^3), the rate of return increased to a positive 3.0 percent[1/]; at LS1.19/m^3 (approaching the average tariff in 1984 based on the cash generation covenant), the rate of return is 9.0 percent.

The projects internal economic rate of return, calculated above at the various water tariff rates, are below the probable opportunity cost of capital in Syria (approximately 15%). It should be noted, however, that health and social benefits were excluded from the calculation because of insufficient information. We are reasonably confident that the addition of these significant benefits would readily convert the benefit-cost ratio from a negative to a positive result. The economic rate of return for the project would then exceed 15 percent per annum.

1/ If rates were LS0.50/m^3, the projected average rate commencing on September 30, 1976, the rate of return would be between positive one and two percent.

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E. Social Analysis

The population of Damascus and the surrounding environs, to whom the benefits of the expansion program will accrue, is approximately 1.2 million, representing nearly one sixth of the total population of the country. The average annual growth rate from 1965-1975 was almost 5%; however, growth during the past decade has been erratic and greatly influenced by events on the Syrian-Israeli front located less than 50 kilometers away. The population has been swollen by refugees from the Golan Heights area. In late 1975 and early 1976 there has also been an influx of people from strife-torn Lebanon.

For many years the population of the metropolitan area of Damascus has benefited from an abundant supply of inexpensive and high quality water from the Figeh spring in the adjacent hills. Service has progressed from water supplied solely through standpipes to house connections. The policy of Figeh has been to provide direct service to as many consumers as possible and to provide a separate metered connection for each dwelling unit. At present, there are approximately 142,000 individual service connections. However, during the last decade the percentage of the population served through direct connections has fallen from 85 to 75% and is expected to continue to fall to about 73% in 1977. This decrease in the percentage of the population served through direct connections is largely the result of supply limitations and Figeh's inability to provide service in pace with accelerated population growth.

Much of the newly-arrived population is crowding into the Old City, and in a sense many of the consumers are served through direct connections since they do have access to water within the building. Nevertheless, Figeh considers this overcrowding a temporary condition and intends to provide true direct connections to these consumers in their future accommodations. Figeh's management has a stated objective of serving 90% of the population through direct connections by 1985. On the basis of the expansion program underway, this target should be met.

The maximum per capita consumption of water in the Damascus area, 174 LTRS/CAP/DAY, was reached in 1972 following three years of increasing consumption beginning in 1970 when repairs to the existing transmission tunnel removed a supply constraint. Per capita consumption began to fall in 1973 and is expected to continue to fall due to supply constraints and increasing population until 1979 when it will have reached an estimated 145 LTRS/CAP/DAY. Before the new supply works are completed in 1980, there will be an estimated unsatisfied demand of 53,000 m^3/day. However, as a result of tariff increases, improved billing controls, and a waste reduction campaign, most of this demand is expected to be suppressed in the short term.

On the basis of these figures, it is apparent that water consumption has been high in Damascus in the past, and the scarcity of the resource has not been appreciated. More constricted consumption in the future will be required to permit the continuing growth of the city.

While the provision of water has been regarded as an important social service which SARG feels must be subsidized, the present average tariff of LS 0.20/m^3 will be raised through implementation of a progressive rate structure. Under this schedule, all other things being equal, the poor will pay less for water on the assumption that they will consume less water than the rich. The progressive rate is thus consistent with the Government's social policies which are strongly oriented toward insuring that essential services be provided to all citizens at a cost within their means.

F. Environmental Analysis

The Syrian Government and Figeh have become increasingly conscious of the value of a safe reliable potable water system, and a large percentage of the present population is either served directly or lives within a short distance of a public fountain. However, the quality of service has deteriorated and shortages have been experienced in recent years as a result of supply constraints and rapid population increases. This problem will become more serious in the near future and will result in decreasing water pressures, physical rationing of delivered water and substantially increasing percentages of the population, not served by direct connections. Completion of the expansion program, of which the proposed project is an essential part, will prevent a further deterioration in the health and living conditions of the people of Damascus.

Installation of the new water distribution mains under both the Urgent and General Phase of the expansion program will cause some inconvenience to vehicle and pedestrian traffic in Damascus. Narrow streets, particularly in the Old City, may have to be closed for extended periods of time to enable the construction contractor to excavate trenches, lay and bed the pipe, and backfill the trenches. However, disruptions to traffic will not present a major problem in newer sections of the city where streets are generally much wider. While this inconvenience is an adverse environmental effect which cannot be avoided, the general conditions of the contract for construction will require the successful bidder to take normal measures to maintain traffic and to provide adequate barricades to prevent open trenches from becoming a hazard to both pedestrian and vehicular traffic.

Urbanization and industrial activity have created serious pollution problems in the larger cities in Syria. While some cities have fairly comprehensive combined sewer networks, the system in Damascus is no longer adequate for the city's needs. None of the major cities or industries have sewage treatment plants. The discharge of untreated sewage into relatively small rivers, whose dry weather flow is minimal, causes them to be grossly polluted. Health benefits of the expansion program may be partially offset in the short term by the likely adverse environmental effects caused by the aggravation of the waste water disposal problems of the city. However, legislation has been prepared to regulate discharge of industrial waste into these rivers and to control general sewage discharge. The IBRD is financing the preparation of feasibility studies and master plans for sewage disposal systems in

Damascus, Homs, and Hama and pollution control studies of the Barada and Orontes river basins. Final selection of the consultant to carry out these studies is expected in mid 1976.

VI. The AID Project

A. Project Description

The project proposed for AID financing is to be part of the overall Damascus Water Supply expansion program as described earlier in Part IV. More particularly, the proposed AID project is to contribute towards Part 1 of that expansion program--the tunnel and related works as described in the IBRD Appraisal Report No. 938-SYR of March 25, 1976. The AID project would consist of the following discrete elements of those supply works:

(i) distribution pumping stations;

(ii) dispatching and control system;

(iii) trial pumping facilities and installation of a permanent pumping station at the Figeh spring;

(iv) engineering design services required to review and revise the bid documents prepared by the French consultant, SOGREAH, to conform with U.S. standards and practices and AID contracting procedures;

(v) supervisory engineering services for the civil works, installation of equipment, and monitoring of the trial pumping tests. Maps and drawings are attached as annexes which supplement the detailed description of each element of the project given below.

Distribution Pumping Stations - A new pumping station will be constructed to serve the three pressure zones in the distribution system of Kassioum West. The three sets of pumps in this station will pump water supplied directly from the existing aqueduct from Figeh. Construction of this station will be included in the IBRD-financed reservoir/Barada overflow contract and is not a part of the proposed AID project.

(i) The four pumping stations included under the proposed AID project are those at Kassioum Bas, Sharki, Jemraya and Mezze 1. The two sets of pumps at Kassioum Bas will serve the pressure zones at Television and Kassioum Haut; the two sets of pumps at Sharki will serve the pressure zones at Akrad and Berze; the pumps at Jemraya will serve the Jemraya-Haut reservoir; and the Mezze 1 pumps will serve the Mezze 2 reservoir.

(ii) Annex 8 includes a schematic plan of the distribution pumping network and Annex 9 contains a detailed list of major equipment required for each station.

Telecommunication Equipment - The proposed project will include the procurement and installation of telecommunications equipment needed to establish a dispatching and flow control system comprised of:

(i) switchboards, relays, and control panels at each pumping station and associated reservoir to permit the pumps at the stations to be remotely controlled by telecommunication signals from the reservoirs;

(ii) switchboards, relays, and control panels at the principal distribution reservoir at Wali, and at the Figeh source, to permit upstream control of the volume of water directed to Damascus;

(iii) computers, consoles, teleprinters, and other equipment required to establish a central operations center at the principal storage reservoir at Wali to receive and store data transmitted from other stations;

(iv) portable radio equipment to facilitate the leak reduction program and other routine operations and maintenance.

Annex 8 provides a schematic layout of the telecommunications system envisioned.

Trial Pumping at the Figeh Spring and Figeh Pumping Station

(i) The present minimum reliable yield of the Figeh spring is the lowest natural flow experienced in the past, approximately 2.4 m^3/second. However, based on the long-term average flow of 8.4 m^3/second, it is likely that the reliable yield can be increased by exploiting the storage capacity of the aquifer. On the basis of historical data, SOGREAH has estimated that the average low flow with a five-year frequency can be increased from the present 3.0 m^3/second to approximately 5.5 m^3/second. As a program of exploratory drilling to determine the characteristics of the aquifer would be prohibitively expensive, a test pumping program has been recommended by SOGREAH.

(ii) The test pumping must take place at rates in excess of the natural spring flow at low flow periods and thus will require the installation of large capacity pumps capable of delivering 6.0 m^3/second. Test wells for the pumps will be drilled in the vicinity of the spring after the grouted underground cutoff wall is completed, and a total of 9 pumps will be installed. During the trial pumping, diesel engines will be used to drive the pumps. It is expected that the tests will be conducted over a period of three years, during which time water excess to the needs of Damascus will be released to the Barada River. Assuming the results of the trial pumping are satisfactory, the permanent installation will incorporate the pumps utilized during the test period with electric motors as the power source.

B. Cost Estimate: The estimated cost of each element of the proposed AID-financed project is given below:

Item	Local	U.S. $ Thousand Foreign	Total
1. Distribution Pumping Stations	851	2,951	3,802
2. Dispatching System	811	2,702	3,513
3. Trial Pumping/Figeh Pumping Station	1,622	2,432	4,054
Sub-Total	3,284	8,085	11,369
4. Contingencies (20%)	657	1,617	2,274
5. Engineering/Construction Supervision	500	1,000	1,500
Sub-Total	4,441	10,702	15,143
6. Escalation (36.2%)	1,608	3,874	5,482
Total	6,049	14,576	20,625
		SAY $14.5 million	

The above estimates were extracted from IBRD Appraisal Report 938-SYR of March 25, 1976 (at exchange rate of LS 3.70 to $1.00). Detailed cost estimates for these elements of the expansion program were prepared by SOGREAH based on unit prices bid for the tunnel construction and installation of the Urgent Phase distribution network. Further discussions between AID technicians and Figeh personnel during March, 1976, in Damascus verified that the estimates are reasonable and valid for Syria under present conditions.

Verification of pumping and electrical equipment prices with U.S. suppliers indicates that the foreign exchange costs of items 1, 2, and 3 above are reasonable and adequate. The physical contingency factor of 15% used in the IBRD Appraisal Report has been increased by AID to 20% to take into account certain unknowns related to the Figeh spring trial pumping and permanent pumping installation as well as uncertainties with respect to shipping costs for off-shore commodities being imported into Syria. Engineering and supervision costs have been estimated on the basis of US architectural and engineering firm operations over the approximately five-year implementation period. Escalation has been computed using an estimated foreign exchange disbursement schedule (see Disbursement Sec VI C.4) and a 7% annual inflation factor compounded from 1976 through 1981, with an estimated 4% price increase from the time the cost estimates were made to the beginning of 1976.

C. Implementation

1. Engineering Design/Supervision of Construction and Equipment Installation - The French consulting firm, SOGREAH, has completed preliminary engineering plans for the pumping stations and dispatching system proposed for financing under the AID loan. A technical committee from Figeh/SARG is now reviewing the design brief. The scope of work of SOGREAH's contract includes the preparation of tender documents for all elements proposed for AID financing. Figeh believes it would be in the best interests of the overall program, and more expeditious for the proposed AID project, to have the French consultant complete this work prior to the involvement of a U.S. A&E firm. Based on a review of progress to date of the engineering work, AID has agreed that it is logical to have the U.S. A&E firm "Americanize" the tender documents upon their completion by SOGREAH. It is anticipated that the technical committee's comments and a notice for SOGREAH to proceed with the final design will be issued during April, 1976. Approximately five months will be required to develop the final bid documents for this portion of the program. Following completion, the tender documents will be modified to conform with U.S. standards and practices and AID contracting procedures, in order to insure responsive bids from U.S. contractors and/or suppliers. Figeh is expected to execute a contract in May, 1976, with a U.S. A&E firm to similarly modify the documents for the General Phase (Part 3) of the water distribution network to be financed under AID loan 276-J-008. In the interests of expediting the work, Figeh has informally requested AID concurrence in using the same A&E firm to undertake the additional engineering and supervision work for the pumping stations, dispatching system and trial pumping tests. As this firm will be intimately familiar with project details as a result of their work in Damascus in preparing bid documents for the distribution network, they will obviously have a predominant capability to carry out the additional work. Therefore, to avoid the problem of effectively coordinating the activities of two separate engineering firms, and because the proposed AID project is an integral part of the overall expansion program, AID agrees that it is advantageous to have the same U.S. A&E perform the required additional engineering work.

SOGREAH has also conducted a detailed hydro-geological study of the Figeh spring and has made recommendations for trial pumping tests to be conducted under this project. At the request of Figeh, the SOGREAH study has been informally reviewed by the United States Geological Survey (USGS). Comments from the USGS indicate that they generally agree with SOGREAH's recommendations for conducting the pumping tests. However, the USGS has suggested that the short-term program include monitoring of water levels in test wells in the area and the inclusion of a variable pumping discharge test to permit determination of the relationship between water levels and discharge. In addition, the USGS has recommended that a more comprehensive long-term study of the effects of stress pumping at the spring be undertaken. The study would ultimately allow Figeh to develop a water balance for the area and permit the rational allocation of water resources among present and prospective users in both Syria and Lebanon. On the basis of the SOGREAH

report and the USGS comments, AID is satisfied that sufficient information is available to enable the U.S. A&E firm to develop a bid package for the trial pumping and permanent pump installations.

The contract under which the U.S. A&E firm will supervise the installation of the General Phase (Part 3) distribution network will also be amended to include general supervision of the construction of the distribution pumping stations and dispatching system. Likewise, the A&E will supervise and monitor the pumping tests to be conducted at the Figeh spring.

2. Civil Works Construction/Installation of Equipment -
It is anticipated that Figeh will execute an A&E contract under Loan 276-J-008 in May, 1976; subsequently, bid documents for the General Phase distribution network should be completed during December, 1976. The French consultant, SOGREAH, should also finalize tender documents for the pumping stations and dispatching system by September, 1976. If these schedules can be maintained, the U.S. A&E will be able to "Americanize" the tender documents by December, 1976. The project elements proposed here could then be incorporated into the work to be accomplished under the distribution construction contract or issued as an addendum during the tendering period for that contract. As the transmission lines entering and leaving the pumping stations are included under the General Phase, it would appear appropriate to incorporate the additional work proposed in this project into the general construction contract for that portion (Part 3) of the expansion program. In addition, the total cost of the civil works associated with the pumping stations and dispatching system to be financed under this project is relatively small, and the work is not likely to attract U.S. contractor interest unless it is combined with the General Phase distribution construction contract (Part 3).

Alternatively, if timing is such that the work herein proposed must be bid in separate packages, U.S. participation will likely be limited to the supply and supervision of installation of equipment, with the civil works to be performed by local construction firms or under an amendment to the distribution contract being performed by the U.S. construction contractor. Under this alternative, suppliers would be expected to provide technicians to supervise the installation of equipment and to conduct performance tests prior to final acceptance by Figeh.

The tender documents for the Figeh spring trial pumping installation will require the successful bidder, probably a well-drilling contractor, to develop the necessary wells, install the pumps and motors, and to conduct final performance tests prior to acceptance. Operational personnel for carrying out the tests over an extended period of time and maintaining the installation will be provided by Figeh.

3. Implementation Schedule -
A tentative, detailed implementation schedule, as well as a Project Performance Tracking (PPT) Chart, for the proposed AID-financed project are shown in

Annexes 10 and 11, respectively. The schedule is based on the assumption that the distribution pumping stations and dispatching system will be included in the (Part 3) General Phase distribution system construction contract. In the event that these elements cannot be added to that contract, separate contracts must be let and may cause the overall implementation schedule to be delayed by a few months.

As noted, the implementation schedule will extend beyond three years. However, as all project elements are closely related and design and construction of the permanent pumping installation at the Figeh spring must necessarily await the results of the trial pumping tests, this extension is deemed fully justified.

4. Disbursement:

Only foreign exchange costs incurred after loan effectivity, i.e., satisfaction of conditions precedent, will be eligible for financing from loan proceeds. Eligible costs include costs of commodities and services of U.S. source and origin when incurred under AID approved procurement processes. The costs of land, rights-of-way, permits, taxes, customs duties, and other local currency costs will not be eligible for AID loan financing and will be financed directly by SARG.

In the event that total project costs run over the $20.6 million presently estimated, the loan agreement will require that SARG provide the additional funds required.

Loan proceeds will be disbursed for dollar costs of the project through standard AID Letter of Commitment/Letter of Credit procedures. However, provision will be made for other AID approved methods of disbursement of loan proceeds, should circumstances require.

By the nature of the project, the project implementation schedule will be governed by inputs other than those financed by the AID loan. Physical completion of all project facilities is scheduled for July, 1981. After a series of performance tests, final acceptance of project is scheduled for January, 1982. Therefore, the terminal disbursement date for loan proceeds is currently estimated to be April 30, 1982.

The loan proceeds to finance the foreign exchange costs of the proposed project are projected to be disbursed approximately as follows:

	1977	1978	1979	1980	1981	Totals
1. Distribution Pumping Stations	-	1,170	1,781	-	-	2,951
2. Dispatching & Control Systems	-	-	1,660	1,042	-	2,702
3. Figeh Test Pumping & Perm. Instln.	250	1,330	-	170	682	2,432
Sub Total	250	2,500	3,441	1,212	682	8,085
4. Plus Contingencies @ 20%	50	500	689	242	136	1,617
5. Engineering/Const. Supervision	200	200	200	200	200	1,000
Sub Total	500	3,200	4,330	1,654	1,018	10,702
6. Escalation @ 7% Compounded[1/]	95	877	1,573	759	571	3,875
Totals	595	4,077	5,903	2,413	1,589	14,577

1/Formulation described in Sec. VI B, Cost Estimate

D. SARG/Figeh Financial Arrangements

The SARG proposes to pass through the loan proceeds to Figeh by means of an equity investment in Figeh rather than by relending. This is considered desirable by SARG in order to fully capitalize the company and to maintain a debt-equity ratio which does not leave the company with an excessive debt service burden. Normally, AID policy is to require that loans made to governments for the use of revenue-producing enterprises in the country be reloaned to the enterprises at rates approximating commercial or development bank lending rates. This is designed to assure that the financial viability of such enterprises is not wholly dependent upon the concessional lending terms of AID loans and to ensure that artificially low policies are not adopted for the enterprises.

As in the case of the first Damascus Water Supply loan, it is felt that a capital contribution in the form of equity is considered justifiable. In connection with the proposed IBRD loan, SARG has agreed to a tariff structure designed to maintain the economic self-sufficiency of the enterprise (see pp. 14-15) and reflecting the economic cost of the resource utilized. Net operating surpluses generated by Figeh in recent years have had to be turned over to the central government, thus depriving Figeh of internally generated retained earnings. Because of the heavy borrowing requirements of the expansion program it is felt that Figeh needs additional equity to maintain a proper balance between debt and equity. Thus, both price policy and capitalization concerns are adequately dealt with in this situation and the proposed pass-through arrangement is considered satisfactory to AID.

E. Repayment Prospects

The most recent IBRD economic report for Syria states that the short-term prospects (1975-1980)[1/] for the Syria economy appear to be favorable and would be greatly enhanced if peace is restored to the area. In the projection, GDP growth rates of 8½% per annum (10% in 1975), and growth of exports (goods plus non-factor services) of 12% per annum are predicted for that time period.

At the end of 1974, Syria's debt service payments on external public debt (excluding military) of $702 million was estimated at $52 million. This is equivalent to about 5% of exports of goods ($784 million) and non-factor services ($272 million) in 1974. Although no reliable figures are available on 1975 external public borrowings, it is probable that they were substantial. Projected public sector investments, given the estimates of public sector savings, will require additional borrowing abroad by the SARG to finance its ambitious investment programs.

In view of the improved prospects of the Syrian economy and the relatively low debt services rates in 1974, Syria should have no problems servicing the modest additional debt relative to this proposed project.

1/ Current Economic Position and Prospects of Syria, October 31, 1975, EMENA CP 11-C, Report No. 806-SYR. See particularly table on p. 21 (Macro-Economic Projections (1980)).

VII. Evaluation

The AID project is part of a comprehensive water supply project developed by and under the general purview of the World Bank Group. Some elements comprising the project are not scheduled for completion until 1981. At that time the IBRD will appraise the effectiveness of the project. Consultations with World Bank Staff indicate that their project completion reports will contain evaluation factors similar to those used by AID. Should that evaluation not satisfy AID's requirements, a specific evaluation by AID covering the elements financed by this loan may be desirable and undertaken at that time. In any event throughout the implementation period AID will monitor progress of the project and coordinate its findings with the World Bank Group.

VIII. Conditions Precedent and Covenants

Conditions Precedent to Initial Disbursement: In addition to the usual conditions precedent relating to the required SARG legal opinion and the designation of Borrower's representative(s) and specimen signature(s), prior to initial disbursement of loan proceeds, the Borrower shall also furnish to AID, in form and substance satisfactory to AID:

(a) the agreement between the Borrower and Figeh by which the loan proceeds are made available to Figeh.

(b) the final design and bid documents in English for the Project prepared by the French engineering consultant retained by Figeh for that purpose.

(c) an executed contract with a U.S. architectural and engineering firm for services required to review Figeh tender documents for the Project, to adapt them as necessary to enable U.S. contractors and/or suppliers to bid on the work, and to supervise the activities of the construction and/or installation contractor.

Conditions Precedent to Disbursement for Construction and/or Installation Goods and Services: Prior to the first disbursement for construction and/or installation services, the Borrower shall furnish to AID, in form and substance satisfactory to AID:

(a) an executed contract with U.S. construction and/or installation contractor(s) for goods and services required for the Project.

(b) evidence that all rights, permits, easements, etc., required to install the Project elements have been secured or are available to Figeh, and will be made available to the construction and/or installation contractors.

Covenants:

(a) Borrower shall provide all authorizations or permits required by Figeh, its agents, consultants and contractors for implementing the Project.

(b) Borrower agrees that all rights, concessions, and privileges granted by the Borrower to Figeh will be provided and maintained as required to complete this Project.

(c) Borrower agrees to provide promptly as needed all additional funds required for the expeditious implementation of the Project.

(d) Borrower agrees to provide all necessary financial and management resources to effectively operate and maintain the Project and the expanded water supply and distribution system of which the Project is a part.

SYRIAN ARAB REPUBLIC
PRESIDENCY OF THE COUNCIL
OF MINISTERS
STATE PLANNING COMMISSION

الجمهورية العربية السورية
رئاسة مجلس الوزراء
هيئة تخطيط الدولة

ANNEX 1
Page 1 of 2

Ref. : 2432/A.H

Date : April 15, 1976

Mr. Gordon B. Ramsey
AID Representative
Embassy of the United States of America
Damascus, Syrian Arab Republic

Dear Mr. Ramsey:

As you are aware, E.P.E.F. officials have had fairly extensiv discussions with AID officials recently, both here and in Washington, D.C. on the possibilities of further AID financial assistance to E.P.E.F. for works of the overall Damascus Water Supply expansion program, which is expected to also receive financial assistance from the IBRD and the Kuwait Arab Development Fund.

The Government of the Syrian Arab Republic requests that A.I gives favorable consideration to a loan for financing the foreign currency needed for the works related to the distribution pumping stations, dispatch and control system, Figeh pump station and test pumpin and other related works. This loan is expected to be $ 18 million.

In addition to the above works, several ground level distribu tion reservoirs are to be built at an estimated cost of L.S. 25.32 million. Also the S.A.R.G requests that the amount L.S. 20,980,000 in the Special Account at the S.A.R. central Bank to be used to finan the distribution reservoirs works.

We look forward for your prompt reply.

Sincerely

Eng. M. Issam Hilou
Deputy Minister of State
For Planning Affairs

RECEIVED
15 APR 1976
USAID [illegible]

CONTENTS OF LOAN APPLICATION

Department of State

TELEGRAM

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AIDAC

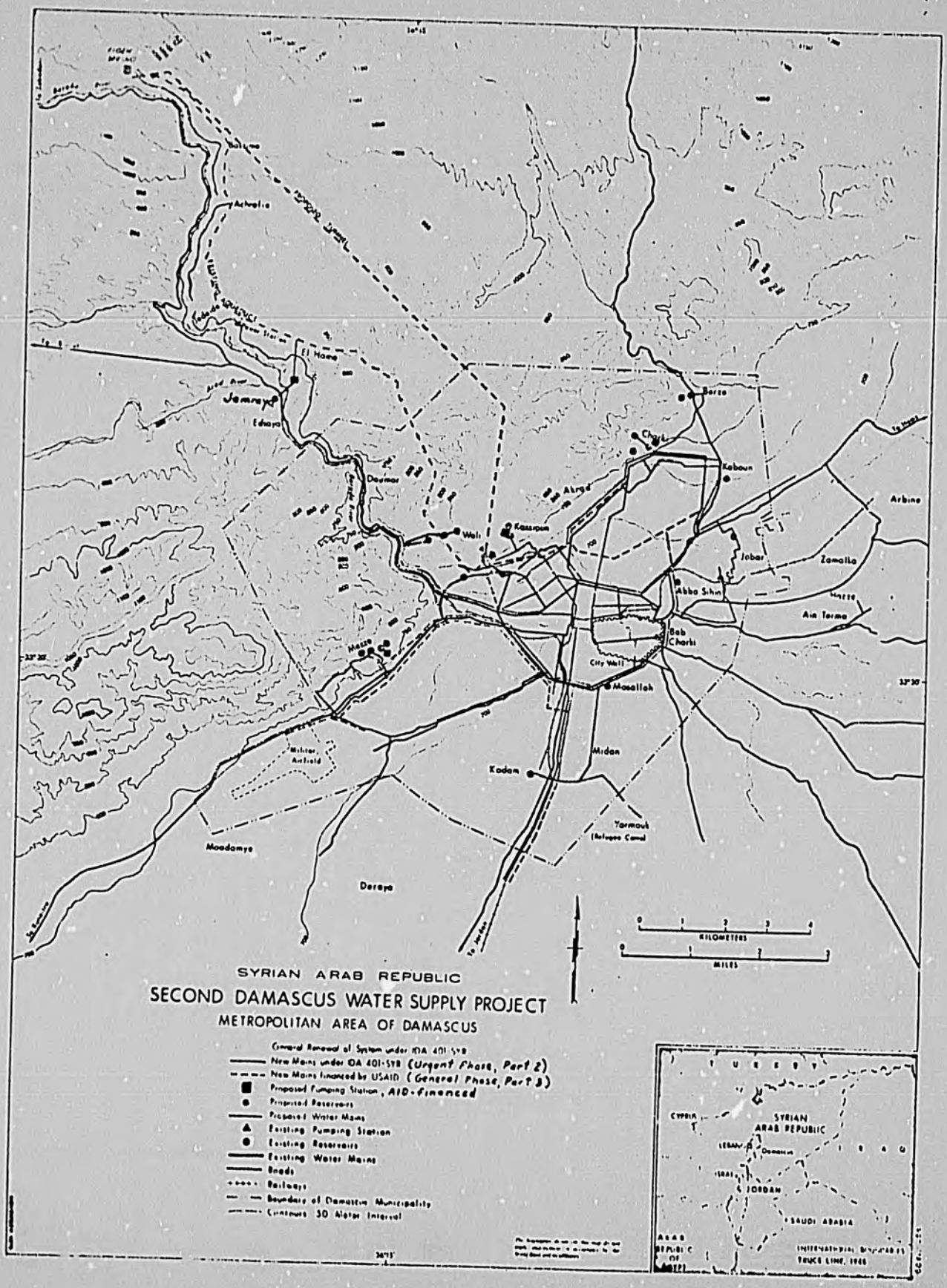
FOR NE/CD

E.O. 11652: N/A
TAGS:
SUBJECT: LOAN APPLICATION - DAMASCUS WATER SUPPLY II

1. SARG LETTER 2561/AK ADDRESSED TO AID REP, SYRIA, DATED 24 APRIL, 1976, FROM MINISTRY OF STATE PLANNING AFFAIRS IS QUOTED VERBATIM IN PAR 2 BELOW.

2. QUOTE WITH REFERENCE TO OUR LETTER NO. 2432/K.H. DATED APRIL 15, 1976, WE WISH TO INFORM YOU THAT ON THE BASIS OF DISCUSSIONS CARRIED OUT BETWEEN U.S. AID OFFICIALS AND EPFF OFFICIALS. THE REQUESTED U.S. AID FINANCING IS TO BE REVISED FROM DOLLARS 18.00 MILLION INTO DOLLARS 14.5 MILLION. PARA BY THIS LETTER WE REVISE OUR PREVIOUS REQUEST FOR A LOAN FOR FINANCING THE FOREIGN CURRENCY NEEDED FOR THE WORKS RELATED TO THE DISTRIBUTION PUMPING STATIONS, DISPATCH AND CONTROL SYSTEM, AND OTHER RELATED WORKS INTO DOLLARS 14.5 MILLION. PARA WE LOOK FORWARD FOR YOUR PROMPT REPLY. END QUOTE. SIGNED M. ISSAM HYLOU, DEPUTY MINISTER.
MURPHY

UNCLASSIFIED


Jamraya
Edaya
El Hama
Daumar
Wali
Kassaum
Alrya
Berze
Kabaun
Arbine
Zamalka
Jobar
Abba Shin
Ain Terma
Bab Charki
City Wall
Mosallah
Midan
Kadam
Yarmouk
Mezze
Military Airfield
Moadamya
Daraya
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Proposed Water Mains
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Existing Reservoirs
Existing Water Mains
Roads
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Boundary of Damascus Municipality
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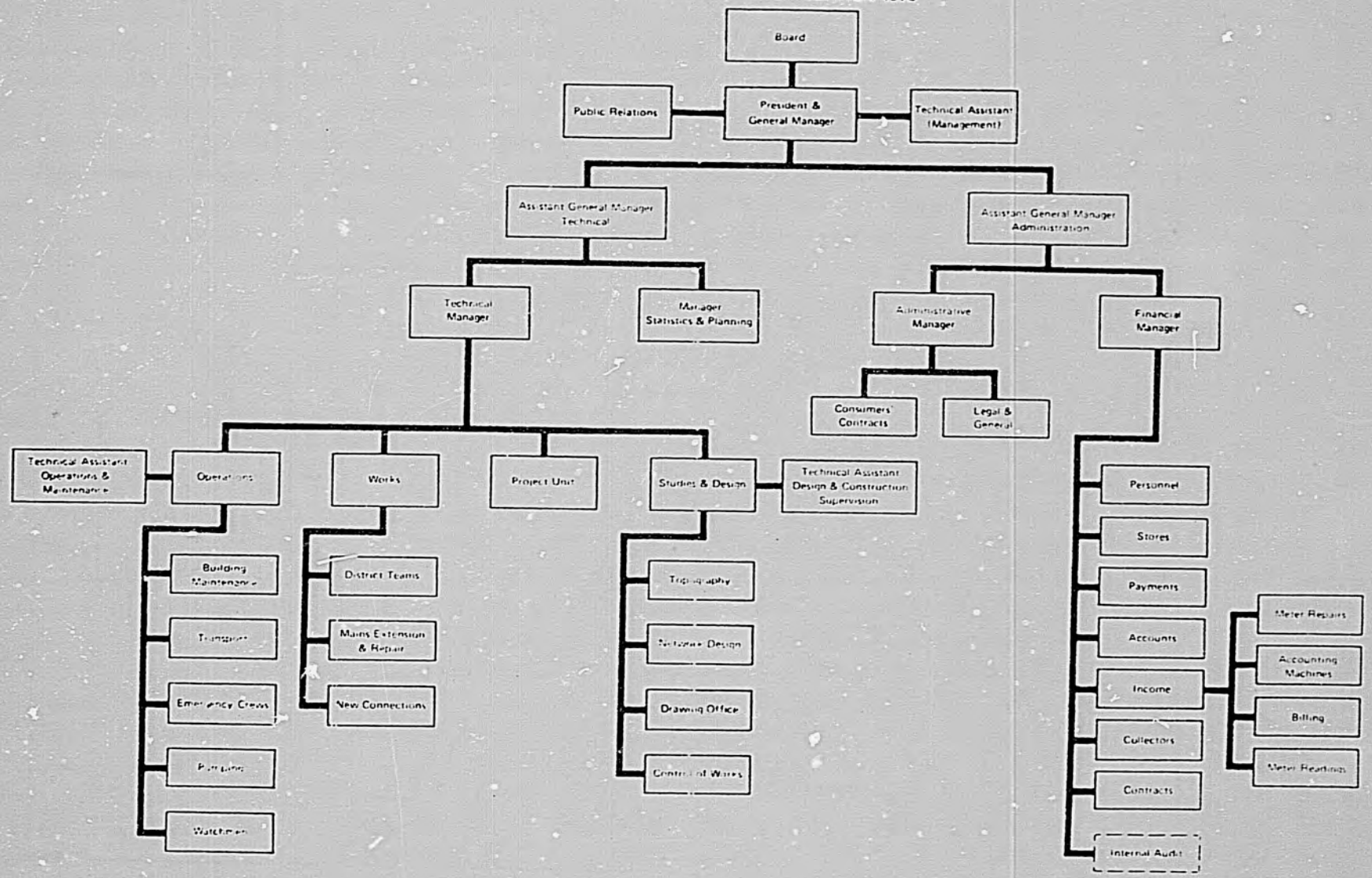
ARAB REPUBLIC OF EGYPT
INTERNATIONAL BOUNDARIES
TRUCE LINE, 1948

SECOND DAMASCUS WATER SUPPLY PROJECT
SYRIA
FIGEH – ORGANIZATION 1975



ANNEX 3

SECOND DAMASCUS WATER SUPPLY PROJECT

SYRIA

INCOME STATEMENT

ACTUALS (1972-1974) AND PROJECTED (1975-1984)

YEAR BEGINNING JAN 1ST	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
TOTAL POPN SERVED '000	1000	1070	1140	1200	1254	1310	1369	1431	1495	1563	1633	1706	1783
NO CONNECTIONS '000	136	143	147	152	157	161	165	177	192	207	223	240	258
NO WAT RT HOLDERS '000 m^3	68	72	74	76	78	80	82	88	96	103	111	120	129
WATER PRODUCTION '000 m^3	85900	89600	92600	96400	98600	100700	101500	102200	118400	124200	131800	139100	146400
WATER CONSUMPTION '000 m^3	63500	66100	68600	71200	73000	74500	75200	75600	87600	91900	97500	102900	108400
- METERED SOLD '000 m^3	26620	28570	31028	32563	37998	44133	49468	53873	69413	72536	76775	80633	84590
- WATER RT HOLDERS '000 m^3	10980	11230	11672	12037	12402	12767	13132	14227	15687	16965	18425	20067	21710
- UNBILLED '000 m^3	23300	23700	23300	24000	20000	15000	10000	5000	-	-	-	-	-
- PUBLIC SUPPLY '000 m^3	2600	2600	2600	2600	2600	2600	2600	2500	2500	2400	2300	2200	2100
WATER LOSSES %	26	26	26	26	26	26	26	26	26	26	26	26	26
AVERAGE RATE LS m^3	.20	.20	.20	.20	.30	.50	.60	.60	.60	.65	.80	1.05	1.25
AVERAGE ANN FEE LS m^3/day	14	14	14	14	50	123	159	159	159	177	232	323	396
	LS '000												
OPERATING REVENUES													
TOTAL - METERED	5357	5478	6999	6513	12179	23367	31239	33824	43147	48708	65098	89282	108359
WATER RIGHT SALES	2543	2595	2470	2000	2000	2000	2000	6000	8000	7000	8000	9000	9000
METER RENTALS	719	808	880	988	1099	1208	1320	1505	1728	1863	2007	2160	2322
CONNECTION CHARGES	518	531	545	440	484	425	467	1546	2124	2340	2739	3210	3730
ANNUAL FEE	409	450	460	532	1950	4920	6520	6997	7633	9115	12876	19745	25503
DIST SYS MAINT FEE	423	476	494	547	565	580	594	637	691	745	803	864	929
OTHER FEES	113	231	43	142	156	172	189	208	228	251	276	304	335
TOTAL	10082	10369	11691	11162	18433	32672	42329	50717	63551	70022	91799	124565	150178
OPERATING EXPENSES													
PERSONNEL	2880	3390	3820	4354	5806	7067	8175	9550	12759	15356	19100	22920	27357
MATERIALS & MAINT	189	134	159	232	268	489	882	1342	1802	4457	4721	4985	5421
ADMINISTRATION	396	454	621	708	944	1149	1329	1553	2074	2496	3105	3726	4446
PUMPING	549	643	714	743	760	776	782	846	983	995	1007	1019	1036
NEW CONNECTIONS	117	266	165	220	242	213	234	773	1062	1170	1370	1605	1865
DEPRECIATION	1599	1837	1926	2108	3330	5234	7084	10040	17940	25020	26340	28640	30340
TOTAL	5730	6726	7403	8365	11350	14928	18486	24104	36620	49494	55643	62895	70465
OPERATING INCOME	4352	3643	4288	2797	7083	17744	23843	26613	26931	20528	36156	61670	79713
OTHER INCOME NET	176	160	245	269	296	326	359	395	434	477	525	578	635
NET INCOME BEF TAX	4528	3803	4533	3066	7379	18070	24202	27008	27365	21005	36681	62248	80348
INT CHARGED OP	0	0	0	150	1866	4866	7963	10998	13032	13596	13339	13009	12657
NET INCOME	4528	3803	4533	2916	5513	13204	16239	16010	14333	7409	23342	49239	67691
RATE OF RETURN	13.1	10.6	11.8	6.8	11.6	13.5	9.4	6.9	4.7	2.0	3.4	5.6	7.0
OPERATING RATIO %	57	65	63	75	62	46	44	48	58	71	61	50	47

ANNEX 4

ANNEX 5

SECOND DAMASCUS WATER SUPPLY PROJECT

SYRIA

CASH FLOW

ACTUALS (1972-1974) AND PROJECTED (1975-1984)

YEAR BEGINNING JAN 1ST	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
INTERNAL SOURCES													
-NET INCOME BEF TX	4528	3803	4533	3066	7379	18070	24202	27008	27365	21005	36681	62248	80348
-DEPRECIATION	1594	1837	1926	2108	3330	5234	7084	10040	17940	25020	26340	28640	30340
-CONSUMER CONTRIB	691	466	432	500	500	400	400	1200	1500	1500	1400	1700	1800
-INVESTMENTS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	6813	6106	6891	5674	11209	23704	31686	38248	46805	47525	64621	92588	112488
OPERATIONAL REQUIREMENTS													
-WORKING CAPITAL	3243	2268	978	-4239	1276	108	-3576	-1176	-911	-2832	-1597	-883	-4725
-DEBT SERVICE	0	0	0	150	1866	4866	8600	12530	14404	16294	17537	17438	17415
OTHER CHG	1124	450	-23	0	0	0	0	0	0	0	0	0	0
TOTAL	4367	2718	955	-4089	3142	4974	5024	11154	13493	13462	15940	16555	12690
NET AVAILABLE FROM OPERATIONS	2451	3388	5936	9763	8067	18730	26662	27094	33312	34063	48681	76033	99798
CONSTRUCTION REQUIREMENTS													
-ONGOING WORKS	2451	3388	5936	0	0	0	0	0	0	0	0	0	0
-PROPOSED PROJECT	0	0	0	0	79550	109237	132186	115358	70086	0	0	0	0
-URGENT PHASE	0	0	0	5000	23743	26958	29793	17296	0	0	0	0	0
-GENERAL PHASE	0	0	0	0	7851	87535	111132	126197	67565	0	0	0	0
-BARADA DAM AND OTHERS	0	0	0	4000	4000	0	0	0	15000	57500	58200	319700	303700
TOTAL	2451	3388	5936	9000	115144	223730	273111	258851	152651	57500	58200	319700	303700
BALANCE TO FINANCE	0	0	0	-763	10707	205000	246449	231757	119339	23437	9519	243667	203902
FINANCED BY:													
PROPOSED IBRD	0	0	0	0	20290	27841	53670	29569	18130	0	0	0	0
IDA CREDIT NO1	0	0	0	5000	4800	11840	12580	8880	0	0	0	0	0
GOVT EQUITY INVEST	0	0	0	0	71224	165319	200199	193308	101209	23437	9519	243667	203902
TOTAL	0	0	0	5000	101314	205000	246449	231757	119339	23437	9519	243667	203902
SURPLUS(DEFICIT) OF FUNDS	0	0	0	5763	-5763	0	0	0	0	0	0	0	0
ACCUMULATED	0	0	0	5763	0	0	0	0	0	0	0	0	0
DEBT SERVICE COVER (EXCL WATER RIGHT SALES)	0.0	0.0	0.0	24.5	4.9	4.5	3.4	2.6	2.7	2.5	3.2	4.8	5.9

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SECOND DAMASCUS WATER SUPPLY PROJECT

SYRIA

BALANCE SHEET

ACTUALS (1972-1974) AND PROJECTED (1975-1984)

AS OF DECEMBER 31ST	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
ASSETS													
PLANT IN OPERATION	50165	53011	58071	66878	102472	216965	357774	501024	1074705	1126845	1179919	1279724	1320653
LESS: DEPRECIATION	16305	18142	20068	22176	25506	30740	37824	47664	65804	90824	117164	145804	176144
NET PLANT	33860	34869	38003	44702	76966	186225	319950	453160	1008901	1036021	1062755	1133920	1144509
WORK IN PROGRESS	2389	2931	3807	4000	83550	192787	325089	440690	19660	25020	30146	250041	512812
CURRENT ASSETS													
-CASH AND BANKS BANKS	3044	1982	1462	2171	2903	3534	4088	4773	4996	5294	5166	5076	5295
TEMPORARY SURP	0	0	0	5763	0	0	0	0	0	0	0	0	0
ACC REC WATER	3743	5028	5962	4109	8178	11710	9439	10205	12695	14456	19494	27257	33466
ACC REC OTHERS	8754	13963	12039	13243	14567	16024	17626	19389	21328	23460	25806	28387	31226
INVENTORIES	11727	14860	14781	12781	10781	8781	9656	10625	11687	12856	14141	15556	17112
PREPAYMENTS	1577	2026	3071	3378	3716	4087	4496	4946	5440	5984	6583	7241	7965
TOTAL	28845	36959	37315	41451	40145	44136	45305	49938	56146	62050	71190	83517	95064
TRANSFERS TO GOVT	27228	27678	27655	27655	27655	27655	27655	27655	27655	27655	27655	27655	27655
TOTAL	92322	102437	106780	117808	228316	450803	717999	971443	1112362	1150746	1191746	1495133	1780040
LIABILITIES													
EQUITY													
-CAPITAL	29340	29340	29340	29340	100564	265883	466082	659390	760599	784036	793555	1037222	1241124
-RETAINED EARNINGS	20200	21408	23471	24387	27900	39104	53343	63353	69686	70095	85437	125676	184367
-WATER RIGHT SALES	31080	33675	36145	38145	40145	42145	44145	50145	58145	65145	73145	82145	91145
TOTAL	80620	84423	88956	91872	168609	347132	563570	772888	888430	919276	952137	1245043	1516636
LONG TERM DEBT	0	0	0	5000	35090	74771	120384	157501	174259	171561	167363	162934	158176
CURRENT LIABILITIES													
-ACCOUNTS PAYABLE	4021	7752	7307	9134	11417	14271	17839	22299	27874	34842	43553	54441	68052
RETIREMENT PROVISI	707	956	873	960	1056	1162	1278	1406	1547	1701	1871	2058	2264
DEP & ADV PAYMENTS	2880	4746	4652	5350	6152	7075	8136	9357	10760	12374	14230	16365	18820
TOTAL	7608	13454	12832	15444	18625	22508	27253	33062	40181	48917	59654	72864	89136
CONSUMER CONTRIBUT	4094	4560	4992	5492	5992	6392	6792	7992	9492	10992	12592	14292	16092
TOTAL	92322	102437	106780	117808	228316	450803	717999	971443	1112362	1150746	1191746	1495133	1780040
DEBT/EQUITY RATIO	0	0	0	5:95	17:83	18:82	18:82	15:85	16:84	16:84	15:85	15:85	9:91

DAMASCUS WATER SUPPLY PROJECT

SYRIA

ECONOMIC ANALYSIS

Least Cost Solution

1. All major components of the Damascus Water supply system -- source works, transmission lines and distribution system -- require expansion to keep pace with the increasing demand for water. Figeh engaged consultants to plan this expansion on the basis of reasonable projections of future demand and after a thorough analysis of alternative development plans which specifically considered staging of the various components.

2. Four main alternatives were investigated in the planning of the source development and related transmission system. The least-cost solution was clearly the further development of the Figeh spring and construction of a tunnel to deliver water from this source to Damascus. A summary of the alternatives which were considered follows.

3. (i) Figeh spring development and tunnel to Damascus

This groundwater source provides Damascus with excellent water at very low cost since it requires no treatment and flows to most consumers by gravity. However the flow varies considerably with the lowest recorded flow below present requirements, and the transmission capacity of the existing aqueduct (3.2 m^3/second) is too small for present and future needs. Fortunately, the average flow of the spring is quite large (8.4 m^3/second) and the consultants expect that underground storage in the aquifer which feeds the spring can be utilized to increase its yield at relatively low cost. Accordingly this alternative includes an underground cutoff wall (to avoid wasting spring water) and test pumping to explore the storage possibilities. In this alternative a tunnel would be constructed to augment the present aqueduct to Damascus. The minimum capacity of the tunnel would have to be about 4.0 m^3/second, the estimated system production capacity required in 1980 (when the tunnel would be completed) so that the existing aqueduct could be taken out of service for badly needed repairs. However, the smallest tunnel which would be economical to construct provides a capacity of 5.0 m^3/second, more than required. The tunnel would be 15.0 km long and terminate at the Wali reservoir above Damascus.

(ii) Figeh spring development and pipeline to Damascus

As in the previous alternative the existing Figeh source would be further developed. A pipeline would be constructed to Damascus. The capacity requirement of 4.0 m^3/second necessitates a large diameter pipeline (1,400 mm asbestos cement) which would be quite expensive to install. The pipeline route, 18.3 km long is very difficult, along the rocky and narrow Barada valley. Two pipeline bridges would be required over the river and ten crossings under roads, railway and canals. At its terminus at the Mali reservoir the pipeline would be some 50 m lower than the reservoir. Although most of the distribution system could be supplied from the pipeline, it is necessary to consider a pumping station with capacity of about 1.5 m^3/second, to pump water to the higher distribution zones that could be supplied by the tunnel alternative.

(iii) Dam on the Barada River and pipeline to Damascus

As the Figeh spring is a principal source of the Barada River, the possibility of using the river to transmit the water much of the way to Damascus was investigated. In 1961 consultants from the USSR (Technopromexport) completed a preliminary analysis of a multipurpose reservoir on the Barada River which could supply water for domestic purposes and irrigation in Damascus as well as control floods. Data from this report was used by SOGREAH to analyze a smaller dam to be built for water supply purposes only, since the hypothetical multipurpose project is unlikely to be built in the immediate future. A water supply project to provide about 4.0 m^3/second would require a dam about 60 m high with a reservoir covering some 210 ha. A pumping station and about 10 km of pipeline would be required to deliver the water to Damascus. Aside from the question of costs discussed in para 5, this solution has the following disadvantages:

(a) this alternative project could not be operational for about six years because of the need to prepare engineering designs and relocate buildings, roads and the railway in the reservoir area, and also because of the long construction period for such a project;

(b) a reservoir with associated installations and pipelines is much less secure as a water source than an underground source and a tunnel.

(iv) Groundwater from Damascus Plain

Wells are the common source of water for irrigation in the area around Damascus. The irrigated area totals some 12,000 ha. The Ministry of Public Works and Water Resources estimates that some 8,000 wells rely on an aquifer which is recharged by the Barada River and smaller seasonal streams flowing from the Anti Lebanon Mountains. Figeh is temporarily using two wells at Jobar but intends to abandon them as soon as possible.

There are many reasons why it is impractical to consider using this groundwater to augment the Damascus water supply.

(a) All the groundwater is bacteriologically contaminated due to gross pollution, mostly from Damascus. until a comprehensive severage system is constructed the use of this groundwater is undesirable for health reasons.

(b) A centuries-old system of water rights allocation has evolved in the region including a hierarchy of committees. To contend with these traditional allocations would be extremely difficult if not impossible.

(c) The yield of individual wells is quite small, generally less than 1,000 m^3/day, which would make the development of this source very expensive in view of the large and increasing demand for water in Damascus.

Furthermore, such wells would involve substantial pumping costs, both to bring the water to the surface and (since the ground rises toward the city) to transmit it to higher-lying areas where the urban consumers are located.

4. Although the original economic analysis of the three possible alternatives in 1972 had shown that Figeh source development and a tunnel to Damascus was the least-cost solution, it was not clear following receipt of the tenders for the tunnel, with their much higher than estimated costs, whether this solution presented the least-cost under current conditions. The consultants (SOGREAH) were requested to update their original feasibility study using unit prices submitted by the contractors for the tunnel works and the Urgent Phase distribution works. Their report, submitted in June 1975 gave the following summary of present values for each of the solutions with investments and maintenance and operating costs over the next 30 years discounted at rates of 8% and 12%.

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Source of Supply	Present Value of Investment at Discount Rate Shown in LE Millions	
	8%	12%
1. Figeh source development and tunnel to Damascus	226.0	214.2
2. Figeh source development and		
(a) cast-iron pipeline to Damascus	311.7	269.6
(b) asbestos-cement pipeline	294.2	254.6
3. Dam on Barada River and		
(a) cast-iron pipeline to Damascus	445.7	406.5
(b) asbestos-cement pipeline		

The new feasibility study thus clearly confirms that the major component of the project for which this loan is proposed is the least-cost solution to Damascus' water supply needs.

[illegible]

[illegible]

Internal Rate of Return of Water Supply Investment

Year	Water Sales (Million m^3)	Incremental Water Sales (Million m^3)	Investment in Tunnel	Other Investment	Incr. Opera. Cost	Total Cost	Residual from Tunnel	Residual from Other Investment	Incremental Revenues at Different Tariff Rates 0.20 a/	[illegible] b/	1.19 X
			(Million LS) in 1975 prices								
1972	51.0	7.9	66.3	26.7	0.1	[illegible]	-	5.2	1.6	[illegible]	[illegible]
1973	57.5	[illegible]	[illegible]	[illegible]	0.4	[illegible]	-	[illegible]	[illegible]	[illegible]	22.1
1974	63.2	[illegible]	[illegible]	[illegible]	0.8	[illegible]	-	32.7	[illegible]	[illegible]	33.[illegible]
1975	70.6	35.5	76.4	95.0	1.7	[illegible]	-	33.0	[illegible]	[illegible]	42.2
1976	57.6	52.5	53.8	[illegible]	3.1	[illegible]	[illegible]	[illegible]	10.5	[illegible]	62.5
1977	61.3	[illegible]	-	32.7	7.1	[illegible]	-	13.1	11.1	[illegible]	67.[illegible]
1978	67.5	42.4	-	39.0	7.9	[illegible]	-	12.8	12.5	[illegible]	74.3
1979	[illegible]	67.8	-	150.1	8.4	[illegible]	-	67.6	13.6	[illegible]	80.7
1980	[illegible]	71.3	-	129.8	9.1	[illegible]	-	61.7	14.7	[illegible]	87.2
1985	114.9	79.5	-	95.7	9.2	[illegible]	-	47.9	16.0	47.9	95.0
1986	121.8	86.7	-	93.7	10.1	103.8	-	49.2	17.3	52.0	103.2
1987	129.1	93.5	-	26.9	11.1	[illegible]	-	14.8	15.7	56.[illegible]	111.3
1988	136.9	101.8	-	26.9	12.1	[illegible]	-	15.5	20.4	61.1	121.1
1989	145.0	109.9	-	26.9	13.2	[illegible]	-	16.2	22.0	66.0	130.8
1990	153.7	118.6	-	26.9	14.3	[illegible]	-	16.8	23.7	71.2	141.1
1991	162.9	127.9	-	26.9	15.5	42.4	-	17.5	25.6	[illegible]	152.1
1992	172.7	137.6	-	[illegible]	16.8	43.7	-	18.2	27.5	[illegible]	163.7
1993	183.1	148.0	-	26.9	18.1	[illegible]	-	18.8	29.6	[illegible]	176.1
1994-2005	183.1	148.0	-	-	18.1	[illegible]	-	-	29.6	[illegible]	176.1

a/ Existing Tariff
b/ Average of tariff and other charges by the end of 1976

Internal Rate of Return (%)

At 0.20 LS/m^3 = [illegible]
At 0.60 LS/m^3 = [illegible]
At 1.19 LS/m^3 = [illegible]

[illegible]

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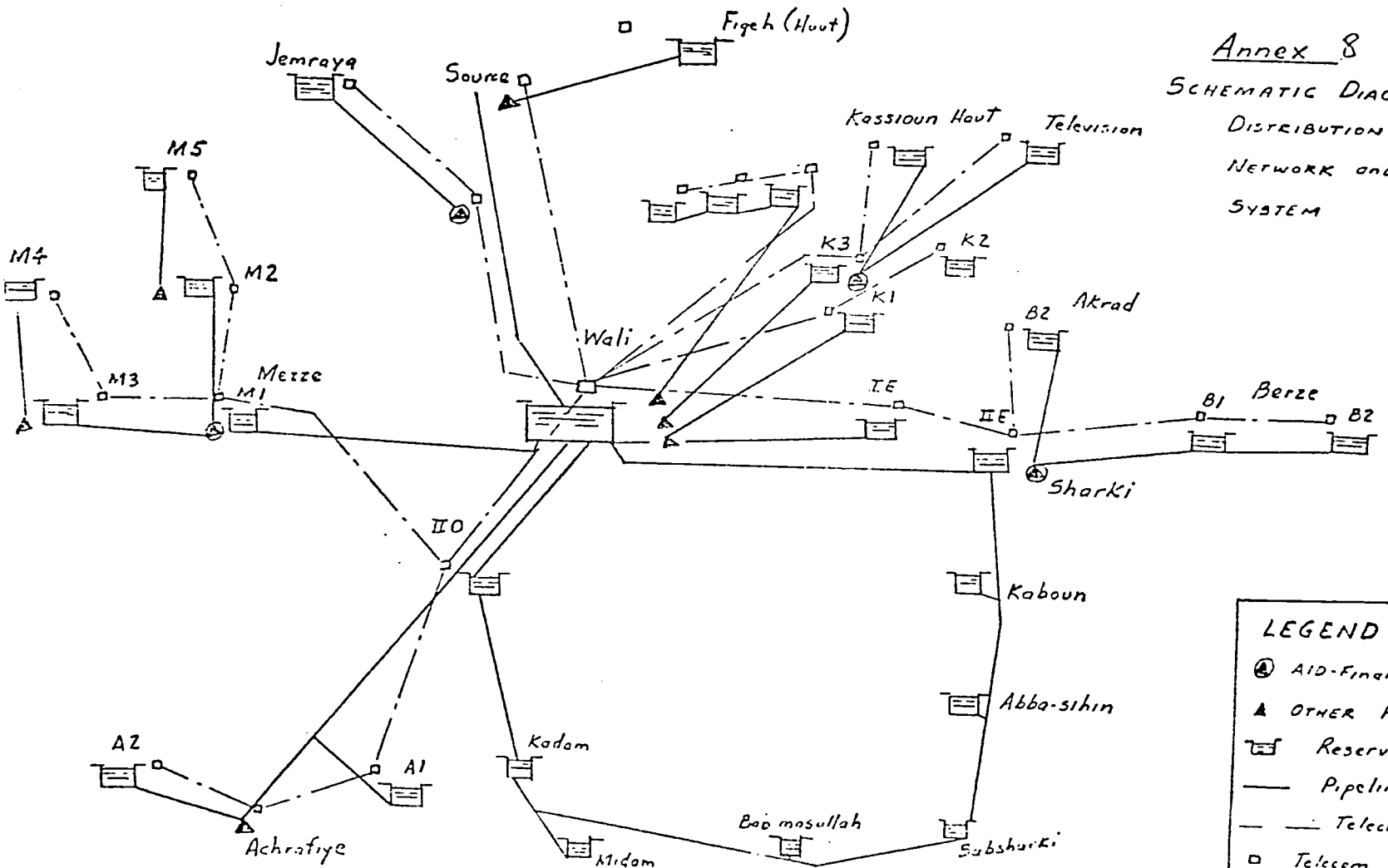
Annex 8

SCHEMATIC DIAGRAM of DISTRIBUTION PUMPING NETWORK and DISPATCHING SYSTEM



LEGEND

- AID-Financed Pumping Sta.
- Other Pumping Stations
- Reservoir
- Pipeline
- Telecom Link
- Telecom Equipment

ANNEX 8

Table 1

Major Equipment Required for Distribution

Pumping Stations

Station	Building Requirement (M^2)	Pumps	Motors	Transformer	Stand-By Power
SHARKI (IIE)	307	4 @ 315 m^3/hr. @ 87 m. head	4 @ 50 h.p.	630 K.V.A.	300 K.V.A. Diesel Generator
		3 @ 150 m^3/hr. @ 150 m. head	3 @ 50 h.p.		
KASSIOUN-BAS	152	3 @ 50 m^3/hr. @ 130 m. head	3 @ 20 h.p.	160 K.V.A.	100 K.V.A. Diesel Generator
		2 @ 25 m^3/hr. @ 300 m. head	2 @ 20 h.p.		
MEZZE (M1)	140	3 @ 350 m^3/hr. @ 46 m. head	3 @ 30 h.p.	250 K.V.A.	160 K.V.A. Diesel Generator
JEMPAYA	140	3 @ 200 m^3/hr. @ 70 m. head	3 @ 30 h.p.	160 K.V.A.	100 K.V.A. Diesel Generator

ANNEX 2

SYRIA -- SECOND DAMASCUS WATER SUPPLY LOAN

TENTATIVE IMPLEMENTATION SCHEDULE

1. Project paper completed (April 1976)
2. Loan authorization signed (May 1976)
3. Loan agreement signed (June 1976)
4. Implementation Letter No. 1 issued (July 1976)
5. All Conditions Precedent to initial disbursement satisfied (August 1976)
6. Completion of contractual arrangement under which the U.S. A/E firm providing engineering and management services for Part 2 (General Phase) agrees to provide similar services for this loan -- this arrangement is to include providing supervision and monitoring the test pumping operations at Figeh. (August 1976)
7. First letter of commitment issued (September 1976)
8. A/E firm receives a notice to proceed (September 1976)
9. Final planning, project design, preparation and Americanization of tender documents completed by A/E firm (December 1976)
10. Completion of contractual arrangement under which the U.S. construction contractor implementing procurement and installation of water distribution mains for AID First Loan (Part 3 - General Phase) agrees to provide appropriate services to implement this loan. (June 1977). (This is required as a CP to further disbursement).
11. Letter of Commitment for construction contract opened (July 1977)
12. Commodity procurement for project facilities begins (July 1977)
13. Civil construction for distribution pumping stations begins (September 1977)

14. Development of wells for Figeh trial pumping facilities begins (October 1977)

15. Installation of equipment for distribution pumping stations begins (April 1978)

16. Installation of pumps for trial pumping facilities begins (April 1978)

17. Interim contracting progress report submitted for trial pumping facilities (July 1978)

18. Interim contracting progress report submitted for construction of distribution pumping stations (July 1978)

19. All commodities required for construction of Figeh trial pumping facilities delivered (August 1978)

20. Figeh trial pumping facilities completed (November 1978)

21. Beginning of test pumping operations. (December 1978)

22. Civil construction and equipment supply for dispatching facilities begin. (December 1978)

23. All commodities required for construction of distribution pumping stations delivered (April 1979)

24. Construction of distribution pumping stations completed (May 1979)

25. Beginning of testing and finishing for distribution pumping stations (June 1979)

26. Interim contracting progress report submitted for dispatching facilities (May 1979)

27. All commodities required for construction of dispatching facilities delivered (August 1979) Commodity procurement for all project elements completed

28. Testing and finishing completed for distribution pumping station (September 1979)

29. Construction of dispatching facilities completed (November 1979)

30. Testing and finishing completed for dispatching facilities (April 1979)

31. Beginning of testing and finishing operations for dispatching facilities (December 1979)

32. Construction begins for Figeh pumping stations--permanent installation (June 1980)

33. Interim contracting progress report submitted for Figeh permanent pumping installations (December 1980)

34. All commodities required for construction of Figeh permanent pumping stations delivered (May 1981)

35. Construction of Figeh permanent pumping stations completed (July 1981)

36. Beginning of testing and finishing for Figeh permanent pumping stations (August 1981)

37. Final construction contractors report submitted. (September 1981)

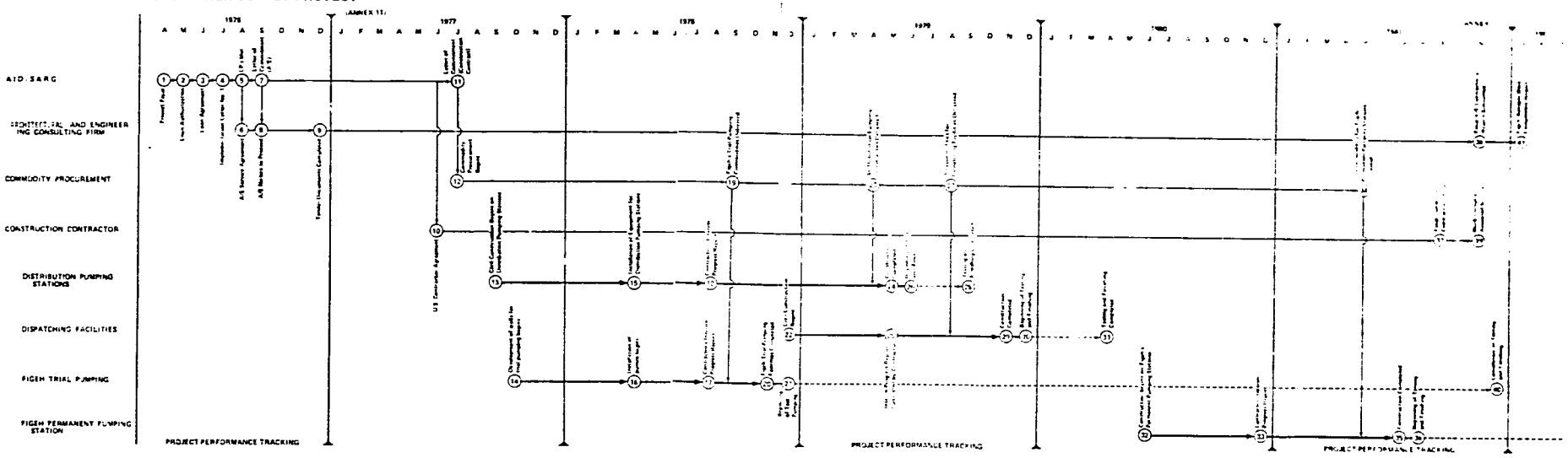
38. Final A/E contractors report submitted (November 1981)

39. Figeh accepts work completion reports of construction contractor and approves final payment. (November 1981)

40. Testing and finishing completed for Figeh trial pumping (December 1981)

41. Figeh accepts work completion reports of A/E firm and approves final payment (January 1982)

PPT-SECOND DAMASCUS WATER SUPPLY PROJECT



AID 1020 28 (1-72)

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project
From FY 1976 to FY 1982
Total U.S. Funding $14.5 million
Date Prepared April 1, 1975

Project Title & Number: Second Damascus Water Distribution System

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes: To contribute to the present and future public health and safety needs of the inhabitants of the city of Damascus by providing a reliable supply of potable water.	Measures of Goal Achievement: Health maintenance and improvement related to measured increases in spring yield, water transmission, and distribution to an increasing number of city of Damascus inhabitants.	Public Health Records. Records of Figeh relating to increased delivery of safe potable water distributed to inhabitants of Damascus	Assumptions for achieving goal: Continued peace in the Middle East. Continued participation by other donors. Spring source will yield larger volume of water.
Project Purpose: To upgrade and expand the existing water supply and distribution system for Damascus	Conditions that will indicate purpose has been achieved: End of project status: Increased water capture, transmission, storage, and water control capability. Expanded and improved water distribution network serving an increasing number of consumers.	Figeh's progress reports. USAID reports based on site visits and inspection of all operating components of improved and expanded water distribution system	Assumptions for achieving purpose: Soundness of overall projects engineering design. Construction of AID financed portion of overall project will be scheduled and completed so as to properly tie in with other project inputs and outputs. Other project elements are in place and operating
Outputs: (a) Increased yield from Figeh spring (b) Larger transmission capacity aqueduct from Figeh spring to the Damascus distribution network (c) Improved and larger water distribution system in Damascus (d) Electronic remote-controlled water flow dispatching system	Magnitude of Outputs: (a) Low flow yield increased from 3.0 m^3/second to 5 or 6 m^3/second (b) Tunnel capacity increased from 3.2 m^3/second to 8.2 m^3/second (c) Storage capacity increased from 47,200 m^3 to 152,000 m^3 --pumping station horsepower increased from 2,132 HP to 3,772 HP --distribution water mains increased from 787 kms to 1,467 kms (d) Installed dispatching system linking 10 pumping stations with associated distribution reservoirs (a) Direct connections increased from 142,000 to 220,000 by 1982.	Progress reports of Figeh. USAID project evaluation reports. A/E and construction contractor reports.	Assumptions for achieving outputs: Ability of Consultant/Contractor to perform contract tasks. U.S. and Syrian ports without congestion or labor problems.
Inputs: (a) Materials and equipment such as: pumps, pipe, diesel engines, telecommunication equipment, etc. (b) Construction and equipment installation services (c) Engineering design and construction supervision services	Implementation Target (Type and Quantity): Materials and equipment delivered and installed. Signed construction contract. Signed A/E contract.	Figeh's records and reports. USAID inspection and reports. A/E and construction contractor's reports.	

ANNEX 12

ANNEX 13

EMBASSY OF THE
UNITED STATES OF AMERICA
AGENCY FOR INTERNATIONAL DEVELOPMENT

CERTIFICATION PURSUANT TO SECTION 611(e) OF THE FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED

DAMASCUS WATER DISTRIBUTION-II

I, Gordon B. Ramsey, the principal officer of the Agency for International Development in Syria, having taken into account, among other things, the maintenance and utilization of projects in Syria previously financed or assisted by the United States, do hereby certify that in my judgement Syria has both the financial capability and the human resources capability to effectively maintain and utilize the capital assistance project Damascus Water Distribution II.

This judgment is based on general considerations discussed in the project paper to which this certification is attached.

Gordon B. Ramsey
AID Representative

DRAFT

LOAN AUTHORIZATION

Syria: Second Damascus Water Supply Project

Provided from: Foreign Assistance Act, Part II, Chapter 4 ("Security Supporting Assistance"), Section 532

Pursuant to the authority vested in the Administrator, Agency for International Development ("A.I.D."), by the Foreign Assistance Act of 1961, as amended (the "Act"), and the delegations of authority issued thereunder, I hereby authorize the establishment of a loan (the "Loan"), pursuant to Part II, Chapter 4 (Security Supporting Assistance), Section 532 of the Act, to the Government of the Syrian Arab Republic ("Borrower") of not to exceed Fourteen Million Five Hundred Thousand United States Dollars ($14,500,000) to assist in financing the foreign exchange costs of goods and services required to support the improvement and extension of the public water supply system in the city of Damascus. The Loan is subject to the following terms and conditions:

1. Interest Rate and Terms of Payment. Borrower shall repay the Loan to A.I.D. in United States dollars within forty (40) years from the first disbursement under the Loan including a grace period of not to exceed ten (10) years. Borrower shall pay to A.I.D. in United States dollars interest on the outstanding disbursed balance of the Loan and any due and unpaid interest at the rate of two percent (2%) per annum during the grace period and three percent (3%) thereafter.

2. Other Terms and Conditions.

   In addition to the standard requirements of a legal opinion from Borrower, appointment of representatives and review and approval of specified contracts, the following terms and conditions shall also apply:

   (a) Borrower shall make available the proceeds of the Loan to the Damascus water authority, Etablissement Public des Eaux de Figeh, on terms and conditions satisfactory to A.I.D.

(b) Unless A.I.D. otherwise agrees in writing, goods and services financed under the Loan shall have their source and origin in the United States.

(c) The Loan shall be subject to such other terms and conditions as A.I.D. may deem advisable.

Daniel Parker

Date

Clearance:
GC:CLGladson
NE/CD:THLustig
NE/ME:NSweet
NE/DP:BLangmaid
FM/FCD:
AA/PPC:PBirnbaum
AA/NE:RHNooter

GC/NE:CECostello:jab:4/23/76

CHECKLIST OF STATUTORY CRITERIA

The following abbreviations are used:

FAA - Foreign Assistance Act of 1961, as amended.

FAA, 1973 - Foreign Assistance Act of 1973.

App. - Foreign Assistance and Related Programs Appropriation Act, 1974.

MMA - Merchant Marine Act of 1936, as amended.

BASIC AUTHORITY

1. FAA § 103; § 104; § 105; § 106; § 107. Is loan being made

   a. for agriculture, rural development or nutrition;

   b. for population planning or health;

   c. for education, public administration, or human resources development;

   d. to solve economic and social development problems in fields such as transportation, power, industry, urban development, and export development;

   e. in support of the general economy of the recipient country or for development programs conducted by private or international organizations.

Inapplicable. Loan is being provided from Security Supporting Assistance funds.

COUNTRY PERFORMANCE

Progress Towards Country Goals

2. FAA §201 (b) (5), (7) & (8); § 208

   A. Describe extent to which country is:

      (1) Making appropriate efforts to

Inapplicable. Loan is being provided from Security Supporting Assistance funds.

increase food production and improve means for food storage and distribution.

(2) Creating a favorable climate for foreign and domestic private enterprise and investment.

(3) Increasing the public's role in the developmental process.

(4) (a) Allocating available budgetary resources to development.

(b) Diverting such resources for unnecessary military expenditure (See also Item No. 20) and intervention in affairs of other free and independent nations.) (See also Item No. 11)

(5) Making economic, social, and political reforms such as tax collection improvements and changes in land tenure arrangements, and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprise.

(6) Willing to contribute funds to the project of program.

(7) Otherwise responding to the vital economic, political, and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.

B. Are above factors taken into account in the furnishing of the subject assistance?

Treatment of U.S. Citizens and firms.

3. FAA § 620(c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) asuch citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government?

There are at present no claims meeting the criteria for termination of assistance pursuant to this Section. However, Syria is now discussing with the U.S.G. and private creditors the status of all remaining outstanding debts of Syria, in order to reach negotiated settlement.

4. FAA § 620(e) (1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect or nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities benefically owned by them without taking steps to discharge its obligations toward such citizens or entities?

Syria, has taken action in the past, which without appropriate action on Syria's part would call for 620(e) sanction. Syria is now discussing the resolution of these claims with the U.S.G. and private creditors. A determination has been made that Syria is taking appropriate steps to discharge its obligations.

5. FAA § 620(o); Fisherman's Protective Act § 5. If country has seized, or imposed any penalty or sanction against, any U.S. fishing vessel on account of its fishing activities in international waters,

No instance of any such seizure or imposition of such penalty or sanctions is now known.

a. has any deduction required by Fishermen's Protective Act been made?

b. has complete denial of assistance been considered by A.I.D. Administrator?

Relations with U.S. Government and Other Nations

6. FAA § 620(a). Does recipient country furnish assistance to Cuba or fail to take appropriate steps to prevent ships or aircraft under its flag from carrying cargoes to or from Cuba.	No instance of such conduct is known.
7. FAA § 620(b). If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communist movement?	The Secretary of State has determined that Syria is not controlled by the international communist movement.
8. FAA § 620(d). If assistance is for any productive enterprise which will compete in the United States with United States enterprise, is there an agreement by the recipient country to prevent export to the United States of more than 20% of the enterprise's annual production during the life of the loan?	The purpose of the contemplated program is not to assist the conduct or operation of a productive enterprise within the meaning of 620(d).
9. FAA § 620(f). Is recipient country a Communist country?	The recipient is not a communist country.
10. FAA § 620(i). Is recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression?	The President has not determined that the recipient country is involved in such conduct.
11. FAA § 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property?	There is not reason to believe that Syria will fail to take adequate measures to prevent the recurrence of mob action which may result in damage or destruction to U.S. property within Syria. Negotiations pertaining to settlement of old claims pertaining to such damage will take place soon.
12. FAA § 620(l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, in convertibility or confiscation, has the the A.I.D. administration within the past year considered denying assistance to such government for this reason?	The institution of an investment guaranty program is now under review. A.I.D. has not considered denying assistance for this reason.

13. FAA § 620(n). Does recipient country furnish goods to North Viet-Nam or permit ships or aircraft under its flag to carry cargoes to or from North Viet-Nam?	Syria is not known to be engaged in such a course of conduct.
14. FAA § 620(q). Is the government of the recipient country in default on interest or principal of any A.I.D. loan to the country?	The Administrator has determined that assistance to Syria is in the national interest, despite the prohibition contained in Section 620(q).
15. FAA § 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption?	Syria broke diplomatic relations with the U.S. in 1967. Diplomatic relations have now been resumed, and the two governments are actively negotiating an up-dated bilateral assistance agreement to replace the earlier agreement still in effect.
16. FAA § 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the A.I.D. Administrator in determining the current A.I.D. Operational Year Budget?	Syria is up to date in payment of its U.N. obligations.
17. FAA § 481. Has the government of recipient country failed to take adequate steps to prevent narcotic drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully?	The President has made no determination under Section 481 that Syria is in violation of this section.
18. FAA § 659. If (a) military base is located in recipient country, and was constructed or is being maintained or operated with funds furnished by U.S., and (b) U.S. personnel carry out military operations from such base, has the President determined that the government of recipient country has authorized regular access to U.S. correspondents to such base?	Inapplicable.

Military Expenditures

19. FAA § 620(s). What percentage of country budget is for military expenditures? How much of foreign exchange resources spent on military equipment? How much spent for the purchase of sophisticated weapons systems? (Consideration of these points is to be coordinated with the Bureau for Program and Policy Coordination, Regional Coordinators and Military Assistance Staff (PPC/RC).)	A.I.D. is taking into account each of the listed considerations and has determined that considerations as to current military expenditures by the Syrians do not inhibit economic aid but rather that the projected program contributes to the underlying intent of the FAA which seeks to reduce arms costs and to stimulate economic developments.

CONDITIONS OF THE LOAN

General Soundness

20. FAA § 201(d). Information and conclusion on reasonableness and legality (under laws of country and the United States) of lending and relending terms of the loan.	Items 20, 21, 22, and 23 of this section of the checklist are inapplicable because the proposed loan will be provided from Security Supporting Assistance funds.
21. FAA § 201(b)(2); § 201(e). Information and conclusion on activity's economic and technical soundness. If loan is not made pursuant to a multilateral plan, and the amount of the loan exceeds $100,000, has country submitted to A.I.D. an application for such funds together with assurances to indicate that funds will be used in an economically and technically sound manner?	Inapplicable.

22. FAA § 201(b)(2). Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospects.	Inapplicable.
23. FAA § 201(b)(1). Information and conclusion on availability of financing from other free-world sources, including private sources within the United States.	Inapplicable.
24. FAA § 611(a)(1). Prior to signing of loan will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the United States of the assistance?	(a) These have been completed. (b) This has been completed.
25. FAA § 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of the purpose of the loan	No further legislative action is required to implement the project other than the ratification action pertaining to the signed loan agreement which in past cases requires no more than 90 days and has not delayed project implementation.
26. FAA § 611(e). If loan is for Capital Assistance, and all U.S. assistance to project now exceeds $1 million, has Mission Director certified the country's capability effectively to maintain and utilize the project?	Yes. A copy is attached as an exhibit to the Project Paper.

Loan's Relationship to Achievement of Country and Regional Goals

27. FAA § 207; § 113. Extent to which assistance reflects appropriate emphasis on: (a) encouraging development of democratic, economic, political and social institutions; (b) self-help in meeting the country's food needs; (c) improving availability of trained manpower in the country; (d) programs designed to meet the country's health needs; (e) other important areas of economic, political, and social development, including industry; free labor unions, cooperatives, and Voluntary Agencies; transportation and communication; planning and public administration; urban development, and modernization of existing laws; or (f) integrating women into the recipient country's national economy.	Items 27, 28, 29, 30, 31, 32, 33, 34, 35, and 36 of this checklist are not applicable because the proposed loan will be provided from Security Supporting Assistance funds.

28. FAA § 209. Is project susceptible of execution as part of regional project? If so, why is project not so executed?	Inapplicable.
29. FAA § 201(b)(4). Information and conclusion on activity's relationship to, and consistency with, other development activities, and its contribution to reliable long-range objectives.	Inapplicable.
30. FAA § 201(b)(9). Information and conclusion on whether or not the activity to be financed will contribute to the achievement of self-sustaining growth.	Inapplicable.
31. FAA § 209. Information and conclusion whether assistance will encourage regional development programs.	Inapplicable.
32. FAA § Section 111. Discuss the extent to which the loan will strengthen the participation of the urban and rural poor in their country's development, and will assist in the development of cooperatives which will enable and encourage greater numbers of poor people to help themselves toward a better life.	Inapplicable.
33. FAA § 201(f). If this is a project loan, describe how such project will promote the country's economic deveopment taking into account the country's human and material resource requirements and the relationship between ultimate objectives of the project and overall economic development	Inapplicable.

34. FAA § 281(a). Describe extent to which the loan will contribute to the objective of assuring maximum participation in the task of economic development on the part of the people of the country, through the encouragement of democratic, private, and local governmental institutions.	Inapplicable.
35. FAA § 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civic education and training in skills required for effective participation in governmental and political processes essential to self-government.	Inapplicable.
36. FAA § 201(b)(3). In what ways does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities?	Inapplicable.
37. FAA § 601(a). Information and conclusions whether loan will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture, and commerce; and (f) strengthen free labor unions.	This loan is not primarily designed to encourage such efforts but will be supportive of the basic welfare of the inhabitants of Syria's major city. To the extent an improvement in their welfare enables the country to upgrade the quality of its human resources and provide more abundant water for industry and commerce as well as domestic use, the loan encourages such efforts.

38. FAA § 619. If assistance is for newly independent country; is it furnished through multilateral organizations or plans to the maximum extent appropriate?	Syria is not a newly independent country.

Loan's Effect on U.S. and A.I.D. Program

39. FAA § 201(b)(6). Information and conclusion on possible effects of loan on U.S. economy, with special reference to areas of substantial labor surplus, and extent to which U.S. commodities and assistance are furnished in a manner consistent with improving the U.S. balance of payments position.	Items 39 and 40 are not applicable because the proposed loan will be provided from Security Supporting Assistance funds.
40. FAA § 202(a). Total amount of money under loan which is going directly to private enterprise, is going to intermediate credit institutions or other borrowers for use by private enterprise, is being used to finance imports from private sources, or is otherwise being used to finance procurements from private sources.	Inapplicable.
41. FAA § 601(b). Information and conclusion on how the loan will encourage U.S. private trade and investment abroad and how it will encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).	The loan will finance foreign exchange costs of goods and services from the United States.
42. FAA § 601(d). If a capital project, are engineering and professional services of U.S. firms and their affiliates used to the maximum extent consistent with the national interest?	Yes.

43. FAA § 602. Information and conclusion whether U.S. small business will participate equitably in the furnishing of goods and services financed by the loan.

The U.S. will be advised of proposed procurements and will notify Small Business of the opportunities.

44. FAA § 620(h). Will the loan promote or assist the foreign aid projects or activities of the Communist-Bloc countries?

No.

45. FAA § 621. If Technical Assistance is financed by the loan, information and conclusion whether such assistance will be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis. If the facilities of other Federal agencies will be utilized, information and conclusion on whether they are particularly suitable, are not competitive with private enterprise, and can be made available without undue interference with domestic programs.

Technical assistance requires to implement the project will be provided by the U.S. private sector on a contract basis. If such assistance is obtained from other Federal Agencies it will be only on the basis that such services are not competitive with the private sector, are in fact the most suitable, and will not unduly interfere with U.S. domestic programs.

Loan's Compliance with Specific Requirements

46. FAA § 110(a) ; § 208(e). In what manner has or will the recipient country provide assurances that it will provide at least 25% of the costs of the program, project, or activity with respect to which the loan is to be made?

Items 46, 48, 49, 50, and 51 of this checklist are inapplicable because the proposed loan will be provided from Security Supporting Assistance funds.

47. FAA §660. Will loan be used to finance police training or related program in recipient country?	No.
48. FAA § 114. Will loan be used to pay for performance of abortions or to motivate or coerce persons to practice abortions?	Inapplicable.
49. FAA § 201(b). Is the country among the 20 countries in which development loan funds may be used to make loans in this fiscal year?	Inapplicable.
50. FAA § 201(d). Is interest rate of loan at least 2% per annum during grace period and at least 3% per annum thereafter?	Inapplicable. (Loan will in fact provide for such interest rate).
51. FAA § 201(f). If this is a project loan, what provisions have been made for appropriate participation by the recipient country's private enterprise?	Inapplicable.
52. FAA § 604(a). Will all commodity procurement financed under the loan be from the Untied States except as otherwise determined by the President?	Yes. The loan authorizes procurement only from the United States.
53. FAA § 604(b). What privision is made to prevent financing commodity procurement in bulk at prices higher than adjusted U.S. market price?	Bulk commodity procurement is not contemplated by the project.

54. FAA § 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will the loan agreement require that marine insurance be placed in the United States on commodities financed by the loan?	Syria has indicated that there will be no discrimination against U.S. marine insurance companies. This provision will be covered by the loan agreement.
55. FAA § 604(e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity?	No procurement of agricultural commodities will be undertaken under the Project.
56. FAA § 604(f). If loan finances a commodity import program, will arrangements be made for supplier certification to A.I.D. and A.I.D. approval of commodity as eligible and suitable?	Inapplicable.
57. FAA § 608(a). Information on measures to be taken to utilize U.S. Government excess personal property in lieu of the procurement of new items.	Efforts will be made to utilize excess property to the maximum extent possible.
58. FAA § 611(b), App. § 101. If loan finances water or water-related land resource construction project or program, is there a benefit-cost computation made, insofar as practicable, in accordance with the procedures set forth in the Memorandum of the President dated May 15, 1962?	Yes.
59. FAA § 611(c). If contracts for construction are to be financed, what provision will be made that they be let on a competitive basis to maximum extent practicable?	A.I.D. regulations requiring competition will be applicable to the Loan.
60. FAA § 612(b); § 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies	Since the loan will finance U.S. foreign exchange costs only, Syria will provide local currencies needed for the project.

owned by the United States are utilized to meet the cost of contractual and other services.

61.	Section 30 and 31 of PL 93-189 (FAA of 1973). Will any part of the loan be used to finance directly or indirectly military or paramilitary operations by the U.S. or by foreign forces in or over Laos, Cambodia, North Vietnam, South Vietnam, or Thailand?	No.
62.	Section 37 of PL 93-189 (FAA of 1973); App. § 111. Will any part of this loan be used to aid or assist generally or in the reconstruction of North Vietnam?	No.
63.	FAA § 612(d). Does the United States own excess foreign currency and, if so, what arrangements have been made for its release?	Discussions are in progress, as part of an overall settlement of U.S. claims, regarding Syrian currency owned by the U.S. in amounts nearly in excess to U.S. needs.
64.	FAA § 620(g). What provision is there against use of subject assistance to compensate owners for expropriated or nationalized property?	The scope of the loan project will prohibit use of loan funds for any such purpose.
65.	FAA § 620(k). If construction of productive enterprise, will aggregate value of assistance to be furnished by the United States exceed $100 million?	Not applicable.
66.	FAA § 636(i). Will any loan funds be used to finance purchase, long-term lease, or exchange of motor vehicle manufactured outside the United States, or any guaranty of such a transaction?	No, procurement is limited to the United States.
67.	App. § 103. Will any loan funds be used to pay pensions, etc., for military personnel?	No.
68.	App. § 105. If loan is for capital project, is there provision for A.I.D. approval of all contractors and contract terms?	Yes. (If this statutory provision is removed from this year's legislation, this section is to be deleted).

69. App. § 107. Will any loan funds be used to pay UN assessments?	No.
70. App. § 108. Compliance with regulations on employment of U.S. and local personnel. (A.I.D. Regulation 7).	The loan agreement will require compliance with A.I.D. Regulation 7. (If this statutory provision is removed from this year's legislation, this section is to be deleted).
71. App. § 110. Will any of loan funds be used to carry out provisions of FAA § 209(d)?	No.
72. App. § 112. Will any of the funds appropriated or local currencies generated as a result of AID assistance be used for support of police or prison construction and administration in South Vietnam or for support of police training of South Vietnamese?	No.
73. App. § 113. Describe how the Committee on Appropriations of the Senate and House have been or will be notified concerning the activity, program, project, country, or other operation to be financed by the Loan.	Congressional notification will be made concerning A.I.D. plans to commit these loan funds to this project activity. (If this statutory provision is removed from this year's legislation, this section is to be deleted).
74. App. § 601. Will any loan funds be used for publicity or propaganda purposes within the United States not authorized by Congress?	No.
75. App. § 604. Will any of the funds appropriated for this project be used to furnish petroleum fuels produced in the continental United States to Southeast Asia for use by non-U.S. nationals?	No.
76. MMA § 901.b; FAA § 640C. (a) Compliance with requirement that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk	The loan agreement will so require.

carriers, dry cargo liners, and tankers) financed with funds made available under this loan shall be transported on privately owned U.S.-flag commercial vessels to the extent that such vessels are available at fair and reasonable rates.