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

CAPITAL ASSISTANCE PAPER

Proposal and Recommendations
For the Review of the
Development Loan Committee

SYRIA - DAMASCUS WATER DISTRIBUTION PROJECT

AID-DLC/P-2113

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

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June 18, 1975

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Syria - Damascus Water Distribution Project

Attached for your review are the recommendations for authorization of a loan in an amount not to exceed forty-eight million United States Dollars ($48,000,000) to the Government of Syria ("Borrower") to assist in financing the foreign exchange costs of goods and services required to support the upgrading 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 Tuesday, June 24, 1975; please note your concurrence or objection is requested at the meeting or by close of business on that date. 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 and Recommendations
Project Analysis
Annexes A - G

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7. Mission Views:

The Embassy and the Acting AID Representative in Syria strongly support this Project.

8. Statutory Checklist:

All statutory criteria have been met. (See Annex F .)

9. Issues: None.

Project Committee:

Chairman:	H. Robert Slusser, NESA/CD
Engineer:	John W. Neave, ENGR/OPNS
Economist:	Leonard G. Rosenberg, NESA/CD
Social Analysis:	Joan Silver, NESA/CD
Counsel:	Bruce Gair, GC/NESA
Desk:	Kurt Teil, NESA/ME

DAMASCUS WATER DISTRIBUTION PROJECT

Summary and Recommendations

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

2. Loan:

(a) Amount: Not to exceed $48 million.

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

3. Project Cost:

$94,700,000, of which $48,000,000 is in foreign exchange and $46,700,000 in local currency. The loan will finance the foreign exchange costs; the SARG will finance all local costs.

4. Project Description:

The project consists of the procurement and installation by a U.S. Consultant and Contractor of approximately 370 kilometers of water mains, fittings and connections to rehabilitate and extend a system in the City of Damascus, using an engineering design already prepared and financed with other resources.

5. Project Justification:

The Project forms part of a three-part program of increasing and modernizing the entire water supply system in Damascus. One part is being constructed with IDA assistance; a second part is expected to be financed by the IBRD; the Project proposed in this paper is the third part. The water supply program responds to the need to supply the growing population of Damascus of over one million people with safe water in sufficient quantity.

6. Other Sources of Financing:

The World Bank Group has financed one part and is expected to finance a second part of the water supply program. No other donor has indicated an interest in financing the third part, the subject of this paper.

population of Syria exceeds six million, of whom roughly a third live in the four largest cities of Damascus, Aleppo, Homs and Hama. Apart from oilfields in the northeast, most of Syria's industrial development is in and around these cities. From imperfect statistics, population growth during 1960-70 has been estimated at 3.2% annually, but urban populations appear to have increased at annual rates of 4% to 6% during this period.

5. 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

6. Three Ministries exercise jurisdiction over development and allocation of hydraulic resources. The Ministry of the Euphrates is responsible for construction of the big 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 recently set up a special department for this purpose.

7. 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 (para. 10) for which foreign aid is requested as a priority in the sector.

8. Urbanization and industrial activity have created serious pollution problems in the larger cities. Fairly comprehensive combined sewer networks exist in the major cities of Aleppo, Homs and Hama, but 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. The water supplied from the rivers for downstream 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. The Pollution Control Department (para. 6) has prepared draft legislation for regulating the discharge of industrial waste and is considering measures to control general sewage discharge; however, progress is hampered by the shortage of resources and diffusion of scarce engineering skills among the various authorities. 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

9. Damascus is one of the oldest continuously occupied cities in the world. The Barada River gave rise to the Al-Ghutta oasis in which Damascus is located and there are remains of a Roman acqueduct which brought water to the city from a source of the Barada, a large natural spring at Ain Figeh 15 km distant (map, Annex A). In subsequent ages, however, the water supply, both for agriculture and human consumption, appears to have again depended on the river flow and on wells until the early 20th century, when the Turkish authorities once more 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 Figeh.[1] The Barada River now mainly provides irrigation of 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.

10. 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 5% annually, and the present potable water system now serves something over a million people (including many refugees from Palestine and the southern war zone). The number of individual water connections is high (about 130,000) and there are 325 public taps, supplying about one-fifth of the population. The capacity of the transmission system, however, is limited to about 3 m^3/sec, which is now barely enough to meet peak demand (including losses); dry-season shortages and restrictions

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1/ Etablissement Public des Eaux de Figeh.

were experienced in 1971 and 1972 and are growing.[1/] They will become more serious unless the production and transmission facilities are expanded. As a short-term remedy, increased attention must be paid to reducing unaccounted-for water.

11. 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 called upon to pay much attention to husbanding 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 meters is believed to be considerable, but since these consumers are merely charged on past consumption, Figeh has not so far tackled this problem. Meters are not routinely called in and Figeh has only the most rudimentary testing and repair facilities. Faced now with a shrinking margin of supply over consumption, Figeh accepts that its performance in these respects requires drastic improvement. The expansion program includes measures to remedy these deficiencies.

III. The Expansion Program

A. Log Frame

12. The goal of the expansion program is to avoid an increase in water related illness in that city. Success will be indicated by a stable, and hopefully decreasing occurrence of water-related illness in all income groups. The purpose of the improved system is to avert a serious water shortage in Damascus for all income groups. This will be indicated by:

--Per capita consumption of water plus meter readings showing adequate quantities of water for health and hygiene being delivered;

--Ratio of population to connections has declined;

--Smaller percent of population depend on public taps.

AID assumptions for achievement of the expansion program purpose include: the completion of other program components as planned and adequate attention to lower income groups; a tariff structure which enables a larger portion of the low income group to connect; the system maintained and well-managed; other conditions, such as food handling and storage, which also contribute to gastroenteric

1/ These shortages were caused by the limited capacity of the aqueduct. However, in drought conditions in earlier years, the Figeh spring yield had sometimes fallen as low as 2.4 m^3/sec.

illness--the origin of which may be difficult to distinguish in individual cases--remain stable or improve. Outputs required for the improved system include the completion of the AID-financed project, which will provide 370 km of new distribution mains by 1980, plus completion of the IDA-financed components of the expansion program. Details of the overall components of the improved system, plus individual donor and SARG responsibilities for these are described in paragraphs 12-15 of this project paper. Inputs required by AID to complete its particular project are: financing of a construction contract and supervisory services. Inputs required from the SARG for this part of the project consist of rights-of-way, physical and service facilities, and financing of the local costs of inland freight, engineering and installation.

B. Project Elements

13. The expansion program is intended to augment the water supply of Damascus by improving the groundwater source, increasing the transmission capacity to the city and improving and extending the distribution system. It consists of:

(i) An underground cut-off wall to increase the available flow and structures to prevent pollution from surface water at Figeh spring;

(ii) Test pumping at Figeh to determine the storage characteristics of the aquifer and the maximum reliable yield which can be developed by pumping from the aquifer;

(iii) A 15 km tunnel from Figeh to the western edge of Damascus and underground reservoirs at the terminus of the tunnel;

(iv) Replacement of existing mains (about 160 km) in the older part of the distribution system;

(v) Installation of new mains (about 370 km);

(vi) Equipment to assist in the operation and maintenance of the distribution system; and

(vii) Assistance of engineering and management consultants, including studies of pollution in the Orontes and Barada Rivers and the need for a sewage system in Damascus.

C. Cost Estimate

14. The cost estimates made for the expansion program in 1972 totaled $32.6 million equivalent, made up as follows (in millions of dollars):

	Local	Foreign	Total
Water supply project			
Discrete elements	10.5	13.3	23.8
Physical contingencies	1.9	1.7	3.6
Price increases	2.2	2.0	4.2
Sub-total	14.6	17.0	31.6
Pollution control studies			
Equipment, consultants, training	.2	.8	1.0
Total project costs	14.8	17.8	32.6

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An IDA credit was granted to finance $15 million of the foreign exchange costs, including the $800,000 for pollution control studies. In the new financing plan for that credit (agreed this year between IDA and SARG), $2 million of the IDA credit is allocated to the pollution control studies and $13 million to the foreign exchange cost of Part 2 of the expansion program.

15. An estimate of the present costs of the expansion program is made up as follows:

Water supply project

Part 1-Source development and transmission tunnel		
(a) Engineers' estimate	LS 204 million	($56 million)
(b) Approximate price of low bid (currently under negotiation)	LS 240 "	($66 ")
Part 2-Older distribution network		
Contracted price	LS 77 "	($21 ")
Part 3-Extension of distribution network		
AID team estimate		$95 million
Telecommunications, reservoirs, other items not included above		$5-10 million

Pollution studies

IDA allocation + 25% for local costs (as in 1972 estimate)	$3 million

Order of magnitude of total cost: $180 to $200 million.

D. Executing Agency

16. The expansion program (excepting the pollution control studies) is being carried out by Figeh (para. 9). Figeh is managed by a Board of seven Directors headed by the Mayor of Damascus and comprising the technical director of the municipality, representatives of three ministries (Finance, Public Works, Municipal and Rural Affairs), a workers' representative and the General Manager of Figeh. To deal with certain procedural inefficiencies which the World Bank had noted, Figeh invited three engineering consultant firms to make proposals for studying and recommending reorganization of its structure. After reviewing the proposals, Figeh decided to hire one engineer each from two of the firms on a man-month basis, thus gaining the experience of both firms (METRA International and La Lyonnaise). The two engineers have not yet begun work.

17. Figeh has relied on engineering consultants for more than a decade of assessing its water resources and finding means of making the best use of them. The latest scientific techniques and equipment are used for these assessments, and Figeh judges each recommendation on its merits before adopting it. Figeh is resourceful in augmenting the amount of water for distribution--removing strictures and up-grades from the 50-year 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. It would seem that Figeh will competently use facilities that the Project would provide to it.

18. For the realization 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 (Annex B), which exempts it "from all the Syrian laws and regulations in force" except those on appointment (employment). Figeh, under the guidance of its project commission, contracts with consultants and construction firms. It relies on engineering consultants for the preparation of specifications, bid documents and cost estimates, but asserts its own opinion in evaluating bids and negotiating a final contract price.

19. Figeh's financial record is sound despite a relatively low water rate, since the natural advantages of gravity transmission and no need for purification make operating costs low. Revenues have exceeded expenses by 20% to 30% in recent years, and Figeh has paid over to the State--as all public enterprises must do--the greater part of its cash balance at the end of the year, for a total to 1973 of some LS 25 million ($6.5 million) which Figeh regards as an interest-free loan to the State.

IV. Program Analysis

A. Technical Analysis

20. A technical analysis requires comment not only on the water distribution project considered for financing under this loan, but also on the existing water supply and distribution system as well as those other elements of improvement of the total system that are now under way and which are being financed or considered for financing by others.

21. Water Source and Transmission to Damascus. Water has been supplied to Damascus from the Figeh spring for approximately 5,000 years, first through open canals and later by tunnels. Ruins of an old Roman-built tunnel
which served Damascus until early this century are still visible

along the Barada River. The tunnel now in use was constructed in the late 1920's and placed in service around 1931. The present tunnel has since been hydraulically upgraded to supply 3.2 m^3/sec (276,500 m^3/day) of water to Damascus. In early 1975, this represented approximately the average day demand for water in Damascus, with some localized water shortages occurring on days of peak demand. In anticipation of this growing demand for water, Figeh has commissioned engineering design for a new tunnel of 5.0 m^3/sec to augment the existing tunnel so that when both tunnels are in operation, potential transmission capacity will be 8.3 m^3/sec (717,100 m^3/day). In order to utilize this transmission capacity, Figeh has also commissioned design for confinement of the Figeh spring. At present, overflows from the spring to the Barada River equal or surpass the quantities of water captured for transmission to Damascus. Entrainment works at Figeh spring include a grout curtain cut-off wall between the overflow channel and the Barada River, and confinement of the entire spring area including additional springs in the overflow channel in a concrete reservoir and catchment basin for subsequent gravity transmission to Damascus. Capture of the water from the entire spring area is expected to satisfy the average day demand until the year 1991, estimated at 5.0 m^3/sec (432,000 m^3/day). Additional studies are currently under way using level of radioactive fallout captured by rainfall on the watershed versus level of radioactive material in the Figeh spring water to determine the dilution factor in the underground reservoir from which Figeh spring flows and hence the estimated amount of water contained in the underground reservoir. Present estimates lie between five and thirty billion cubic meters of water. Further studies are planned to determine whether pumping from this underground reservoir is feasible to augment the Damascus water supply beyond the year 1991. A technical review of the engineering designs and a site visit to the Figeh spring confirmed that the plans are well conceived and technically feasible for increasing the source supply and transmission capacity.

22. Water Distribution System. The water distribution system, principally in the older and most heavily populated section of Damascus, has deteriorated from age to a point where it has been determined uneconomically repairable. The distribution system in the newer sections of Damascus requires strengthening in order to deliver water in adequate quantities and at adequate pressures. Still newer sections of Damascus are undergoing a tremendous building boom and require extension of the distribution system for new services. Figeh has contracted with the French engineering firm SEURECA for the new distribution system design, and engineering designs and construction drawings have been completed for the older section of the city and construction drawings will be completed for the newer areas of the city by the end of August 1975. A construction contract has been executed between Figeh and the French construction firm SOCEA for installation of water mains in the older section of the city, and mobilization for construction

has begun. When installation of the new mains is completed and consumer services reconnected to the new mains, the old distribution system will be abandoned. Installation of these new mains is expected to save Damascus about 11 million cubic meters of water per year that is now lost through leakage. This construction phase, which Figeh refers to as the Urgent Phase, is Part 2 of the Expansion Program.

23. The design for the remainder of the distribution system, Part 3, which is being considered for financing under this loan, is being completed by the same engineering firm--SEURECA--using the same standards and criteria as for Part 2. On the basis of compatability with Part 2, this Part 3 design is judged satisfactory, including establishment of pipe sizes, selection of materials, suitability of construction standards and adequacy of construction drawings.

24. Adequacy of Water Supply for General Phase: The transmission capacity of the existing tunnel from Figeh spring to Damascus, in early 1975, was approximately equal to the average daily demand. During periods of peak demand or higher than average daily demand, localized water shortages appeared and were dealt with on an emergency basis (ground water from wells, for instance). The question arose, therefore, whether distribution system improvement and extension would aggravate this shortage condition if installed prior to completion of Part 1, that is, prior to increase in source supply and transmission capacity via a new and larger tunnel. An analysis indicates the critical water supply problem would not be aggravated, primarily due to a newly initiated leak detection and repair program, and a campaign to control wasteful use of water. A complete discussion of background, expected results and accomplishments to date is contained in Annex C . A graphic illustration of expected results is included in the Annex. It is anticipated, therefore, that the proposed Part 3 network reinforcement will not aggravate any water shortage condition in Damascus, and for the average day, a small surplus water supply will exist at the time Part 3 is approximately two-thirds completed and the new increased water supply (Part 1) to Damascus is in operation.

25. Minimum Pipe Size. Pipe sizes determined by SEURECA in their network analysis included sizes of 60 mm and 80 mm ($2\frac{1}{2}$ inch and $3\frac{1}{4}$ inch, respectively). These sizes are not commonly manufactured in the U.S. (3 inch may be manufactured on special order) nor are they recommended for use in municipal water distribution systems. Therefore, we recommend a minimum of 100 mm (4 inch) pipe size. This was discussed with Figeh officials and they agreed.

26. Storage Tanks, Pressure Zones. In an "average" system, extension and reinforcement of a distribution system to the magnitude of the proposed project would require additional elevated storage to maintain system minimum pressures during peak load periods and to provide storage against supply component failure or outage. In the case of the Damascus system, the supply is by gravity, not dependent upon pumping or other external power input and therefore not subject to supply outage except by natural catastrophe (earthquake, for instance). In the latter event, if such storage was not also destroyed, it would be of questionable value depending on the degree of destruction of the delivery (distribution) system. It is understood that the system design is such as to deliver peak loads without storage reinforcement and, as such, is acceptable. Expansion of Damascus up the mountainous slopes is now being encouraged in lieu of expansion on the plain which involves withdrawal of productive agricultural land. Such upward expansion requires pumping and elevated storage with subsequent distribution at higher pressure zones. Six such pumping stations and elevated storage systems are now in existence, with planning for additional pumping stations and reservoirs by Figeh as required.

27. Disruption Due to Construction Activities. Concern was voiced as to whether undue disruption of traffic and other life patterns of Damascus citizens would occur due to simultaneous construction of the various parts of the water supply system. Disruption of vehicle and pedestrian traffic will occur during construction of either part, ranging from extended closure of some streets in areas where streets are narrow to virtually no disruption of traffic in the new outlying areas where modern city planning has provided for wide avenues and adequate street rights-of-way. Aggravated disruption by virtue of two construction projects progressing simultaneously will not be a factor, however, since overlap of the two parts is not expected to exceed a few months and construction sequence can be controlled to prevent excessive disruption to any major critical traffic pattern. The greatest disruption to city traffic patterns and life style will be in the old section of the city during Part 2, not during Part 3. For graphic portrayal of construction sequence, see Annex C.

28. Conclusion. In conclusion, we believe that the IDA Report of 1973, supplemented and updated by the findings of the Appraisal Team, establishes the technical feasibility of constructing and expanding the water supply system for the City of Damascus. We believe the cost estimates are reasonably accurate.

B. Environmental Assessment

29. Environmental impact on the Figeh spring locale will be limited to relocation of a restaurant and a few houses. Relocation of these is required to protect the expanded spring water capture

area from pollution. Figeh has already purchased the buildings and land and has given the former owners sufficient time to relocate in an orderly and unhurried manner. There will be a reduced overflow from Figeh spring into the Barada River. The Barada River, however, is fed from the Barada spring, another huge spring, approximately 14 kilometers upstream from Figeh spring, and flows year round. The slightly decreased flow of the Barada River by virtue of less overflow from Figeh spring is not expected to have any detrimental impact on the lower reaches of the river. The waters of the Barada River, after flowing through the City of Damascus, percolate into the ground at the edge of the desert and the river disappears.

30. Since most of the tunnel construction is underground, the water supply project will have a very limited impact on the local ecology. Some of the tunnel spoil is expected to be used to improve the landscape by backfilling quarries at the cement factory near Doumar in the Barada valley, and some will be deposited at landfill sites designated by Damascus Municipality.

31. As stated in the 1973 IDA Appraisal Report under the section heading of Ecological Aspects, the provision of increased supplies of water to Damascus will improve city and home cleanliness and the standard of living. At the same time, it will create increased quantities of waste water. To address this waste water problem, two million dollars of the IDA credit have been earmarked for pollution control studies which will include master plans and preliminary designs for sewerage in Damascus. The pollution control studies are expected to get under way in late 1975.

32. The only other identifiable environmental impact will be the temporary disruption of pedestrian and vehicular traffic during construction. A current and prevalent practice in the Damascus building construction industry, however, is to utilize street rights-of-way as well as portions of the paved roadways for storage of building materials, sometimes for prolonged periods of time. With the current building boom in Damascus, the inconveniences caused by this practice would equal or perhaps exceed the inconvenience caused by trenching and water main installation. Damascus residents appear to accept this practice and have become adapted to any inconvenience so caused. Although the inconvenience to pedestrians and vehicle traffic will be increased temporarily during the construction period of the water distribution system, it should not be increased to unacceptable levels given the benefits realized upon completion of the system.

C. Rate Structure

33. Water tariffs in Syria are regulated by a national law enacted in 1966, which appears to have been based on the tariff structure long practised in Damascus. One component of the tariff is unusual, in that 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 premises; the average is $\frac{1}{2}$ m^3/day which at present costs LS 1,000 (US $250). Consumption in excess of the purchased allowance is charged at the normal metered rate. This system of water rights--generating over LS 2 million a year in advance investment finance for Figeh--evolved from the communal syndicate whose members subscribed for shares in a limited supply of water, but is thought to have its roots in the age-old system of water rights for irrigation-fed agriculture.1/

34. Besides the cost of the water right, new consumers have to pay a capital contribution to the cost of the mains. In addition, all owners of water rights pay an annual fee representing the amount by which the value of the "free" water, at current metered rate, exceeds the annual value of the water right (calculated by applying 3% notional interest to the purchase price).1/

35. The charge producing the largest part of Figeh's revenues under the existing tariff is that based on metered use of water, at present billed at a rate of LS 0.20/m^3, equivalent to $0.19/1000 gallons; that rate has been in effect since 1949 and, although very low, has been more than adequate to cover Figeh's costs of transmitting and distributing water. The main reason for the adequacy of the tariff for Figeh's financial requirements is, of course, the fact that no major investments in system improvements have been made for several decades and depreciation charges, therefore, are small.

36. An investment of the size now projected will make it necessary to increase water rates very substantially. In the financial analysis that formed part of IDA's Appraisal Report, an increase in the rate for metered water was foreseen; a gradual increase to LS 0.30/m^3 ($0.28/1000 gallons) would have been adequate to cover Figeh's costs of supplying water and to provide a return of 7.5 percent on fixed assets. The present estimates of the cost of expanding the system will, of course, result in far larger revenue requirements to cover Figeh's costs and thus a substantially larger increase in water rates. The range of rates that would be required to cover the cost of water and provide either a 5 percent or 7.5 percent on fixed assets under present assumptions on the capital investment required to build the system are tabulated in paragraph 40, below.

1/ Appraisal Report, p. 17.

37. The drastic increase in estimates of the size of the investment needed requires a complete review of the rate structure. IDA plans to undertake that review late this summer based on an analysis to be prepared in July by consultants retained by FIGEH to prepare a rate study. IDA and the SARG have agreed that the rate schedule eventually adopted will meet the original objectives of covering the operating and maintenance costs for the utility system and providing a modest return on fixed assets. To achieve that objective, and to avoid pricing water so high that the poorer parts of the population cannot afford it, it has further been agreed that a progressive schedule of water rates (increasing block rates) will be intrinsic to the rate design. To construct such a rate schedule will require a thorough analysis by FIGEH's consultants of the probable effects on water demand and use, and thus on FIGEH's revenues, of the alternative rate schedules to be considered.

38. Since the World Bank has already agreed to finance one part of the system and is appraising another, the most costly part, we propose to accept the principle already agreed between the SARG and the World Bank, that FIGEH will install a progresive schedule of water rates that will produce revenues sufficient to cover its operating and maintenance costs, debt service on the expansion program and provision for future investment. We expect that the schedule eventually agreed upon will meet AID's requirements and propose that that schedule be accepted by AID as applicable to the entire system.

In the expansion program, the tunnel was chosen as the least cost method of bringing water to the distribution system, and there is no viable alternative to the proposed method of constructing the distribution system.

In the 1973 Appraisal Report, no value was given to such social benefits as better health and fire protection. Based on the projected self-liquidating nature of the project and inestimable values for all social benefits, we believe there is a positive cost-benefit ratio in excess of 1:1.

D. Financial Analysis

39. Only the adoption of a rate schedule will make it possible to project the revenues to be generated from the sale of water and to carry out an analysis of the sensitivity of those projections to variations in the underlying assumptions of water use by different classes of consumers. Such projections and analyses are not possible at this time. It is, however, possible to extrapolate from IDA's financial analysis made in 1973, using the

present estimate of the cost of constructing the system, and to calculate the approximate average cost of water in a number of years following completion of construction. Those calculations are shown in Table 1, below. The Bank's 1973 estimates of "chargeable consumption revenues" 1/ have been maintained but are subject to adjustment after a rate schedule has been selected and the revenues expected to result from application of that schedule calculated.

1/ See footnote 2 to Table 1.

TABLE 1

Additional Water Revenue Requirements Related to Depreciation and Return on Net Fixed Assets Caused by Escalated Project Cost
(LS Millions)

Year 1/	Chargeable Consumption Revenues 2/	Additional Depreciation 3/	Additional Returns 7.5%	Additional Returns 5.0%	Total Additional Revenue Requirements 7.5% (Col 3+Col 4)	Total Additional Revenue Requirements 5.0% (Col 3+ Col 5)	Ratio of Projected Revenue Requirements to Initial Chargeable Consumption Revenues (Cols 6+2+Col 2)	Ratio of Projected Revenue Requirements to Initial Chargeable Consumption Revenues (Cols 7+2+ Col 2)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	5.7	0.8	3.1	2.0	3.9	2.8	1.68	1.49
2	6.2	4.0	14.7	9.8	18.7	13.8	4.00	3.21
3	9.0	8.0	25.3	16.9	33.3	24.9	4.69	3.76
4	9.7	10.3	33.3	22.2	43.6	32.5	5.51	4.36
5	10.5	10.3	31.6	21.1	41.9	31.4	4.98	3.98
6	11.7	10.3	30.8	20.5	41.1	30.8	4.52	3.63
7	12.5	10.3	30.0	20.0	40.3	30.3	4.24	3.43
8	13.3	10.3	29.3	19.5	39.6	29.8	3.98	3.24
9	14.2	10.3	28.5	19.0	38.8	29.6	3.73	3.08
10	16.8	10.3	27.7	18.5	38.0	29.8	3.26	2.77

1/ A construction period of four years was assumed.
2/ From Annex 10, May 1973 IDA Appraisal Report. The total volume of water consumed exceeds "chargeable consumption" by the amounts used by purchasers of water rights within certain specified limits (see para.33 above). In [illegible] excess chargeable consumption was 28.7 million m^3 and volume consumed was 38.8 million m^3. By 1982, excess chargeable consumption was projected as 56.1 million m^3 and volume consumed as 71.5 million m^3.
3/ An average depreciation rate of 2% per annum was used.

40. The above Table indicates that use of the larger fixed assets base, and therefore the increased depreciation charges, for calculating net returns will require an increase in water rates by year 5, by a multiple of approximately 4 (at the 7.5% return on net fixed assets), and between 3 and 4 (at the 5.0% return on net fixed assets) over the 1973 rates. In 1973, water rates were LS 0.20/m^3. In its financial analysis, IDA assumed that the rate would be increased to LS 0.30/m^3 by 1982. Based on the calculations in Table 1, they might have to be increased to an average of LS 1.20/m^3 (or $1.14/1000 gallons) by that year, with rather a large initial increase over 1973 levels before that year is reached.[1/]

E. Economic Analysis

41. The IDA Appraisal Report of 1973 adopted incremental revenue at LS 0.30/m^3 for water sales, plus miscellaneous charges such as sales of water rights, as the measure of project benefits. No value was attached to free water supplied through standpipes or to mosques, nor to the free supply to which water rights holders are entitled. No consideration was given to health and fire protection as social benefits.

42. On the basis of the available information, no precise breakdown of the contributions to incremental revenue by different classes of consumers (water rights holders, metered customers, etc.) or by its nature (water charges, connection fees, other fees) was possible. In our calculations, the assumption was, therefore, made that total incremental revenues were related to chargeable consumption, and directly proportional to water rates on chargeable consumption, although in fact only about 75-80% of total incremental revenues consists of revenues from chargeable consumption. On that basis, and using present cost estimates ($160 million) and a four-year construction period, average water rates would have to be approximately LS 1.50/m^3, or $1.425/1000 gallons for the economic rate of return to approach 10 percent, the assumed opportunity cost of capital in Syria. Given the tentative and inexact nature of this calculation, no sensitivity test was carried out. By including social benefits, completely omitted by IDA, into the economic rate of return analysis, we are confident that the rate will be acceptable and the Project economically feasible.

1/ The estimated project costs of about $160 million may be on the low side. For every additional $10 million in project costs, additional annual depreciation costs would average about $0.20 million, LS 0.75 million; additional annual net return on fixed assets at 7.5 percent about $0.75 million or LS 2.77 million and $0.50 million or LS 1.85 million at 5 percent. At the 7.5 percent rate of return on fixed assets guideline, therefore, each $10 million increase in project costs could add LS 0.075/m^3 or $0.08/1000 gallons to the illustrative LS 1.20/m^3 water rate levels mentioned above.

F. Social

43. The population of Damascus has always been accustomed to an abundant water supply. During the present century the service of a piped water system has progressed from solely standpipes to almost universal house connections. The expansion program will make it possible to install still more connections and reduce the number of standpipes, but the effect on living patterns will be relatively small. A greater effect on customary practices may be caused for large users of water by the introduction of progressive water rates and the offering by tank truck of lower-priced well water for lawns, gardens, car washing, etc. Clearly any such change in habits will not be a hardship for the people affected.

G. Institutional

44. The various agencies responsible for planning and executing projects in Damascus regularly use modern methods and professional assistance in dealing with their problems. As discussed in paragraphs 16 to 19 and 21, Figeh seems to be fully capable of monitoring execution of the expansion program and of operating and maintaining the new facilities. Professional consultants are usually found abroad, but occasionally in Syria (Annex C). There are several construction contractors in Syria whose capacity and experience indicate they can handle the necessary work as joint venturers with or sub-contractors to foreign prime contractors.

V. Evaluation

45. The World Bank Group, having financed the major part of the expansion program, will evaluate the effectiveness of the total program. If that evaluation does not meet AID's requirements, AID will arrange an evaluation of the Project to be financed by this loan. AID will monitor progress of its project, and will coordinate its findings with the Bank Group.

VI. The Project

A. Description

46. The project to be undertaken under this loan is construction of a domestic water supply distribution system for that part of the City of Damascus that lies outside the old quarter of Damascus in the less heavily populated area. The project will include procurement and delivery to Damascus of all materials required for the distribution system, and the installation of these materials in accordance with construction drawings already prepared. More specifically, the project will include supply and installation of approximately 370 km of ductile cast-iron water mains of the following sizes:

SIZE mm	SIZE inches	INSTALLED LENGTH kilometers
100	4	270
150	6	25
200	8	12
250	10	10
300	12	6.7
400	16	2.85
500	20	11.3
600	24	13.5
700	30*	14.6
1000	42*	0.55
1100	48*	2.0 3.8
1200	48	1.8

*--mm size upgraded to next larger commercial size manufactured in U.S.

Supplementary to the above, the project will include supply and installation of valves, fittings, fire hydrants, adaptors, PVC service connection piping and other accessory materials required.

B. Implementation

47. The work described in paragraph 46 will require the services of a U.S. engineering consultant firm and a U.S. prime contractor to supply the commodities and make appropriate local arrangements for the civil works in Damascus. Certain special considerations arise from the fact that the Project will follow designs already prepared by a European firm. Because the design, specifications, construction drawings and other documents have been nearly completed in the French language (full completion expected by August 31, 1975) and because International Standards Organization (ISO) specifications have been used throughout, some modifications will be necessary to adapt the French documents to U.S. standards and practices in order to assure responsive construction bids from U.S. contractors. Also, some modifications will be required to assure the documents reflect AID contracting requirements. These modifications and other technical concerns are discussed in turn.

1. French to English Language

48. In order to obtain responses from potential U.S. contractors, the IFB documents must therefore be translated from French into English and the documents must be in a format familiar to U.S. contractors. In addition, there are AID-required provisions that must be included (e.g., those relating to cargo preference). It is proposed, therefore, to have a U.S. A&E firm put them into a format suitable for U.S. bidders.

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2. Supervision of Construction

49. FIGEH had proposed to assign responsibility for supervising the Project to the French firm already under contract to them for supervising the construction of Part 2 of the Expansion Program. We anticipated that differences of construction methods, job organization, specifications and, finally, language would make cooperation between a French A&E firm and a U.S. construction firm extremely difficult. We therefore obtained FIGEH's agreement that supervision of construction would be performed by the U.S. A&E firm that is retained to convert the bid documents to a form suitable for bidding by U.S. firms and to assist FIGEH in the resolution of the problem discussed in the following paragraph and in the evaluation of bids and awarding of a contract.

3. ISO vs. ANSI

50. The design and bidding documents as prepared by SEURECA refer to and incorporate ISO specifications for all pipe and accessory materials to be incorporated into the work. U.S. manufacturers produce according to the American National Standards Institute (ANSI) specifications, which incorporate standards of the American Standards Association (ASA) and the American Water Works Association (AWWA) for the materials to be incorporated into the works. While there is little, if any, basic difference in the physical properties of the materials specified (ductile cast-iron, for instance), there is a measurable difference in the outside diameter (OD) of the pipe and in the pipe and fitting jointing dimensions. These differences in jointing dimensions will need to be resolved wherever a connection is required between the pipe installed under Part 2 (ISO standards) and that installed under Part 3 (U.S. supplied, ANSI standards). We are investigating the possibility that a sufficient number of U.S. manufacturers can be found to produce pipe and fittings according to ISO specifications at competitive prices, as a means of reducing or eliminating this problem.

51. A tentative implementation schedule is attached as Annex D. It indicates February 28, 1980 as possible completion date for the Project. Implementation will follow the guidance of A.I.D. Handbook 11 on country contracting, with such modifications as prove to be necessary for the efficient realization of the project.

C. Cost Estimate

52. The project team's estimate of the cost of the Project consists of the following elements, developed from current price quotations. (All amounts are in thousands.)

	Foreign Exchange $ (1)	Local Costs LS (2)	Local Costs $Equiv. (3)	Total $ (4)
Material 1/				
Pipe	13,200			
Fittings	4,000	1,630 2/	450 2/	25,230
Valves & Hydrants	2,650			
Service Connections	4,930			
Procurement Charge	2,960			2,960
Material Installation	9,250	116,210	31,840	41,090
Engineering	900	730	200	1,100
Sub-total	37,890	118,570	32,490	70,380
Contingencies 15%	5,680	17,790	4,870	10,550
Sub-total	43,570	136,360	37,360	80,930
Escalation 10%	4,360			4,360
25%		34,090	9,340	9,340
	47,930	170,450	46,700	94,630
Rounded	48,000		46,700	94,700

1/ Dollar costs CIF Latakia.
2/ In-country freight, Latakia to Damascus.
(3) = (2) ÷ 3.65
(4) = (1) + (3)

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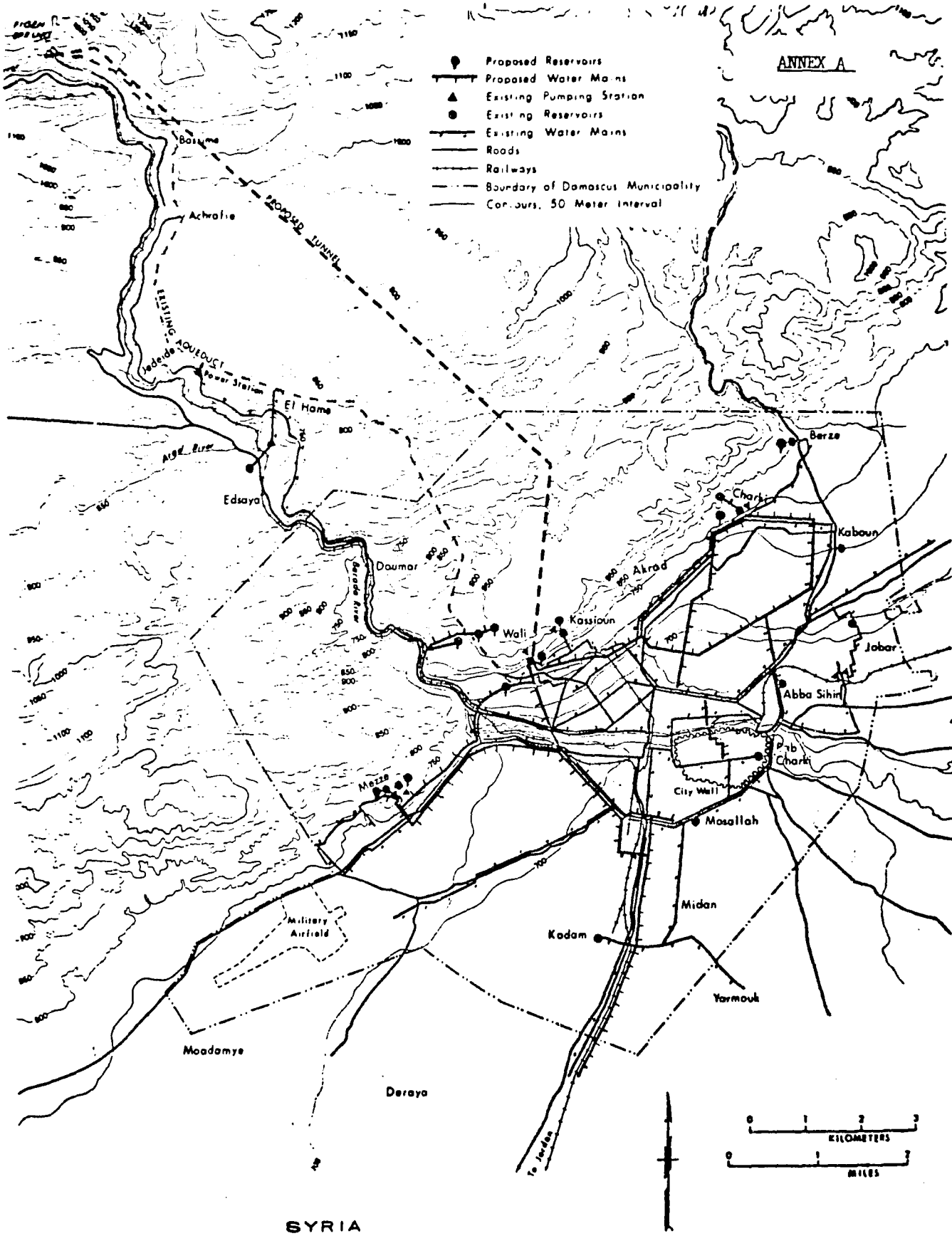


SYRIA

DAMASCUS WATER SUPPLY PROJECT

Informal Translation

ANNEX B

Presidential Decision No. 6

The President of the Republic

In conformity with the provisions of the legislative Decree No. 25 of the year 1975 has decided as follows:

Article 1
A commission is composed of

The Minister of Housing and Public Services	President
The Director of the Public Authority for Water of Figeh	Vice President
The Vice Minister of Housing and Public Services for Technical Affairs	Member
The Director of Technical Affairs of the Municipality of the City of Damascus	Member
Engineer Nibras Mouayad, Chief of the Projects Bureau of the Public Authority for Water of Figeh	Member

This Commission will be charged with the execution of the new projects of the Authority.

Article 2
The Commission is considered responsible for the execution of the necessary studies and for following the execution of those projects until they be ready for operation during a period fixed at 3 years beginning from the date of this decision.
The Commission has the right to make use of Arab and foreign technicians and to take the measures necessary for resolving the difficulties they may encounter. Likewise it is to have recourse to government offices of the State to take employees whether by transfer or by charging the personnel to carry out work during supplementary hours.

Article 3
The Commission is authorized to grant, by a decision taken by itself, bonuses for encouragement and allowances for supplementary work of the civil servants and employees working on the projects above mentioned.

Article 4
The Commission has the full power necessary for carrying out its mission, its decisions and its works will be exempt from all the Syrian laws and regulations in force.

Article 5
The exemption cited in the preceding article does not include the texts of appointment in all their forms.

Article 6
The Commission is responsible to the President of the Council of Ministers for its work.

Article 7
This decision will be published and notified.

Damascus, 1/30/1975

The President of the Republic

Hafez El Assad

Damascus Water Supply System

Leak Detection and Water Waste Control Program

The Damascus water authority, generally known as "Figeh", has realized for some time that uncontrolled use of water would result in some shortages of water prior to completion of expanded source and transmission facilities, as well as imposing limitations on the long-range timeframe of source capability to supply Damascus. Therefore, in 1972-1973, Figeh contracted with a hydraulic engineer, Dr.-Ing. Mazen Azem, to study the extent of leakage and water waste in the Damascus water supply system, and to recommend procedures for control. Dr. Azem's report was completed in 1973 and is titled Integral Program of Measures for Ideal Use of Waters of Figeh--Preliminary Study of Losses in the Distribution Network (translation of the French title).

The report recommended establishment of a new office within the Figeh organization to address the problem of leakage from the distribution pipes and control of wasteful use of water in the community. The office as recommended was established in early 1975 with a total complement of approximately 150 workers. Figeh contracted with Dr. Azem to direct the program for the first year, and to advise and provide on-the-job training as required, particularly with respect to sonic leak detection equipment.

The office is organized into four principal groups. Responsibilities of the four groups are as follows:

Group 1. Water waste control (or wasteful use control).
Group 2. Network flow control and analysis of results.
Group 3. Leak detection (sonic instruments used at night. (6 teams)
Group 4. Repair of leaks detected by Group 3. (6 teams)

The group titles are self-explanatory except for Group 1. Within Group 1, teams will be formed with the following responsibilities:

-- 2 teams for meter replacement and/or meter setting at schools, government occupied buildings, etc., in order to determine water usage, and if found excessive, instructions to the occupants on how to reduce water waste

-- 1 team responsible for military installations to instruct in water use as, for instance, use of well water for washing clothes and other non-potable water use requirements, saving Figeh water for uses requiring potable water.

-- 2 teams to investigate public garden and decorative fountain water use, with responsibility to have public gardens change from Figeh water to well water for irrigation purposes, and to make sure public decorative fountains either use well water or recirculate the water.

-- 1 team to install meters in all mosques, churches, etc., primarily for control purposes since water is supplied free to such institutions.

-- 10 teams for installation of protective meter boxes for prevention of tampering with meters and registers.

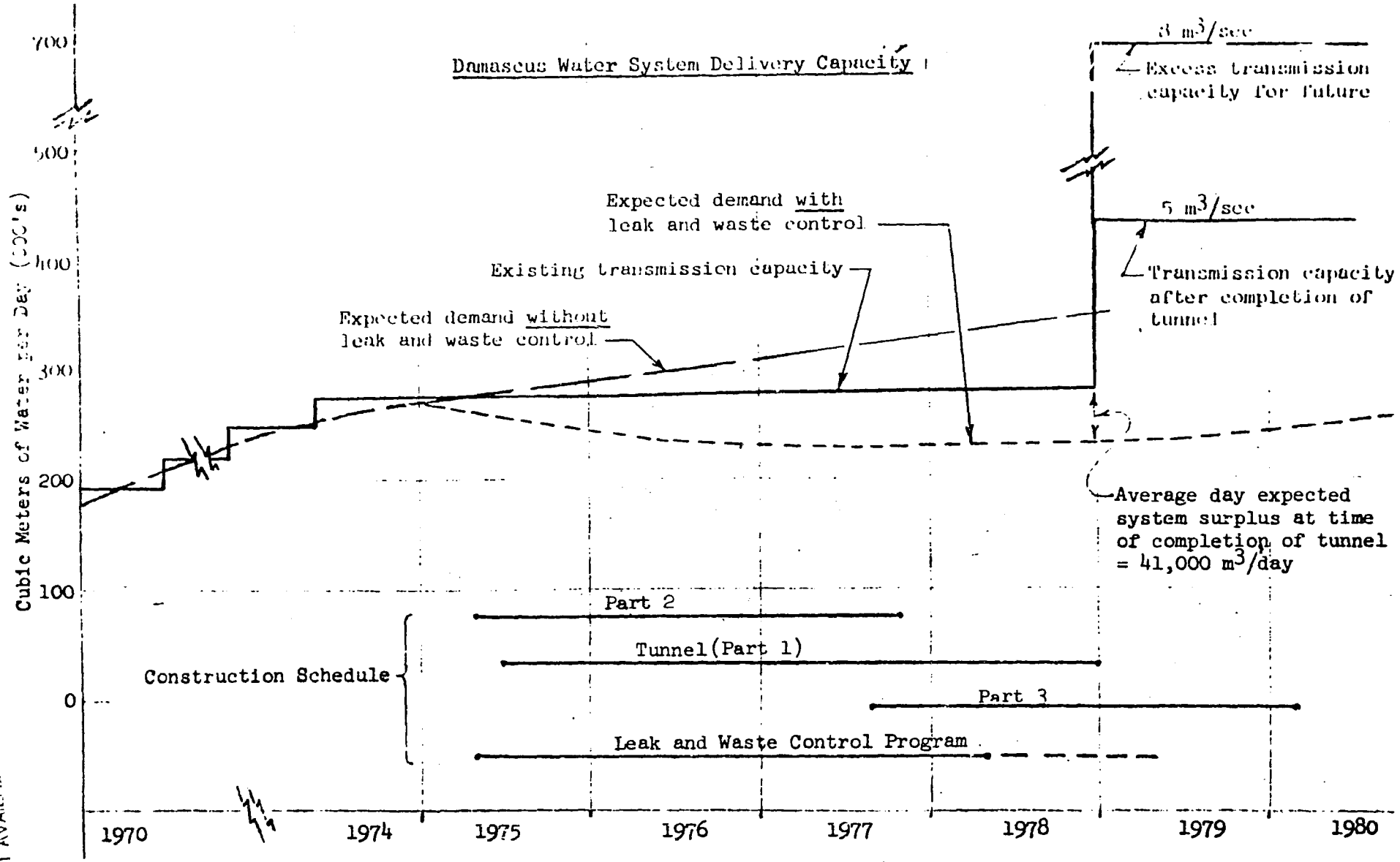
-- Meter readers and a program to ensure each meter is read every three months (approximately 150,000 meters installed to date).

-- 1 public relations team to initiate an educational effort by means of newspaper advertisements, TV spots, etc., aimed at educating the public on water conservation practices.

The leak detection and repair groups became operational April 1, 1975, and therefore insufficient information is available at this time to make a judgment on the success of the program. Dr. Azem reported, however, that for the first operational month 72 leaks were detected and repaired, for an estimated 36,000 m^3 of water saved during the month of April and available for future beneficial use. Dr. Azem estimates that if the program continues as well as it has started, it will progress in accordance with his estimates of potential water savings.

Present estimates are that unaccounted for water represents approximately 46% of the total supply to Damascus. The program target is to reduce this unaccounted for water to 30% within three years and ultimately to approximately 20%. While this is a formidable goal, replacement of all deteriorated water mains in the older section of the city (on-going under Part 2) will greatly advance accomplishment of the goal. Dr. Azem estimates that approximately one-half of the total leakage in the system is due to the old and deteriorated condition of the existing water mains in the older section of the city, and that as much as 11,000,000 m^3 per year can be saved.

The attached chart, in terms of water demand on an average day with and without the leak and waste control program, indicates that with a successful leak and waste control program Damascus will have sufficient water through at least 1979 without shortages on an average day and without serious shortages on a peak demand day.



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ANNEX D

Tentative Implementation Plan

	Tentative Estimate of Completion Date 1975
Figeh will prepare request for A&E (architect and engineer) proposals, with help from USAID/Damascus.	August 1
SEURECA will provide final design and bid documents in French.	August 30
Figeh, with help from USAID, will review A&E proposals and select a firm for negotiations.	September 30
Figeh, with help from USAID, will prepare and issue a pre-qualification notice for construction contractors.	October 31
Figeh, with help from USAID, will negotiate and contract with an A&E firm.	November 30
Preparation of final bid documents.	February 28, 1976
Selection of pre-qualified construction firms.	February 28, 1976
Issue of bid documents.	March 15, 1976
Evaluation of construction bids and negotiation of contract.	July 31, 1976
Mobilization by construction contractor.	August 31, 1977
Completion of construction.	February 28, 1980

ANNEX E

LOAN AUTHORIZATION

Provided From: FAA Section 903 (Middle East Special Requirements Fund)

Syria: Damascus Water Supply

Pursuant to the authority vested in the Administrator, Agency for International Development ("A.I.D."), by the Foreign Assistance Act of 1961, as amended, and delegations of authority issued thereunder, I hereby authorize the establishment of a loan ("the Loan") pursuant to Part VI, Section 903, of said Act, to the Government of Syria ("Borrower") of not to exceed forty-eight million United States Dollars ($48,000,000) to assist in financing the foreign exchange costs of goods and services required to support the upgrading 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:

   (a) Borrower shall relend the proceeds of the Loan to the Damascus water authority, Etablissement 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.

_____

Administrator

_____

Date

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ANNEX F

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. (Funds are being provided under FAA Section 903, Middle East Special Requirements Fund.)

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

(This section of the checklist is inapplicable because the funds provided for this loan were authorized under FAA Section 903 and are in the nature of supporting assistance rather than development loan 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.

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(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.

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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 guarentor 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 outstanding debts of Syria, in order to negotiate 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 a 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,

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?

No instance of any such seizure or imposition of such penalty or sactions is now know.

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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 no 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. The U.S. plans to negotiate a new bilateral agreement to up-date the current agreement which is 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 [illegible] 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 development.

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 ion of the checklist are inapplicable. See answes to item 2 of ckecklist.)
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 confirmation action pertaing to the signed loan agreement.
26.	FAA § 611(a). 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 an 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. See item 2 of the checklist.)

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, 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 independant 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 See item 2 of this ckecklist.)
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 is not financed by the loan.

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 t his checklist are inapplicable. See Item 2 of this ckecklist.)

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.
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 from the United States.
53.	FAA § 604(b). What provision is made to prevent financing commodity procurement in bulk at prices higher than adjusted U.S. market price?	Cooomidyt procurement in bulk 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? **No, Syria is not an excess or near-excess currency country.**

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.**

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.
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.	Pursuant to section 903 of the FAA notification was sent to Congress regarding A.I.D. plans to commit these loan funds.
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.

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ANNEX G

Damascus Water Supply Project

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

I, Richard W. Murphy, the Principal Officer of the American Mission in Syria, having taken into account, among other things, the capacity of the Syrian Government and its Agencies to properly utilize and manage prior investments in capital facilities of a similar nature do hereby certify that in my judgment Syria has both the financial capability and the human resources capability to effectively utilize, manage and maintain the Damascus Water Supply facilities to be provided by this Loan.

Richard W. Murphy
Ambassador

June 17, 1975