Report No. 1069a-JO

# The Hashemite Kingdom of Jordan: Appraisal of a Tourism Project

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Tourism Projects Department

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THE HASHEMITE KINGDOM OF JORDAN

TOURISM PROJECT

## CURRENCY EQUIVALENTS

| | | |
|---|---|---|
| Currency Unit | = | Jordan Dinars (JD) |
| Fil 1 | = | JD 0.001 |
| JD 0.33 | = | US$1.00 |
| JD 1.00 | = | US$3.03 |

## WEIGHTS AND MEASURES EQUIVALENTS

| | | |
|---|---|---|
| 1 meter (m) | = | 3.28 feet |
| 1 square meter ($m^2$) | = | 10.76 square feet |
| 1 cubic meter ($m^3$) | = | 35.29 cubic feet |
| 1 kilogram (kg) | = | 2.205 pounds |
| 1 metric ton (m ton) | = | 2,205 pounds |
| 1 hectare (ha) | = | 2.47 acres |
| 1 kilometer (km) | = | 0.62 miles |
| 1 liter per second (l/sec) | = | 22,800 US gallons per day |
| 1 cubic meter per day ($m^3$/d) | = | 264 US gallons per day |

## ACRONYMS AND ABBREVIATIONS

| | | |
|---|---|---|
| ALIA | - | The Royal Jordanian Airline |
| HRC | - | Hotels and Resthouses Corporation |
| MMRA | - | Ministry of Municipalities and Rural Affairs |
| MTA | - | Ministry of Tourism and Antiquities |
| NPC | - | National Planning Council |
| WSC | - | Water Supply Corporation |
| ILO | - | International Labour Office |
| UNDP | - | United Nations Development Programme |
| UNESCO | - | United Nations Educational, Scientific and Cultural Organization |

## FISCAL YEAR

January 1 to December 31

# THE HASHEMITE KINGDOM OF JORDAN

# APPRAISAL OF A

# TOURISM PROJECT

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This report is based on the findings of a mission consisting of Messrs. Menezes, Bentjerodt, Calkins, Echeverria, Iizuka and Burrows (UNESCO Consultant).

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## SUMMARY


i. This report appraises a project that would provide for the improvement and expansion of visitor facilities and infrastructure in the historical sites of Petra and Jerash in Jordan, and for the preservation and protection of the archaeological assets of those sites. The visitor facilities would include upgrading and expansion of an existing 24-room hotel at Petra, improvements to the visitor centers in Petra and Jerash, and the construction of restaurants and related facilities. The infrastructure would consist of water supply and sewerage systems, electricity, lighting, telecommunications, solid waste disposal, access trails, landscaping and watershed protection. Technical assistance from experts, along with tools and equipment, would be included in a program designed to preserve and protect the existing monuments from erosion and other hazards, and to provide for a modest amount of excavation work.

ii. Situated in a region marked, since prehistoric times, by the ebb and flow of various peoples, armies, and civilizations, Jordan has been described as "history written in stone". The archaeological riches, combined with Jordan's scenic beauty and the hospitality of its people, have supported a rapid growth of the tourism sector. Prior to the 1967 war, the focus of tourism development was, understandably, on the Holy Land zone of the "West Bank". The immediate effect of the war was a decline in tourist arrivals in the Middle East. Jordan, however, faced a far more serious disruption resulting from the loss not only of her best known assets but also of 80% of her accommodation capacity. Since 1967, attention has been shifted to the development of tourist attractions east of the Jordan River. While recovery has been somewhat delayed, the expansion of hotel facilities on the East Bank and the growth of demand since 1971 have combined to produce a dynamic increase in foreign visitor arrivals, with total arrivals to Jordan expected to be 750,000 in 1975, surpassing the 1966 peak by a substantial margin. In general, however, the development of accommodation capacity of international standard on the East Bank has tended to lag behind the growth of foreign visitor demand. As a result, hotel occupancy rates are relatively high and a number of hotels are now under construction or in the planning stage.

iii. Since the 1967 war, foreign exchange receipts from tourism have grown from JD 4.6 million in 1968 to JD 32.2 million in 1975. This represented over 18% of total 1975 exports of goods and services, ranking behind workers' remittances from abroad (30%) and ahead of phosphate exports (10%).

iv. The most important of Jordan's tourist assets on the East Bank are Petra and Jerash. Petra, an ancient Nabataean rock-hewn city located 250 km south of Amman, is undoubtedly one of the wonders of the ancient world. Its magic stems not only from the grandeur of its antiquities but also from the provocative mystery of its setting, deep in the heart of the surrounding mountain; it is approached through a long, narrow chasm, whose rock walls tower some two hundred feet overhead. Jerash, 50 km north of Amman, contains the ruins of an ancient town and is an impressive example of a well preserved Roman provincial city of the Eastern Empire.

v. Both of these sites have been the subject of detailed planning studies, and both have been recommended by UNESCO as Jordan's prime historical and archaeological sites in a report prepared in 1974. These studies and report, together with further work done by the Ministry of Tourism and Antiquities and Bank Group missions, have served as a basis for appraisal. The plans include an integrated investment program designed to meet three major requirements of each site: (a) the need to preserve and protect the antiquities themselves, which are currently endangered both by the natural forces of erosion and by deterioration resulting from human activity; (b) the need to provide physical facilities and amenities for growing numbers of visitors without jeopardizing the archaeological value of the sites; and (c) the need to improve the presentation and interpretive services of each site in order to achieve higher levels of visitor satisfaction.

vi. The project is estimated to cost about US$12.1 million, including contingencies. The proposed credit of US$6.0 million would cover 92% of the foreign exchange component of the project; the Government would provide the balance of the funds required to finance the project, as well as any cost overruns.

vii. Major civil works and equipment contracts would be awarded after international competitive bidding, in accordance with the Association's guidelines. Some contracts, however, would be too small to attract foreign bids, and it is proposed that they be awarded on the basis of locally advertised bids. The total value of such contracts is estimated not to exceed US$0.4 million equivalent. Because of the need for standardization, the telecommunications switching equipment, costing US$0.2 million would either be added to a current contract or negotiated separately with suppliers of such equipment. In addition, the Government would carry out, on force account, certain works, estimated to total about US$0.9 million equivalent. In evaluating international bids for equipment contracts, domestic manufacturers of equipment and furniture would be allowed a preferential margin of 15% of the c.i.f. price of competing imports or the prevailing level of customs duties, whichever is lower.

viii. Responsibility for implementing the project would rest with the Ministry of Tourism and Antiquities, with the exception of certain utility components which would be the responsibility of specialized Government

agencies. At the operational stage, the hotel and restaurant facilities would be managed by an experienced hotel operating company on the basis of a management contract with the Ministry of Tourism and Antiquities. The infrastructure components would be turned over to the municipalities or to specialized Government agencies for operation and maintenance.

ix. The economic rate of return on the project is estimated at 20.1%; it is not very sensitive to reductions in the projected number of visitors to Jordan and the project sites that could result from increased tensions in the region. When implemented, the project would employ about 560 persons directly in the hotel and other tourism facilities. Employment generated in construction, transport, handicrafts and other services would account for an estimated 600 additional jobs. Net foreign exchange earnings are estimated at US$1.5 million in 1979 and about US$4.8 million from 1988 on.

x. The project is suitable for an IDA credit to the Government of US$6.0 million equivalent.

# THE HASHEMITE KINGDOM OF JORDAN

# APPRAISAL OF A

# TOURISM PROJECT

## I. INTRODUCTION

1.01 In June 1975, an IDA mission visited The Hashemite Kingdom of Jordan to discuss with the Government the development of the tourism sector. At the Government's request, the mission subsequently assisted in drafting terms of reference for a master plan for the sector. Financing arrangements for that plan have not yet been completed. In advance of the availability of a master plan, however, several studies have identified two specific areas which are obviously of the highest priority in terms of both their current importance and their future development potential: the historical sites at Petra and Jerash.

1.02 Both these sites have been the subject of detailed planning studies carried out by the U.S. National Park Service in 1968, and both have been recommended by UNESCO as Jordan's prime historical and archaeological sites in a report prepared in 1974. Project preparation missions visited Jordan in September and October 1975 and, with the assistance of a UNESCO consultant, formulated a project proposal based on the earlier planning studies, updated and revised where necessary by the Ministry of Tourism and Antiquities. The proposed project would provide for the improvement and expansion of visitor facilities in each area and for the preservation and protection of the historical assets themselves.

1.03 Because of the earlier planning effort, project preparation work progressed rather quickly. A mission, consisting of Messrs. Menezes, Bentjerodt, Calkins, Echeverria, Iizuka, and Burrows (UNESCO consultant), collected much of the information needed for appraisal in December 1975. A visit to Jordan by Messrs. Calkins and Echeverria in February 1976 completed the needed field work.

1.04 This would be the first IDA credit for tourism in Jordan.

## II. THE TOURISM SECTOR

2.01 Jordan is situated in a region marked, since prehistoric times, by the ebb and flow of various peoples, armies and civilizations. The tides of history have left an impressive deposit of archaeological riches, from the relics of ancient civilizations to the cultural heritage of several of today's

major religions. Jordan's scenic beauty and the well-known hospitality of its people, heighten the country's potential for the continued growth of foreign tourism. Although prior to the 1967 war the Holy Land zone of the "West Bank" was the focal point of tourism development, attention has since shifted to the development of attractions east of the Jordan River. With the capital city of Amman (Biblical Rabbath-Ammon and later Philadelphia) as the main staging area, tourist excursions lead south to Petra and the Gulf of Aqaba, east to the ancient castles of the desert, north to Jerash and Mount Nebo, and west to the Dead Sea, with many tourists continuing on across the Jordan River into the Holy Land.

2.02 The immediate effect of the 1967 war was a 26% decline (Annex III) in tourist arrivals in the Middle East; by 1974, however, most countries of the region, with the exception of Jordan, had recovered their 1966 tourist arrival levels. Jordan faced a far more serious disruption resulting from the loss not only of her best known attractions but also of about 80% of her accommodation capacity. While recovery has been somewhat delayed, the expansion of hotel facilities on the East Bank and the growth of demand since 1971 have combined to produce a dynamic increase in foreign visitor arrivals (an annual increase of 29.3% between 1971 and 1974), with total visitors to Jordan in 1975 expected to surpass the 1966 peak by a substantial margin. The number of visitor arrivals for 1975 is estimated to be 750,000 compared to 617,000 visiting Jordan in 1966, including the "West Bank". (Past trends and projected future arrival numbers are described in paras. 4.01-4.09.)

2.03 In general, the development of tourist facilities on the East Bank has tended to lag behind the growth of foreign visitor demand, especially for hotel accommodation of international standard. As a result of the recent shortage of hotel rooms, occupancy rates (and financial returns) for hotels are relatively high. In response to this situation, a number of hotels are either under construction or in the planning stage. In addition, other tourist facilities such as shops, restaurants and transportation facilities, are also being expanded. (The growth of supply is described in paras. 4.10-4.13.)

2.04 Although the private sector carries primary responsibility for developing tourism facilities, the Government's Ministry of Tourism and Antiquities (MTA) plays an important role in overall planning and promotion of tourism sector growth by: (a) development and implementation of tourism policies; (b) preparation of five-year plans for the sector; (c) identification, protection and improvement of historical and archaeological assets; (d) advertising and promotional activities abroad; (e) implementation of some infrastructure works in specific tourist areas; and (f) in conjunction with the Ministry of Education, development of training programs and facilities for workers engaged in tourism services.

2.05 In order to encourage private sector interest in tourism development, the Government offers a number of investment incentives, including

custom duty exemptions, tax holidays and the repatriation of foreign capital. Hotel credit, on reasonable terms, is also available for investors in tourism facilities. On occasion, when private sector investments are not forthcoming, the Government may also invest directly in accommodation and catering facilities through its own Hotels and Resthouses Corporation (HRC). The HRC was recently formed in order to centralize Government investments in hotels and restaurants, so that they could be independently managed and operated. Further support from the Government is derived from investments in the transportation sector, particularly in terms of international air access and internal road connections, which have facilitated the growth in tourist arrivals.

2.06 The economic importance of tourism in Jordan is derived primarily from the level of net foreign exchange earnings generated by the sector. Average daily visitor expenditures have been estimated to be US$45.00 for Americans, US$38.00 for Europeans and US$ 15.00 for other visitors, excluding pilgrims. Since the 1967 war, gross foreign exchange receipts from tourism have grown from JD 4.6 million in 1968 to JD 32.2 million in 1975. This represented over 18% of total 1975 exports of goods and services, ranking behind workers' remittances from abroad (30%) and ahead of phosphate exports (10%). Net foreign exchange earnings from tourism, after deducting imported goods and services, are estimated to be about 65% of gross receipts.

2.07 At present, an estimated 5,000 people are employed in tourism facilities, and perhaps another 4,000 jobs are indirectly attributable to the tourist sector in agriculture, handicrafts, the construction industry and other services.

2.08 Given the growing importance of tourism to the economy, tourism has been accorded high priority in the Five-Year Plan for 1976-1980. Investments in the sector are projected at about JD 24 million for the Plan's period. The main objectives of the sector Plan are: (a) to increase tourism foreign exchange earnings in real terms from JD 17.3 million in 1974 to JD 43.0 million in 1980; (b) to stimulate domestic tourism; (c) to preserve historical and cultural assets; and (d) to expand training facilities. Although a target figure for visitor arrivals is not stated in the Plan, the foreign exchange earnings' objective implies that visitor arrivals are expected to increase from 750,000 in 1975 to 1.4 million by 1980.

## III. THE PROJECT

### A. Background and Objectives

3.01 Petra and Jerash are, without doubt, the most important of Jordan's tourism assets on the East Bank. In terms of cultural value, Petra has the potential to compete with the pyramids of Egypt and the

Acropolis of Athens, for, as a manifestation of ancient human endeavors, it is of like rank. Both Petra and Jerash have followed roughly similar patterns of development, from very early origins through a period of flourishing construction and commerce, to final declines, abandonment and centuries of tranquil seclusion until their "rediscovery" by separate explorers in the early 19th century. 1/ Beyond these similarities, however, each is a uniquely individual tourist attraction.

3.02 Petra, located 250 km south of Amman, was, from the fourth century B.C. until its fall to Rome in 106 A.D., the capital city of the Nabataeans, whose power during that period extended as far north as Damascus. Deriving their wealth from control of the nearby caravan routes, the Nabataeans transformed their mountain stronghold into a city of houses, temples and tombs, all carved out of the mountain rock whose multi-colored hues glow in the sunlight to produce one of nature's finest displays of color and majesty. After its capture by Rome, the city was remodeled along the lines of a typical Roman town, complete with a columned main street, a theater, baths and related structures which are still in evidence today. The magic of Petra, however, stems not only from the grandeur of its monuments, but also from the provocative mystery of its setting, deep in the heart of the surrounding mountain; the city is approached through a long, narrow chasm known as the Siq, whose rock walls tower two hundred feet overhead.

3.03 Jerash, located in a peaceful valley surrounded by the mountains of Gilead, is about 50 km north of Amman on the road to Damascus. It is an impressive example of a well preserved Roman provincial town of the Eastern Empire. Dating from 6,000 B.C., Jerash experienced a long period of flourishing trade, intensive construction and development between 63 B.C. and the third century A.D., when it was joined to the Roman Province of Syria. The town plan, of classic Roman design and proportion, is clearly in evidence today. The diversity and number of monuments, including temples, theaters, baths, a columned main street, and an elliptic forum surrounded by shops, all bear mute testimony to the wealth and prestige of Jerash, at the peak of its glory. While the city followed the fortunes of Rome into gradual decline, it enjoyed a period of reconstruction during the fourth and fifth centuries A.D., which produced at least seven Byzantine churches. With the Moslem conquest of the seventh century A.D., however, the city's demise was nearly complete; it was finally abandoned after a series of earthquakes destroyed many of the buildings.

3.04 While both of these sites have had a long and glorious past, their accessibility to significant numbers of foreign visitors is a fairly recent development. Until 1967, with the attention of most tourists focused on the better known attractions of the West Bank, Government

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1/ Annex II contains a description of the historical background of each site.

activity at Petra and Jerash was confined primarily to relatively modest programs of excavation and restoration of selected monuments, and even these efforts were constrained by limited availability of budgetary resources and trained personnel. The Department of Antiquities of the MTA is responsible for the physical care and protection of the sites and monuments, which have been damaged by increasing human contact, as well as by forces of nature. The legislative framework to protect these sites is contained in Law No. 26 of 1968, under which both Petra and Jerash have been declared national treasures. This law has recently been revised in order to strengthen certain provisions, including, for example, tighter regulations governing the sale and disposition of historical artifacts. Additional land use controls, however, are required in order to protect the two sites. Detailed regulations governing the use of Government-owned land at each site are expected to be drafted by the MTA, under the authority of the (revised) Law No. 26. The Ministry of Municipalities and Rural Affairs (MMRA), in cooperation with the MTA, is expected to prepare zoning regulations and related development controls for land surrounding the two sites which is privately owned. The Government has agreed to adopt these regulations and development controls by July 1, 1977. Although master plans for the development of both sites were drawn up in 1968, the proposals have not yet been implemented. These plans, prepared by the U.S. National Park Service, include an integrated investment program designed to meet: (a) the need to preserve and protect the antiquities, which are currently endangered both by the natural forces of erosion and by deterioration resulting from human activity; (b) the need to provide physical facilities and amenities for growing numbers of visitors without jeopardizing the archaeological value of the sites; and (c) the need to improve the presentation and interpretive services of each site in order to achieve higher levels of visitor satisfaction.

## B. Project Description

3.05 The project would consist of the following main elements, described further below and listed in detail in Annex I:

(a) tourist accommodation, related superstructure facilities and supporting infrastructure works near the entrance to Petra;

(b) visitor facilities, infrastructure works and archaeological preservation in Petra Basin; also the resettlement of the Bedouins currently living there; and

(c) visitor facilities (including a Sound & Light Program), infrastructure works and archaeological preservation at Jerash.

3.06 In Petra, a distinction is made between the "Entrance" to the ancient city and the "Basin", where all the major monuments and related structures are located. In accordance with the master plan, the bulk of investments in Petra will take place at the "Entrance", which is located near the town of Wadi Musa. The investments in the "Basin" will be limited to the provision of some visitor facilities and to preservation and consolidation works.

3.07 The accommodation facilities at the Petra Entrance would consist of the upgrading and expansion of an existing 24-room hotel to include an additional 76 new rooms, catering, shopping, reception, administrative and camping facilities. The facilities would be designed to provide services both for hotel guests and campers, and for the large number of daily visitors. Provision would also be made for improvements to the existing visitor center, for additional staff quarters (12 units), and for a corral and cleaning area for the horses used to transport visitors to the Basin.

3.08 Infrastructure works at the Petra Entrance would include water supply and sewerage systems, solid waste disposal, electricity and lighting, telecommunications, landscaping and watershed protection. Water would be supplied through a connection to the expanded system serving the nearby town of Wadi Musa, and would be chlorinated and stored near the hotel complex. The sewerage system, involving treatment by means of an extended aeration-type lagoon, would serve primarily the visitor facilities and staff quarters. The water effluent, after chlorination, would be used for landscape irrigation. Under the project a dump truck and bulldozer would be provided for collecting and disposing of solid waste in a sanitary landfill to be established some two kilometers from the Petra Entrance.

3.09 The electricity component would consist of a diesel generating unit installed in the Wadi Musa municipal power station to meet the additional energy demand created by the project, as well as a transmission line from Wadi Musa to the Petra Entrance, underground distribution lines and lighting. A new public telephone exchange, designed to serve both the project and the town of Wadi Musa, would be built to replace the existing obsolete system. An internal exchange system for the hotel and a telex printer would also be provided. The existing landscaping around the Petra Entrance would be extended and improved in order to create an attractive environment for the new hotel complex. Watershed protection would involve the construction of three velocity check-dams between the visitor facilities at the Entrance and the point at which the Siq begins, to slow the torrents of water in the River Wadi which occur after rainstorms, and which have cost the lives of tourists in the past.

3.10 The visitor facilities within the Petra Basin would include a visitors contact and first aid station, restrooms, a refreshment bar and a covered terrace for luncheon service. A small research facility

would also be provided for archaeological investigations. These buildings would be grouped together and located in an area which would not obstruct the visual impact of the Basin. The Government has agreed to remove the existing camping amenities (Nazzal Camp) from the Basin not later than December 31, 1979, thereby eliminating the visual pollution caused by these facilities.

3.11 In support of these Basin facilities the project would include a number of infrastructure improvements. The existing well would be improved and water would be pumped through concealed pipes to a reservoir. Sewerage would be treated in septic tanks, with the effluent disposed of in underground absorption trenches downstream from the potable water source. Electricity would be supplied from the Wadi Musa power plant and would be transmitted by underground cables through the Siq and within the Basin. Telephone lines would also be extended from the Entrance to the Basin using underground lines.

3.12 In order to control the erosion resulting from rapid runoff of rain water within the Basin and through the Siq, the project would provide for the construction of ten velocity check-dams within the Basin and nine in the Siq. In addition, the floor surface of the Siq would be cleared and stabilized, with a drainage channel constructed to ensure all-weather access to and from the Basin. Trails would be developed from the Siq and would lead into the Basin to the principal monuments. These trails, surfaced with crushed stone and lime binders, would be combined with route and monument markers to provide self-guided interpretive circuits within the Basin.

3.13 Technical assistance from foreign experts, along with tools and equipment, would be included in a program (Annex II) designed to preserve and protect the existing monuments from erosion and other hazards, and to provide for a modest amount of excavation work which would enhance the tourist value of the site.

3.14 At present, about 96 Bedouin families live within the Petra Basin. Since these people have endangered the archaeological value of the site by, for example, walling up the entrances of tombs which they use for living quarters and by unauthorized digging for artifacts which they sell to tourists, the MTA has determined that they should be relocated to an area outside of the Petra archaeological site.1/ A Government Committee established to deal with the resettlement of the Bedouins has recently decided on a site on the outskirts of the town of Wadi Musa, a site acceptable to the families currently living in the Petra Basin. The project would, therefore, include provision for housing and other community facilities at the new site for the Bedouin families. The site is large enough (300 ha) to allow for the construction of houses, as well as for agricultural activities. In addition, the Government has agreed to give the people to be relocated priority in the employment created by the project, and special assistance in preparing themselves for other occupations (para. 4.32).

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1/ This action would be taken even if the project did not go ahead.

It was further agreed that there would be a prohibition of vehicular traffic in the Basin, except for a limited number of balloon-tired vehicles. This would increase the employment of the local Bedouins who use their horses to transport visitors to and from the Petra Basin.

3.15 In Jerash, the visitor facilities to be provided under the project would include a restaurant with both indoor and outdoor dining, improved interpretive material and equipment for the visitor center, a small site museum located in vaults under the Temple of Artemis, and parking facilities. In addition, a Sound & Light Program would be developed in several languages, together with outdoor seating capacity for about 500 visitors, as well as administrative offices, workshops, and storage areas.

3.16 Water would be supplied through connections to the existing municipal system at Jerash, while sewage would be treated in septic tanks and the effluent disposed of in underground absorption trenches. Fencing and gates would be installed to protect the archaeological features of the site. Trails, surfaced with crushed stone and lime binders, would be designed to provide access to the main elements of the city and, at the same time, would serve as a means of controlling the movements of guests so as to improve visitor capacity. Several alternative tour routes through the city would be available, each self-guided by means of trail markers and printed, multi-lingual pamphlets. The project would also provide equipment, tools, and technical assistance for a program of archaeological work designed to preserve, protect and enhance the historical assets of Jerash (Annex II).

3.17 Project administration costs, and the costs of on-the-job and overseas training for staff of the Antiquities Department of the MTA (54 man/months) are also included in the project.

## C. Cost Estimates

3.18 The detailed cost estimates and the foreign exchange component of the project elements are given in Annex I, and are summarized in Table 1, on page 9.

3.19 Baseline cost figures reflect December 1975 price levels. An allowance of 15% of the civil works and equipment costs has been made to cover physical contingencies; this is a reasonable amount since most of the cost estimates are based on semi-detailed design work and specified equipment lists. Price contingencies take into account the projected implementation schedule and likely increases in price levels of foreign and local costs during the construction period resulting in an average price increase of 15% per annum during 1976 and 1977, and 10% per annum thereafter (Annex I, Table 7). Jordan has been experiencing major

# JORDAN: TOURISM PROJECT

## PROJECT COST BY COMPONENT AND CATEGORY OF EXPENDITURE

| Component | Jordanian Dinars (000) | | | US$ (000) | | | % |
|---|---|---|---|---|---|---|---|
| | Local | Foreign | Total | Local | Foreign | Total | |
| A. PETRA ENTRANCE | (616) | (719) | (1,335) | (1,866) | (2,179) | (4,045) | (33.3) |
| 1. Visitor and Other Facilities | 439 | 533 | 972 | 1,330 | 1,615 | 2,945 | 24.2 |
| Civil Works | 286 | 218 | 504 | 866 | 661 | 1,527 | 12.5 |
| Equipment | 101 | 267 | 368 | 306 | 809 | 1,115 | 9.2 |
| Professional Services | 52 | 48 | 100 | 158 | 145 | 303 | 2.5 |
| 2. Infrastructure | 177 | 186 | 363 | 536 | 564 | 1,100 | 9.1 |
| Civil Works | 122 | 105 | 227 | 370 | 318 | 688 | 5.7 |
| Equipment | 40 | 72 | 112 | 121 | 218 | 339 | 2.8 |
| Professional Services | 15 | 9 | 24 | 45 | 28 | 73 | 0.6 |
| B. PETRA BASIN | (282) | (332) | (614) | (854) | (1,006) | (1,860) | (15.3) |
| 1. Visitor Facilities | 32 | 40 | 72 | 97 | 121 | 218 | 1.8 |
| Civil Works | 18 | 21 | 39 | 54 | 64 | 118 | 1.0 |
| Equipment | 11 | 17 | 28 | 34 | 51 | 85 | 0.7 |
| Professional Services | 3 | 2 | 5 | 9 | 6 | 15 | 0.1 |
| 2. Infrastructure | 135 | 107 | 242 | 409 | 324 | 733 | 6.1 |
| Civil Works | 116 | 87 | 203 | 351 | 264 | 615 | 5.1 |
| Equipment | 11 | 12 | 23 | 34 | 36 | 70 | 0.6 |
| Professional Services | 8 | 8 | 16 | 24 | 24 | 48 | 0.4 |
| 3. Archaeological Preservation | 62 | 68 | 130 | 188 | 206 | 394 | 3.2 |
| Civil Works | 56 | 14 | 70 | 170 | 42 | 212 | 1.7 |
| Equipment | 6 | 54 | 60 | 18 | 164 | 182 | 1.5 |
| 4. Bedouin Resettlement | 53 | 117 | 170 | 161 | 354 | 515 | 4.2 |
| Civil Works | 30 | 79 | 109 | 91 | 239 | 330 | 2.7 |
| Equipment | 23 | 27 | 50 | 70 | 82 | 152 | 1.2 |
| Professional Services | | 11 | 11 | | 33 | 33 | 0.3 |
| C. JERASH | (252) | (294) | (546) | (764) | (891) | (1,655) | (13.6) |
| 1. Visitor Facilities | 83 | 121 | 204 | 251 | 367 | 618 | 5.1 |
| Civil Works | 38 | 27 | 65 | 115 | 82 | 197 | 1.6 |
| Equipment | 38 | 88 | 126 | 115 | 267 | 382 | 3.2 |
| Professional Services | 7 | 6 | 13 | 21 | 18 | 39 | 0.3 |
| 2. Infrastructure | 62 | 46 | 108 | 189 | 139 | 328 | 2.7 |
| Civil Works | 55 | 33 | 88 | 167 | 100 | 267 | 2.2 |
| Equipment | 3 | 10 | 13 | 9 | 30 | 39 | 0.3 |
| Professional Services | 4 | 3 | 7 | 13 | 9 | 22 | 0.2 |
| 3. Archaeological Preservation | 107 | 127 | 234 | 324 | 385 | 709 | 5.8 |
| Civil Works | 94 | 30 | 124 | 282 | 94 | 376 | 3.1 |
| Equipment | 13 | 97 | 110 | 42 | 291 | 333 | 2.7 |
| D. PROJECT ADMINISTRATION | 71 | 18 | 89 | 216 | 54 | 270 | 2.2 |
| E. TECHNICAL ASSISTANCE AND TRAINING | 17 | 45 | 62 | 52 | 136 | 188 | 1.6 |
| BASE-LINE COSTS: | 1,238 | 1,408 | 2,646 | 3,752 | 4,266 | 8,018 | 66.0 |
| F. CONTINGENCIES | 624 | 738 | 1,362 | 1,891 | 2,236 | 4,127 | 34.0 |
| Physical Increase | 160 | 188 | 348 | 485 | 569 | 1,054 | 8.7 |
| Price Increase | 464 | 550 | 1,014 | 1,406 | 1,667 | 3,073 | 25.3 |
| TOTAL PROJECT COST: | 1,862 | 2,146 | 4,008 | 5,643 | 6,502 | 12,145 | 100.0 |

increases in construction costs, due to an increase in the cost of labor and materials. The costs of skilled labor, for example, increased by 10% in the first two months of 1976. In addition, substantial delays are being experienced at Jordan's only port at Aqaba. Total provision for contingencies amounts to 51.5% of baseline costs or 34% of total project costs, including physical contingencies.

3.20 Cost estimates for project buildings, based on space requirements and current unit building costs, are in line with costs of similar works recently constructed in Jordan. Detailed lists of equipment and furniture would be prepared during the final design stage and reviewed by the Association prior to procurement. Cost estimates for equipment procured locally, include taxes, port, warehouse and handling charges, and transportation to sites; these charges are equivalent to about 9% of the c.i.f. prices. Since tourism investments enjoy special fiscal privileges under present regulations, no taxes or duties are included in the estimate for imported equipment.

3.21 In order not to delay the implementation of the project, it is proposed that part of final design and engineering expenditures incurred after March 1, 1976, and not exceeding US$150,000 or 1.2% of total project cost, be financed retroactively. For the project as a whole, consultants' services are estimated to total 230 man/months over a four-year period at a cost of about US$0.5 million, of which some 51 man/months would be provided by foreign consultants.

## D. Execution and Operation

3.22 Responsibility for implementing the project would rest with the MTA, with the exception of certain utility components noted below which would be carried out by other Government agencies. In order to coordinate efforts of other Government departments and agencies involved, a Project Coordinating Committee would be established. The MTA and the NPC would be permanently represented on the Committee, while the representatives of other agencies would be members for such periods of time as their respective agencies are involved in project execution. To ensure proper supervision of design and construction work a Project Unit would be set up within the MTA. The Director of the Project Unit would report directly to the Minister. The functions of the Project Unit would include:

(a) the employment and briefing and the coordination of the work of specialists to be hired under the technical assistance provisions of the project;

(b) the employment and briefing and the coordination of the work of architectural and engineering consultants who would be responsible for the design

and supervision of the facilities included in the project; this would involve reviewing and approving the consultants' designs and bidding documents;

(c) the preparation of master lists of equipment;

(d) the organization of bidding for civil works and equipment, and subsequent evaluation of the bids;

(e) the preparation of designs for construction of minor works under force account;

(f) the overall supervision of construction;

(g) the preparation of progress reports for the Association;

(h) the preparation of credit withdrawal applications;

(i) the day-to-day coordination of other Government agencies that would be responsible for implementing some parts of the project; and

(j) negotiations with firms that would operate the hotel and restaurant facilities once they are constructed.

The Unit would include a Project Director, an engineer, an architect, an accountant and a procurement officer, and would be assisted by archaeological experts, specialists in park service management and a museologist. The Project Director and the experts would be appointed after consultation with the Association. A separate salary scale would be used if necessary in order to attract qualified personnel.1/ Employment of experts and training of personnel would be done with the assistance of UNESCO. The establishment of the Project Unit and the appointment of the members of the Project Unit would be a condition of credit effectiveness.

3.23 At Petra, the MTA would develop the hotel complex and would then employ an experienced hotel operating company to manage the facilities on the basis of a management contract.2/ The company to be selected is expected to be one which also operates at least one other hotel in Jordan, in order to ensure both local experience and economies of scale in marketing. The new public telephone exchange facility would be implemented by the Telecommunications Corporation, a Government agency, which would continue to operate the system. The water supply component would be constructed by the MTA with the assistance of the Government's Water Supply Corporation, which operates the Wadi Musa municipal system. The additional diesel generating unit to be installed in the Wadi Musa power plant would be obtained and operated by the MMRA.

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1/ This practice is not uncommon in Jordan.

2/ Under the contract, trained technicians will be required to operate and maintain the sewerage treatment plant, pumping station, and the air-conditioning and refrigeration units.

3.24 The remaining physical components at Petra Entrance and within the Basin would be implemented and operated by the MTA, with the exception of the luncheon facilities in the Basin which would be run by the same company which would operate the hotel complex. Resettlement of the Bedouin families is being coordinated by a special Government Committee, consisting of the Ministers of Tourism and Antiquities, Interior, and Municipalities and Rural Affairs, and would be executed by the Project Unit with the assistance of the Housing Corporation.

3.25 The investment program in Jerash would be implemented entirely by the MTA, which would also operate all facilities with the exception of the restaurant. The restaurant would be operated by the same company which would manage the hotel in Petra.

3.26 The Government has agreed to cause the respective agencies to execute the telecommunications and electric power components of the project, and to provide adequate and timely telecommunications and electric power services to the hotel and other visitor facilities at Petra and Jerash. In addition, the Government has agreed to cause the WSC to complete the expansion of the municipal water supply system which would serve both the town of Wadi Musa and the tourism facilities in Petra. These facilities are being funded by other sources and present plans call for the completion of the new well and the transmission line by August 1976 (Annex I).

3.27 Consultants would be engaged for design and supervision of construction of the hotel, restaurant, and other amenities at the Petra Entrance, the visitor facilities and the utility systems in the Basin, and the restaurant, adminstrative offices, and the facilities for Sound & Light performances at Jerash. The employment of these consultants, acceptable to the Association, would be a condition of credit effectiveness. The MTA, with the assistance of experts attached to the Project Unit (para. 3.22), would be responsible for the design of park trails, the development of trail markers and guide books, and the archaeological program in each area, as well as for the site museum at Jerash. Design of the houses and community facilities for the Bdul Bedouin families would be the responsibility of the Housing Corporation.

3.28 In order to ensure proper coordination during the implementation stage, the MTA would be responsible for preparing and submitting to the Association a critical path chart for carrying out all parts of the project. The Government has agreed to periodically review this chart and submit the results of such reviews to the Association quarterly. The project is expected to be implemented over a four-year period, with construction of most of the facilities completed in the first three years.

## E. Financing Plan and Lending Arrangements

3.29 The total estimated cost of the project is JD 4.0 million (US$12.1 million equivalent). It is proposed that the IDA credit cover about 92% of the foreign exchange component of JD 2.1 million (US$6.5 million equivalent), or roughly 50% of total project costs including contingencies. The balance would be provided by the Government, which would also meet any cost overruns.

3.30 The consolidated financing plan for the project including contingencies, but excluding interest during construction and working capital, can be summarized as follows:

Table 2: Consolidated Financing Plan

| Component | Estimated Cost (US$ millions) | Source of Funds | |
|---|---|---|---|
| | | IDA Credit | Gov't Contrib. |
| Petra Entrance | 5.826 | 2.859 | 2.967 |
| Petra Basin | 2.797 | 1.502 | 1.295 |
| Jerash | 2.530 | 1.244 | 1.286 |
| Project Administration | 0.270 | - | 0.270 |
| Professional Services | 0.534 | 0.250 | 0.284 |
| Technical Assistance and Training | 0.188 | 0.145 | 0.043 |
| Total | 12.145 | 6.000 | 6.145 |

3.31 The Government contribution and the proceeds of the IDA credit required for the project components to be carried out by the MTA and other agencies would be made available as budgetary contributions. This undertaking will be set forth in a supplemental letter. Operating surpluses which result from the collection of entry fees and other charges, and the returns from the hotel and restaurant facilities would be turned over to the Treasury.

## F. Procurement and Disbursement

3.32 Major civil works and equipment contracts would be awarded on the basis of international competitive bidding, in accordance with the Association's guidelines. Project items would be grouped to the extent possible, in order to encourage such competitive bidding, but bidders would also be able to bid on individual items. In evaluating interna-

tional bids for equipment and furniture, local manufacturers would be allowed a preferential margin of 15% of the c.i.f. price of competing imports or the prevailing level of customs duties, whichever is lower. It is expected that some furniture contracts would be awarded to local manufacturers and most equipment contracts to foreign suppliers. Some civil works, and equipment and furniture contracts (e.g., site museum, stables and camp grounds) would probably be too small to attract foreign bids. It is proposed that these contracts, each not to exceed US$65,000 in value, would be awarded after local competitive bidding or be executed through negotiated contracts. The total value of such contracts would not exceed US$400,000 equivalent. Since the switching equipment under the telecommunications component of the project should be compatible with the rest of Jordan's network to permit interconnections, procurement of this equipment, valued at US$200,000 would either be added to a current contract or negotiated separately with suppliers of such equipment.

3.33 The MTA would carry out, on force account, certain works, such as:

(a) the archaeological work in both areas, work too specialized for civil work contractors; and

(b) the development of trails, trail markers, fencing and relatively minor landscaping, for which it would not be appropriate to prepare detailed designs for purposes of tender documents.

The total value of work to be carried out on force account would not exceed US$900,000 equivalent.

3.34 The Project Unit in the MTA would be responsible for advertising requests for tenders, issuing tender documents, evaluating bids and awarding contracts for all project components, with the exception of the utility items to be implemented by other Government agencies, which would be responsible for their respective components.

3.35 The proposed credit of US$6.0 million would be disbursed to meet:

(a) 35% of total expenditures for civil works;

(b) 100% of the c.i.f. price of directly imported equipment and furniture or 100% of the ex-factory cost of locally manufactured equipment and furniture procured under international competitive bidding, or 40% of the total cost of locally procured items; and

(c) 100% of the foreign exchange costs of professional services, technical assistance, specialists and overseas training for the MTA staff members.

The disbursement percentages under (a) and locally procured items under (b) would be adjusted as necessary to ensure continued disbursements throughout the construction period. The estimated schedule of disbursements of the credit is shown in Annex I, Table 6.

## IV. JUSTIFICATION

### A. Market Demand

4.01 Tourism in Jordan was seriously hurt by the 1967 war and the disturbances in the country in the following years. Visitor arrivals to Jordan declined sharply from the 1966 peak of 617,000 to a low of 257,000 in 1971. With an easing of tensions in the area, and the development of facilities on the East Bank, foreign visitor traffic increased gradually in 1972 and 1973 (to 292,000 and 308,000, respectively) and then very rapidly the following year to 555,000. The upward trend continued last year and arrivals are estimated to have reached 750,000 in 1975. Table 3 shows the growth in foreign visitor arrivals in the period from 1966-75.

Table 3: (a) Foreign Visitor Arrivals (000)

| Nationality or Region of Origin | 1966 | 1968 | 1971 | 1972 | 1973 | 1974 | 1975 1/ |
|---|---|---|---|---|---|---|---|
| Arab and Other Middle East | 442 | 355 | 238 | 261 | 276 | 499 | 670 |
| Western and Far East | 175 | 20 | 19 | 31 | 32 | 56 | 80 |
| Total | 617 | 375 | 257 | 292 | 308 | 555 | 750 |

(b) Average Annual Rates of Growth (%)

| | 66/74 | 66/71 | 71/74 |
|---|---|---|---|
| Arab and Other Middle East | 1.5 | - 11.6 | 28.0 |
| Western and Far East | - 13.3 | - 35.9 | 43.4 |
| Total | - 1.3 | - 16.1 | 29.3 |

1/ Estimate, based on the first ten months' figures.

Source: Department of Statistics, Central Bank of Jordan

4.02 In analyzing visitor traffic to Jordan, it should be noted that most of the visitor arrivals from neighboring countries, both Arab and non-Arab Middle East countries, are those whose basic purpose is a pilgrimage to the religious shrines in Saudi Arabia and the West Bank and who are, therefore, essentially transit visitors to Jordan. On the other hand, the majority of visitor arrivals from Western countries are those who come to Jordan either for business or vacation purposes and who stay at least one night in the country. Hotel statistics show that 70% of visitors from Western countries stay overnight in lodging establishments, as compared to only 15% of visitors from neighboring countries. Furthermore, while religious traffic is highly concentrated in 10 days (varying with the lunar year), non-religious traffic is spread fairly evenly throughout the year.

4.03 The recent upward trend in visitor arrivals from Western countries is more significant for tourism in Jordan than arrivals from neighboring countries. Unlike the latter, Westerners are not normally in transit but stay in lodging establishments in Jordan for an average of two to three nights. Moreover, expenditures for Western visitors are estimated to be greater than for non-Western visitors; the average daily expenditure in 1975 for Americans was US$45.00, for Europeans US$38,00 and for others US$15.00. The most important factors in the recent rapid increase in arrivals from Western countries were:

(a) the significant hotel development: the opening of 300 new hotel rooms in 1974 and another 200 rooms in 1975, bringing the total of classified rooms in Jordan to 1,200;

(b) the opening of access by bridge across the Jordan River to Jerusalem in 1973, which established Amman as an important entry point for foreign tourists wishing to visit both the East and West Banks; and

(c) the active efforts being made by both the public and private sectors in promoting tourism to Jordan.

4.04 In assessing the revival of foreign visitor traffic to Jordan, it is important to distinguish between the two major visitor groups in terms of purpose of visit, namely: (i) vacation and business, and (ii) pilgrimages. The first group is made up of business travellers who often visit tourist attractions during their stay, vacation travellers coming individually or in groups to spend their holiday in Jordan, and multiple-stop group tourists who visit other destinations in the region besides Jordan. As to the second group (predominantly Moslems from the Middle East and Asia), a certain number takes advantage of their pilgrimage to visit one or more tourist attractions while passing through Jordan, although the proportion is probably rather small.

4.05 Evaluation of the future market demand for Petra and Jerash necessarily begins with an assessment of the proportion of total visitor arrivals in Jordan who will visit tourist attractions during their stay in the country. Available data suggest that about 22% of Arab visitors from neighboring countries and about 15% of the other regional visitors (mainly from Turkey) come to Jordan either on vacation or for business purposes, rather than as pilgrims or for visiting relatives. Of visitors from Western countries, over 80% of arrivals are either on holiday or business trips and the remainder come to Jordan for purposes such as research or studies. On the basis of these data, the proportion of foreign arrivals who are likely to visit tourist attractions during their stay in the country would amount to about 26% of total foreign arrivals to Jordan.

4.06 Most of the visitors from Western countries come by air. This traffic has been increasing rapidly as is reflected in statistics of some airlines flying into the region. For example, the number of passengers carried by Alia, the Royal Jordanian Airline, increased by 50% between 1973-1974 and by 61% during the first ten-month period of 1975 over the corresponding period in 1974, though part of this latter growth may have been caused by the extraordinary conditions in Beirut. Of the Western visitor traffic (i.e., business travellers, single-destination holiday makers to Jordan, and multiple-stop group tourists), the segment which has perhaps the greatest market potential is multiple-stop group tourism, because Jordan's tourism assets complement rather than compete with those in neighboring destinations. However, Jordan has not been able to develop this market sufficiently because of the severe scarcity of acceptable accommodation facilities. In particular, the existing hotels of international standard have experienced high room occupancies. The tight hotel capacity has caused substantial frustrated demand in the holiday market. This situation is gradually being rectified and present plans call for the construction (para. 4.12) of 2,400 hotel rooms to come into operation by 1980, bringing the total of hotel rooms in Jordan to 3,600. The traffic implications of this total hotel capacity are substantial. By 1980, when all the planned hotels would be in full operation, more than 420,000 tourists could be accommodated in Jordan.1/

4.07 The number of visitors coming to Jordan for business or vacation purposes has been projected to grow at an average annual rate of 15% between 1974-80, reaching a projected arrival number of 336,000 in 1980. This growth rate is small compared to the average growth rate of 29% per annum during the 1971-74 period, though this period reflects a rapid recuperation from the civil strife in 1970-71. A higher rate of growth than that projected may well be achieved for several reasons: the potential impact of the proposed investments in Petra and Jerash on Jordan's tourism; the significant expansion in airline fleet and tour arrangements by Alia and inclusion of Jordan in the routes of several major West European airlines in 1976-77; the projected 25% annual increase in Jordan's hotel capacity

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1/ Based on conservatively estimated average room occupancy of 65% with a 1.5% double occupancy factor for an average length of stay of three nights.

over the next few years (Table 5), and the active promotional efforts being made by both private and public sectors. The Government has agreed to periodically evaluate the country's promotional efforts to ensure that the needs of the sector are met. This undertaking will be set forth in a supplemental letter. Because of the higher absolute number of visitors and a gradual elimination of repressed demand, it is assumed that the growth rate would decline during the subsequent five-year period (1980-85) to 12% per annum, reaching 590,000 arrivals in 1985. Overall, this would mean an average increase of about 13.5% over the next ten years (1976-85). The projected number of business and holiday visitors to Jordan is given in Table 4.

Table 4: Projected Number of Business and Holiday Visitor Arrivals
(000)

| Year | Arabs | Non-Arabs | Total |
|---|---|---|---|
| 1974 | 77 | 67 | 144 |
| 1980 | 137 | 199 | 336 |
| 1985 | 192 | 398 | 590 |
| Percentage Increase | | | |
| 1974-85 | 8.5 | 17.5 | 13.5 |

4.08 The development of tourist facilities and the enhancement of the attractions at Petra and Jerash may be expected to attract increasing numbers of visitors from 1979 on, after the project is completed. Because of its location and accessibility, which make it a convenient day trip from Amman, Jerash will appeal to a wide segment of the business and vacation travel arrivals. It is assumed that about 30% of the Arab visitors and 70% of the non-Arab visitors projected in Table 4 will make an excursion to Jerash during their stay in Jordan, or a total of 180,000 day visitors in 1980, rising to 337,000 by 1985.

4.09 Because of its greater distance from Amman, Petra is somewhat less accessible to foreign business travellers who may stay only 2-3 days in Jordan. It is, however, particularly well situated to appeal to the vacation travel market since it can attract not only the multiple-stop group tourists but also the holiday makers who come to Jordan for a week or more at resorts on the Gulf of Aqaba, 100 km south of Petra. With the development of accommodation, catering and related visitor facilities, and with the likely growth of vacation travel to Jordan, Petra is expected to attract an increasing proportion of projected visitor arrivals. In 1980, about 29% of these arrivals are estimated to visit Petra, representing 10% of Arab and 40% of non-Arab arrivals. This proportion is estimated to increase to about 37% by 1985, with the number of visitors to Petra thus growing from 94,000 in 1980 to 218,000 in 1985, an average annual growth rate of 18%.

## B. Development of Tourist Facilities

4.10 The supply of accommodation facilities in Jordan has lagged significantly behind the recent growth in foreign visitor traffic to the country and has acted as a constraint on the development of market demand. There are currently 28 classified lodging establishments in Jordan with a total capacity of 1,202 rooms, of which 69% are in the 3- to 5-star categories. Of this total, 23 hotels (1,025 rooms) are located in Amman, four hotels (153 rooms) in Aqaba and one hotel in Petra (24 rooms). As a result of the severe shortage of accommodation, occupancy rates are relatively high (e.g., 78% occupancy for the Jordan Intercontinental in 1974 and 83% during the first ten months of 1975, despite that hotel's expansion from 120 rooms in 1973 to 250 rooms in 1974).1/ About 85% of the lodging establishments or two-thirds of the total number of hotel rooms in Jordan is in private hands, while the remainder is either wholly or partially Government owned.

4.11 While operating costs have increased significantly in recent years, they have remained reasonable in relation to gross revenues and hotels have generally been able to maintain a satisfactory relationship between capital costs and room rates. As a consequence, hotel investments have shown good results in terms of both gross operating profits and return on equity. In response to the shortage of accommodation facilities, and in view of satisfactory returns, a number of hotel projects are either under construction or in the planning stage: Amman has five new hotels under construction involving 720 rooms, while Aqaba has one hotel involving 113 rooms. Table 5 shows the likely development of hotel capacity in Jordan during the 1976-80 period, on the basis of current and planned construction.

Table 5: Hotel Development 1976-80
(Number of Rooms)

| | Amman | | Petra | | Aqaba | | Total | |
|---|---|---|---|---|---|---|---|---|
| Year | Annual | Cumul. | Annual | Cumul. | Annual | Cumul. | Annual | Cumul. |
| 1975* | | 1,025 | | 24 | | 153 | | 1,202 |
| 1976 | 540 | 1,565 | - | 24 | 113 | 266 | 653 | 1,855 |
| 1977 | 280 | 1,845 | - | 24 | 156 | 422 | 436 | 2,291 |
| 1978 | - | 1,845 | - | 24 | 178 | 600 | 178 | 2,469 |
| 1979 | 400 | 2,245 | 76 | 100 | 200 | 800 | 676 | 3,145 |
| 1980 | 265 | 2,500 | - | 100 | 200 | 1,000 | 465 | 3,610 |

* Presently available rooms

4.12 One of the main difficulties to be overcome in the expansion of hotel accommodation in Jordan is the currently rather low standard of service, resulting largely from a shortage of trained staff and experienced manage-

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1/ High occupancy rates in 1975 are partly due to the present problems confronting Beirut.

ment personnel and caused partly by Jordanians leaving the country to work elsewhere. To combat this problem, the Government has already begun several training programs with assistance from ILO, UNDP and IDA. A hotel training center partly financed by UNDP has just begun operations, with emphasis on basic and medium level staff. Higher level staff training will be provided by the Hotel Management School to be opened in 1979, which is financed, in part, by the Bank Group (Credit 534-JO). Instructors are presently being trained abroad. On-the-job training, however, will continue to play an important role in developing staff, and foreign management experts can make a valuable contribution to improving the overall level of hotel services.

4.13 Transportation services within Jordan are generally rather good, both in terms of road networks and the availability of buses and taxis. It is reasonable to assume that local transport facilities will continue to expand in response to an increase in visitors. Air access is also relatively good, and Amman airport will soon be able to handle wide-bodied aircraft such as the 747, following improvements currently under way. Scheduled flights by KLM, Aeroflot, British Airways, Alia (Royal Jordanian Airline) and several regional airlines, serve Amman with connections to the major airports of Europe, the Middle East and several Asian countries. There is no reason to expect that air access will in the near future pose a constraint on the development of foreign visitor demand, but the question needs to be periodically reviewed.

## C. Financial Aspects

4.14 The project's revenues would be derived from entry fees at both sites, charges for the Sound & Light program at Jerash, and the net income from the hotel and restaurant operations at Petra and Jerash. At the same time, those utility components at Petra which are to be carried out by other Government agencies (para. 3.23) would be expected to meet standard public sector operating results.

4.15 Detailed financial projections for the hotel and restaurant facilities at Petra, and for the restaurant facilities at Jerash (in 1975 prices), are described separately in Annex IV. In Petra, estimated revenues from the hotel operations are based on a projected occupancy rate of 55% in 1979, increasing to 75% by 1983, an assumed double occupancy factor of 1.8, and an average daily expenditure for hotel guests of US$29.75, distributed as follows: 43% for accommodation; 41% for food; 11% for beverages; and 5% for "other". The number of visitors staying in the hotel represents 28% of total visitors to Petra in 1979 and 18% in 1983.

4.16 Operating costs for the hotel and restaurant operations have been

estimated on the basis of current experience in existing facilities, where applicable, and on standard ratios for comparable facilities in Jordan (Annex IV). Gross operating profit for the hotel and catering facilities at Petra is estimated to be 22% of sales in 1979, rising to 31% of sales from 1985 on. The restaurant facility at Jerash is estimated to achieve a gross operating profit of about 7% of sales in 1979, increasing to 22% of sales from 1985 on.

4.17 While the cost of managing the facilities in Petra and Jerash will depend upon the outcome of negotiations between the MTA and potential hotel operating companies, it is estimated that the management fee will not exceed 25% of the gross operating profits as is usually the case. Combined with the financial projections indicated above, this assumption would result in a net income to the MTA sufficient to generate a financial (DCF) rate of return on the hotel and restaurant facilities at Petra of 9.9%, and on the restaurant facilities at Jerash of 23.7%. The proposed management contract for operating the hotel and restaurant facilities, including the qualifications of the firm, and the terms and cost of their services, would be submitted to the Association for approval. In addition, the Government has agreed to require the MTA to review room tariffs and menu prices established by the management firm for hotel and restaurant operations in the light of market conditions, in order to ensure that the operating revenues would cover operating expenses and adequate depreciation, and generate maximum returns on the investment. The results of such a review would be submitted to the Association.

4.18 Operating revenues and costs have also been projected separately for the MTA's operation of the services at Petra and Jerash. The assumed entrance fee at Petra is JD 1.00 (about US$3.03) and at Jerash JD 0.50 (about US$1.50). Admission fee to the Sound & Light performance at Jerash is assumed to be JD 1.50 (about US$4.55). These charges appear reasonable in view of both the touristic value of the attractions and the level of fees charged by similar operations in other parts of the world. Projected revenues from entry fees have been based on the estimated number of visitors to each site; special groups of visitors who may enter the sites free or at reduced rates (such as students, archaeological groups, etc.), have not been taken into account. Revenues from the Sound & Light program at Jerash have been estimated on the assumption of 200 performances a year, with 50% of the seat capacity utilized in 1979, rising to 65% capacity utilization by 1985. The Government has agreed to introduce the entry fees and the Sound & Light program fee described above by the time the investment program is completed, and to review these fees with the Association from time to time. Based on the results of such reviews, the fees would be adjusted periodically in light of relevant changes in price levels, so as to maximize returns on investments within the sites.

4.19 The operating costs associated with these revenues are quite low, especially since the trails and interpretive services are to be designed for self-guided tours through each site. Administrative and maintenance costs, including the collection of entrance fees, is estimated to amount to only

about 10% of sales. Operating costs, primarily payroll, for the Sound & Light performance are much higher, and are estimated at 50% of gross revenue. On the basis of these assumptions, the MTA is expected to achieve a combined internal financial rate of return on the site service operations of 18.6%.

4.20 The Government has agreed to require the MTA to establish a system of commercial accounts, acceptable to the Association, for the hotel and restaurant operations as well as the sites and Sound & Light activities. The financial records would be maintained according to generally accepted accounting principles, and audited annually by independent auditors acceptable to the Association. Audited financial statements would be submitted to the Association within four months after the end of each fiscal year of operation.

## D. Economic Justification

4.21 The economic impact of the proposed investments has been evaluated in terms of estimated costs and benefits in Petra and Jerash. Incremental benefits and costs of activities not financed under the project, but located within Petra and Jerash, such as souvenir shopping and local transportation, have also been included in the evaluation. Possible off-site costs and benefits induced by the project in other parts of Jordan, however, have been excluded on grounds that they are difficult to quantify. Nevertheless, these off-site effects are significant and relate to accommodation and other facilities in Amman and Aqaba, transportation to and from Petra and Jerash, and also to operations of Alia, the Jordanian Airline. These activities would benefit from: (i) an increase in the visitor average length of stay and expenditures, because of the project, of visitors who would come to Jordan even without the project; and (ii) higher growth rates of tourism to the country as a whole, in view of the favorable impact on Jordan's tourism offering resulting from the proposed investments in Petra and Jerash. On the other hand, any "diversion effects" that may take place because of the expansion of hotel capacity in Petra would be minor, given the limited number of rooms to be added to total capacity. The restriction of the "economic boundaries" of the project, therefore, yields a conservative estimate of the net benefits generated. Similarly, no attempt has been made to estimate the value -- apart from the direct benefits from tourism expenditures -- which should be assigned to preservation of the cultural heritage of Jordan represented by investments in Petra and Jerash.

4.22 The gross benefits of the project in Petra and Jerash would then be the expenditures of those visitors attracted to the archaeological sites as a result of the project, plus the incremental expenditures of those tourists who would have visited the sites anyway. Revenues have been estimated on the basis of average expenditures per site visitor of JD 2.60 (US$7.88) in the case of Jerash and JD 5.70 (US$17.27) in the case of Petra,

where visitors would be using hotel accommodations. In Jerash, 66% of visitor expenditures would be on food and beverages, 18% on entrance fees, 11% on the Sound & Light performance, and 5% on "other" items, such as shopping. In Petra, 69% of visitor expenditures would be on accommodation, food and beverages, 18% on entrance fees, and 13% on "other" items, including transportation and shopping.

4.23 Since the Government has stated that it would not charge fees in the absence of investments (such as the proposed project) that would significantly improve services offered to tourists visiting the archaeological sites, the entrance fees included in the evaluation are considered to be incremental. Although included in the financial analysis, gross benefits from entrance fees paid by Jordanians have been excluded, since they mainly represent a transfer from resident tourists to the Government. These tourists would be able to visit the sites (and derive similar benefits) free of charge without the project. With the exception of the Sound & Light program and archaeological site operations, gross operating profits of the facilities to be provided have been estimated on the basis of actual experience with similar facilities in Jordan. Operating costs of the Sound & Light program and site management have been estimated on the basis of current experience with facilities in Europe and the Middle East. Hotel, restaurants and Sound & Light activities are expected to generate about 70% of the project gross benefits and 50% of the net benefits; entrance fees 20% of the gross benefits and 40% of the net benefits; and other activities 10% of both gross and net benefits.

4.24 Total capital costs associated with the project (excluding replacement costs) amount to JD 0.69 million (US$2.09 million) in Jerash and JD 2.23 million (US$6.76 million) in Petra. The costs of resettling the Bedouins have been excluded because this program would have been implemented anyway. Similarly, not all the costs and benefits associated with the telecommunications component of the project in Petra have been taken into account, since the system would also meet the local needs of the town of Wadi Musa.

4.25 On the basis of the assumptions indicated above, and with an estimated economic life of the project of 25 years, the economic rate of return on the investments in Jerash would be 30.3% and in Petra 16.9%, for a combined rate of return of 20.1%. The economic evaluation has been elaborated for Petra and Jerash separately, on grounds that interactions of costs and benefits are difficult to quantify and tend to counterbalance each other. The sensitivity of the rate of return to changes in key variables is shown below; possible increased tensions in the Middle East which would affect the flow of tourists to the region, including Jordan, are seen as the main source of risk affecting the project's economic viability. Conscious of this fact, the MTA has scaled the project so as to minimize the risks involved, and yet permit viable and efficient operations of the facilities. A 20% decrease in visitor arrivals, for example, reduces the rate of return from 20.1% to 15.1% (it has not been found appropriate to shadow price labor or foreign exchange, but the effects of doing so in the case of Bedouin wages in Petra are shown in the table).

Table 6: Sensitivity Tests (in %)

| | Jerash | Petra | Total Project |
|---|---|---|---|
| Best Estimate | 30.3 | 16.9 | 20.1 |
| Changes | | | |
| Investment Cost + 20% | 26.0 | 14.3 | 17.2 |
| Gross Operating Profit - 20% | 25.0 | 13.0 | 15.1 |
| + 10% | 32.8 | 18.3 | 21.8 |
| 25% Shadow Pricing of Bedouin Wages | 30.3 | 18.7 | 21.4 |
| 20% Reduction in Visitor Arrivals | 21.0 | 13.1 | 15.1 |
| One Year's Delay in Project Implementation | 26.7 | 15.5 | 18.3 |

4.26 The introduction of entrance fees could be looked at as an administrative measure unrelated to the proposed project rather than an action triggered by it. Nevertheless, since the Government is unwilling to charge entrance fees without the provision of some additional facilities, an alternative project incorporating the minimum investments that would likely make entrance fees acceptable to the Government was analyzed for each site. The economic returns on the alternative project and the proposed project were compared on the basis of their net present values, using discount rates of 10, 12, and 14 percent and indicate that the proposed project has significantly higher benefits than the alternative project in both sites.

4.27 The proposed project is expected to increase net foreign exchange receipts by about JD 0.50 million (US$1.51 million) in 1979, and by about JD 1.59 million (US$4.82 million) per year from 1988 onwards. This compares with the estimated foreign exchange component of the proposed project of US$6.5 million, including price contingencies but excluding replacement costs. Taking into account the profits of the Government-owned facilities and tax receipts generated by the project, the net annual receipts to the Government would rise from JD 0.34 million (US$1.03 million) in 1980 to JD 0.77 million (US$2.33 million) in 1990. The internal rate of return to the Government on its investment would be 19.2%. Direct employment in the facilities to be built would amount to 560 jobs (350 in Petra and 210 in Jerash). Indirect employment in agriculture, handicrafts, transportation and other services is likely to account for 600 additional jobs.

4.28 The Government, as the owner and operator of most of the facilities to be built under, or induced by, the project, is expected to capture about 85% of the project's net benefits. About 5% of the net benefits would go to the management company of the facilities and the rest would accrue to low to medium income groups, e.g., horse and shop owners, and souvenir sellers.

## E. Environmental and Social Impact

4.29 The environmental impact of the project would be confined to the archaeological sites at Petra and Jerash and, given the nature and purpose of the proposed investments, would result in a substantial improvement over the existing situation. The archaeological preservation program at each site is specifically designed to inhibit, to the extent possible, the deterioration of both natural and man-made monuments which, together, represent an important element of Jordan's heritage. At the same time, the planned development of infrastructure components such as water supply, sewerage, and watershed protection would help to safeguard the environment from physical pollution, while the removal of the Nazzal Camp at Petra and the introduction of zoning controls and land use regulations at Petra and Jerash will help to preserve the aesthetic character of the two sites.

4.30 With regard to the social impact of the project, the primary concern relates to the relocation of the 96 Bedouin families who currently reside in the Petra Basin. As noted in para. 3.14, the justification for their removal is based on the harmful effects of their activities on the environmental and archaeological assets of the Basin. Nonetheless, it is important to ensure that the process of relocation does not, on balance, result in their being made worse off than they are now. Given their currently low standard of living, and the fact that their resettlement is a consequence of Governmental decisions, it would seem entirely appropriate on social grounds that their standard of living should in fact be improved as a result of their resettlement.

4.31 In order to ensure proper coordination of the Bedouin resettlement at Petra, the Government has formed a special committee, consisting of the Ministers of Tourism and Antiquities, Interior, and Municipalities and Rural Affairs. Other Government agencies, such as the Ministries of Education and Agriculture and the Housing Corporation, are involved as needed in order to assist in planning and carrying out the resettlement.

The Housing Corporation has conducted a basic survey of the families in order to determine their precise requirements for housing and is currently preparing a site plan for housing, infrastructure and related facilities.

4.32 In the short term, the provision of modern housing would, by itself, represent an improvement in the living standards of the Bdul Bedouins at Petra Basin. The site, which is acceptable to the Bedouins, is located very near the town of Wadi Musa, so that the move is only a matter of a few kilometers. In order to provide for a sustainable, long-term improvement in their living standards, however, it will be necessary to ensure that the people involved are able to adjust to new types of occupations, which may be more difficult to achieve. The Government has indicated that it would provide agricultural land, farm implements and related technical assistance for those who wish to become farmers, and that the Bedouins who are relocated would be given priority in the employment generated by the project. The UNDP office in Jordan has offered the assistance of a sociologist to study possible types of employment which might be of interest to the Bdul Bedouins.

4.33 The Government has agreed to prepare a detailed program and a timetable for the resettlement of the Bdul Bedouins by December 31, 1976. This program would subsequently be reviewed with the Association and an understanding reached on the necessary steps to be taken to satisfactorily implement the resettlement program. The Government has also agreed to give priority to the training and employment of the Bdul Bedouins who are to be relocated.

## V. AGREEMENTS REACHED AND RECOMMENDATIONS

5.01 During credit negotiations, agreement was reached and assurances were obtained from the Government on the following:

(a) the Government would, not later than July 1, 1977 adopt regulations that will protect the environment of Petra and Jerash (para. 3.04); among other things, these regulations would contain development controls governing use of land in and around the sites, will limit the use of motorized vehicles in the Basin and allow only horses to carry a majority of the visitors to and from the Basin (para. 3.14);

(b) the Government would not renew the present "Nazzal Camp" lease when it expires, and would remove the "Nazzal Camp" visitor facilities now located in the Petra Basin not later than December 31, 1979 (para. 3.10);

(c) the Government would prepare not later than December 31, 1976 a detailed program and timetable, satisfactory to the Association, for the resettlement of the Bdul Bedouin families living in the Basin and would give priority to the training and employment of the families that are to be relocated (paras. 3.14 and 4.33);

(d) detailed designs and lists of equipment and furniture would be prepared during the final design stage and reviewed by the Association on completion (para. 3.20);

(e) the Government would staff the Project Unit to include, in addition to the Project Director, an engineer, an architect, an accountant, and a procurement officer. The Unit would also be assisted by archaeological experts, park service specialists, and a museologist. The experts would be appointed after consultation with the Association (para. 3.22);

(f) the Government would engage expert assistance from a hotel operating company on a full-time basis, at least six months prior to the start of hotel and restaurant operations, to ensure proper management of the facilities. The firm selected to operate the facilities would also be consulted on the design of the hotel and related facilities (paras. 3.23 and 4.17);

(g) the Government would cause the Telecommunications Corporation to implement and operate the new telephone exchange facility in Petra by the time the hotel and other facilities are ready for operation (para. 3.26);

(h) the Government would ensure that the WSC would complete the expansion of the municipal water supply which would serve the town of Wadi Musa and the tourism facilities in Petra, but which are being constructed independently of the proposed project (para. 3.26);

(i) the Government would cause the WSC of Jordan and the Municipality of Wadi Musa to implement and operate the water supply components of the project in Petra by the time the hotel and other facilities are ready for operation (para. 3.26);

(j) the Government would cause the MMRA to install and operate the additional diesel unit at the Wadi Musa power plant to serve Petra by the time the hotel and other facilities are ready for operation (para. 3.26);

(k) the Government would provide adequate and timely power, water supply and telecommunication services to the hotel and restaurant facilities in Petra and Jerash (para. 3.26);

(l) a critical path chart for the control and implementation of various components of the project would be prepared and adopted by the Project Unit within the MTA, as soon as detailed design work is complete, but not later than January 1, 1977; this chart would be reviewed periodically and the results of such reviews would be submitted to the Association quarterly (para. 3.28);

(m) the Government would provide funds for carrying out the project, as needed (para. 3.29);

(n) the Government contribution and the proceeds of the IDA credit required for the project components would be made available to the MTA and other Government agencies as budgetary contributions. (para. 3.31);

(o) the Government would periodically evaluate the country's promotional efforts, including the matter of air access, to ensure that the needs of the tourism sector are met (paras. 4.07 and 4.13);

(p) the terms and conditions of the management contract between the MTA and the hotel operating company would be subject to approval by the Association (para. 4.17);

(q) the MTA would review room tariffs and menu prices established by the management firm for the hotel and restaurant operations in order to ensure that the operating revenues would cover operating expenses and adequate depreciation, and gen-

erate maximum returns on the investment in the facilities. The results of such a review would be submitted to the Association (para. 4.17);

(r) on completion of the project, the MTA would introduce and cause to be collected, entry fees for visitors to the two sites and the Sound & Light program initially at levels agreed with the Association; would review these fees from time to time with the Association; based on the results of such reviews, would periodically adjust the level of fees in the light of relevant changes in price levels in Jordan, so as to maximize returns on the investments within the sites, excluding hotel and restaurant investments (para. 4.18);

(s) the MTA would establish a system of commercial accounts, acceptable to the Association, for the hotel and restaurant operations as well as the sites and Sound & Light activities. The financial records should be maintained according to generally accepted accounting principles and audited annually by independent auditors, acceptable to the Association (para. 4.10);

(t) audited financial statements for the hotel and restaurant operations, as well as for the two sites and the Sound & Light program would be submitted to the Association within four months after the end of each fiscal year (para. 4.20).

5.02 The following would be conditions for credit effectiveness:

(a) the establishment of the Project Unit and appointment of the Project Director, an engineer, an architect, an accountant, and a procurement officer to the Unit (para. 3.22);

(b) the appointment of consulting engineers and architects, acceptable to the Association, as needed to complete the final design of the project and supervise its execution (para. 3.27).

5.03 Subject to the conditions of effectiveness described above, the project is suitable for a credit of US$6.0 million equivalent to the Hashemite Kingdom of Jordan on standard IDA terms.

ANNEX I

# THE HASHEMITE KINGDOM OF JORDAN

## TOURISM PROJECT

## PROJECT DESCRIPTION AND COST ESTIMATES

### I. Project Description

#### A. General

1. The project would consist of the following main elements, described further below:

(a) tourist accommodation, related superstructure facilities and supporting infrastructure works near the entrance to Petra;

(b) visitor facilities, infrastructure works and archaeological preservation in Petra Basin, and also the resettlement of the Bedouins currently living there; and

(c) visitor facilities (including a Sound and Light program), infrastructure works and archaeological preservation at Jerash.

#### B. Petra Entrance

2. The accommodation and visitor facilities at Petra entrance would consist of the up-grading and expanding an existing 24-room hotel to include 76 new rooms, catering and shopping facilities, reception and administrative space. The facilities would be designed so as to provide services both for the hotel guests and for the large number of daily visitors.

3. The new hotel facilities would be built north of the present visitor center in close proximity to the existing rest house and guest rooms. Furthermore, expanded public areas (lobbies, reception, lounge, restrooms) as well as restaurant space would be provided for the increasing number of day visitors to Petra. Dining facilities would have a seating capacity of 200. There would also be a spacious terrace for mid-day food service, which would triple the present capacity. A complete range of kitchen facilities for food service and cold storage are included, adequate to serve 1,000 mid-day meals. Space has also been provided to meet laundry, service, administration and front office requirements.

4. The hotel has been planned to have an "oasis" atmosphere, with a desert palm and fountain garden in the interior court. All new rooms face inward, with the terrace and dining room located at one end. The active recreation areas for riding, tennis and swimming are located to the north of the hotel complex. With the construction of the new hotel facilities, the existing dining room located in an ancient Nabataean "tomb" will be converted into a Bedouin-style lounge mainly for evening social activities, using Bedouin-style carpets and cushions.

5. To accommodate young visitors and scholars on limited budgets, modest camping facilities would be provided to the northwest of the planned hotel complex and would include an access trail, fixed equipment for campfires, toilets, showers and a storage room. Trees and shrubs would be planted to provide shade and a sense of privacy. The area designated for camping can be expanded to accommodate 150 tents -- the maximum capacity of the site.

6. Staff quarters for the key archaeological and administrative staff (12 families) have been planned adjacent to the Petra entrance facilities. This would allow the archaeologists now living in the Basin in Nabataean tombs to move out, and provide an incentive to qualified staff to relocate themselves from Amman. The quarters are proposed in a cluster arrangement against the hillside. The dwellings have been sited so that the cluster can be expanded to 24 dwellings. They would visually form part of the village of Wadi Musa.

7. To improve services and safety relating to horse rental activities, the existing stables would be removed and new stables built on the flat across the village of Wadi Musa and opposite the visitor center. These new facilities would include stables for 50 horses, a large corral, storage space, water supply, electricity and toilets. A separate septic tank and leeching fields will be used to treat sewage, including stable wastes.

8. The existing visitor center is the initial contact point for visitor information and orientation to Petra and needs to be upgraded. The project includes equipping the center with adequate interpret material for museum exhibits, necessary audio-visual aids, and a three-dimensional model of the Petra Basin. The design of the audio-visual space would permit the free flow of visitors and encourage those that wish to remain to do so. Interior finishes would be in an Arab motif.

9. Provision of uninterrupted service of adequate quantities of safe, potable water is of crucial importance to tourists. The main source of water at present for both Petra and the town of Wadi Musa is a well at Ein Musa, which has a mean flow of 23.69$m^3$ and a minimum flow of 4.7$m^3$ per hour, or 113$m^3$ per day. The Water Supply Corporation of Jordan,

which is charged with the responsibility of supplying water for all urban settlements, estimates the needs of the town alone to be in excess of 250 cubic meters a day. It has accordingly designed and funded a new water source near Bir El-Qa (well PP 64) which is estimated would yield a minimum of 100$m^3$ per hour. Chemical tests have shown the water to be of excellent quality, requiring only chlorination. The WSC is planning to begin construction of a 9 km, 20 to 25 inch transmission line from the new well to Wadi Musa which would provide the town and the surrounding area with 800$m^3$ a day, much more than is needed at present.

10. Water needs for the existing and proposed tourism facilities at Petra Entrance have been calculated to be 210$m^3$ a day. Water would come from the new well due for completion in August 1976. The project includes facilities that would connect Petra to the system serving the town of Wadi Musa, as well as facilities for the treatment and storage of water. These include a 15 cm galvanized steel transmission line from the Wadi Musa reservoir, 5 km to the northeast, a separate 550$m^3$ capacity reinforced concrete reservoir for the visitor facilities, a hypochlorinator, control valves and fittings, and an access road to the reservoir. The reservoir would have a storage capacity equivalent to 2.6 days of water and is considered adequate by WSC.

11. An adequate sewerage and solid waste disposal system is as important as an adequate water-supply system, particularly in view of the need to keep the environment clean. The sewerage system included in the project will primarily serve the visitor facilities and staff quarters, but would also economically serve a limited number of private dwellings near the Petra Entrance. The proposed system would consist of gravity sewers from the existing facilities and the new hotel complex to a pumping station where by force main the sewage is pumped to a treatment plant to be located to the northeast of the hotel and visitor center. The plant has been designed as an aerobic extended aeration type lagoon with an 8-day retention. From the standard inlet and screening chambers, the sewage would be treated in two chambers with mechanical aerators that can be operated in tandem when necessary. The effluent flows into an outlet chamber and is chlorinated prior to being released by gravity for irrigation purposes. The plant has been designed for an efficiency of 90% BOD reduction. The sludge would be mineralized and drawn off every 3 to 4 years.

12. With regard to solid waste disposal, a sanitary landfill would be established in the vicinity of Wadi Musa to serve the town as well as the visitor facilities. During the peak season, it is estimated that the hotel would generate 270 kg of solid waste per day. The village, with a projected population of 7,000 by 1985, would generate another 5,250 kg, for a total of 5,520 kg or 5.5 tons per day. A 3-ton dump truck and a small bulldozer are all the equipment required plus a 20-

dunum (2.02 has) tract of government owned land. The solid waste from visitor facilities within Petra Basin would be collected daily by a "balloon-tired" vehicle and dumped at the sanitary landfill.

13. The electric power supply at present is provided by the Municipality of Wadi Musa with a theoretical installed capacity of 166 kva; two generators of 35 kva each and one generator of 96 kva. However, the first two generators are presently out of service. In order to meet the existing demand of the municipality, the Ministry of Municipalities and Rural Affairs is planning to install a new diesel generating unit of 90-100 kw capacity which is expected to be in service by August 1977. While existing and planned power generating capacity will meet the demands of the town of Wadi Musa (186-196 kva), it will not be sufficient to meet the power requirements of the proposed facilities in Petra (80 kva). Accordingly, the project includes the installation of an additional diesel unit of 100 kva at the Wadi Musa power plant to supply the needs of Petra and Petra Basin and to be operated by the Ministry of Municipalities and Rural Affairs. In addition, a new transmission line of 1,500 meters, laid underground, and a voltage regulator to serve the visitor facilities have been included in the proposed project. The existing power units at the Petra Entrance would be used as stand-by generators.

14. The project includes telecommunication facilities which would serve both the project facilities and the town of Wadi Musa. The existing PBX (old magnets) telephone exchange in Wadi Musa is obsolete and cannot be expanded to meet the needs of the proposed hotel complex and other facilities. A new public exchange PUBX with an initial capacity of 500 lines (expandable to 1,000 lines) of a cross-bar type is included in the project to replace the existing manual exchange, as well as a building (200$m^2$) to house the exchange. Petra would be connected to the exchange, initially with 20 pairs of lines, partly laid underground. The hotel itself would have a PABX internal exchange with 150 telephones, as well as a telex printer. The ultra-hgih frequency (UHF) service between Ma'an and Wadi Musa has at present 8 channels which are adequate to meet the needs of the project and the town through 1985.

15. In order to provide for proper maintenance of facilities, maintenance workshops would be built adjacent to the sewage treatment plant, which would consist of an office, a workshop, four vehicle work bays, mechanical and electrical equipment, bulk storage space, toilets and washrooms, as well as outdoor storage facilities. This facility would meet the needs of both the Petra Entrance and Basin, and would be landscaped so that it would not be visible from the visitor area. The existing storage room, warehouses and equipment room would be removed when the new facilities have been constructed.

16. An essential item included in the project is watershed protection. The Petra area is susceptible to flash floods which have in the past destroyed valuable structures and cost the lives of tourists. Hill terracing and construction of small check-dams have been undertaken by the Ministry of Tourism and Antiquities and the Ministry of Agriculture, but are not considered adequate. The proposed project would provide for additional protection from the torrential flows that race down the Wadis during the short rainy season. Three check dams would be constructed between the visitor facilities and the entrance to the Siq to reduce the velocity of the run-offs, provide a limited amount of recharging of the aquifer, and serve as collection points for silts to be cleared periodically. Structures have been designed as masonry dams with preliminary designs and cost estimates prepared by the MTA.

17. The existing landscaping around the entrance would be extended and improved under the project in order to create an attractive environment for the new hotel complex and other visitor facilities.

C. Petra Basin

18. The number of visitors to the Petra Basin should be carefully controlled in order to reduce the adverse impact this may have on the environment of the area. A limit of 1,200 visitors per day will be imposed, which would mean 300 persons per hour visiting any one monument at a time during the peak period. The maximum number of horses that could efficiently and safely move in and out of the Siq is calculated to be about 300. Assuming two trips per day, a maximum of 600 visitors could be transported on horse-back. Twelve to fifteen round trips of a "balloon-tired" vehicle, included in the proposed project, could bring in an additional 120 persons unable to ride or walk. Any additional vehicular travel would become a nuisance and introduce an element of risk for visitors. Accordingly, the remaining tourists would have to walk the 4 kms.

19. To further minimize the impact of visitor activities, tourist facilities in Petra Basin included in the project have been planned as a single complex and are located on the west side of Wadi Deir facing the main archaeological monuments of Qasr El Bint, the Colonnade and the dramatic cliffs of Petra. Located in an area shaded from the afternoon sun, the complex would consist of a visitor contact and first-aid station along with restrooms. A refreshment bar and covered terrace for mid-day lunch would be oriented to the view, with the food brought in from the main kitchen of the hotel. Access would be provided across the crest of the velocity check dam at Nazzal Camp. Office space for visiting scholars and archaeologists would also be provided in the same complex.

20. In support of these Basin facilities the project would include a number of infrastructure improvements. The existing well at the edge of the channel at Wadi Musa would be reconstructed and a new pump installed to meet the water supply needs of the proposed facilities. A new concealed pipeline to a reservoir on top of the visitor facilities would be provided to serve the projected number of visitors to the Basin. Water demand is estimated at $18m^3$ per day; the reservoir would have a 4-day storage capacity of $72m^3$ of water.

21. With the removal of Nazzal's Visitor Camp an environmental hazard would be eliminated as currently its sewage is dumped into cesspools. Sewage from the visitor facilities to be constructed under the project would be treated in a septic tank located 100 m from the water source. The effluent would be carried another 50 m further downstream where it would be disposed of in underground absorption trenches.

22. Existing facilities in the Petra Basin are supplied with electricity from an electric generator located in a Nabataean cave near Nazzal's Camp. The electric generator will be removed and power would be directly supplied by the Wadi Musa power plant. The project also provides for 4 km of cable laid underground from the Petra Entrance through the Siq to the visitor facilities in the Basin. This line will also permit economic connections to floodlight various monuments along the trail, as well as to provide some dramatic lighting of the Siq itself.

23. Similarly, an underground telephone line would connect the Basin to the new telephone exchange in Wadi Musa. Telephones would be provided at strategic points along the access trail to facilitate management of the site. The present overhead telephone line which obstructs the view of monuments, would be removed.

24. The project would also provide for watershed protection inside the Basin. The ancient city of Petra lies in a basin in which three drainage areas meet -- Wadi Musa and its two principal tributaries, Wadi Mataha and Wadi Turkumanyah. The drainage of the upper Wadi Musa is now diverted through an ancient tunnel into the Wadi Mataha which rejoins the Wadi Musa in the heart of Petra at the ancient monument of the Nymphaeum and Colonnade Street. The channelization works along the Colonnade at the Nymphaeum and Colonnade Street especially the revetments (intended to protect these monuments) have been seriously weakened. Velocity check dams would be constructed under the project to change the hydraulic gradient, and reduce the velocity which has badly scoured the channel bed. The sands and silts would be retained to produce an attractive sandy bottom at the check dams and to assist in recharging the aquifer. Two large check dams and eight lesser structures would be built along the Wadi Musa for this purpose. Inside the Siq, nine dry-

stone check dams above the floor of the Siq would be provided at strategic locations where debris of fill and boulders are deposited annually on the trail. Constructed to a height of 1.5-2 m, a 15 to 20 minute retention of drainage waters could be achieved. Vegetation would occur naturally on and around these check dams and assist in stabilizing the Siq.

25. The Siq access would also be improved and stabilized for foot and horse traffic. The 900 m of surface floor would be cleaned of rubbish and boulders and a drainage channel constructed to one side so that an all weather trail can be maintained. Between the Siq and the Cardo Maximus, 1,200 m of access way would be graded and stabilized for all weather traffic, and a drainage channel built on the south side.

26. The project would also provide for interpretive trails to be developed from the main access way to the principal monuments throughout the Basin. Surfaced with crushed stone and lime binders, trails would be designed as self-guided routes. Most of the trails would feature alternative return routes for a maximum of exposure to the park features. Trail route markers, as well as "site" or monument markers would be provided in both Arabic and Roman numbers. Descriptive multi-lingual guide pamphlets would be available to all visitors to facilitate comprehension of the monuments.

27. The program for the protection and consolidation of the monuments included in the project is described in detail in Annex II. Implementation of the program would require the acquisition of tools and equipment.

28. Ninety-six families of the Bdul Bedouin Tribe who live in the Petra Basin would be resettled to preserve the cultural, historic and tourist attraction of the area. The cost of resettlement which includes housing on land suitable for farming is included in the project, along with essential community facilities.

## D. Jerash

29. Visitor facilities to be provided in Jerash under the project would include a restaurant, improved interpretive material and equipment for the visitor center, a Sound and Light program, a small site museum, restrooms and parking facilities. With the open character of the monuments and the ease of pedestrian access through the site, the physical capacity of the site is at least twice that of Petra and depending on the spacing of the tours, could be increased to as many as 3,500 visitors per day.

30. Designed as an integral element, restaurant and kitchen facilities for indoor and outdoor dining would be provided to cater to 150 persons

indoors and 250 persons on an outside terrace. The restaurant would be located outside of the archaeological area, and have one main parking area. For special events, more parking would be provided to the south near the Triumphal Arch. With the completion of the new restaurant, the present rest house would be removed, as it is located on top of an archaeologically valuable, but unexcavated section of Jerash.

31. The new visitor center, which will be the initial contact point for information and orientation to Jerash, would be equipped with adequate interpretive materials for museum exhibits, as well as necessary equipment for a continuous presentation of an orientation slide show. In addition, visitors would also view a three-dimensional model of the site, where guides would provide detailed interpretation and information prior to their visit to the site.

32. Between the restaurant facilities and the Triumphal Arch, administrative offices and maintenance areas would be provided with workshops, storage space, toilets and washrooms. The "Turkish" building, and other buildings used at present for storage and other purposes would be removed from the site once the new facilities have been constructed, as they are built on archaeologically important but unexcavated sites.

33. Water connections to the visitor facilities and new administration and maintenance areas would be provided. Sanitary drainage would be treated in septic tanks and the effluent would be disposed of in underground absorption trenches.

34. A Sound and Light program included in the proposed project would present a dramatic and historic view of Jerash, covering the prehistoric, iron and bronze ages as well as the Hellenistic, Imperial Roman and early Byzantine and Arab periods. An optimal viewing area to accommodate 500 visitors would be provided. The scenario would be taped in 4 or 5 languages, with programs coordinated to present two different languages a night, during the peak season. Dinner would be served at the restaurant prior to the presentation of the program.

35. The project provides for the archaeological preservation of major monuments at Jerash, including the South Theater, the Temple of Artemis, the Temple of Zeus, the South Bridge, and the Christian Churches. The program described in detail in Annex II would require tools and equipment which are included in the project. To implement the program, technical assistance and training would be provided under the project.

36. A site museum would be developed in the well preserved vaults under the Temple of Artemis (the vaults were used during the Turkish occupation as a prison). Fine carvings and artifacts in the vault would be highlighted with the assistance of a museologist, once the vaults have been restored and a safe and convenient access provided.

37. To protect the historic and archaeological features, fencing and gates would be provided at Jerash under the project. Part of the fencing involves rebuilding of masony walls.

38. Interpretive trails would traverse the site and pedestrians and the occasional service vehicle. Surfaced with crushed stone and lime binders, the trails would be designed as self-guided routes and provide access to the major monuments of the ancient city. The trails would be designed for short as well as long tours and would feature alternative return routes for the maximum exposure to archaeological features. Trail markers, as well as "site" or monument markers, would be provided and descriptive multi-lingual guide pamphlets would be available to all visitors.

39. Landscaping under the project would be limited to the entrance gates, terraces of the visitor center and restaurant, and their immediate environs. Much of the excavated sites and monuments at Jerash are innundated by weeds and shrub growth that are doing irreparable harm to the monuments. A limited program of weed and shrub eradication and control would be included in the project.

## II. Project Cost Estimates

40. The attached tables contain project cost estimates and schedules of implementation, expenditures and disbursements. These tables and schedules are listed below:

General Cost Estimates

1. Breakdown of Total Project Costs by Project Items
2. Project Cost by Sector and by Component for Each Site
3. Breakdown of Costs of Project Items and Components by Year
4. Schedule of Expenditures by Project Items by Quarter
5. Schedule of Disbursement of Project Items by Quarter
6. Estimated Schedule of Disbursements
7. Contingency Allowances

Detailed Cost Estimates

8. Petra Entrance: Cost Estimates by Project Items & Components
9. Petra Basin: Cost Estimates by Project Items & Components
10. Jerash: Cost Estimates by Project Items & Components
11. Petra Entrance Hotel Complex: Schedule of Accommodation & Cost Estimates

JORDAN: TOURISM PROJECT

BREAKDOWN OF TOTAL PROJECT COSTS BY PROJECT ITEMS 1/

(Exchange Rate: US$1.00 = JD 0.33)

| Project Items | Civil Works JD(000) | Equip-ment JD(000) | Profes-sional Services JD(000) | Physical Facilities JD (000) | Physical Facilities US$ (000) | Project Administration JD(000) | Technical Assistance & Training JD(000) | Total Project Cost JD (000) | Total Project Cost US$ (000) |
|---|---|---|---|---|---|---|---|---|---|
| A. Petra Entrance | 706 | 505 | 124 | 1,335 | 4,045 | 47 | 32 | 1,414 | 4,284 |
| B. Petra Basin | 421 | 161 | 32 | 614 | 1,860 | 23 | 16 | 653 | 1,979 |
| C. Jerash | 277 | 249 | 20 | 546 | 1,655 | 19 | 14 | 579 | 1,755 |
| Base-Line Costs | 1,404 | 915 | 176 | 2,495 | 7,560 | 89 | 62 | 2,646 | 8,018 |
| Physical Increase (15%) | 211 | 137 | 348 | 348 | 1,054 | | | 348 | 1,054 |
| Price Increase (38%) | 614 | 400 | | 1,014 | 3,073 | | | 1,014 | 3,073 |
| Total Contingencies | 825 | 537 | | 1,362 | 4,127 | | | 1,362 | 4,127 |
| GRAND TOTAL | 2,229 | 1,452 | 176 | 3,857 | 11,687 | 89 | 62 | 4,008 | 12,145 |
| Foreign Exchange Component | | | | | | | | | |
| Percentage | 43.7% | 70.8% | 45.4% | 54.0% | 54.0% | 20.0% | 72.5% | 53.5% | 53.5% |
| Total | 975 | 1,028 | 80 | 2,083 | 6,311 | 18 | 45 | 2,146 | 6,502 |
| Proceeds of the Credit | | | | | | | | | |
| % of Total Expenditure to be Financed | 33.7% | 76.0% | 45.4% | 50.2% | 50.2% | | 72.5% | 49.4% | 49.4% |
| Amount of Credit Allocated | 751 | 1,104 | 80 | 1,935 | 5,863 | | 45 | 1,980 | 6,000 |

ANNEX I
Table 1

1/ Discrepancies due to rounding.

ANNEX I
Table 2

JORDAN: TOURISM PROJECT

PROJECT COST BY SECTOR AND BY COMPONENT FOR EACH SITE

| Component | Jordanian Dinars (000) | | | US$ (000) | | |
|---|---|---|---|---|---|---|
| | Local | Foreign | Total | Local | Foreign | Total |
| A. PETRA ENTRANCE | 872 | 1,051 | 1,923 | 2,642 | 3,184 | 5,826 |
| 1. Hotel and Related Facilities | 540 | 703 | 1,243 | 1,636 | 2,130 | 3,766 |
| 2. Infrastructure | 250 | 288 | 538 | 754 | 875 | 1,629 |
| 2.1 Water Supply | (55) | (31) | (86) | (165) | (95) | (260) |
| 2.2 Sewerage | (35) | (52) | (87) | (107) | (156) | (263) |
| 2.3 Power Supply and Lighting | ( 8) | (27) | (35) | (23) | (83) | (106) |
| 2.4 Telecommunications | (61) | (114) | (175) | (182) | (346) | (528) |
| 2.5 Watershed Protection | (51) | (20) | (71) | (154) | (62) | (216) |
| 2.6 Landscaping | (16) | ( 8) | (24) | (49) | (24) | (73) |
| 2.7 Maintenance Facilities | (19) | (19) | (38) | (59) | (57) | (116) |
| 2.8 Solid Waste Disposal | ( 5) | (17) | (22) | (15) | (52) | (67) |
| 3. Visitor Center Improvements | 2 | 8 | 10 | 6 | 24 | 30 |
| 4. Camp Grounds | 14 | 10 | 24 | 43 | 29 | 72 |
| 5. Staff Quarters | 47 | 32 | 79 | 144 | 97 | 241 |
| 6. Stables | 19 | 10 | 29 | 59 | 29 | 88 |
| B. PETRA BASIN | 423 | 500 | 923 | 1,282 | 1,515 | 2,797 |
| 1. Visitor Facilities | 48 | 59 | 107 | 145 | 179 | 324 |
| 1.1 Visitor Contact Station | ( 9) | ( 8) | (17) | (28) | (24) | (52) |
| 1.2 First-Aid Station | ( 3) | ( 5) | ( 8) | (10) | (14) | (24) |
| 1.3-5 Lunch Terrace and Rest Rooms | (27) | (34) | (61) | (80) | (104) | (184) |
| 1.6 Office Space | ( 9) | (12) | (21) | (27) | (37) | (64) |
| 2. Infrastructure | 199 | 160 | 359 | 603 | 484 | 1,087 |
| 2.1 Water Supply | (13) | (17) | (30) | (40) | (51) | (91) |
| 2.2 Sewerage | ( 5) | ( 2) | ( 7) | (14) | ( 5) | (19) |
| 2.3 Power Supply and Lighting | ( 7) | (15) | (22) | (21) | (47) | (68) |
| 2.4 Telecommunications | ( 4) | (10) | (14) | (13) | (29) | (42) |
| 2.5 Watershed Protection | (106) | (69) | (175) | (321) | (211) | (531) |
| 2.6-8 Access Improvement, Trails, Trail Markers, etc. | (64) | (47) | (111) | (195) | (142) | (337) |
| 3. Archaeological Preservation | 44 | 162 | 206 | 133 | 492 | 625 |
| 4. Bedouin Resettlement | 132 | 119 | 251 | 401 | 360 | 761 |
| C. JERASH | 384 | 451 | 835 | 1,160 | 1,370 | 2,530 |
| 1. Restaurant Facilities | 49 | 78 | 127 | 149 | 236 | 385 |
| 2. Infrastructure | 85 | 75 | 160 | 255 | 230 | 485 |
| 2.1 Utilities | (9) | (3) | (12) | (26) | (10) | (36) |
| 2.2-3 Trails, Trail Markers, etc. | (30) | (23) | (53) | (90) | (71) | (161) |
| 2.4 Fencing | ( 7) | ( 9) | (16) | (21) | (28) | (49) |
| 2.5 Landscaping & Weed Control | (14) | (16) | (30) | (43) | (48) | (91) |
| 2.6 Maintenance Facilities | (25) | (24) | (49) | (75) | (73) | (148) |
| 3. Sound and Light Facilities | 50 | 112 | 162 | 150 | 341 | 491 |
| 4. Visitor Center Improvements | 3 | 11 | 14 | 9 | 33 | 42 |
| 5. Archaeological Preservation | 196 | 176 | 372 | 597 | 530 | 1,127 |
| D. PROJECT ADMINISTRATION | 71 | 18 | 89 | 216 | 54 | 270 |
| E. PROFESSIONAL SERVICES | 96 | 80 | 176 | 291 | 243 | 534 |
| F. TECHNICAL ASSISTANCE AND TRAINING | 17 | 45 | 62 | 52 | 136 | 188 |
| TOTAL PROJECT COST: | 1,862 | 2,146 | 4,008 | 5,643 | 6,502 | 12,145 |

JORDAN: TOURISM PROJECT

BREAKDOWN OF COSTS OF PROJECT ITEMS & COMPONENTS BY YEAR

(Exchange Rate: US$1.00 = JD 0.33)

| Items | Civil Works JD(000) | Equip-ment JD(000) | Contin-gencies JD(000) | Pro-fessional Services JD(000) | Total Cost JD(000) | Total Cost US$(000) | Foreign Exchange Component JD(000) | Foreign Exchange Component US$(000) | Year I JD(000) | Year II JD(000) | Year III JD (000) | Year IV JD(000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A PETRA ENTRANCE | | | | | | | | | | | | |
| A.1 Hotel and Related Facilities | 446 | 337 | 460 | 90 | 1,333 | 4,039 | 723 | 2,192 | 88 | 914 | 331 | |
| A.2 Infrastructure: | 202 | 137 | 199 | 24 | 562 | 1,702 | 303 | 918 | 26 | 457 | 79 | |
| 2.1 Water Supply | ( 48) | ( 6) | ( 32) | ( 4) | ( 90) | ( 273) | | | ( 4) | ( 86) | | |
| 2.2 Sewerage | ( 34) | ( 21) | ( 32) | ( 8) | ( 95) | ( 287) | | | ( 8) | ( 87) | | |
| 2.3 Power & Lighting | ( 6) | ( 16) | ( 13) | ( 1) | ( 36) | ( 109) | | | ( 1) | ( 35) | | |
| 2.4 Telecommunications | ( 45) | ( 65) | ( 65) | ( 3) | ( 178) | ( 539) | | | ( 3) | ( 116) | ( 59) | |
| 2.5 Watershed Protection | ( 45) | | ( 26) | ( 6) | ( 77) | ( 233) | | | ( 6) | ( 51) | ( 20) | |
| 2.6 Landscaping | ( 12) | ( 3) | ( 9) | ( 1) | ( 25) | ( 76) | | | ( 1) | ( 24) | | |
| 2.7 Maintenance Facilities | ( 12) | ( 12) | ( 14) | ( 1) | ( 39) | ( 118) | | | ( 3) | ( 36) | | |
| 2.8 Solid Waste Disposal | | ( 14) | ( 8) | | ( 22) | ( 67) | | | | ( 22) | | |
| A.3 Visitor Center Improvements | | 6 | 4 | | 10 | 30 | 5 | 15 | 10 | | | |
| A.4 Campground | 10 | 5 | 9 | 2 | 26 | 79 | 14 | 42 | 3 | 23 | | |
| A.5 Staff Quarters | 30 | 20 | 29 | 6 | 85 | 258 | 46 | 139 | 21 | 64 | | |
| A.6 Stables | 18 | | 11 | 2 | 31 | 94 | 17 | 52 | 14 | 17 | | |
| Sub-Total | 706 | 505 | 712 | 124 | 2,047 | 6,202 | 1,108 | 3,358 | 162 | 1,475 | 410 | |
| B PETRA BASIN | | | | | | | | | | | | |
| B.1 Visitor Facilities | 39 | 28 | 40 | 5 | 112 | 339 | 60 | 182 | 9 | 103 | | |
| 1.1 Visitor Contact Station | ( 6) | ( 5) | ( 6) | ( 1) | ( 18) | ( 54) | | | ( 1) | ( 17) | | |
| 1.2 First Aid Station | ( 2) | ( 3) | ( 3) | | ( 8) | ( 24) | | | | ( 8) | | |
| 1.3-5 Lunch Terrace & Rest Rooms | ( 23) | ( 15) | ( 23) | ( 3) | ( 64) | ( 194) | | | ( 6) | ( 58) | | |
| 1.6 Field Laboratory | ( 8) | ( 5) | ( 8) | ( 1) | ( 22) | ( 67) | | | ( 2) | ( 20) | | |
| B.2 Infrastructure | 203 | 23 | 133 | 16 | 375 | (1,137) | 202 | 612 | 17 | 291 | 67 | |
| 2.1 Water Supply | ( 13) | ( 6) | ( 11) | ( 2) | ( 32) | ( 97) | | | ( 1) | ( 31) | | |
| 2.2 Sewerage | ( 4) | | ( 3) | | ( 7) | ( 21) | | | | ( 7) | | |
| 2.3 Power & Lighting | ( 9) | ( 5) | ( 8) | ( 1) | ( 23) | ( 70) | | | ( 1) | ( 22) | | |
| 2.4 Telecommunications | ( 9) | | ( 5) | | ( 14) | ( 42) | | | | ( 14) | | |
| 2.5 Watershed Protection | (110) | | ( 65) | ( 8) | ( 183) | ( 555) | | | ( 5) | ( 135) | ( 43) | |
| 2.6-8 Access Improvement, Trails, etc. | ( 58) | ( 12) | ( 41) | ( 5) | ( 116) | ( 352) | | | ( 10) | ( 81) | ( 25) | |
| B.3 Archaeological Preservation | 70 | 60 | 76 | | 206 | 624 | 111 | 336 | 8 | 53 | 70 | 75 |
| B.4 Bedouin Resettlement | 109 | 50 | 92 | 11 | 262 | 794 | 141 | 427 | 37 | 225 | | |
| Sub-Total | 421 | 161 | 341 | 32 | 955 | 2,894 | 514 | 1,557 | 71 | 672 | 137 | 75 |
| C JERASH | | | | | | | | | | | | |
| C.1 Restaurant Facilities | 35 | 45 | 47 | 5 | 132 | 400 | 72 | 218 | 5 | 99 | 28 | |
| C.2 Infrastructure | 88 | 13 | 59 | 7 | 167 | 506 | 90 | 273 | 13 | 154 | | |
| 2.1 Utilities | ( 7) | | ( 5) | ( 1) | ( 13) | ( 39) | | | ( 1) | ( 12) | | |
| 2.2-3 Trails & Markers | ( 32) | | ( 21) | ( 3) | ( 56) | ( 170) | | | ( 6) | ( 50) | | |
| 2.4 Fencing | ( 10) | | ( 6) | ( 1) | ( 17) | ( 52) | | | ( 3) | ( 14) | | |
| 2.5 Landscaping | ( 15) | ( 5) | ( 10) | ( 1) | ( 31) | ( 94) | | | ( 2) | ( 29) | | |
| 2.6 Maintenance Facilities | ( 24) | ( 8) | ( 17) | ( 1) | ( 50) | ( 151) | | | ( 1) | ( 49) | | |
| C.3 Sound & Light Facilities | 30 | 72 | 60 | 7 | 169 | 512 | 91 | 276 | 7 | 162 | | |
| C.4 Visitor Center Improvement | | 9 | 5 | 1 | 15 | 46 | 8 | 24 | 9 | 6 | | |
| C.5 Archaeological Preservation | 124 | 110 | 138 | | 372 | 1,127 | 200 | 606 | 20 | 92 | 131 | 129 |
| Sub-Total | 277 | 249 | 309 | 20 | 855 | 2,591 | 461 | 1,397 | 54 | 513 | 159 | 129 |
| D PROJECT ADMINISTRATION | | | | | 89 | 270 | 18 | 54 | 23 | 22 | 22 | 22 |
| E TECHNICAL ASSISTANCE & TRAINING | | | | | 62 | 188 | 45 | 136 | 11 | 21 | 18 | 12 |
| GRAND TOTAL | 1,404 | 915 | 1,362 | 176 | 4,008 | 12,145 | 2,146 | 6,502 | 321 | 2,703 | 746 | 238 |

ANNEX I
Table 3

JORDAN: TOURISM PROJECT

SCHEDULE OF EXPENDITURES BY PROJECT ITEMS BY QUARTER
(US$ 000)

| Items | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | |
| A. PETRA ENTRANCE | | | | | | | | | | | | | | | | | |
| A.1 Hotel & Related Facilities | 128 | 96 | 32 | 32 | 267 | 542 | 848 | 1,096 | 998 | | | | | | | | 4,039 |
| A.2 Infrastructure | | | | | | | | | | | | | | | | | 1,702 |
| 2.1 Water Supply | 7 | 5 | 1 | - | 54 | 74 | 132 | - | - | | | | | | | | ( 273) |
| 2.2 Sewerage | 14 | 9 | 3 | - | 41 | 101 | 119 | - | - | | | | | | | | ( 287) |
| 2.3 Power & Lighting | 3 | - | - | - | 33 | 73 | - | - | - | | | | | | | | ( 109) |
| 2.4 Telecommunications | 10 | - | - | - | - | 83 | 102 | 159 | 185 | | | | | | | | ( 539) |
| 2.5 Watershed Protection | 10 | 6 | 3 | - | 27 | 35 | 42 | 50 | 60 | | | | | | | | ( 233) |
| 2.6 Landscaping | - | 3 | - | 6 | 25 | 37 | 5 | - | - | | | | | | | | ( 76) |
| 2.7 Maintenance Facilities | 3 | - | - | 5 | 38 | 54 | 14 | 4 | - | | | | | | | | ( 118) |
| 2.8 Solid Waste | - | - | - | - | 43 | 24 | - | - | - | | | | | | | | ( 67) |
| A.3 Visitor Center Facilities | - | - | - | 30 | - | - | - | - | - | | | | | | | | 30 |
| A.4 Campground | 4 | 2 | - | 3 | 28 | 36 | 6 | - | - | | | | | | | | 79 |
| A.5 Staff Quarters | 10 | 5 | 4 | 10 | 49 | 83 | 83 | 14 | - | | | | | | | | 258 |
| A.6 Stables | 6 | - | - | 40 | 48 | - | - | - | - | | | | | | | | 94 |
| Sub-Total | (195) | (126) | (43) | (126) | (653) | (1,142) | (1,351) | (1,323) | (1,243) | | | | | | | | 6,202 |
| B. PETRA BASIN | | | | | | | | | | | | | | | | | |
| B.1 Visitor Facilities | | | | | | | | | | | | | | | | | 339 |
| 1.1 Visitor Contact Station | 3 | - | - | 2 | 15 | 20 | 9 | 5 | - | | | | | | | | ( 54) |
| 1.2 First Aid Station | - | - | - | 1 | 10 | 13 | - | - | - | | | | | | | | ( 24) |
| 1.3-5 Lunch Terrace & Rest Rooms | 6 | 4 | - | 8 | 56 | 60 | 53 | 7 | - | | | | | | | | ( 194) |
| 1.6 Field Laboratory | 3 | - | - | 3 | 15 | 24 | 19 | 3 | - | | | | | | | | ( 67) |
| B.2 Infrastructure | | | | | | | | | | | | | | | | | 1,137 |
| 2.1 Water Supply | 6 | - | - | - | 23 | 35 | 33 | - | - | | | | | | | | ( 97) |
| 2.2 Sewerage | - | - | - | - | 12 | 9 | - | - | - | | | | | | | | ( 21) |
| 2.3 Power & Lighting | 3 | - | - | - | - | 19 | 24 | 24 | - | | | | | | | | ( 70) |
| 2.4 Telecommunications | - | - | - | - | - | 11 | 16 | 15 | - | | | | | | | | ( 42) |
| 2.5 Watershed Protection | 10 | 16 | - | - | 66 | 85 | 114 | 134 | 130 | | | | | | | | ( 555) |
| 2.6-8 Access Improvement Trails, etc. | 16 | - | - | 22 | 33 | 61 | 70 | 73 | 77 | | | | | | | | ( 352) |
| B.3 Archaeological Preservation | - | - | - | 32 | 32 | 32 | 40 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 60 | 64 | 624 |
| B.4 Bedouin Resettlement | 19 | 14 | - | 48 | 125 | 200 | 228 | 160 | - | | | | | | | | 794 |
| Sub-Total | (66) | (34) | - | (116) | (387) | ( 569) | ( 606) | ( 473) | ( 259) | | | | | | | | 2,894 |
| C. JERASH | | | | | | | | | | | | | | | | | |
| C.1 Restaurant Facilities | 6 | 8 | 2 | - | 24 | 62 | 99 | 114 | 85 | | | | | | | | 400 |
| C.2 Infrastructure | | | | | | | | | | | | | | | | | 506 |
| 2.1 Utilities | 3 | - | - | - | - | 21 | 15 | - | - | | | | | | | | ( 39) |
| 2.2-3 Trails & Markers | 10 | - | - | 10 | 25 | 41 | 46 | 38 | - | | | | | | | | ( 170) |
| 2.4 Fencing | 3 | - | - | 6 | 19 | 24 | - | - | - | | | | | | | | ( 52) |
| 2.5 Landscaping | 3 | - | - | 5 | 10 | 13 | 20 | 27 | 16 | | | | | | | | ( 94) |
| 2.6 Maintenance & Administrative Facilities | 3 | - | - | - | 24 | 33 | 45 | 46 | - | | | | | | | | ( 151) |
| C.3 Sound & Light Facilities | 12 | 10 | - | - | 49 | 98 | 176 | 167 | - | | | | | | | | 512 |
| C.4 Visitor Center Improvement | 3 | - | - | | 19 | - | - | - | - | | | | | | | | 46 |
| C.5 Archaeological Preservation | - | - | - | 57 | 57 | 57 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 99 | 99 | 100 | 1,127 |
| Sub-Total | (43) | (18) | (2) | (102) | (227) | (349) | (495) | (486) | (195) | | | | | | | | 2,591 |
| D. PROJECT ADMINISTRATION | 18 | 18 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 13 | 270 |
| E. TECHNICAL ASSISTANCE & TRAINING | - | - | - | 33 | 33 | 10 | 10 | 10 | 10 | 23 | 23 | - | - | 18 | 18 | - | 188 |
| TOTAL BY QUARTER | 322 | 196 | 62 | 394 | 1,317 | 2,087 | 2,479 | 2,309 | 1,724 | 186 | 186 | 163 | 163 | 186 | 194 | 177 | 12,145 |
| TOTAL YEAR I | | | | 974 | | | | | | | | | | | | | |
| II | | | | | | | | 8,192 | | | | | | | | | |
| III | | | | | | | | | | | | 2,259 | | | | | |
| IV | | | | | | | | | | | | | | | | 720 | |
| TOTAL (Accumulative) | | | | 974 | | | | 9,166 | | | | 11,425 | | | | 12,145 | |

ANNEX I
Table 4

JORDAN: TOURISM PROJECT

SCHEDULE OF DISBURSEMENT OF PROJECT ITEMS BY QUARTER

(US$000)

| | 1 Q | 2 Q | 3 Q | 4 Q | 5 Q | 6 Q | 7 Q | 8 Q | 9 Q | 10 Q | 11 Q | 12 Q | 13 Q | 14 Q | 15 Q | 16 Q | 17 Q | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Part A. PETRA ENTRANCE | | | | | | | | | | | | | | | | | | |
| A.1 Hotel & Related Facilities | | 48 | 37 | 12 | 12 | 146 | 298 | 1002 | 198 | 200 | 71 | | | | | | | 2,024 |
| A.2 Infrastructure | | | | | | | | | | | | | | | | | | |
| 2.1 Water Supply | | 3 | 3 | | | 20 | 26 | 41 | 8 | | | | | | | | | 101 |
| 2.2 Sewerage | | 5 | 4 | 1 | | 19 | 38 | 35 | 21 | 11 | | | | | | | | 134 |
| 2.3 Power & Lighting | | 1 | | | | 27 | 31 | 6 | | | | | | | | | | 65 |
| 2.4 Telecommunications | | 4 | | | | | 43 | 57 | 86 | 102 | 48 | | | | | | | 340 |
| 2.5 Watershed Protection | | 4 | 3 | 1 | | 10 | 13 | 15 | 17 | 22 | | | | | | | | 85 |
| 2.6 Landscaping | | 1 | | | 3 | 7 | 14 | 5 | | | | | | | | | | 30 |
| 2.7 Maintenance Facilities | | 1 | | | 3 | 10 | 16 | 22 | 4 | | | | | | | | | 56 |
| 2.8 Solid Waste | | | | | | 25 | 18 | | | | | | | | | | | 43 |
| A.3 Visitor Center Improvement | | | | | 17 | 3 | | | | | | | | | | | | 20 |
| A.4 Campground | | 2 | 1 | | 2 | 11 | 13 | 4 | | | | | | | | | | 33 |
| A.5 Staff Quarters | | 4 | 2 | 2 | 5 | 15 | 47 | 47 | 17 | | | | | | | | | 139 |
| A.6 Stable | | 2 | 1 | | 18 | 18 | | | | | | | | | | | | 39 |
| Sub-Total | | | | | | | | | | | | | | | | | | 3,109 |
| Part B. PETRA BASIN | | | | | | | | | | | | | | | | | | |
| B.1 Visitor Facilities | | | | | | | | | | | | | | | | | | |
| 1.1 Visitor Contact Station | | 1 | | | 2 | 5 | 7 | 5 | 3 | | | | | | | | | 23 |
| 1.2 First Aid Station | | | | | | 5 | 6 | 2 | | | | | | | | | | 13 |
| 1.3-5 Lunch Terrace & Rest Rooms | | 4 | | | 3 | 21 | 33 | 19 | 4 | | | | | | | | | 84 |
| 1.6 Field Laboratory | | 1 | | | 2 | 7 | 13 | 7 | 2 | | | | | | | | | 32 |
| B.2 Infrastructure | | | | | | | | | | | | | | | | | | |
| 2.1 Water Supply | | 3 | | | | 13 | 20 | 16 | | | | | | | | | | 52 |
| 2.2 Sewerage | | | | | | 3 | 4 | | | | | | | | | | | 7 |
| 2.3 Power & Lighting | | 1 | | | | | 14 | 17 | 16 | | | | | | | | | 48 |
| 2.4 Telecommunications | | | | | | | 8 | 12 | 9 | | | | | | | | | 29 |
| 2.5 Watershed Protection | | 4 | 7 | | | 32 | 32 | 42 | 49 | 47 | | | | | | | | 213 |
| 2.6-8 Access Improvement, Trails, etc. | | 7 | | | 5 | 10 | 25 | 30 | 35 | 32 | | | | | | | | 144 |
| B.3 Archaeological Preservation | | | | | 19 | 19 | 34 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 46 | 50 | 50 | 495 |
| B.4 Bedouin Resettlement | | 12 | 6 | | 22 | 59 | 81 | 95 | 71 | 16 | | | | | | | | 362 |
| Sub-Total | | | | | | | | | | | | | | | | | | 1,502 |
| Part C. JERASH | | | | | | | | | | | | | | | | | | |
| C.1 Restaurant Facilities | | 7 | | | | 13 | 30 | 63 | 64 | 45 | | | | | | | | 222 |
| C.2 Infrastructure | | | | | | | | | | | | | | | | | | |
| 2.1 Utilities | | 1 | | | | | 5 | 4 | | | | | | | | | | 10 |
| 2.2-3 Trails & Markers | | 4 | | | 3 | 11 | 17 | 21 | 17 | | | | | | | | | 73 |
| 2.4 Fencing | | 2 | | | 2 | 10 | 12 | | | | | | | | | | | 26 |
| 2.5 Landscaping | | 1 | | | 2 | 4 | 6 | 8 | 13 | 8 | | | | | | | | 42 |
| 2.6 Maintenance & Administrative Facilities | | 2 | | | | 10 | 13 | 18 | 22 | | | | | | | | | 65 |
| C.3 Sound & Light Facilities | | 10 | | | | 27 | 56 | 96 | 96 | | | | | | | | | 285 |
| C.4 Visitor Center Improvement | | 1 | | | 14 | 12 | | | | | | | | | | | | 27 |
| C.5 Archaeological Preservation | | | | | 24 | 24 | 24 | 41 | 41 | 41 | 42 | 42 | 42 | 42 | 42 | 42 | 47 | 494 |
| Sub-Total | | | | | | | | | | | | | | | | | | 1,244 |
| Part D. TECHNICAL ASSISTANCE & TRAINING | | | | | 25 | 25 | 7 | 7 | 7 | 7 | 18 | 19 | | | 15 | 15 | | 145 |
| TOTAL BY QUARTER: | 136 | 64 | 16 | 183 | 621 | 989 | 1771 | 843 | 574 | 222 | 104 | 85 | 85 | 103 | 107 | 97 | 6,000 | |
| TOTAL YEAR I | | | 216 | | | | | | | | | | | | | | | |
| II | | | | | | | 3564 | | | | | | | | | | | |
| III | | | | | | | | | | | 1743 | | | | | | | |
| IV | | | | | | | | | | | | | | | | 380 | | |
| V | | | | | | | | | | | | | | | | | 97 | |
| TOTAL (CUMULATIVE): | | | 216 | | | | 3780 | | | | 5523 | | | | | 5903 | 6000 | |

ANNEX I
Table 5

ANNEX I
Table 6

JORDAN: TOURISM PROJECT

ESTIMATED SCHEDULE OF DISBURSEMENTS
(US$ 000's)

| Implementation Quarter | | Disbursements | | | | | |
|---|---|---|---|---|---|---|---|
| | | Quarterly | Percent | Cumulative | Percent | Quarterly | Percent |
| First Year | Q1 | | | | | 6,000 | 100.0 |
| | Q2 | 136 | 2.2 | 136 | 2.2 | 5,864 | 97.8 |
| | Q3 | 64 | 1.1 | 200 | 3.3 | 5,800 | 96.7 |
| | Q4 | 16 | 0.3 | 216 | 3.6 | 5,784 | 96.4 |
| Second Year | Q5 | 183 | 3.0 | 399 | 6.6 | 5,601 | 93.4 |
| | Q6 | 621 | 10.3 | 1,020 | 16.9 | 4,980 | 83.1 |
| | Q7 | 989 | 16.5 | 2,009 | 33.4 | 3,991 | 66.6 |
| | Q8 | 1,771 | 29.5 | 3,780 | 63.0 | 2,220 | 37.0 |
| Third Year | Q9 | 843 | 14.1 | 4,623 | 77.1 | 1,377 | 22.9 |
| | Q10 | 574 | 9.6 | 5,197 | 86.7 | 803 | 13.3 |
| | Q11 | 222 | 3.7 | 5,419 | 90.4 | 581 | 9.6 |
| | Q12 | 104 | 1.7 | 5,523 | 92.1 | 477 | 7.9 |
| Fourth Year | Q13 | 85 | 1.4 | 5,608 | 93.5 | 392 | 6.5 |
| | Q14 | 85 | 1.4 | 5,693 | 94.9 | 307 | 5.1 |
| | Q15 | 103 | 1.7 | 5,796 | 96.6 | 204 | 3.4 |
| | Q16 | 107 | 1.8 | 5,903 | 98.4 | 97 | 1.6 |
| Fifth Year | Q17 | 97 | 1.6 | 6,000 | 100.0 | | |
| TOTAL: | | 6,000 | 100.0 | | | | |

JORDAN: TOURISM PROJECT

CONTINGENCY ALLOWANCES
(in US$ 000)

| | Civil Works | | | Equipment | | | Professional Services | | | Project Administration | | | Technical Assistance and Training | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Local | Foreign | Total | Local | Foreign | Total | Local | Foreign | Total | Local | Foreign | Total | Local | Foreign | Total | Local | Foreign | Total |
| TOTAL PROJECT COST EXCLUDING CONTINGENCIES | 2,394 | 1,860 | 4,254 | 821 | 1,951 | 2,772 | 291 | 243 | 534 | 216 | 54 | 270 | 52 | 136 | 188 | 3,752 | 4,266 | 8,018 |
| Percentage of Total | 56.3% | 43.7% | 100.0% | 29.6% | 70.4% | 100.0% | 54.5% | 45.5% | 100.0% | 80.0% | 20.0% | 100.0% | 27.7% | 72.3% | 100.0% | 46.8% | 53.2% | 100.0% |
| CONTINGENCIES | | | | | | | | | | | | | | | | | | |
| (a) Allowance for Probable Price Increases | | | | | | | | | | | | | | | | | | |
| (i) Percentage (2.5yrs.) | 48.9% | 36.9% | 43.7% | 26.3% | 51.2% | 43.8% | | | | | | | | | | 37.5% | 39.1% | 38.3% |
| (ii) Amount | 1,171 | 687 | 1,858 | 216 | 999 | 1,215 | | | | | | | | | | 1,406 | 1,667 | 3,073 |
| (b) Allowance for Unforeseen Factors | | | | | | | | | | | | | | | | | | |
| (i) Percentage | 15.0% | 15.0% | 15.0% | 15.0% | 15.0% | 15.0% | | | | | | | | | | 12.9% | 13.3% | 13.1% |
| (ii) Amount | 359 | 279 | 638 | 123 | 293 | 416 | | | | | | | | | | 485 | 569 | 1,054 |
| (c) Total Contingency Allowances | | | | | | | | | | | | | | | | | | |
| (i) Percentage | 63.9% | 51.9% | 58.7% | 41.3% | 66.2% | 58.9% | | | | | | | | | | 50.4% | 52.4% | 51.5% |
| (ii) Amount | 1,530 | 966 | 2,496 | 339 | 1,292 | 1,631 | | | | | | | | | | 1,891 | 2,236 | 4,127 |
| (iii) Percentage of Total | 61.3% | 38.7% | 100.0% | 20.8% | 79.2% | 100.0% | | | | | | | | | | 45.8% | 54.2% | 100.0% |
| TOTAL PROJECT COST INCLUDING CONTINGENCIES | 3,924 | 2,826 | 6,750 | 1,160 | 3,243 | 4,403 | 291 | 243 | 534 | 216 | 54 | 270 | 52 | 136 | 188 | 5,643 | 6,502 | 12,145 |
| Percentage of Total | 58.9% | 41.1% | 100.0% | 26.3% | 73.7% | 100.0% | 54.5% | 45.5% | 100.0% | 80.0% | 20.0% | 100.0% | 27.7% | 72.3% | 100.0% | 46.5% | 53.5% | 100.0% |

ANNEX I
Table 7

JORDAN: TOURISM PROJECT

PETRA ENTRANCE: COST ESTIMATES BY PROJECT ITEMS & COMPONENTS

(Exchange Rate: US$1.00 = JD 0.33)

| | Project Items | Civil Works JD(000) | Equipment JD(000) | Total Cost JD(000) | Total Cost US$(000) | Foreign Exchange Component JD(000) | Foreign Exchange Component US$(000) | Year I JD(000) | Year II JD(000) | Year III JD (000) | Year IV JD(000) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Part A. | PETRA ENTRANCE | | | | | | | | | | |
| A.1 | Hotel & Related Facilities | 446 | 337 | 783 | 2,372 | 443 | 1,342 | 55 | 592 | 136 | |
| 1.1 | Hotel Complex | | | | | | | | | | |
| (a) | New Rooms (76) | (286) | (172) | (458) | (1,388) | (244) | ( 739) | ( 31) | (346) | ( 81) | |
| (b) | Re-modeling of existing rooms (24) | ( 3) | ( 38) | ( 41) | ( 124) | ( 28) | ( 85) | ( 3) | ( 31) | ( 7) | |
| 1.2 | Public Space - Lobby/Recpt. | ( 37) | ( 24) | ( 61) | ( 185) | ( 33) | ( 100) | ( 5) | ( 46) | ( 10) | |
| 1.3 | Concessions | ( 8) | - | ( 8) | ( 24) | ( 4) | ( 12) | - | ( 6) | ( 2) | |
| 1.4 | Food & Beverage | ( 78) | ( 62) | (140) | ( 424) | ( 90) | ( 272) | ( 10) | (106) | ( 24) | |
| 1.5 | General Service | ( 30) | ( 34) | ( 64) | ( 194) | ( 37) | ( 112) | ( 5) | ( 49) | ( 10) | |
| 1.6 | Miscellaneous Facilities | ( 4) | ( 7) | ( 11) | ( 33) | ( 7) | ( 21) | ( 1) | ( 8) | ( 2) | |
| A.2 | Infrastructure | 202 | 137 | 339 | (1,027) | 182 | 551 | 17 | 213 | 109 | |
| 2.1 | Water Supply System | | | | | | | | | | |
| (a) | Transmission ( 5 km) | ( 37) | - | ( 37) | ( 112) | ( 13) | ( 39) | | | | |
| (b) | Reservoir plus RD | ( 11) | ( 4) | ( 15) | ( 46) | ( 5) | ( 15) | ( 4) | ( 39) | ( 11) | |
| (c) | Chlorinator plus Meter | - | ( 2) | ( 2) | ( 6) | ( 2) | ( 6) | | | | |
| 2.2 | Sewerage System | | | | | | | | | | |
| (a) | Sewer plus Force Main | ( 3) | ( 4) | ( 7) | ( 21) | ( 4) | ( 12) | ( 4) | ( 26) | ( 25) | |
| (b) | Treatment - Biological | ( 31) | ( 17) | ( 48) | ( 145) | ( 28) | ( 86) | | | | |
| 2.3 | Power & Lighting | ( 6) | ( 16) | ( 22) | ( 67) | ( 17) | ( 52) | - | ( 18) | ( 4) | |
| 2.4 | Telecommunications | ( 45) | ( 65) | (110) | ( 333) | ( 72) | ( 218) | ( 5) | ( 52) | ( 53) | |
| 2.5 | Watershed Protection | ( 45) | - | ( 45) | ( 136) | ( 13) | ( 39) | ( 4) | ( 25) | ( 16) | |
| 2.6 | Landscaping | ( 12) | ( 3) | ( 15) | ( 46) | ( 5) | ( 15) | - | ( 15) | - | |
| 2.7 | Maintenance & Workshops | ( 12) | ( 12) | ( 24) | ( 73) | ( 12) | ( 36) | - | ( 24) | - | |
| 2.8 | Solid Waste Disposal | - | ( 14) | ( 14) | ( 42) | ( 11) | ( 33) | - | ( 14) | - | |
| A.3 | Visitor Center Improvements | - | 6 | 6 | 18 | 5 | 15 | 6 | - | - | |
| A.4 | Camp Grounds | 10 | 5 | 15 | 45 | 6 | 18 | - | 15 | - | |
| A.5 | Staff Quarters | 30 | 20 | 50 | 152 | 20 | 61 | 10 | 40 | - | |
| A.6 | Stables | 18 | - | 18 | 55 | 6 | 18 | 2 | 13 | 3 | |
| | (a) Base-Line Costs | 706 | 505 | 1,211 | 3,669 | 662 | 2,005 | 90 | 873 | 248 | |
| | Contingencies | | | ( 712) | (2,157) | (389) | (1,179) | (53) | (512) | (147) | |
| | (b) Physical Increase | | | 182 | 551 | 99 | 300 | 14 | 130 | 38 | |
| | (c) Price Increase | | | 530 | 1,606 | 290 | 879 | 39 | 382 | 109 | |
| | (d) Professional Services | | | 124 | 376 | 57 | 174 | 19 | 90 | 15 | |
| | TOTAL PART "A" | | | 2,047 | 6,202 | 1,108 | 3,358 | 162 | 1,475 | 410 | |

ANNEX I
Table 8

JORDAN: TOURISM PROJECT

PETRA BASIN: COST ESTIMATES BY PROJECT ITEMS & COMPONENTS

(Exchange Rate: US$1.00 = JD 0.33)

| Project Items | Civil Works JD(000) | Equipment JD(000) | Total Cost JD(000) | Total Cost US$(000) | Foreign Exchange Component JD(000) | Foreign Exchange Component US$(000) | Year I JD(000) | Year II JD(000) | Year III JD(000) | Year IV JD(000) |
|---|---|---|---|---|---|---|---|---|---|---|
| Part B. PETRA BASIN | | | | | | | | | | |
| B.1 Visitor Facilities | 39 | 28 | 67 | 203 | 38 | 115 | 8 | 59 | | |
| 1.1 Visitor Contact Station | ( 6) | ( 5) | ( 11) | ( 33) | ( 5) | ( 15) | ( 3) | ( 8) | | |
| 1.2 First Aid Station | ( 2) | ( 3) | ( 5) | ( 15) | ( 3) | ( 9) | | ( 5) | | |
| 1.3 Rest Rooms | ( 10) | - | ( 10) | ( 30) | ( 6) | ( 19) | | | | |
| 1.4 Refreshment Bar & Lunch Terrace | ( 9) | ( 8) | ( 17) | ( 52) | ( 9) | ( 27) | ( 4) | ( 34) | | |
| 1.5 Kitchen Space | ( 4) | ( 7) | ( 11) | ( 33) | ( 7) | ( 21) | | | | |
| 1.6 Research Facilities (Field Lab.) | ( 8) | ( 5) | ( 13) | ( 40) | ( 8) | ( 24) | ( 1) | ( 12) | | |
| B.2 Infrastructure | 203 | 23 | 226 | 685 | 102 | 309 | | 189 | 37 | |
| 2.1 Water Supply | ( 13) | ( 6) | ( 19) | ( 58) | (11) | ( 33) | | ( 19) | | |
| 2.2 Sewerage | ( 4) | - | ( 4) | ( 12) | ( 1) | ( 3) | | ( 4) | | |
| 2.3 Power & Lighting | ( 9) | ( 5) | ( 14) | ( 43) | (10) | ( 30) | | ( 14) | | |
| 2.4 Telecommunications | ( 9) | - | ( 9) | ( 27) | ( 6) | ( 18) | | ( 9) | | |
| 2.5 Watershed Protection | (110) | - | (110) | (333) | (44) | (134) | | ( 98) | (12) | |
| 2.6 Improvement of Access | ( 40) | - | ( 40) | (121) | (16) | ( 49) | | | | |
| 2.7 Trails | ( 10) | - | ( 10) | ( 30) | ( 4) | ( 12) | | ( 45) | (25) | |
| 2.8 Trail Markers & Printed Guides | ( 8) | (12) | ( 20) | ( 61) | (10) | ( 30) | | | | |
| B.3 Archaeological Preservation | 70 | 60 | 130 | 394 | 103 | 312 | (16) | 18 | 49 | 47 |
| 3.1 Equipment, Tools & Consolidation | ( 70) | (60) | (130) | (394) | (103) | (312) | (16) | ( 18) | (49) | (47) |
| B.4 Bedouin Resettlement | 109 | 50 | 159 | 481 | 75 | 228 | 17 | 142 | | |
| 4.1 96 Family Dwelling plus School & Community Facilities | ( 79) | (35) | (114) | (345) | (57) | (173) | (12) | (102) | | |
| 4.2 Access Road | ( 30) | (15) | ( 45) | (136) | (18) | ( 55) | ( 5) | ( 40) | | |
| (a) Base-Line Cost | 421 | 161 | 582 | 1,763 | 318 | 964 | 41 | 408 | 86 | 47 |
| Contingencies | | | (341) | (1,034) | (182) | ( 551) | (25) | (237) | (51) | (28) |
| (b) Physical Increase | | | 87 | 264 | 46 | 139 | 6 | 61 | 13 | 7 |
| (c) Price Increase | | | 254 | 770 | 136 | 412 | 19 | 176 | 38 | 21 |
| (d) Professional Services | | | 132 | 197 | 14 | 42 | 5 | 27 | | |
| TOTAL PART "B" | | | 955 | 2,894 | 514 | 1,557 | 71 | 672 | 137 | 75 |

ANNEX I
Table 9

JORDAN: TOURISM PROJECT

JERASH: COST ESTIMATES BY PROJECT ITEMS & COMPONENTS

(Exchange Rate: US$1.00 = JD 0.33)

| Project Items | Civil Works JD(000) | Equipment JD(000) | Total Cost JD(000) | Total Cost US$(000) | Foreign Exchange Component JD(000) | Foreign Exchange Component US$(000) | Year I JD(000) | Year II JD(000) | Year III JD (000) | Year IV JD(000) |
|---|---|---|---|---|---|---|---|---|---|---|
| Part C. JERASH | | | | | | | | | | |
| C.1 Restaurant Facilities | 35 | 45 | 80 | 242 | 49 | 149 | 3 | 61 | 16 | |
| 1.1 Dining Room & Lunch Terrace | ( 18) | ( 22) | ( 40) | (121) | (23) | ( 70) | ( 2) | ( 30) | ( 8) | |
| 1.2 Kitchen including Cold Storage | ( 17) | ( 23) | ( 40) | (121) | (26) | ( 79) | ( 1) | ( 31) | ( 8) | |
| C.2 Infrastructure | 88 | 13 | 101 | 306 | 48 | 145 | | 98 | 3 | |
| 2.1 Utilities | ( 7) | - | ( 7) | ( 21) | ( 2) | ( 6) | | ( 7) | | |
| 2.2 Trails | ( 12) | - | ( 12) | ( 36) | ( 5) | ( 15) | | ( 12) | | |
| 2.3 Trail Markers & Printed Guides | ( 20) | - | ( 20) | ( 61) | (10) | ( 30) | | ( 20) | | |
| 2.4 Fencing | ( 10) | - | ( 10) | ( 30) | ( 6) | ( 18) | | ( 10) | | |
| 2.5 Landscaping & Weed Control | ( 15) | ( 5) | ( 20) | ( 61) | (10) | ( 30) | | ( 17) | ( 3) | |
| 2.6 Administration & Maintenance Facilities | ( 24) | ( 8) | ( 32) | ( 97) | (15) | ( 46) | | ( 32) | | |
| C.3 Sound & Light Performance | 30 | 72 | 102 | 309 | 71 | 215 | 13 | 89 | | |
| C.4 Visitor Center Improvement | - | 9 | 9 | 27 | 7 | 21 | 5 | 4 | | |
| C.5 Archaeological Preservation | 124 | 110 | 234 | 710 | 110 | 334 | 12 | 62 | 79 | 81 |
| 5.1 Site Museum | ( 20) | ( 20) | ( 40) | (122) | (25) | ( 76) | ( 6) | ( 30) | ( 5) | |
| 5.2 Equipment, Tools & Consolidation | (104) | ( 90) | (194) | (588) | (85) | (258) | ( 6) | ( 32) | (74) | (81) |
| (a) Base-Line Cost | 277 | 249 | 526 | 1,594 | 285 | 864 | 33 | 314 | 98 | 81 |
| Contingencies | | | (309) | ( 936) | (167) | (506) | (20) | (184) | (57) | (48) |
| (b) Physical Increase | | | 79 | 239 | 43 | 130 | 5 | 47 | 15 | 12 |
| (c) Price Increase | | | 230 | 697 | 124 | 376 | 15 | 137 | 42 | 36 |
| (d) Professional Services | | | 20 | 61 | 9 | 27 | 1 | 15 | 4 | - |
| TOTAL PART "C" | | | 855 | 2,591 | 461 | 1,397 | 54 | 513 | 159 | 129 |

ANNEX I
Table 10

JORDAN: TOURISM PROJECT

PETRA ENTRANCE HOTEL COMPLEX: SCHEDULE OF ACCOMMODATION & COST ESTIMATES

(Exchange Rate: US$1.00 = JD 0.33)

PART "A" PETRA ENTRANCE FACILITIES

| | | UNIT AREA (sq. m) | TOTAL AREA (sq. m) | UNIT COST per $m^2$ (JD) | SITEWORKS (JD 000) | CONSTRUCTION (JD 000) | EQUIPMENT (JD 000) | TOTAL (JD 000) | TOTAL (US$ 000) Equivalent | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.1 | HOTEL COMPLEX: | | | | | | | | | |
| | Bedroom Areas | | | | | | | | | |
| | (i) New Bedroom Area: | | | | | | | | | |
| | 76 Double Bedrooms | @ 27 $m^2$ gross/rm | 2052 | @ 110 | 15 | 226 | 165 | 406 | 1230 | incl. acc/heating unit @ $600/room |
| | 4 Linen and Service Rooms | @ 25 $m^2$ gross/rm | 100 | @ 90 | | 9 | 7 | 16 | 49 | |
| | 5 Stairways (2 ST.) | @ 7 $m^2$ | 70 | @ 110 | | 8 | - | 8 | 24 | |
| | Corridors | | 474 | @ 60 | | 28 | | 28 | 85 | |
| | Sub-Total: | | (2696) | @ 101 avg. | (15) | (271) | (172) | (458) | (1388) | $ 19,290/room |
| | (ii) Existing Guest Rooms: (Remodeling) | @ 40 $m^2$ | 960 | | 3 | - | 38 | 41 | 124 | $ 5,460/room |
| B. | Public Space | | | | | | | | | |
| | 1 Main Lobby and Registration | | 160 | | | | | | | |
| | 1 Lounge/Bar | | 40 | | | | | | | |
| | 1 Men's Toilet | | 15 | | | | | | | |
| | 1 Women's Toilet | | 15 | | | | | | | |
| | Circulation | | 70 | | | | | | | |
| | Sub-Total: | | (300) | @ 110/$m^2$ | 4 | 33 | 24 | 61 | 185 | |
| C. | Concessions | | | | | | | | | |
| | 2/3 Rented Shops | | 75 | @ 110/$m^2$ | | 8 | - | 8 | 24 | |
| D. | Food and Beverage | | | | | | | | | |
| | 1 Dining Room & Lunch Terrace (200 seats) | | 300 | @ 100/$m^2$ | | 30 | 24 | 54 | 164 | |
| | 1 Outside Bar | | 50 | @ 60/$m^2$ | | 3 | 3 | 6 | 18 | |
| | 1 Kitchen and Cold Storage | | 400 | @ 100/$m^2$ | 5 | 40 | 35 | 80 | 242 | |
| | Sub-Total: | | (750) | | (5) | (73) | (62) | (148) | (424) | |
| E. | General Service Space | | | | | | | | | |
| | 1 Manager's Office | | 15 | 110/ | | 2 | 2 | 4 | 12 | |
| | 1 Accounting Office | | 20 | 110/ | | 2 | 6 | 8 | 24 | |
| | 2 Staff Toilets & Lockers | | 35 | 90 | | 3 | 2 | 5 | 15 | |
| | 1 Laundry | | 100 | 110 | | 11 | 9 | 20 | 61 | |
| | 1 Mechanical/Electric Service/R Repair | | 120 | 100 | | 12 | 15 | 27 | 82 | |
| | Sub-Total: | | (290) | | | (30) | (34) | (64) | (194) | |
| F. | Miscellaneous Facilities | | | | | | | | | |
| | 2 Reflecting/Fountain Pools | | 85 | 40/ | 4 | - | 1 | 5 | 15 | |
| | 2 Vehicles (Small Van & Mini Bus) | | | | | | 6 | 6 | 18 | |
| | Sub-Total: | | (85) | | (4) | | (7) | (11) | ( 33) | |
| | TOTAL BASE LINE COSTS | | 5071 | | 31 | 415 | 337 | 783 | 2372 | |

ANNEX I
Table 11

ANNEX II

# THE HASHEMITE KINGDOM OF JORDAN

## TOURISM PROJECT

## HISTORICAL AND ARCHAEOLOGICAL BACKGROUND AND A PROGRAM FOR PRESERVATION AND CONSOLIDATION

## I. Historical and Archaeological Background

### A. Introduction

1. Jordan has been described as "history written in stone". There is evidence within its borders of Palaeolithic, Neolithic, and Chaleolithic occupation; the Assyrians, the Persians, the Greeks, the Romans and the Arabs all in their time attacked and subjugated the area, built their palaces, castles, theaters, houses and churches, traded their merchandise and had a profound influence on the country we now know as the Hashemite Kingdom of Jordan. Much of the history of this part of the world is told in the Old Testament. Although at times these writings are conflicting, the antiquities of Jordan bring the Bible alive and this alone is of great tourist interest.

2. Two of the most exciting monuments of these peoples from a tourist point of view are Petra, a unique city hewn from rock by the Nabataeans and Jerash, the large Roman City lying on the fringe of the desert and rediscovered only in 1806.

### B. Petra

3. Julian Huxley has described it as "one of the starred exhibits in the world museum of civilization". Its magic stems not only from the grandeur of its antiquities but from the provocative mystery of its setting in the heart of the red sandstone massif and its approach through the narrow defile of the Siq penetrating deep into the mountain.

4. The area is steeped in history. Human settlements dating from 8,000 B.C. have been found at Beida nearby. At the time of the Edomite Kingdom we get Biblical references to the City of Sela (as it was then called) but it was the Nabataeans, who at the height of their power ruled the country as far north as Damascus, who really developed Petra as their capital. Even to this day evidence can be seen of their civilization, not only in their mausoleums and temples, but in their engineering works of water supply, drainage, irrigation and land stabilization for which they are justly renowned. The city was occupied from about the 5th century B.C. and was in its heyday during the first centuries B.C. and A.D.

5. With the coming of the Romans, the Nabataeans at first successfully defended their stronghold but as a nation paid dearly for their resistance and finally in 106 A.D., Petra with all its territory became a Roman Province. The Emperor Trajan built a road from Damascus to the Red Sea passing by Petra and from this advantageous trading position it prospered until, in the 3rd century A.D., with changing economic trade patterns, and the rise of Palmyra in the north, the lifeblood of the town slowly drained away.

6. Christianity came to Petra sometime in the 4th and 5th centuries A.D. Some of the early tombs and temples were converted into churches and even to this day one part of the city is known as Haret el Nasara or the Christian Quarter.

7. By the time of the Arab conquest in the 7th century little was left, although the Crusaders built, and for some time occupied, a fort overlooking the City. Then, until the early part of the 19th century it was lost to the Western World, to be 'rediscovered' by the Anglo-Swiss traveler Buckhardt in 1812. It was not until the early 1920's, however, that archaeologists first began serious investigations of the site.

8. Archaeologically, Petra is of great importance as it is one of the few places where the gradual development of a civilization can be studied through time. The Nabataeans developed a style of architecture of their own, founded on Greek and Assyrian lines, the characteristic feature of which is the 'crowstep' motiff of the pinnacles. Rock faces were cut and made smooth and great numbers of tombs (suggesting a cult for the dead) were carved out of the mountains and on the very tops of the crags, 'High Places' were formed for sacrificial rites. Houses, sometimes two or three story, were cut out of the rock with tiers of 'streets' and steps to give access. Coinage was introduced and a unique and highly distinctive decorated pottery of astonishing thinness and quality was developed.

9. During Roman times tomb facades became larger and more imposing, columns were introduced and some free-standing temples and other buildings erected, but an individuality of style still remained; the extreme softness of the sandstone prevented finely carved work, characteristic of other Greek and Roman practice. Hence, sculptors devised a more rugged style suitable to their material.

10. The softness of the stone, particularly in the more vulnerable lower strata, which are most subject to erosion by wind blown sand and human activity, probably presents the single greatest problem for the future survival of some of the monuments. Effective steps have to be found to arrest this deterioration if the site is to be preserved for posterity.

C. Jerash

11. As an example of a well preserved Roman provincial city of the Eastern Empire, Jerash has no equal. Its site goes back to prehistory, but the city as we know it today was chiefly the product of the first and second centuries A.D. The first documentary evidence referring to Jerash came about a hundred years before Christ from Josephus the Jewish historian. He described it as the place Theodorus, the tyrant of Philadelphia (now Amman) brought his treasure for safe-keeping (in the Temple of Zeus) when he was turned out of Gadara.

12. Major town extensions and redevelopment took place sometime in the middle of the first century A.D. in accordance with a predetermined comprehensive plan, much of which can still be seen to this day. By the second century A.D. Jerash was entering its golden age and when the Emperor Trajan extended the frontiers, annexed the Nabataean kingdom (A.D. 106) and built a series of roads, her trade prospered and the town grew in importance and prosperity. By the third century it had been promoted to the status of a colony.

13. But then, as the power of Rome declined, so did the importance of the town. It experienced a revival under Byzantine Christianity. A large Christian community was known to exist and many churches were built or converted from earlier temples in this period. The Moslem conquest in about A.D. 635 completed the decline of the City until, in the late 8th century, earthquakes destroyed many of its buildings.

14. The fact that by and large, despite a brief occupation by a Crusader garrison in the early eleven hundreds, the ruins remained untouched until the present era, makes Jerash of particular interest to archaeologists. Much of the City has yet to be uncovered but what can be seen, traces development through time and gives a clear picture of a living town of a past era.

## II. Preservation and Consolidation Program

### A. Introduction

15. Development of the preservation and consolidation program is based on the management principle that public use and physical development be limited to those activities and facilities which are necessary and appropriate to full visitor understanding and enjoyment of the sites and monuments without detriment to the cultural and economic resources.

16. The physical care and protection of the sites and monuments are the responsibility of the Department of Antiquities, but with increasing visitor use, care must be taken to ensure that human erosion is not added

to the erosion occasioned by the forces of nature. The legislative framework does exist and is contained in Law No. 26 of 1968. This law lays the functions of the Department of Antiquities and provides for the drawing up of the archaeological policy of the State. It sets up an Archaeological Advisory Board which determines the draft annual budget for the Department of Antiquities, and controls the granting of all licenses to excavate and any other matter relating to antiquities. It provides for the "listing" of all historic sites and monuments, the purchase, leasing and other arrangements for preserving sites and monuments from alternation or destruction or for the control of building on or near such sites. Under the law, Petra and Jerash have been declared national treasures and all needed land acquired by the Government.

17. The Antiquities Law has also been framed to cover all aspects of archaeological activities: an important one being the stopping of illicit digging which destroys not only the "finds" but also the archaeological and historical value. It also provides legislation to control dealing in antiquities.

18. At the present time Law No. 26 of 1968 is being revised. This will incorporate the existing code bringing it up to date and strengthening some of its provisions, particularly those dealing with the export of objects. In addition, and as a condition of the credit, specific regulations will be drafted under authority of the (revised) Law No. 26 for Petra and Jerash, which will further protect the environment of the sites. These regulations would control construction of buildings and other facilities surrounding the two sites on land which is privately owned.

19. The Jordanian Government is also a signator to the Final Act of the Inter-Governmental Conference of the Protection of Cultural Property in the event of Armed Conflict (the Hague 1954).

20. In drawing up a program, two important factors must be taken into account. Firstly, much of both Petra and Jerash still remains to be uncovered and there is a temptation to advocate a massive excavation program -- an excavation program which could have immense tourist value. But every excavation, if it is to be of lasting benefit, must be followed by a consolidation and conservation program. This has not always been the case in the past in Jordan and there is such a large backlog of work needed in both these sites that the temptation to excavate still further and on a large scale has to be resisted.

21. Secondly, in the past, consolidation has only too often been directed towards restoration for architectural effect. Although this approach can sometimes be justified in certain circumstances there can be a real danger to the integrity of the true nature of the ruins. Any attempt to go further than enlightened consolidation to preserve the ruins as ruins should be strongly resisted. Likewise, the use of new and especially foreign materials should be eschewed.

22. The four-year program to be implemented under the project takes into account the two factors mentioned above and represents the minimum work to be done on items of highest priority. It also takes into account the capacity of available staff and expertise within the Department of Antiquities, augmented by specialist advisors.

B. Petra

23. The rock from which most of Petra is hewn is of variable softness and much of it is friable and poorly consolidated. When subject to erosion by water, wind and sand, and human use the stone yields readily. Although there is nothing which can be done to totally stop this action, efforts must be directed towards slowing down this destruction as much as possible. The United States National Park Service in their Master Plan of 1968 recommended the use of "Pencapsula" as a rock hardener. Recent information and research has shown that this rock hardener and other brands of silicone or viscid petrochemical based liquids are not altogether satisfactory in practice despite the claims of the manufacturers and in any case require renewal at regular intervals.

24. When dealing with natural rock, as opposed to buildings, the prevention of capillary and other forms of water penetration poses many problems. When wet stone dries, salts that had been dissolved are brought to the surface and deposited thereon in the form of crystals. These crystals either appear on the surface as efforescence or they form within the surface pores. If the latter happens, considerable damage is likely. Crystals, when they form, need room to expand and will exert enormous pressure which breaks down the surface of the rock even when "hardened". This weakened surface is then more prone to abrasion from wind blown sand than it would otherwise be. This probably accounts for the more rapid deterioration of the lower three to four meters of rock which is evident at such monuments as El Deir (the Monastery).

25. To reduce the effects of wind blown sand to the minimum it is recommended that where possible some 10 to 15 meters or more of the forecourt in front of appropriate buildings be cleaned and consolidated with the object of reducing the amount of sand which is otherwise picked up by swirling winds. Initially the forecourts of both the Khazna (the Treasury) and El Deir (the Monastery) will be so treated under the project.

26. Human erosion presents another problem. Covering of worn steps and slopes with concrete, as sometimes recommended, is no answer and can, in the long run, cause a great deal of harm. On completion of the project, visitors would be guided along selected paths and abraded surfaces would either be protected mechanically by means of superstructures

in appropriate cases, or newly cut surfaces. This kind of protection, even if more obtrusive from the visual point of view, is far more respectful of the integrity of the original materials.

27. Work at Petra under the project would include flood control measures to safeguard the continuing existence of sites and monuments, the consolidation of the floor of a narrow defile of the Siq, the consolidation of areas in the forefront of certain monuments to reduce erosion from wind blown sand and consolidation of the monuments and caves themselves. These are described in detail below:

(a) Court Tomb

This "building" is one of the more dramatic of the rock cut tombs or temples, with its impressive colonnaded forecourt. Some consolidation work and restoration is at present being implemented, but progress has been slow for lack of funds. Under the project, work on the tomb will be accelerated so that it could be completed as soon as reasonably possible.

(b) Siq Area

A firmer trail through the Siq will be provided, suitable for foot and horse traffic, and as a means to channel off surface water, so it does not break up and wash away the surface. The flood deposited fill and boulders will be removed and dry-stone check dams built in the Wadis which join the Siq. At the same time, the covered and other remains of the old paved road would be carefully exposed where possible, under the supervision of an archaeologist. The old water channels will be cleaned out but no attempt will be made to restore them. This work which is of high priority can be completed within one season.

(c) Qasr El Bint

This is the most important freestanding building exposed so far at Petra. It has suffered much damage in the past, but is still termed one of "the most important surviving Hellenistic buildings in the Near East". Some existing masonry appears to be in a perilous condition and consolidation is needed, requiring extensive scaffolding and mechanical equipment and above all expert supervision. Before additional consolidation can take place, however, fallen material both inside and immediately outside the building will be excavated and cleared. One year of work is allowed for this purpose under the project to run consecutively with the consolidation program elsewhere in Petra.

(d) The Roman Street

An excess of rainfall runoff carried by Wadi Musa and Wadi Mataha forced the construction of a revetment to protect the Roman structures in Petra. Owing to the lack of velocity dams upstream, however, continuing floods have undermined this revetment and urgent steps need to be taken if irreparable damage is to be avoided. The project provides for this work to be carried out under the supervision of archaeologists to ensure that existing historic features are not damaged. Excavation and repairs to the street itself and its immediate features are also allowed for, covering a period of two years.

C. Jerash

28. Work at Jerash under the project is described in detail below:

(a) South Theater

The Department of Antiquities is committed to a program of restoration of the Theater to enable its use for public performances and festivals. Financial provision has already been made for the work from other sources, but this commitment does not cover work needed on the approaches to the Theater and in the immediate vicinity which are included in the project.

(b) Temple of Artemis

This temple complex, is the most impressive and probably the most important group of structures in Jerash. There have been many occupation levels over the area of the temple precinct and whole columns still remain buried. The most urgent work of consolidation is to save the fine columns that have been excavated and dominate the "Cardo". The basal drums of several of these columns are so eroded as to constitute a real danger of collapse. The fact that some of the columns "move" in the breeze, although an amusing tourist gimmick, is an indication of the stresses imposed on the already weakened drums. Works of wedging, grouting and impregnation with epoxy resin will be initiated under the project and cover a period of four years.

(c) South Bridge

This bridge is an important link in the circulation pattern of the original town. Some work has already been done on the bridge, but this must be continued and further consolidation carried out soon if the bridge and the value of the earlier work is not to be lost. Under the project, the bridge's arch will be

consolidated and the pavement of the bridge replaced so that it could be used once again.

(d) Temple of Zeus

UNESCO is assisting the government in the preparation of a computer program designed to help archaeologists restore the temple. The program, one of the first of its kind, includes stone registration, storage and retrieval, matching stone and missing stone printouts, together with a project control program. But if the full potential of the computerized program is to be used, it must be followed by a program of restoration and/or consolidation, some of which is allowed for in the project.

(e) Christian Churches

To safeguard the mosaic flooring of the churches, the project provides for a protective covering in the form of a simple roof, together with viewing "catwalks". Repair of some of the mosaics themselves will also be carried out under the project.

D. Subsequent Priorities

29. Items listed above constitute the works of highest priority, but there remains a long list of lesser priority sites and monuments on which work has to be initiated at a later date. These include the Nymphaeum, the Monumental Gate, the Bath area, the Triumphal Arch, the domestic area, the South Tetrapylon, the Cardo (colonnade and channels), the East and West Baths, the North Gate and the North Theater.

E. Weed and Shrub Control

30. Much of the excavated sites and monuments at Jerash are innundated by weed and shrub growth. This is not only unsightly to visitors, but is also doing harm to the masonry. The slowly growing roots force themselves into cracks and joints which in the course of time not only cause dampness and consequent stone decay but the limestone mortar is dissolved by acid juices produced by the plants. Consequently, the stones are forced apart.

31. A continuing program of weed and shrub eradication and control is necessary and will be initiated under the project. The work would be commenced in the spring, using portable pressure sprayers. In the first year two sprayings will be necessary but less will be required in subsequent years when growth is under control.

32. Shrub and weeds growing in the walls, after being spot treated, would be allowed to die and then cut back as near the face of the wall as possible. In due course it will be possible to rake out these weeds and then the joint or crack can be filled up. Under no circumstances will roots be pulled out of the wall as this will only cause the stone and joints to be broken away, giving rise to water penetration and making it difficult to repair.

F. Technical Assistance and Training

33. The staff resources of the Department of Antiquities are limited and their effectiveness would benefit from both specialist and on-site training particularly at the technician level.

34. With this in mind the Department of Antiquities estimated that they would require about 40 man months of experts' services to advise on the work program of protection and consolidation at both Petra and Jerash. These experts will also be responsible for on-site training. This would include the services of an archaeologist with special knowledge of Petra and suitably qualified archaeologists/restorers with experience of Nabataean and Hellenistic-Roman and Byzantine architecture. The cost of these services as well as training of Jordanians abroad is estimated to be about US$200,000.

ANNEX III

# THE HASHEMITE KINGDOM OF JORDAN

## TOURISM PROJECT

## THE TOURISM SECTOR

### A. Tourism Assets

1. Jordan is essentially an arid country, most of its terrain being either sandy or barren mountains. Yet, despite the desert-like appearance of the land, Jordan is rich in archaeological treasures, in tradition, and in religious heritage. Since the beginning of human civilization, this part of the world has been inhabited by Canaanites, Egyptians, Babylonians, Persians, Greeks, Romans, Byzantines, Crusaders, and many others. They have all contributed to the rich accummulation of sites and relics still to be seen in Jordan.

2. Before the 1967 war tourism development in Jordan was almost exclusively around Jerusalem, where a significant number of Jordan's relics and about 80% of her total hotel accommodations were concentrated. The loss of Jerusalem highlighted dramatically the lack of emphasis given before the war to the tourism assets on the East Bank, so that with the loss of Jerusalem, Jordan also lost an important segment of its tourism market, which is yet to be recaptured. Nevertheless, Jordan re-allocated its tourism investment resources to the East Bank during the last few years and was so able to make important inroads (para. 10). The main tourist attractions on the East Bank are Amman, Aqaba, Petra and Jerash (the latter two have been described in Annex II).

3. Amman, Jordan's capital, is a fast-growing city that surpassed the 500,000 inhabitant mark not long ago. Known as Rabbath-Ammon in Biblical times, and as Philadelphia in its Roman period, Amman still has the remains of a Roman citadel and a finely preserved 6,000-seat amphi-theater. Amman is centrally located for the exploration of historical and scenic attractions of the Jordan Valley, the Dead Sea, Jericho and Jerusalem. Amman is also beginning to attract a share of the newly established convention market in the Arab world and with the re-opening of the bridge over the River Jordan, has become the gateway for tourists who want to visit the West Bank as well as other Arab countries.

4. Aqaba is an almost year-round playground for water sports, with superb fishing for everything from rock lobster to fifty-pound tuna. Aqaba is also becoming famous as a center of skin diving, with water of exceptional depth and clarity and, in the view of veteran divers, coral formations as fine as any in the world. Adjoining Aqaba to the south are 17 km of sandy

beaches that are being considered for tourism development. Aqaba is the only place outside of Amman with hotel accommodations of international class, of which there are four hotels with 153 rooms, with a new 113-room Holiday Inn Hotel nearing completion. Aqaba is also a busy port, representing Jordan's only sea outlet. The present plans for the industrial development of Aqaba is likely to affect the prospects for developing tourism there.

5. Not more than a 90-minute drive and a good one-day tour from both Petra and Aqaba lies the valley of Wadi Rum, the scene of some of the spectacular shots of the film "Lawrence of Arabia". Past shouldering black and red crags, a river of pink sand flows to a mudflat valley shimmering with mirages, where the two-towered fort of the desert Camel Corps stands and where magnificent copper-veined cliffs flank the valley. This is desert scenery at its best, and here the visitor can enjoy camel rides and the traditional hospitality of Bedouins in their goatskin tents.

6. The Dead Sea can be reached from Amman in less than a one-hour drive. Visitors are attracted to the Dead Sea because it is the lowest spot on the face of the earth, and its waters are so buoyant that it is impossible to sink in them. Still others have been coming for centuries seeking the curative mineral waters of Zarqa Ma'in and Al Zara hot springs close by. Overlooking the springs are the remains of Herod's Palace at Makavier.

7. The Desert Castles, built by the Omayyad caliphs in the eighth century, are another visitor attraction of Jordan. Some of them are very close to Amman, but they spread almost the length of the East Bank. The better known are the impressive Qasr El-Kharana and Qasr Amra. Few of the castles were built for defensive purposes, having been primarily used by the caliphs for relaxation away from city life. Some are rich in frescoes and mosaic floors showing the artistry and pleasures of contemporary Arab life.

8. There are also several Crusader Castles in Jordan, the best known being the massive Kerak Castle. Its battlements look down a precipitous descent to the Dead Sea, 3,000 feet below. To defend themselves against the crusaders, the Arabs built in the 13th century a strategically located castle, Qalat al Rabad, in Ajlum, minutes away from Jerash. Sitting impressively on the top of a mountain overlooking the Jordan Valley, it could exchange signals with both Jerusalem and Damascus. In addition, there are numerous remains of buildings of all the civilizations that prevailed in Jordan at one time or another.

## B. Tourist Arrivals - Trends and Characteristics

9. Tourism to the Middle East as a whole was seriously hurt by the

1967 war. Visitor traffic to the area, based on statistics for Egypt, Israel, Jordan, Lebanon and Syria, fell by 26% between 1966 and 1967, compared to a growth of 12% per annum during the 1961-66 period (see Table I). In the following years, total visitor arrivals in the region have increased gradually, surpassing the pre-1967 war levels.

10. While sharing the general loss of visitor traffic to the region because of the 1967 war and instability in the area, Jordan has suffered particularly from the loss of Jerusalem and the West Bank of Jordan which contained 80% of its tourist facilities. Visitor arrivals to Jordan declined sharply from the 1966 peak of 617,000 to a low of 257,000 in 1971. With an easing of tensions in the area, and the development of facilities on the East Bank, foreign visitor traffic again began picking up, increasing gradually between 1972 and 1973 (292,000 to 308,000) and then very rapidly in the following year to 555,000. The upward trend continued last year and is expected to reach 750,000 in 1975. Table I shows the growth in foreign visitor arrivals in the period from 1966-75.

Table I

Foreign Visitor Arrivals (000)

| Nationality or Region of Origin | 1966 | 1968 | 1971 | 1972 | 1973 | 1974 | 1975 1/ |
|---|---|---|---|---|---|---|---|
| Arab and Other Middle East | 442 | 355 | 238 | 261 | 276 | 499 | 670 |
| Western and Far East | 175 | 20 | 19 | 31 | 32 | 56 | 80 |
| Total | 617 | 375 | 257 | 292 | 308 | 555 | 750 |

Average Annual Rates of Growth (%)

| | 66/74 | 66/71 | 71/74 |
|---|---|---|---|
| Arab and Other Middle East | 1.5 | - 11.6 | 28.0 |
| Western and Far East | - 13.3 | - 35.9 | 43.4 |
| Total | - 1.3 | - 16.1 | 29.3 |

1/ Estimate, based on the first ten months' figures.

Source: Department of Statistics, Central Bank of Jordan

11. In analyzing visitor traffic to Jordan, it should be noted that most of the visitor arrivals from neighboring countries, both Arab and non-Arab Middle East countries, are those whose basic purpose was a pilgrimage to the religious shrines in Saudi Arabia and the West Bank and who were, therefore, essentially transit visitors to Jordan. On the other hand, the majority of visitor arrivals from Western countries are those who came to Jordan either for business or vacation purposes and who stay at least one night in the country. Hotel statistics show that 70% of visitors from Western countries stayed overnight in lodging establishments, as compared with only 15% of visitors from neighboring countries. Furthermore, while religious traffic is highly concentrated in 10 days (varying with the lunar year), non-religious traffic is spread fairly evenly throughout the year.

12. The recent upward trend in visitor arrivals from Western countries is more significant for tourism in Jordan than those arrivals from neighboring countries. Unlike the latter, Westerners are not normally in transit but stay in lodging establishments in Jordan for an average of 2-3 nights. Moreover, the average daily expenditures for the Western visitors are greater than for the non-Western visitors, i.e., the average daily expenditure in 1975 for Americans was US$45.00, for Europeans US$38.00 and for others US$15.00. The most important factors in the recent rapid increase in arrivals from Western countries were:

(a) the significant hotel development: the opening of 300 new hotel rooms in 1974 and another 200 rooms in 1975, bringing the total of classified rooms in Jordan to 1,200;

(b) the opening of access by bridge across the Jordan River to the Holy Land in 1973, which established Amman as an important entry point for foreign tourists wishing to visit both the East and West Banks; and

(c) the active efforts being made by both the public and private sectors in promoting tourism to Jordan.

13. In assessing the revival of foreign visitor traffic to Jordan, it is important to distinguish between the two major visitor groups in terms of purpose of visit, namely: (i) vacation and business, and (ii) pilgrims. The fist group is made up of business travellers who often visit tourist attractions during their stay, vacation travellers coming individually or in groups to spend their holiday in Jordan, and multiple-stop group tourists who visit other destinations in the region besides Jordan. As to the second group (predominantly Moslems from the Middle East and Asia), a certain number take advantage of their

pilgrimage to visit one or more tourist attractions while passing through Jordan, although the proportion is probably rather small.

C. Development of Tourist Facilities

14. Although hotel accommodation has increased at a fast pace in recent years, more than doubling since 1967, the development of tourist facilities on the East Bank has tended to lag behind the growth of foreign visitor demand, especially for hotel accommodation of international standard. There are now 28 classified lodging establishments on the East Bank, with a total capacity of 1,202 rooms or 2,404 beds. Hotels in the three to five star class have been commonly used by foreign tourists. These hotels contain about 830 rooms, representing 69% of the total capacity of classified lodging establishments. With the exception of the 250-room Intercontinental Hotel in Amman, most existing hotels are inadequate in terms of maintenance and service and need urgently to improve their operational standards.

15. Accommodation capacity is also rather concentrated. Of the total lodging establishments, 23 hotels (1,025 rooms) are located in Amman and four hotels (153 rooms) are in Aqaba and one hotel in Petra (24 rooms). This distribution reflects both the concentration of current visitor demand and the rather moderate distances involved in traveling within the country.

D. Hotel Profitability

16. Four major factors have been taken into account in analyzing the profitability of hotel operations, namely: occupancy levels, room tariffs, operating costs and capital expenditures. The acute shortage of adequate accommodation, combined with the recent growth in foreign visitor arrivals, has resulted in relatively high average room occupancy rates in Jordan, particularly in Amman. The average occupancy rate for selected hotels in Amman was about 70% for 1974, while the rates for two hotels in Aqaba averaged about 55% in the same year, because of relatively high seasonality in this resort area. The average occupancy of the Jordan Intercontinental Hotel in Amman was about 78% for 1973 and 1974, and increased to 83% during the first ten months of 1975, in spite of the fact that the hotel more than doubled its capacity, from 120 rooms in 1973 to 250 rooms in 1974.

17. Another factor to be considered for the profitability of hotels is investment costs. The cost of hotel construction varies widely depending on location, the type and size of hotel, and the availability of utilities and other infrastructure at the site. In 1975, the average costs of hotels in Jordan have been estimated at US$35,000 per room for a 5-star class hotel,

US$25,000 for a 4-star and US$20,000 or less for a 3-star class hotel. These figures exclude the cost of land and related infrastructure but take account of physical and price contingencies, as well as professional service fees. These cost estimates appear reasonable relative to the likely hotel operations. Based on the current experience of hotel operations in Jordan and on an average investment cost of US$25,000 per room, it has been estimated that hotels would break even at between 55% and 60% room occupancy.

18. While operating costs have increased significantly in recent years (20% between 1974-75) they have remained reasonable in relation to gross revenues. Food costs average 35-38% of food sales, which appears to be reasonable by international standards. Payroll costs, including fringe benefits appear at present to be favorable, with monthly average payroll costs of about JD 50-55 per employee (or US$151-167) and the number of employees averaging 0.8-1.3 persons per room. Utility costs have risen substantially in 1975, with an average increase reported of about 40% in the Amman area; however, utility charges have been kept at a reasonable cost ratiom i.e., 6-9% of the total gross revenue at a room occupancy rate of 70-75%. In summary, "5 and 4-star" class hotels in Amman in 1975 appear to be experiencing profitable operations due largely to relatively high room occupancies, average room rates of US$20 - US$28 for a single room and US$25 - US$33 for a double room, and gross operating profits of between 25-30% on gross sales at a room occupancy of 70-75%.

19. In response to this situation, a number of hotels are either under construction or in the planning stage. There are five new hotels under construction at present, four in Amman and one in Aqaba. When completed in the next two years, these hotels would add 720 rooms to the capacity in Amman and 113 rooms to the existing accommodation in Aqaba. In addition, there appear to be a number of investors, both foreign and domestic, that have been showing an interest in building new hotels in the country. Based on data available the following table shows the likely development of hotel capacity in Jordan during the 1976-80 period.

Table II

Hotel Development 1976-80
(Number of Rooms)

| | Amman | | Petra | | Aqaba | | Total | |
|---|---|---|---|---|---|---|---|---|
| | Annual | Cumul. | Annual | Cumul. | Annual | Cumul. | Annual | Cumul. |
| 1975* | | 1,025 | | 24 | | 153 | | 1,202 |
| 1976 | 540 | 1,565 | - | 24 | 113 | 266 | 653 | 1,855 |
| 1977 | 280 | 1,845 | - | 24 | 156 | 422 | 436 | 2,291 |
| 1978 | - | 1,845 | - | 24 | 178 | 600 | 178 | 2,469 |
| 1979 | 400 | 2,245 | 76 | 100 | 200 | 800 | 676 | 3,145 |
| 1980 | 265 | 2,500 | - | 100 | 200 | 1,000 | 465 | 3,610 |

* Existing

E. Training

20. The main difficulty to be overcome in the expansion of hotel accommodation in Jordan is the currently rather low standards of service, resulting largely from a shortage of trained staff and experienced management personnel. (This is understandable in view of the fact that Jordan's East Bank did not have a tourism tradition before the 1967 war.) Accordingly, the Government is determined to make an important effort in formal and informal training. It has already begun to undertake training programs with the help of ILO, UNDP and IDA. The Bank Group has included a Hotel Management School in a recently approved education project (Credit 534-JO). With UNDP and ILO assistance, the Government has begun to provide on-the-job courses for hotel employees, mainly at the basic and medium level. Moreover, a Hotel Training Center financed by UNDP is to begin operation in early 1976. The training center has been provided with kitchen laboratories in addition to classrooms and should be adequate for training of basic and medium level personnel. The emphasis is put on the basic level (roughly 80% of the program), and the courses offered cover front office, restaurant, bar and cafeteria, housekeeping, and kitchen skills. Students at the basic level, mostly high school graduates (although minimum entry requirements are lower), will graduate after two to three months of accelerated courses at the training center and one month of practice in commercial establishments. The intermediate level will consist of three to four months of courses at the center plus practice at commercial establishments.

21. The Hotel Management School located in Amman and financed in part by the Bank Group is scheduled to begin operation in 1979, and will train persons for managerial positions, including those of Food and Beverage Manager, Front Office Manager and Executive Housekeeper. The course consists of two years of study in the school and one year of work in a practice hotel built for the purpose.

22. In order to train instructors for these courses, the Jordanian Government has been sending students abroad to attend a specially tailored course at the Hotel Management School in Beirut. Furthermore, over 10 university graduates have been granted two-year scholarships under bilateral agreements with several European governments. On completion of their courses, these graduates would be employed by the Management School.

23. Important as these Government efforts in the training field are, hotel managers still have the main burden of training employees to provide adequate service to lodgers. With the exception of some experienced hotel chains, hotel management in Jordan is ill-prepared to do this job properly. As a result, lack of trained manpower will remain a limiting factor in tourism expansion and in the improvement of tourist services for several years to come. The Government should, therefore, continue stepping up its efforts in this field, particularly in view of the fact that a number of persons trained in Jordan leave the country to work elsewhere (Gulf States) for better salaries.

F. Other Facilities and Services

24. Aside from training, further support for tourism development is derived from Government investments in the transportation sector, particularly in terms of internal road communications and international air access, which have facilitated the growth in tourist arrivals. Jordan's network of paved roads cover most of the country's tourism assets. It has two airports, one in Amman and the other in Aqaba. A new international airport is under construction in Amman and is expected to enter into operation in 1976, thus substantially improving the services to visitors.

25. Alia, the Royal Jordanian Airline and national carrier, has frequent scheduled flights to most main Western European and several Middle Eastern and Asian destinations. KLM, Aeroflot, British Airways and some Middle Eastern airlines, also serve Amman. With the completion of the new airport, other Western airlines are expected to commence service. Alia has nine Boeing 707, 720, and 727 aircrafts and is receiving her first two Boeing 747 jumbo jets in 1976, when she is set to begin service to South America. Jordan has been unable, however, to get authorization for direct scheduled flights to the U.S., although charter services have been operating for some time. The Jordanian authorities allow foreign carriers to organize charter flights to Jordan, but there is no "open skies" policy at present. In spite of this, there is no reason to expect that air access to Jordan at present, both from the point of view of airports and air policies, could prevent the tourism market potential of the country from materializing.

26. With respect to internal surface transportation, Jordan has in addition to an adequate network of paved roads, a large fleet of taxis and buses -- 6,950 and 530 registered at the end of 1974, respectively -- which can cope adequately with the present transport needs of visitors. A tourist transport company, JETT (Jordanian Express Tourist Transport Co.) in which the Government has a minority equity participation, has 20 luxury 45-seat buses to cater for tourists exclusively. Given the policies of the Jordanian Government, one could expect that taxi and bus fleets will expand both in response to increased general economic activity and number of visitors, without encountering major financial or foreign exchange difficulties. In particular, JETT is in a sound financial position to expand quickly.

G. Economic Importance of Tourism

27. The economic importance of tourism in Jordan is derived primarily from the level of net foreign exchange earnings generated by the sector. Before the 1967 war, tourism represented more than a quarter of Jordan's total goods and services. Immediately after the war, tourism related foreign exchange revenues fell below JD 5 million a year, representing some

10% of total exports. Since the war, gross foreign exchange receipts have grown to JD 32.2 million in 1975, representing over 18% of total exports (Tables 5 and 6). Tourism ranks behind workers' remittances from abroad (30%) and ahead of phosphate exports (10%). Net foreign exchange earnings, after deducting imported goods and services, are estimated to be about 65% of gross receipts.

28. Employment generated by the sector has not recovered as rapidly as foreign exchange receipts, but the projected expansion of hotel rooms and related facilities over the next several years will add a significant number of new jobs. At present there are an estimated 5,000 people employed directly in the sector, excluding ground transportation services, and perhaps another 4,000 people employed indirectly in meeting demand generated by foreign visitors. This figure is comparatively small and is a reflection of the still low level of services in shops and entertainment activities throughout the country. It is estimated that some 1,200 people work in hotels, or an average of just over .6 employees per room (the ratio is higher for better class hotels), also a reflection of the small percentage of international class hotels on the one hand, and the poor level of services in hotels on the other.

## H. Institutional Aspects

29. Although the primary responsibility for developing tourism facilities rests with the private sector, the Government plays an important role in the overall planning and promotion of tourism sector growth. Within the Government, responsibility for the sector lies with the Ministry of Tourism and Antiquities (MTA) whose main tasks include: (a) the development and implementation of tourism policies; (b) the preparation of 5-year plans for the sector; (c) the identification, protection and improvement of Jordan's historical and archaeological assets; (d) advertising and promotional activities abroad; (e) implementation of some infrastructure works in specific tourist areas; and (f) in conjunction with the Ministry of Education, the development of training programs and facilities for workers engaged in tourism services.

30. To carry out some of these functions, the Ministry has two departments (the Department of Tourism and the Department of Antiquities) with a total staff of around 350 permanent employees, and a Tourism Board chaired by the Minister of Tourism and Antiquities and with representatives from the Ministry of Industry and Commerce, Ministry for Information, Industrial Development Bank, the Travel Agents Association, and the Director General of Tourism and of Antiquities. The Department of Tourism employs just over 150 persons, including 41 university graduates and a tourist police force. The Department of Antiquities has some 200 persons on its payroll, including 45 university graduates, 29 of whom are archaeologists. In addition, the Department of Antiquities employs on a temporary and seasonal basis an average of 450 manual workers annually. The Department

of Tourism's budget was JD 288,000 in 1974 and JD 355,000 in 1975. The Department of Antiquities budget for 1974 was JD 200,000 and JD 281,000 in 1975. The Ministry has one tourism representative attached to the Jordanian embassy in Saudi Arabia, and beginning in 1976 is planning to add several more to diplomatic missions in Western Europe and the U.S.

31. Under the umbrella of the Department of Tourism, several regional tourism commissions have been organized with representation from local governments, local business, tourism workers, and the community at large. These commissions are responsible for supervising the tourism activities and advising the Department of Tourism on matters relating to tourism in general within their areas of jurisdiction. There is also a permanent commission at the national level, responsible for the development of domestic tourism.

32. The staff resources of the Ministry are limited and their effectiveness would benefit from specialist training. At certain levels, the Ministry could be further strengthened by the selection and appointment of experienced staff.

33. In addition to the role played by the Ministry of Tourism and Antiquities, the Government is also supporting the sector by investing in hotels, either directly or through the Government-owned airline, Alia, and the Hotel and Resthouses Corporation (HRC). The Corporation manages its establishments, most of which are small resthouses and restaurants located in areas where private investments are not yet forthcoming.

34. In addition to attempting to open new areas, and investing in facilities, the Government offers the private sector a number of investment incentives under the Investment Encouragement Law No. 197 covering tourism industry, housing and land reclamation projects, including the following:

(a) exemption of custom duties and other custom levies on machinery, equipment, and spare parts;

(b) exemption of profits from income tax for six years in the case of projects located in Amman and for nine years in other regions;

(c) exemption of property tax on the land and buildings covered by the project for five years in the case of projects located in Amman and for seven years in other regions;

(d) free transfer of profits; and

(e) free transfer of capital after two years from date of commencement of operations.

35. Investors in the tourism sector also benefit from the availability of finance on attractive terms. Interest rates, both on Government and private bank loans, range between 8% and 10% for investment projects, and loans are being extended up to 12 years, including two years of grace for hotel construction, and up to six years for transport equipment. Moreover, the Government sometimes extends guarantees on loans granted by private banks. Loans usually cover 65% of the projects' cost in the case of hotels. The most active institution in financing tourism projects is the Industrial Development Bank (IDB). Tourism loans approved by IDB during the last ten years have fluctuated very widely in relation to the few but sizable hotel projects that have been implemented as the following table shows:

Table III

Loans to Tourism Projects Approved by IDB, 1965-74 (in JD)

| 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 |
|---|---|---|---|---|---|---|---|---|---|
| 8,480 | 335,400 | 106,000 | 70,000 | 15,000 | 27,000 | 5,500 | 505,000 | 48,000 | 380,000 |

36. Besides IDB, some commercial banks have also been active in tourism but their terms are slightly less attractive. The following table shows the outstanding loans of the tourism sector at the end of each year:

Table IV

Outstanding Loans of Tourism Sector, Commercial Banks 1970-75 (in JD)

| 1970 | 1971 | 1972 | 1973 | 1974 | 1975 |
|---|---|---|---|---|---|
| 978,000 | 886,000 | 924,000 | 1,379,000 | 1,527,000 | 1,993,000 |

37. As both tables indicate, there was a renewed interest in tourism investment in 1972 which began to materialize in 1973 and has continued since.

## I. The Five-Year Plan, 1976-80

38. Given the growing importance of tourism to the economy, tourism has been accorded high priority in the Five-Year Plan for 1976-80. Investments in the sector are projected at about JD 24.0 million for the period. The plan's main objectives in tourism are:

(a) to stimulate foreign and domestic tourism so as to increase the number of incoming tourists and to lengthen their stay in Jordan by creating the appropriate incentives;

(b) to stimulate domestic tourism in order to limit the travel of Jordanians abroad;

(c) to preserve the historical, cultural, and aesthetic environment through the implementation of national park schemes; and

(d) to provide the necessary manpower for tourist services, and to improve the level of its performance;

39. To achieve these goals, the Government is planning to:

(a) amend tourism legislation to facilitate freer movement of visitors in and out of Jordan;

(b) increase promotion and marketing activities by coordinating the action of all public and private agencies working in the tourism field;

(c) coordinate with Syria and Lebanon, the signatory states together with Jordan of a 1974 Tourist Region Agreement, in undertaking market studies, advertising campaigns, and development of circuit tours to increase the tourist activity in the entire area;

(d) encourage private sector investment in tourism;

(e) strengthen the role of the Ministry of Tourism Antiquities, supply it with skilled personnel; and

(f) train personnel to serve in tourist establishments.

40. Besides the Petra and Jerash projects which are accorded highest priority, the Five-Year Plan undertakes to implement several other projects, the main ones covering the following:

(a) provision of facilities at Zarqa Ma'in and Al Zara mineral hot springs, at a cost of some JD 1 million;

(b) upgrading the Resthouse Corporation hotels and restaurants, at a cost of JD 0.7 million;

(c) construction of the National Museum in Amman, at a cost of JD 1.3 million;

(d) general restoration and preservation of ruins, at a cost of JD 0.6 million; and

(e) the encouragement of the private sector investments in hotel projects, restaurants, entertainment places and other tourist services during the plan period, are projected at JD 12.5 million, mostly in hotel accommodation.

J. Future Visitor Arrivals to Jordan

41. Evaluation of the future market demand for Petra and Jerash necessarily begins with an assessment of the proportion of total visitor arrivals in Jordan who will visit tourist attractions during their stay in the country. Available data suggest that about 22% of Arab visitors from neighboring countries and about 15% of the other regional visitors (mainly from Turkey) come to Jordan either on vacation or for business purposes, rather than as pilgrims or for visiting relatives. Of visitors from Western countries, over 80% of arrivals are either on holiday or business trips and the remainder come to Jordan for other purposes, such as research or studies. On the basis of these data, the proportion of foreign arrivals who are likely to visit tourist attractions would amount to about 26% of total foreign arrivals to Jordan. The following table summarizes the results of assessments on arrivals to Jordan in 1974 and 1975.

Table V

Visitor Arrivals to Jordan in 1974-75
(000)

| Tourists | 1974 | 1975 1/ |
|---|---|---|
| Arabs | 77 | 85 |
| Non-Arabs | 67 | 80 |
| Subtotal | 144 | 165 |
| Other Visitors | | |
| Arabs 2/ | 273 | 325 |
| Non-Arabs | 138 | 260 |
| Subtotal | 411 | 585 |
| Total Arrivals | 555 | 750 |

1/ Estimate based on arrivals for the first ten-month period.

2/ Includes arrivals from Europe, the Americas, Asia and non-Arab countries in the Middle East. The number of non-Arab arrivals in the category of "other visitors" consists of a large group of pilgrims, mainly from Turkey.

42. Most of the visitors from Western countries come by air. This traffic has been increasing rapidly as is reflected in statistics of some airlines flying into the region. For example, the number of passengers carried by Alia, the Royal Jordanian Airline, increased by 50% between 1973-74 and by 61% during the first ten months of 1975 over the corresponding period in 1974, though part of this latter growth may have been affected by the extraordinary conditions in Beirut. Of the Western visitor traffic (i.e., business travellers, single-destination holiday makers to Jordan, and multiple-stop group tourists), the segment which has perhaps the greatest market potential is multiple-stop group tourism, because Jordan's tourism assets complement rather than compete with those in neighboring destinations. However, Jordan has not developed this market sufficiently because of the severe scarcity of acceptable accommodation facilities. In particular, the existing hotels of acceptable international standard have experienced high room occupancies and have had heavy bookings for their rooms. The tight hotel capacity has caused substantial frustrated demand in the holiday market. This situation, however, is gradually being rectified and present plans call for the construction (see para. 4.12) of 2,400 hotel rooms to come into operation by 1980, bringing the total of hotel rooms in Jordan to 3,600 by 1980. The traffic implications of this total hotel capacity are substantial. By 1980, when all the planned hotels would be in full operation, the number of tourists who could be accommodated in Jordan would be more than 420,000. 1/

43. The number of visitors coming to Jordan for business or vacation purposes has been projected to grow at an average annual rate of 15% between 1974-80, reaching a projected arrival number of 336,000 in 1980. This growth rate is small compared to the average growth rate of 29% per annum during the 1971-74 period, though this period reflects a rapid recuperation from the civil strife in 1970-71. 2/ A much higher rate of growth than that projected may well be achieved for many reasons: the potential impact of the proposed investments in Petra and Jerash on Jordan's tourism, the significant expansion in fleet and tours arrangements by Alia, and inclusion of Jordan in the routes of several major West European airlines in 1976-77, the projected 25% per annum increase in Jordan's hotel capacity over the next few years (Table 5 of the main report), and the active promotional efforts being made by both private and public sectors. The Government, will however, have to periodically evaluate the country's promotional efforts to ensure that the needs of the sector are met. Because of the higher absolute number of visitors and a gradual elimination of repressed demand, it is assumed that the growth rate would decline during the subsequent five-year period of 1980-85 to 12% per annum, reaching 590,000 arrivals in 1985 and to 6% per annum thereafter. Overall, this would mean an average increase of about 13.5% over the next ten years (1976-85). The projected number of business and holiday visitors to Jordan is given in the table below.

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1/ Average room occupancy is conservatively estimated at 65% with a 1.5% double occupancy factor for an average length of stay of three nights.

2/ The projected number of European and North American visitors --who would represent the great majority of visitors to Jerash and Petra-- would surpass the pre-1967 war peak only in 1979-1980.

Table VI

Projected Number of Visitor Arrivals
(000)

| Year | Arabs | Non-Arabs | Total |
|---|---|---|---|
| 1974 * | 77 | 67 | 144 |
| 1979 | 124 | 166 | 290 |
| 1980 | 137 | 199 | 336 |
| 1981 | 147 | 229 | 376 |
| 1982 | 157 | 263 | 420 |
| 1983 | 168 | 303 | 471 |
| 1984 | 180 | 348 | 528 |
| 1985 | 192 | 398 | 590 |
| | Average Annual Growth (%) | | |
| 1974-80 | 10.0 | 20.0 | 15.0 |
| 1980-85 | 7.0 | 15.0 | 12.0 |
| 1974-85 | 8.5 | 17.5 | 13.5 |

* actual number

K. Future Visitor Traffic to Jerash and Petra

44. The development of tourist facilities and the enhancement of the attractions at Petra and Jerash may be expected to attract increasing numbers of visitors from 1979 on, following completion of project implementation. Because of its location and accessibility, which make it a convenient day trip from Amman, Jerash will appeal to a wide segment of the business and vacation travel arrivals. It is assumed that about 30% of the Arab visitors and 70% of the non-Arab visitors projected in Table 4 (main report) will make an excursion to Jerash during their stay in Jordan, or a total of 180,000 day visitors in 1980 (an equivalent of 32% of total foreign arrivals to Jordan in 1974), rising to 337,000 by 1985.

45. Because of its greater distance from Amman, Petra is somewhat less accessible to foreign business travellers who may stay only 2-3 days in Jordan. It is, however, particularly well situated to appeal to the vacation travel market since it can attract not only the multiple stop group tourists but also the holiday makers who come to Jordan for a week or more at resorts on the Gulf of Aquaba, 100 km south of Petra. With the development of accommodation, catering and related visitor facilities, and with the likely growth of vacation travel to Jordan, Petra is expected to

attract an increasing proportion of projected visitor arrivals. In 1980, about 29% of these arrivals are estimated to visit Petra, representing 10% of Arab and 40% of non-Arab arrivals. This proportion is estimated to increase to about 37% by 1985, with the number of visitors to Petra thus growing from 94,000 in 1980 to 218,000 in 1985, an average annual growth rate of 18%.

46. The following table shows the projected number of foreign visitors to Jerash and Petra over the next ten-year period:

Table VII

Projected Number of Foreign Visitors to Jerash and Petra (000)

| | Jerash | | | Petra | | |
|---|---|---|---|---|---|---|
| | Arabs | Non-Arabs | Total | Arabs | Non-Arabs | Total |
| 1974 | 24 | 47 | 71 | 8 | 27 | 35 |
| 1979 | 37 | 116 | 153 | 12 | 66 | 78 |
| 1980 | 41 | 139 | 180 | 14 | 80 | 94 |
| 1981 | 44 | 160 | 204 | 15 | 92 | 107 |
| 1982 | 47 | 184 | 231 | 16 | 132 | 148 |
| 1983 | 50 | 212 | 262 | 17 | 152 | 169 |
| 1984 | 54 | 244 | 298 | 18 | 174 | 192 |
| 1985 | 58 | 279 | 337 | 19 | 199 | 218 |
| | Average Annual Growth (%) | | | | | |
| 1974-80 | 9.5 | 20.0 | 17.0 | 9.0 | 20.0 | 18.0 |
| 1980-85 | 7.0 | 15.0 | 13.5 | 6.0 | 20.0 | 18.0 |
| 1974-85 | 9.0 | 17.5 | 15.0 | 8.0 | 20.0 | 18.0 |

47. Peace in the region is important for the materialization of Jordan's tourist market potential. Jordan is particularly vulnerable, given its present reliance on the access to Jerusalem and the West Bank for attracting some of the Western visitors. In this respect, the predominant place occupied by Petra and Jerash in the Five-Year-Plan has the added justification of partially freeing Jordan's tourism potential of the vicissitudes affecting the West Bank.

ANNEX III
Table 1

# JORDAN: TOURISM PROJECT

## VISITOR ARRIVALS FOR SELECTED COUNTRIES IN THE MIDDLE EAST 1961-1968

| | 1961 | 1966 | 1967 | 1968 |
|---|---|---|---|---|
| Egypt (UAR) | 283,957 | 578,734 | 344,954 | 317,621 |
| Israel | 159,624 | 289,752 | 291,168 | 431,966 |
| Jordan | 162,058 | 616,784 | 425,633 | 375,432 |
| Lebanon a/ | 474,418 | 701,184 | 515,228 | 710,010 |
| Syria | 516,000 | 656,263 | 528,705 | 516,288 |

a/ Excluding Syria

Source: IUOTO International Travel Statistics

ANNEX III
Table 2

JORDAN: TOURISM PROJECT

FOREIGN VISITOR ARRIVALS BY REGION IN JORDAN, 1966-1975

| Foreign Visitor Arrivals (in thousands) | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 (first half) |
|---|---|---|---|---|---|---|---|---|---|---|
| Arab | 366.6 | 262.9 | 379.4 | 271.5 | 223.4 | 223.1 | 224.0 | 258.6 | 350.0 | 174.7 |
| Non-Arab Middle East and Asia | 75.2 | 79.1 | 75.6 | 44.3 | 77.0 | 14.6 | 17.3 | 17.0 | 149.1 | 85.0 |
| European | 101.0 | 53.5 | 15.0 | 15.9 | 14.5 | 12.2 | 19.4 | 19.1 | 29.5 | 18.3 |
| American | 63.6 | 24.0 | 3.6 | 5.8 | 4.6 | 4.8 | 8.3 | 9.8 | 21.0 | 13.0 |
| Other | 10.5 | 6.1 | 1.8 | 2.2 | 2.2 | 2.1 | 3.0 | 3.3 | 5.3 | 3.1 |
| Total | 616.9 | 425.6 | 375.4 | 339.7 | 321.7 | 256.8 | 292.0 | 307.8 | 554.9 | 294.1 |

Sources: Department of Statistics, Central Bank.

JORDAN: TOURISM PROJECT

USE OF HOTEL ACCOMMODATION FACILITIES, 1974

| | Visitor Arrivals (in th.) | Total % of Visitor Arrivals | Lodgers (in th.) | Lodgers as % of Arrivals | Average Length of Stay in Hotel | Nights Spent in Hotels (in th.) | % of Nights Spent by All Lodgers in Hotels by Lodgers' Nationality | Nights Spent in International-class Hotels 1/ (in th.) | % of Nights Spent by All Lodgers in International-class Hotels by Lodgers' Nationality | % of Nights Spent in International-class Hotels |
|---|---|---|---|---|---|---|---|---|---|---|
| Foreign Visitors | | | | | | | | | | |
| Arab | 350.0 | 63.0 | 67.4 | 19.3 | 2.4 | 160.2 | 27.7 | 49.9 | 33 | 31 |
| Non-Arab Middle East and Asia | 149.1<br>149.1 | 26.9 | 8.8 | 5.9 | 1.9 | 16.6 | 2.9 | 6.5 | 4 | 39 |
| European | 29.5 | 5.3 | 25.3 | 85.7 | 2.4 | 59.8 | 10.3 | 48.5 | 32 | 81 |
| American | 21.0 | 3.8 | 12.0 | 57.1 | 1.9 | 22.9 | 4.0 | 19.0 | 12 | 83 |
| Other | 5.3 | 1.0 | 2.0 | 37.7 | 1.9 | 3.8 | .6 | 1.8 | 1 | 47 |
| Total | 554.9 | 100.0 | 115.5 | 28.0 | 2.3 | 263.3 | 45.5 | 126.7 | 82 | 48 |
| Jordanians | | | 122.3 | | 2.6 | 315.2 | 54.5 | 28.4 | 18 | 9 |
| Total | | | 237.8 | | 2.4 | 578.5 | 100.0 | 155.1 | 100 | 27 |

1/ 3, 4 and 5-star hotels

Sources: Department of Statistics, Ministry of Tourism

ANNEX III
Table 3

ANNEX III
Table 4

## JORDAN: TOURISM PROJECT

### LENGTH OF STAY OF FOREIGN VISITORS, 1974 (in %)

| Nationality | No. of days: Less than 1 | 1-3 | 4-10 | 11-30 | 31-90 | Over 90 | Total |
|---|---|---|---|---|---|---|---|
| Arab | 26.7 | 49.3 | 12.0 | 6.3 | 3.2 | 2.5 | 100.0 |
| Non-Arab Middle East and Asia | 22.4 | 64.5 | 6.9 | 3.1 | 1.4 | 1.7 | 100.0 |
| European | 7.6 | 33.3 | 26.8 | 20.2 | 4.4 | 7.7 | 100.0 |
| American | 6.2 | 32.3 | 34.1 | 13.0 | 6.6 | 7.8 | 100.0 |
| Other | 10.4 | 37.9 | 22.2 | 13.4 | 5.5 | 10.6 | 100.0 |
| All Visitors | 23.4 | 51.8 | 12.4 | 6.6 | 2.9 | 2.9 | 100.0 |

**Source: Department of Statistics**

ANNEX III
Table 5

JORDAN: TOURISM PROJECT

FOREIGN EXCHANGE RECEIPTS, 1964-1974
(in million JD)

| Year | Tourism | Total Goods and Services | Participation of Tourism Receipts (%) | Rate of Growth of Tourism Receipts (%) |
|---|---|---|---|---|
| 1964 | 8.02 | 32.70 | 24.5 | |
| 1965 | 9.81 | 37.29 | 26.3 | 22.3 |
| 1966 | 11.26 | 41.58 | 27.1 | 14.8 |
| 1967 | 6.79 | 36.81 | 18.4 | -39.7 |
| 1968 | 4.60 | 37.20 | 12.4 | -32.3 |
| 1969 | 4.53 | 46.01 | 9.8 | -1.5 |
| 1970 | 4.85 | 44.09 | 11.0 | 7.1 |
| 1971 | 6.35 | 40.42 | 15.7 | 30.9 |
| 1972 | 8.30 | 51.34 | 16.2 | 30.7 |
| 1973 | 10.71 | 76.82 | 13.9 | 29.0 |
| 1974 | 17.29 | 114.36 | 15.1 | 61.4 |
| 1975 1/ | 32.20 | 178.00 | 18.0 | 86.0 |

Source: Central Bank of Jordan

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1/ Preliminary estimates

ANNEX III
Table 6

## JORDAN: TOURISM PROJECT
## GOODS AND SERVICES EXPORTS, SELECTED CATEGORIES, 1970-1975
(in million JD)

| | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 (1st qtr.) |
|---|---|---|---|---|---|---|
| Phosphates | 2.2 | 2.2 | 3.5 | 4.0 | 19.5 | 4.2 |
| Remittances from Jordanians Abroad | 5.5 | 5.0 | 7.4 | 14.7 | 24.1 | 6.8 |
| Tourism | 4.9 | 6.4 | 8.3 | 10.7 | 17.3 | 5.8 |
| Agricultural Products | 4.7 | 3.7 | 4.8 | 4.7 | 9.6 | 4.1 |
| Cement | .3 | .5 | 1.9 | 1.3 | 4.1 | .4 |
| Total Goods and Services Exports | 44.1 | 40.4 | 51.9 | 76.8 | 114.4 | 30.3 |
| Deficit on the Goods and Services Account | 46.6 | 57.9 | 67.0 | 60.8 | 83.8 | 22.9 |

Source: Central Bank of Jordan

ANNEX IV

# THE HASHEMITE KINGDOM OF JORDAN

## TOURISM PROJECT

## FINANCIAL ASPECTS

### A. Financial Objectives

1. The basic financial objective which the project is expected to meet is the recovery of the investment cost plus a reasonable rate of return. The main agency responsible for meeting this objective would be the Ministry of Tourism and Antiquities (MTA) which would manage the two sites, including the Sound and Light program at Jerash, and operate the hotel and restaurant facilities. At the same time, those utility components at Petra which are to be carried out by other government agencies would be expected to meet standard public sector operating results. The main source of revenue to be received by MTA would be the entrance fees charged to visitors at Petra and Jerash and the admission fees charged for the Sound and Light performances at Jerash. MTA would also derive its income from the expenditure of hotel guests and day visitors on accommodation and catering services at Petra and Jerash. The utility agencies would charge the hotel, restaurants and MTA with standard tariffs for the use of their services. In addition to these direct revenue sources, the Government would receive increased tax revenues resulting from expenditures of park visitors on other goods and services during their stay in Jordan.

### B. Financial Forecasts

2. The financial forecasts for the hotel and restaurant facilities have been made separately for each of the two types of operations at Petra and Jerash. Operating projections for the hotel and restaurants along with pro forma statements of income and expenses are presented in Tables 1 and 2. These projections indicate that MTA would be able to achieve a rate of return of about 10.6% on its gross fixed assets in the expanded hotel and restaurant facilities at Petra and 25.1% on the assets in the restaurant facility at Jerash by 1982, the fourth year of operations. By this time, MTA is expected to be able to generate sufficient internal funds from its operations to meet its financial obligations, if any, for this part of the project and to retain adequate reserve funds. The financial (DCF) rate of return on investments is estimated to be 9.9% for Petra and 23.7% for Jerash, after deduction of management fees.

3. These projections are based on the assumptions discussed below and listed in Tables 1 and 2.

4. For operations at Petra, revenues are based on an average hotel occupancy rate of 55% in 1979, increasing to 75% in 1983, and an assumed double room occupancy factor of 1.8%. A fairly even distribution of visitors throughout the year, with the exception of February, can be expected. By 1983, when the hotel would reach the level of normal operations, the expected room occupancies by season would be 90% for the spring, 85% for the autumn, 75% for the summer, and 50% for the winter months. This averages out to 75% occupancy for the year. These targets are reasonably attainable in view of the potential market for the area and the limited number of rooms to be provided under the project. Similarly, given the limited capacity of the hotel at Petra and the distances involved in Jordan, restaurant services represent an important source of revenue to MTA. These services would be provided by a restaurant at the Petra Entrance attached to the hotel with a total capacity of 350 seats and another facility in the Petra Basin with a total capacity of 120 seats. Based on the projected traffic it is estimated that the restaurant at Petra Entrance could serve an average of 99-134 breakfasts, 151-362 lunches, and 107-178 dinners daily. In addition, the restaurant in the Petra Basin expects to serve an average of 85-197 mid-day meals daily.

5. Daily expenditures of tourists staying at the hotel in Petra (in 1975 prices) are projected to be as follows:

Table A

Average Expenditures of Hotel Guests

| | (JD) | (US$) | (%) |
|---|---|---|---|
| Rooms | 4,000 | 12.12 | 43 |
| Food | 3,800 | 11.51 | 41 |
| Breakfast | (0,500) | (1.51) | 5 |
| Lunch | (1,500) | (4.55) | 16 |
| Dinner | (1,800) | (5.45) | 20 |
| Beverages | 1,000 | 3.03 | 11 |
| Other | 0,500 | 1.51 | 5 |
| TOTAL | 9,300 | 28.18 | 100 |

6. Operating costs for the hotel and restaurant operations have been estimated on the basis of current experience in existing facilities, where applicable, and on standard ratios for comparable facilities in Jordan. Cost of sales are based on ratios to departmental sales. The cost ratios are assumed to be 38% for food costs, 22% for beverage costs, and 50% for other costs (gift shop, telephone, laundry, etc.). Payroll and related expenses are calculated from staffing tables for the hotel and from average wages and related expenses currently paid in Jordan, adjusted to reflect differences in the scope of facilities and types of markets. The payroll cost, including fringe benefits, has been projected to average JD 50 or about US$151 equivalent per month per employee. The

number of employees averaging 1.5 persons per room. Other departmental costs which include expenses for guest supplies, replacement of linen, china and glassware, etc., are assumed will be 8% on room sales and 15% on food and beverage sales. These expenses include estimated expenditures for administration, promotion, utilities, and repair and maintenance. (Table 1.)

7. Because of its location, less than one hour's drive from Amman and on the highway to Damascus, the restaurant at Jerash could expect to receive a substantial number of guests: some would come to visit the archaeological site but there would be others who would visit the restaurant only. For the restaurant operations at Jerash, it is projected that the restaurant would serve an average of 386-668 meals during the day time and 118-181 dinners daily. These sales are based on the projected foreign visitors to the area plus an estimated number of Jordanian visitors (Table 2).

8. The Jerash restaurant plans to have a more varied menu than the one in Petra and prices, shown in Table B below, are projected to be slightly lower.

Table B

| | Average Meal Prices (JD) | (US$) |
|---|---|---|
| **Food** | | |
| Mid-Day Meals | 1,200 | 3.64 |
| Evening Meals | 1,500 | 4.55 |
| **Beverages** | | |
| Mid-Day | 500 | 1.51 |
| Evening | 800 | 2.42 |

9. Costs of sales are based on ratios to respective sales. The cost ratios are estimated at 36% for food cost and 20% for beverage costs. Payroll cost, including fringe benefits, has been projected at a monthly average rate of JD 55 or about US$167 equivalent per employee. A total of 90 persons would be employed. Other operating costs are also based on ratios to total sales. These include advertising and promotion, utilities, administration and general expenses as well as repair and maintenance costs.

10. While the cost of managing the facilities in Petra and Jerash will depend upon the outcome of negotiations between MTA and potential hotel operating companies, it has been assumed that the management fee will not exceed 25% of gross operating profits, as is usually the case. This is adequate to cover both a basic fee as well as an incentive payment to the management company.

11. Operating results have been projected separately for MTA's operation of the two sites including the Sound and Light performance at Jerash. Revenues would come from entrance fees charged to tourists, who would visit the archaeological sites at Petra and Jerash. These results are shown in Table 3 and indicate that MTA would be able to achieve a rate of return on its gross fixed assets of about 12% in 1980, after paying for the necessary infrastructure and utility facilities to be provided under the project and the cost of resettling the Bdul Bedouin families.

12. Entrance fees to be charged are assumed to be JD 1.0 (about US$3.03 equivalent) for Petra and JD 0.50 (about US$1.50 equivalent) for Jerash. In addition, admission fees charged for the Sound and Light performances at Jerash have been assumed at an average of JD 1.50 (about US$4.55 equivalent) per person. These charges would appear reasonable in view of both the touristic value of the attractions and the level of fees charged for similar operations in other parts of the world.

13. Projected revenues from entry fees have been based on the estimated number of visitors to each site. Special groups of visitors to the sites who might be paying nothing or a reduced fee (e.g., students, archaeological groups, etc.) have not been taken into account. Revenues from the Sound and Light performances at Jerash have been calculated on the assumption that 200 performances will take place annually, with 50% of the 500 seat capacity utilized in 1979, rising to 65% capacity utilization by 1985.

14. The nature of Petra and Jerash site operations is different from hotel and restaurant operations in that the operating costs are relatively low, resulting in relatively high gross operating profits. Based on the operating results experienced by similar operations in Europe and the Middle East, gross operating profits for the archaeological sites at Petra and Jerash have been estimated at 90% of the gross revenues derived from entrance fees. Operating costs for the Sound and Light performances at Jerash are expected to be much higher; about 50% of gross revenues.

15. Excluding price contingencies, but including the costs of Bedouin resettlement and the cost of all utility items, the overall internal financial rate of return on total project investments would be 16%.

C. Financial Covenants

16. During negotiations, assurances should be sought that the Government would introduce the entry fees and the Sound & Light program fee described above by the time the investment program is completed, and that these fees would be discussed with the Association prior to being introduced and adjusted periodically in line with general price level movements, to permit the recovery of investments within the sites and to earn a reasonable return. Approval by the Association of the proposed management contract for operating the hotel and restaurant facilities, including the qualifications of the firm, and the terms and cost of their services, would be a condition of the credit. In addition, the MTA would establish, with the assistance of consultants acceptable to the Association, a system of commercial accounts for the hotel and restaurant operations, as well as the sites and Sound & Light activities. The financial records should be maintained according to generally accepted accounting principles, and audited annually by independent auditors acceptable to the Association. Assurances will also be sought that the audited financial statements would be submitted to the Association within four months after the end of each fiscal year of operation.

ANNEX IV
TABLE 1

JORDAN: TOURISM PROJECT

PROJECTED HOTEL AND RESTAURANT OPERATIONS AT PETRA

| CALENDAR YEAR | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 |
|---|---|---|---|---|---|---|---|
| OPERATING YEAR | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Available Rooms | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Room Occupancy (%) | 55 | 60 | 65 | 70 | 75 | 75 | 75 |
| Double Occupancy | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| Guest Nights (per year) | 36,135 | 39,420 | 42,705 | 45,990 | 49,275 | 49,275 | 49,275 |
| Average Length of Stay | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| Staying Guests at Hotel (000) | 26 | 28 | 31 | 33 | 35 | 35 | 35 |
| Foreign Tourists | 22 | 24 | 26 | 28 | 30 | 30 | 30 |
| Jordanian Tourists | 4 | 4 | 5 | 5 | 5 | 5 | 5 |
| Total Visitor Arrivals (000) | 92 | 109 | 136 | 167 | 189 | 213 | 241 |
| Foreign Visitors | 78 | 94 | 118 | 148 | 169 | 192 | 218 |
| Jordanian Visitors | 14 | 15 | 18 | 19 | 20 | 21 | 23 |
| Total Day Visitors (000) | 66 | 81 | 105 | 134 | 154 | 178 | 206 |
| Foreign Day Visitors | 56 | 70 | 92 | 120 | 139 | 162 | 188 |
| Jordanian Day Visitors | 10 | 11 | 13 | 14 | 15 | 16 | 18 |
| Hotel Restaurant Guests (000) | 130 | 146 | 164 | 195 | 214 | 229 | 246 |
| Breakfast | 36 | 39 | 43 | 46 | 49 | 49 | 49 |
| Lunch | 55 | 64 | 73 | 95 | 106 | 118 | 132 |
| Dinner | 39 | 43 | 48 | 54 | 59 | 62 | 65 |
| Petra Basin Restaurant Guests (000) | 31 | 36 | 41 | 52 | 59 | 65 | 72 |
| Total Meals Served (000) | 161 | 182 | 205 | 247 | 273 | 294 | 318 |
| Total Mid-day Meals Served (000) | 86 | 100 | 114 | 147 | 165 | 183 | 204 |
| Total Beverages Served (000) | 82 | 93 | 105 | 128 | 142 | 154 | 167 |
| SALES: | | | Jordanian Dinars (000) | | | | |
| Room | 144 | 158 | 171 | 184 | 197 | 197 | 197 |
| Food | 213 | 247 | 279 | 341 | 379 | 412 | 448 |
| Breakfast | ( 18) | ( 20) | ( 22) | ( 23) | ( 25) | ( 25) | ( 25) |
| Lunch | (125) | (150) | (171) | (221) | (248) | (275) | (306) |
| Dinner | ( 70) | ( 77) | ( 86) | ( 97) | (106) | (112) | (117) |
| Beverages | 82 | 93 | 105 | 128 | 142 | 154 | 167 |
| Other | 18 | 20 | 22 | 23 | 25 | 25 | 25 |
| Total Sales | 457 | 518 | 577 | 676 | 743 | 788 | 837 |
| COST & EXPENSES: | | | | | | | |
| Direct Cost | | | | | | | |
| Food | 81 | 94 | 106 | 130 | 144 | 157 | 170 |
| Beverage | 18 | 20 | 23 | 28 | 31 | 34 | 37 |
| Other | 9 | 10 | 11 | 12 | 13 | 13 | 13 |
| Subtotal | 108 | 124 | 140 | 170 | 188 | 204 | 220 |
| Payroll & Related Expenses | 113 | 116 | 119 | 124 | 127 | 129 | 132 |
| Other Departmental Costs | 56 | 64 | 71 | 85 | 94 | 101 | 108 |
| Total Operating Costs | 277 | 304 | 330 | 379 | 409 | 434 | 460 |
| GROSS INCOME: | 180 | 214 | 247 | 297 | 334 | 354 | 377 |
| (Less) Undistributed Expenses | | | | | | | |
| Administration | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| Promotion | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Heat, Light & Power | 49 | 50 | 52 | 54 | 55 | 56 | 57 |
| Repair & Maintenance | - | 15 | 29 | 29 | 29 | 29 | 29 |
| Total Expenses | 96 | 112 | 128 | 130 | 131 | 132 | 133 |
| GROSS OPERATING PROFIT: | 84 | 102 | 119 | 167 | 203 | 220 | 244 |
| (As % to Gross Sales) | (18.4) | (19.7) | (21.4) | (24.7) | (27.3) | (28.2) | (29.1) |

ANNEX IV
TABLE 2

JORDAN: TOURISM PROJECT

OPERATING PROJECTIONS OF RESTAURANT AT JERASH

| CALENDAR YEAR | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 |
|---|---|---|---|---|---|---|---|
| OPERATING YEAR | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Total Visitor Arrivals (000) | 227 | 262 | 292 | 325 | 362 | 406 | 453 |
| Foreign Visitors | 153 | 180 | 204 | 231 | 262 | 298 | 337 |
| Site Visitors | 138 | 162 | 184 | 208 | 236 | 268 | 303 |
| Casual Visitors | 15 | 18 | 20 | 23 | 26 | 30 | 34 |
| Jordanian Visitors | 74 | 82 | 88 | 94 | 100 | 108 | 116 |
| Site Visitors | 59 | 66 | 70 | 75 | 80 | 86 | 93 |
| Casual Visitors | 15 | 16 | 18 | 19 | 20 | 22 | 23 |
| Site Visitors (000) | 197 | 228 | 254 | 283 | 316 | 354 | 396 |
| Casual Visitors (000) | 30 | 34 | 38 | 42 | 46 | 52 | 57 |
| Theater Visitors (000) | 50 | 55 | 55 | 60 | 60 | 65 | 65 |
| Restaurant Guests (000) | | | | | | | |
| For Mid-day Meals | 123 | 141 | 157 | 176 | 195 | 219 | 244 |
| Site Visitors | 99 | 114 | 127 | 142 | 158 | 177 | 198 |
| Casual Visitors | 24 | 27 | 30 | 34 | 37 | 42 | 46 |
| For Evening Meals | 38 | 43 | 46 | 50 | 55 | 60 | 66 |
| Site Visitors | 20 | 23 | 25 | 28 | 32 | 35 | 40 |
| Theater Visitors | 15 | 17 | 17 | 18 | 18 | 20 | 20 |
| Casual Visitors | 3 | 3 | 4 | 4 | 5 | 5 | 6 |
| SALES: | | | Jordanian Dinars (000) | | | | |
| Food | | | | | | | |
| Mid-day Meals | 148 | 169 | 188 | 211 | 234 | 263 | 293 |
| Evening Meals | 57 | 65 | 69 | 75 | 83 | 90 | 99 |
| | 205 | 234 | 257 | 286 | 317 | 353 | 392 |
| Beverages | | | | | | | |
| Mid-day | 62 | 71 | 79 | 88 | 98 | 110 | 122 |
| Evening | 30 | 34 | 37 | 40 | 44 | 48 | 53 |
| | 92 | 105 | 116 | 128 | 142 | 158 | 175 |
| Total Sales | 297 | 339 | 373 | 414 | 459 | 511 | 567 |
| COST OF SALES: | | | | | | | |
| Food | 74 | 84 | 93 | 103 | 114 | 127 | 141 |
| Beverages | 18 | 21 | 23 | 26 | 28 | 32 | 35 |
| Total Cost of Sales | 92 | 105 | 116 | 129 | 142 | 159 | 176 |
| OTHER EXPENSES: | | | | | | | |
| Payroll | 89 | 93 | 96 | 100 | 105 | 110 | 116 |
| Direct Operating Expenses | 30 | 34 | 37 | 41 | 46 | 51 | 57 |
| Advertising & Promotion | 3 | 3 | 4 | 4 | 5 | 5 | 6 |
| Utilities | 21 | 24 | 26 | 29 | 32 | 36 | 40 |
| Administration & General | 15 | 17 | 19 | 21 | 23 | 26 | 28 |
| Repairs & Maintenance | 9 | 10 | 11 | 12 | 14 | 15 | 17 |
| Total Other Expenses | 167 | 181 | 193 | 207 | 225 | 243 | 264 |
| Total Operating Cost & Expenses | 259 | 286 | 309 | 336 | 367 | 402 | 440 |
| GROSS OPERATING PROFIT | 38 | 53 | 64 | 78 | 92 | 109 | 127 |
| (As % to Gross Sales) | (12.8) | (15.6) | (17.2) | (18.8) | (20.0) | (21.3) | (22.4) |

ANNEX IV
TABLE 3

JORDAN: TOURISM PROJECT

PROJECTED SITE OPERATIONS
Jordanian Dinars (000)

| CALENDAR YEAR | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 |
|---|---|---|---|---|---|---|---|
| OPERATING YEAR | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| PETRA | | | | | | | |
| Revenues from Entrance Fee | 92 | 109 | 136 | 167 | 189 | 213 | 241 |
| Gross Operating Profit | 83 | 98 | 122 | 150 | 170 | 192 | 217 |
| JERASH | | | | | | | |
| Revenues from Entrance Fee | 99 | 114 | 127 | 142 | 158 | 177 | 198 |
| Gross Operating Profit | 89 | 103 | 114 | 128 | 142 | 159 | 178 |
| Revenues from Sound & Light Performance | 75 | 83 | 83 | 90 | 90 | 98 | 98 |
| Gross Operating Profit | 38 | 42 | 42 | 45 | 45 | 49 | 49 |
| Subtotal Jerash Gross Operating Profit | 127 | 145 | 156 | 173 | 187 | 208 | 227 |
| TOTAL GROSS OPERATING PROFIT | 210 | 243 | 278 | 323 | 357 | 400 | 444 |

# THE HASHEMITE KINGDOM OF JORDAN

# TOURISM PROJECT

# ECONOMIC JUSTIFICATION

## A. Introduction

1. For purposes of economic evaluation, the project's components can be divided as follows:

(a) a hotel in Petra, restaurants in Petra and Jerash, and Sound & Light facilities in Jerash to be operated as commercial entities;

(b) non-revenue earning tourist facilities and restoration and archaeological work inside the archaeological areas, to be financed by the imposition of entrance fees;

(c) utilities to service the facilities included in the two previous categories;

(d) training and technical assistance for the implementation of the project in both sites; and

(e) resettlement of the Bdul tribe (Bedouin) in Petra.

## B. Project Boundaries

2. Whether the above components of the project are implemented or not, people will continue to visit Jerash and Petra as they have done in the past. Accordingly, the economic impact of the project has been evaluated in terms of the investment costs incurred and the net benefits enjoyed in the respective sites and their immediate proximity in relation to the "without project" case. Hence, gross benefits generated by the project have been estimated as incremental expenditures of tourists. The increment would be achieved through the expected increase in the number of visitors due to the enhancement of the sites and the facilities provided (Table I) and the higher per capita expenditures of visitors to Petra and Jerash as a result of the introduction of entrance fees, higher

tariffs on new and/or improved accommodations and catering services, the charge for Sound & Light performances in Jerash, and improved local transportation services in Petra. The costs and revenues assumptions, based on the financial analysis of the commercial units (Annex IV), are described in more detail in paras. 12 to 21 below.

3. Commercial activities not financed under the project, but located within Petra and Jerash, such as souvenir shopping and local transportation on which incremental tourists induced by the project would spend money, have been included in the evaluation. Similar "external" off-site benefits and costs in other parts of Jordan have not been included.

4. Possible off-site costs and benefits induced by the project in other parts of Jordan -- especially those related to transportation to and from Petra and Jerash and accommodation in Amman and Aqaba -- have, however, been analyzed in order to identify any major bias from considering "on site" costs and benefits. The effect of the project on transportation activities between Petra and Amman and Aqaba, and between Jerash and Amman would be beneficial to Jordan since these activities are profitable. The project's effect on accommodation in Amman and Aqaba, on the other hand, has some minor negative as well as strongly positive facets. In the very short run, the expansion of hotel capacity in Petra may divert some demand from other parts of Jordan, but this would be temporary and minor, given the limited accommodation expansion (76 rooms as compared with some 1,500 rooms in Amman and Aqaba). In the longer run, of the 70,000 visitors the project is expected to attract by the seventh year of operation over and above the "without" case (some 150,000), less than 30,000 would lodge in the expanded hotel facilities, and the remainder will be accommodated in hotels in Amman and Aqaba. Hence, the project will induce an increase in the number and length of stay of visitors to Jordan over and above time spent "on-site", and hotels elsewhere would therefore enjoy higher occupancy rates and profitability.

5. Likewise, the catering facilities to be expanded in Jerash are not expected to have a significant net demand diversion effect on similar activities elsewhere. The training and technical assistance component of the project would also affect positively other activities of the Ministry of Tourism and Antiquities outside the project areas and tourism in general.

6. The effect of these "externalities" on net benefits of the project are therefore expected to be quite positive. Hence, the restriction of the "economic boundaries" of the project to the Petra and Jerash archaeological sites, their accommodation and catering facilities, and local transportation and other commercial activities that take place inside or adjacent to the sites is felt to yield a very conservative estimate of net benefits.

7. Although a consolidated internal rate of return for the project is calculated, most of the economic evaluation has been elaborated for Petra and Jerash separately, on grounds that interactions of costs and revenues are difficult to quantify and in any event counterbalance each other. 1/

8. Similarly, no estimation is made of the value -- apart from the direct benefits from tourist expenditures -- which should be assigned to preservation of the cultural heritage of Jordan represented by Jerash and Petra. Archaeological ruins are a non-renewable resource with low rates of deterioration, much of which occurs by natural catastrophes such as earthquakes or major floods. Although erosion by nature and by greater numbers of visitors will accelerate deterioration of the ruins in Jerash and Petra, they will, barring catastrophes, probably stand for several more centuries with proper protection. The project's archaeological component was conceived to provide enough protection to arrest deterioration, through preservation and consolidation work, plus some excavation that will have touristic as well as archaeological value.

## C. Costs and Benefits without the Project

9. The Ministry of Tourism and Antiquities has among its duties the maintenance of the national monuments, for which a small budget is provided. The present work program is insufficient, however, to prevent some deterioration. Nevertheless, it is conservatively assumed that, from a touristic point of view, the deterioration would not diminish the attractiveness of the sites sufficiently to affect the market negatively in the medium term. On the other hand, it is evident that work along the lines contemplated for this project would have to be undertaken in Petra and Jerash at some point within the economic life of the project. In principle, therefore, several project costs should be included in the "without" case, but delayed some years into the future. Moreover, since it is likely that the costs (in constant prices) of achieving some given standard of preservation will rise as the attractions deteriorate, these future costs should be somewhat higher than those assumed with the project. That no such costs are included in the "without" case imparts a conservative bias to the estimate of net benefits.

10. Non-resident visitors to Petra and to Jerash have been projected to grow in the "without" case at the same rate as is projected for

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1/ The project would finance some minor archaeological restoration equipment that would be used in both sites. There are also market interactions -- attraction reinforcement and diversion of demand -- which are assumed here just to offset each other.

visitors to Jordan as a whole (at 15.5% per year from 1975 to 1985 - Annex III), whereas with the project they would grow at 15% in Jerash and at 18% in Petra. Resident visitors are projected to grow at 8% per year between 1975 and 1985. Total visitors are assumed to grow at 6% per year after 1985 until the areas' saturation point is reached (para. 12).

11. The tourist expenditures on shopping, local transportation, and other related activities "without" the project have been assumed to be JD 1.00 day per visitor in Jerash and JD 2.00 in Petra. The present accommodation and catering facilities in Petra and Jerash are inadequate to serve the present demand and to permit profitable operations. The records of the Resthouses Corporation, which operates them, show that the financial results have been erratic, frequently ending in operational losses. For purposes of projecting, however, it has been conservatively assumed for the "without" case that the 24-room hotel in Petra would have yearly gross operating profits of JD 14,000 and the restaurant in Jerash, JD 8,000.

## D. Revenue Assumptions

12. With the project, then, the number of foreign visitors would grow in the case of Jerash at 15% per year between 1975 and 1985, and in the case of Petra at 18% (in consideration of the broader investment program and added attractions there; Annex I). The number of local visitors, on the other hand, is expected to be unaffected by the project, on the assumption that the introduction of entrance fees will offset the effect of enhanced facilities. After 1985, visitors are assumed to increase with the project by the same amount as without, the number of incremental visitors reached by 1985 (40,000 for Jerash and 70,000 for Petra) remaining constant up to the point when the two sites reach saturation. If no further investments are undertaken, the saturation point in Jerash would be reached by year 2000 and by 1992 in Petra. This assumes that not more than 3,500 visitors per day can be handled in Jerash and 1,200 in Petra (Annex I, para. 18), which gives a total number of visitors per year, when taking into account seasonality, of some 960,000 and 330,000 visitors, respectively. Since these capacities are considered to be unaffected by the project, the saturation point would be reached earlier with the project, and the marginal number of visitors in relation to the "without" case would progressively decline afterwards. In addition to increased arrivals, the hotel in Petra will make it possible for more foreign tourists to stay longer in Petra and visit the site more than once. This is estimated to represent the equivalent of another 11,000 site visits per year by 1985. The number of foreign and Jordanian visitors to both areas (based on the market projections up to 1985 presented in Annex III and the above assumptions) are given below:

## Table I

## Projected Visitors to Jerash and Petra, 1979-1995

### With the Project

| | 1975 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1990 | 1995 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Jerash** | | | | | | | | | | | |
| Jordanians 1/ | 45 | 60 | 66 | 70 | 75 | 80 | 86 | 93 | 124 | 167 | 225 |
| Foreigners | 82 | 138 | 162 | 184 | 208 | 236 | 268 | 303 | 396 | 516 | 687 |
| Total | 127 | 198 | 228 | 254 | 283 | 316 | 354 | 396 | 520 | 683 | 912 |
| **Petra** | | | | | | | | | | | |
| Jordanians 1/ | 11 | 14 | 15 | 18 | 19 | 20 | 21 | 23 | 31 | 40 | 40 |
| Foreigners | 41 | 78 | 94 | 118 | 148 | 169 | 192 | 218 | 279 | 290 | 290 |
| Total | 52 | 92 | 109 | 136 | 167 | 189 | 213 | 241 | 310 | 330 | 330 |

### Without the Project

| | 1975 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1990 | 1995 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Jerash** | | | | | | | | | | | |
| Jordanians 1/ | 45 | 60 | 66 | 70 | 75 | 80 | 86 | 93 | 124 | 167 | 225 |
| Foreigners | 82 | 131 | 151 | 169 | 189 | 209 | 238 | 266 | 356 | 476 | 637 |
| Total | 127 | 191 | 217 | 239 | 264 | 289 | 324 | 359 | 480 | 643 | 862 |
| **Petra** | | | | | | | | | | | |
| Jordanians 1/ | 11 | 14 | 15 | 18 | 19 | 20 | 21 | 23 | 31 | 40 | 40 |
| Foreigners | 41 | 73 | 84 | 94 | 105 | 118 | 132 | 148 | 198 | 265 | 290 |
| Total | 52 | 87 | 99 | 112 | 124 | 138 | 153 | 171 | 229 | 305 | 330 |

1/ Only paying visitors included. Special groups, such as children and students are not included.

13. For purposes of economic evaluation, all revenues have been estimated in 1975 prices. Park entrance fees are estimated at JD 0.50 for Jerash and JD 1.00 for Petra.1/ Entrance fees collected from Jordanian visitors are excluded from the benefit stream since they mainly represent a transfer from resident tourists to the Government.2/

14. Entrance fees to Sound & Light performances in Jerash are estimated at JD 1.50 per person and are all, including those paid by Jordanians, incremental. The number of visitors to these performances is assumed to grow from 50,000 in the first year of operation up to 65,000 in the seventh (Annex III). Revenues of the hotel and restaurant in Petra and the restaurant in Jerash are derived from the projected financial accounts (Annex IV), which in turn, are based on actual experience of similar facilities elsewhere. Revenues from hotel, restaurants, and Sound & Light performances represent 70% of the project's total revenues from the tenth year of operations on (and even more during the first years). Since these facilities have been scaled 3/ to cater for the existing unsatisfied demand and the growth in the market for the next few years only (they would be fully utilized -- seasonality considered -- by 1985), the bulk of the project's revenues would in the latter years be quite independent of the marginal increase in tourist arrivals over the "without" project case.

15. The substantial growth in number and, in the case of Petra, length of stay of visitors expected as a result of the project will also increase other foreign tourist expenditures -- e.g., local transportation (mainly horse rides inside the archaeological areas), guides' services, and souvenir shopping -- which are estimated to total JD 1.00 in Jerash and JD 2.50 in Petra per person per day. Although there would be an expected increase of JD 0.50 in Petra, where horse stables and transportation equipment are being provided (no such increase is expected in Jerash), these

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1/ MTA may charge differential rates according to domestic and foreign, or season of the year, in which case these estimates could be considered as weighted averages.

2/ This procedure ignores: (a) the increased benefit to residents from being able to visit enhanced sites; (b) the favorable distributional effect of transferring receipts from (relatively well-off) Jordanian tourists to the Government; (c) the unfavorable distributional effect of the shift of consumer surplus to these relatively well-off Jordanians who would visit the improved parks from less well-off Jordanians who would not visit the parks because of the entrance fees.

3/ Future expansions are likely to take place but they have not been considered in the economic evaluation.

figures are still very low by international standards and are based on the unsophisticated services presently offered to tourists. It is a conservative estimate, therefore, because it does not take into account the level of services that can evolve in the future. The estimated expenditure breakdown on these items is presented below:

Table II

| | Jerash | Petra |
|---|---|---|
| Local Transportation | 10% | 50% |
| Souvenir Shopping | 70% | 40% |
| Guides and Other | 20% | 10% |
| Total | 100% | 100% |

16. Tourist activities pay few taxes in Jordan. Not only are most tourism-related enterprises covered by the Investment Promotion Law (Annex III), but tourists pay sales taxes only in shops. In the case of Jerash and Petra, where almost all facilities would be owned and operated by the Government, tax revenues have been estimated to play an insignificant role (sales tax is estimated at 5% of souvenir sales).

## E. Investment Cost Assumptions

17. For purposes of calculating economic rates of return on the development of each archaeological site, the investment costs have been derived from the estimates of construction costs (or purchase price) for most project components, with the exception of the telecommunications component of the project and the costs of the Bedouin resettlement program. The portion of the costs of the telecommunications component excluded in the economic evaluation (60%) corresponds roughly to the incremental cost of having chosen a larger telephone exchange in Wadi Musa than strictly needed by the project in order to service the town's present and future needs. The new automatic exchange would cut operational costs, such as skilled operators' wages and repair and maintenance costs, of running Wadi Musa's obsolete telephone installation. The new exchange would provide more and better services, expected to be fully paid by the community. This portion is therefore judged to be justified on its own merits. With regard to the resettlement of Bedouins, the Jordanian Government has already set up a high-level commission to study the resettlement program and has stated that it would be implemented with or without the project. Hence, these costs are excluded altogether. The estimated investment cost of other than hotel, restaurant, and park-related tourist activities induced by the incremental visitor expenditures (JD 40,000 in Jerash and JD 100,000 in Petra) has been

added to the project-financed components in order to build the relevant investment cost stream within the project's boundaries.

18. For project-financed components, price contingencies have been excluded (physical contingencies have been left in). Replacement costs for Petra have been estimated at JD 10,000 per year for the second and third years of operation and JD 20,000 thereafter, and at JD 20,000 per year for Jerash. These estimates are based on replacement reserves typical for accommodation and catering facilities (2% of sales), plus JD 5,000 per year for other project components. In view of the tax exemptions granted to tourist investments (para. 15), no import tariffs have been deducted from the investment costs.

## F. Operating Cost Assumptions

19. The operating costs of the Jerash and Petra archaeological sites have been projected taking into account the cost of site maintenance already incurred by MTA and the impact the collection of entrance fees and the increased number of visitors will have on them. It was estimated that the incremental cost would be covered by 10% of the entrance fees paid by visitors in both areas. The Sound & Light performances in Jerash would have estimated operating costs amounting to 50% of the fees collected (Annex IV).

20. The hotel and restaurant operating costs are also based on the financial projections presented in detail in Annex IV, which, in turn, take into account the cost structure of similar facilities in Jordan and both sites' pecularities. The operating cost projections of the accommodations and catering facilities in Petra range from 82% of sales during the first year of operation down to 69% from the seventh year onward. The operating cost projections of the restaurant in Jerash range from 93% of sales during the first year to 78% from the seventh year onward. The operating costs of the management company was estimated at 20% of management fees.

21. The operating costs of the non-project financed commercial activities have been estimated at 65% of sales, based on their present level of operation and on knowledge of similar activities in other countries. Although operating costs of horse rides would appear to be much lower than those of other activities, it has been conservatively assumed that they also represent 65% of sales.

## G. Internal Economic Rate of Return

22. The project's cost and benefit streams (before applying shadow

prices in Jerash and Petra resulting from the above assumptions are presented below:

Table III

Economic Cost and Benefit Stream
(in 1975 JD thousand)

| Year | Jerash | | | Petra | | |
|---|---|---|---|---|---|---|
| | Investment Cost | Operating Cost | Revenues | Investment Cost | Operating Cost | Revenues |
| 1 | 180 | - | - | 800 | - | - |
| 2 | 270 | - | - | 980 | - | - |
| 3 | 150 | 310 | 450 | 250 | 420 | 610 |
| 4 | 80 | 350 | 510 | 160 | 500 | 720 |
| 5 | 20 | 370 | 560 | 30 | 580 | 860 |
| 6 | 10 | 410 | 630 | 30 | 680 | 1,060 |
| 7 | 20 | 450 | 690 | 30 | 730 | 1,160 |
| 8 | 20 | 500 | 770 | 30 | 780 | 1,260 |
| 9 | 20 | 550 | 850 | 20 | 820 | 1,380 |
| 10 | 20 | 550 | 870 | 20 | 830 | 1,410 |
| 11 | 20 | 550 | 880 | 20 | 840 | 1,430 |
| 12 | 20 | 560 | 880 | 20 | 850 | 1,440 |
| 13 | 20 | 560 | 890 | 20 | 850 | 1,460 |
| 14 | 20 | 560 | 900 | 20 | 860 | 1,470 |
| 15 | 20 | 560 | 910 | 20 | 860 | 1,490 |
| 16 | 20 | 560 | 920 | 20 | 840 | 1,450 |
| 17 | 20 | 560 | 940 | 20 | 820 | 1,430 |
| 18 | 20 | 570 | 950 | 20 | 790 | 1,390 |
| 19 | 20 | 570 | 970 | 20 | 750 | 1,330 |
| 20 | 20 | 570 | 980 | 20 | 730 | 1,290 |
| 21 | 20 | 570 | 990 | 20 | 730 | 1,290 |
| 22 | 20 | 580 | 1,010 | 20 | 730 | 1,290 |
| 23 | 20 | 580 | 1,030 | 20 | 730 | 1,290 |
| 24 | 20 | 580 | 1,040 | 20 | 730 | 1,290 |
| 25 | 20 | 580 | 1,060 | 20 | 730 | 1,290 |

23. Based on these streams (the base case), the internal economic rate of return is 30.3% in Jerash and 16.9% in Petra, with a horizon of 25 years (2 years of construction and 23 years of operation) and no residual value being considered. The total project rate of return is 20.1%. Net revenues by year 10, represent JD 0.30 million in Jerash and JD 0.56 million in Petra. These fall in the case of Petra in later years as the effect of saturation is felt.

24. Labor at all levels of training seems to be scarce in Jordan so that shadow wages should not be applied generally. The project will, however, provide employment in Petra to Bedouins who are currently underemployed but who would not seek employment outside their settlements in and around Petra. The wages of these Bedouins are estimated to represent roughly 10% of total operating costs in Petra. With shadow wages equal to 75% of their market wages, the internal economic rate of return in Petra would be 18.7% and 21.4% for the total project.

## H. Sensitivity Analysis

25. The sensitivity of the project's rate of return to changes in costs, gross operating profits, prices, visitor arrivals, and commencement of operations, is presented below:

Table IV

Internal Economic Rate of Return: Sensitivity Analysis
(in %)

| | Jerash | Petra | Total Project |
|---|---|---|---|
| Best Estimate | 30.3 | 16.9 | 20.1 |
| Changes | | | |
| Investment Cost + 10% | 28.0 | 15.5 | 18.5 |
| + 20% | 26.0 | 14.3 | 17.2 |
| Gross Operating Profit + 10% | 32.8 | 18.3 | 21.8 |
| - 10% | 27.7 | 15.3 | 18.4 |
| - 20% | 25.0 | 13.6 | 16.4 |
| Prices a/ + 10% | 37.6 | 21.6 | 24.6 |
| - 10% | 22.7 | 12.7 | 15.2 |
| 20% Reduction in Visitor Arrivals | 21.0 | 13.1 | 15.1 |
| One Year's Delay in Project Implementation b/ | 26.7 | 15.5 | 18.3 |

a/ i.e., change of all prices used in estimating revenues, including those of commercial activities undertaken by the private sector.

b/ i.e., investments stretched so that operations commence in year four.

26. As can be observed from Table IV, the project is not very sensitive to changes in total visitor arrivals to Jordan (and to the sites). The effect of a reduction in visitor arrivals would be particularly weak in Petra, where the 100-room hotel would be fully utilized (seasonality considered) with significantly less visitor arrivals than those shown in the best estimate market projections. 1/ Overall, the project has been conservatively scaled in relation to the best estimate market projections (see para. 14 of this Annex) in view of the uncertainties stemming from the instability in the Middle East which has resulted in wide fluctuations of visitor arrivals to the region in the past.

27. The project's rates of return are also moderately sensitive to changes in gross operating profits. It is especially important that the accommodation and catering facilities -- which, as indicated before, represent the bulk of total revenues -- be properly managed to realize the projected profits (see financial covenants in Annex IV). Pursuant to this end, the Government is planning to enter into a management contract with an experienced company to run these facilities and the project includes a housing component in Petra to mitigate the problem imposed by the relative remoteness of the area on higher level staff recruitment. In addition, the project provides technical assistance for the efficient operation of other facilities.

28. The project's rates of return are slightly more sensitive to changes in prices. These, however, are unlikely to fall much below the projected level, given Jordan's rather strong price competitive position in the Middle East and that rather conservative price assumptions have been used in the best estimate case.

## I. Balance of Payments Effect

29. The estimated foreign exchange component of the project's costs and revenues are shown below:

Table V

Estimated Foreign Exchange Component
(in %)

| | Jerash | Petra |
|---|---|---|
| Investment Cost | 53 | 53 |
| Operating Cost | 30 | 25 |
| Revenues: | 80 | 89 |
| Hotel and Restaurant | ( 73) | ( 86) |
| Entrance Fees | (100) | (100) |
| Sound & Light | ( 70) | |
| Other Commercial Activities | (100) | ( 90) |

1/ The projected gradual build-up of the hotel occupancy rates corresponds to the time needed to establish Petra as a destination possessing international-class accommodation rather than to the projected build-up of visitor arrivals.

30. The project's net foreign exchange earnings (defined here as recurrent revenues minus recurrent costs) based on the percentages of Table V above, are shown below:

Table VI

Project's Net Foreign Exchange Earnings
(in JD million)

| | Jerash | Petra | Total |
|---|---|---|---|
| First Year of Operation | 0.19 | 0.31 | 0.50 |
| Fifth Year of Operation | 0.41 | 0.84 | 1.25 |
| Tenth Year of Operation Onward | 0.53 | 1.06 | 1.59 |

In comparison to these net earnings, the foreign exchange component of the investment costs relevant for the economic evaluation, but excluding replacement costs, is estimated at JD 1.47 million, or JD 0.35 million in Jerash and JD 1.12 million in Petra. The project's net foreign exchange receipts would reach JD 1.59 million (US$4.8 million) per year by the tenth year of operation, when gross foreign exchange receipts would reach JD 2.0 million (US$6.1 million). Gross foreign exchange revenues from tourism in Jordan were JD 32.2 million (US$98 million) in 1975.

## J. Employment Effect

31. The project is expected to create some 350 permanent jobs in Petra and 210 in Jerash after seven years of operation, more than half of those in the hotel and restaurants, but also including park operations, shops, guides, and local transportation. The indirect employment effect of the project can be estimated very roughly at some 300 to 500 in Petra and 150 to 300 in Jerash, mainly in land transportation, handicrafts, and agriculture. Total direct tourism employment in Jordan is estimated at 5,000 in 1975.

## K. Government Finances Effect

32. The Government is expected to gain good returns on its investment in Jerash and Petra. It would profit substantially from the park, accommodation and catering facilities it would own. In addition to the sales

and profits generated by these facilities, the Government would collect small sales taxes from tourist shops (estimated at 5% of sales). Revenues from income taxes induced by the project, with the exception of management company (estimated at 20% of fees), have not been estimated. The main sources of Government net revenues are the hotel and restaurants. Almost as important are the sites themselves, especially after taking fully into account the entrance fees paid by Jordanians which were not accounted for in the economic evaluation (para. 13). The full telecommunications component cost was included here, but cost and revenues related to non-project financed commercial activities are excluded.

33. Two elements deserve special consideration in calculating the Government's discounted cash flow internal rate of return. These relate to the effect of the Bank Group credit and the Bedouin resettlement program on the Government's cash flow. To analyze the direct effect of the project on Government finances, both elements have been included (Case 1) and the expenditures and revenues calculated on the above asssumptions are presented below:

Table VII

Government's Cash Flow on Total Project, Case 1
(in JD thousand)

| Year | Investment Cost | Operating Cost | Revenues | Net Cash Flow |
|---|---|---|---|---|
| 1 | 400 | - | - | - 400 |
| 2 | 1,380 | - | - | - 1,380 |
| 3 | 70 | 730 | 1,020 | 220 |
| 4 | 80 | 820 | 1,160 | 260 |
| 5 | 30 | 870 | 1,290 | 390 |
| 6 | 40 | 980 | 1,500 | 480 |
| 7 | 40 | 1,050 | 1,630 | 540 |
| 8 | 40 | 1,130 | 1,780 | 610 |
| 9 | 40 | 1,190 | 1,950 | 720 |
| 10 | 40 | 1,190 | 1,980 | 750 |
| 11 | 40 | 1,240 | 2,010 | 730 |
| 12 | 40 | 1,250 | 2,030 | 740 |
| 13 | 40 | 1,250 | 2,050 | 760 |
| 14 | 40 | 1,250 | 2,070 | 780 |
| 15 | 40 | 1,250 | 2,100 | 810 |
| 16 | 40 | 1,250 | 2,110 | 820 |
| 17 | 40 | 1,260 | 2,140 | 840 |
| 18 | 40 | 1,260 | 2,160 | 860 |
| 19 | 40 | 1,260 | 2,180 | 880 |
| 20 | 40 | 1,260 | 2,190 | 890 |
| 21 | 40 | 1,260 | 2,210 | 910 |
| 22 | 40 | 1,270 | 2,230 | 920 |
| 23 | 40 | 1,270 | 2,250 | 940 |
| 24 | 40 | 1,270 | 2,270 | 960 |
| 25 | 40 | 1,280 | 2,280 | 960 |

In this case, the Government's DCF internal rate of return is 24.8%.

34. Considering, on the other hand, that the Bedouin resettlement program would be implemented "without" the project at Government expense and that the Bank Group's credit is not tied to the project so that another Government project could have been financed by the Bank Group in the "without" project case, these two elements have been excluded from the Government's cash flow table (Case 2) presented below:

Table VIII

Government's Cash Flow on Total Project, Case 2
(in JD thousand)

| Year | Investment Cost | Operating Cost | Revenues | Net Cash Flow |
|---|---|---|---|---|
| 1 | 1,000 | - | - | - 1,000 |
| 2 | 1,280 | - | - | - 1,280 |
| 3 | 370 | 710 | 1,020 | - 60 |
| 4 | 20 | 800 | 1,160 | 340 |
| 5 | 40 | 870 | 1,290 | 380 |
| 6 | 40 | 980 | 1,500 | 480 |
| 7 | 40 | 1,050 | 1,630 | 540 |
| 8 | 40 | 1,130 | 1,780 | 610 |
| 9 | 40 | 1,190 | 1,950 | 720 |
| 10 | 40 | 1,190 | 1,980 | 750 |
| 11 | 40 | 1,200 | 2,010 | 770 |
| 12 | 40 | 1,210 | 2,030 | 780 |
| 13 | 40 | 1,210 | 2,050 | 800 |
| 14 | 40 | 1,210 | 2,070 | 820 |
| 15 | 40 | 1,210 | 2,100 | 850 |
| 16 | 40 | 1,210 | 2,110 | 860 |
| 17 | 40 | 1,210 | 2,140 | 890 |
| 18 | 40 | 1,220 | 2,160 | 900 |
| 19 | 40 | 1,220 | 2,180 | 920 |
| 20 | 40 | 1,220 | 2,190 | 930 |
| 21 | 40 | 1,220 | 2,210 | 850 |
| 22 | 40 | 1,230 | 2,230 | 860 |
| 23 | 40 | 1,230 | 2,250 | 980 |
| 24 | 40 | 1,230 | 2,270 | 1,000 |
| 25 | 40 | 1,240 | 2,280 | 1,000 |

The DCF internal rate of return is 19.2%.

## L. Distribution of the Project's Net Benefits

35. The Government, as the owner and operator of most of the facilities to be set up by the project, would be expected to capture the bulk (almost 5%) of the project's net benefits. The rest, with the exception of the management company, is expected to be captured by low to medium income groups. The management company would capture only some 5% of the total net benefits. The benefits accruing to other private entrepreneurs in Petra and Jerash, although not substantial in absolute terms, are expected to be high as compared to the small investment cost associated with them (the internal rate of return of non-project financed commercial activities would be more than 50%). Most of these entrepreneurs would be local people selling souvenirs and handicrafts, and Bedouins renting their horses; although not the poorest segment of their communities they are, however, probably part of Jordan's low income group. In addition to these benefits, Bedouins working in the project's facilities should earn higher wages than in any alternative occupation they would be prepared to accept. The additional consumption this margin would make possible would be a benefit enjoyed by some of the poorest groups in Jordanian society. The effect of the project would, therefore, be in the direction of equalizing income distribution.

## M. Alternative Project

36. The Government is expected to introduce park entrance fees in Jerash and Petra to help recover the costs of the proposed project. Entrance fees could, however, be charged with small investments being required to allow their collection. The introduction of entrance fees, therefore, could be looked at as an administrative measure unrelated to the proposed project rather than an action triggered by it. Nevertheless, since the Government is unwilling to charge entrance fees without the provision of some additional facilities, an alternative project incorporating the minimum investments that would likely make entrance fees acceptable to the Government was analyzed for each site. The alternative project consists of all the components incorporated in the proposed project with the exception of accommodation and catering facilities and the utilities to serve them, the Sound & Light installations, and most of the excavation equipment and archaeological works. No additional visitors (and no additional expenditures on other commercial activities) over the "without" case are assumed for the alternative.

37. Since these are viewed as mutually exclusive, the economic returns on the alternative project and the proposed project are compared on the basis of their net present values. These are presented below, using discount rates of 10, 12, and 14 percent.

Table IX

Net Present Value
(in JD million)

| | Alternative Project Discount Rate | | | Proposed Project Discount Rate | | |
|---|---|---|---|---|---|---|
| | 10% | 12% | 14% | 10% | 12% | 14% |
| Jerash | 0.27 | 0.22 | 0.18 | 1.55 | 1.19 | 0.91 |
| Petra | 0.48 | 0.33 | 0.19 | 1.54 | 0.98 | 0.47 |
| Total Project | 0.75 | 0.55 | 0.37 | 3.09 | 2.17 | 1.38 |

The proposed project has a significantly higher net present value than the alternative project in both areas for discount rates in the 10-14% range.

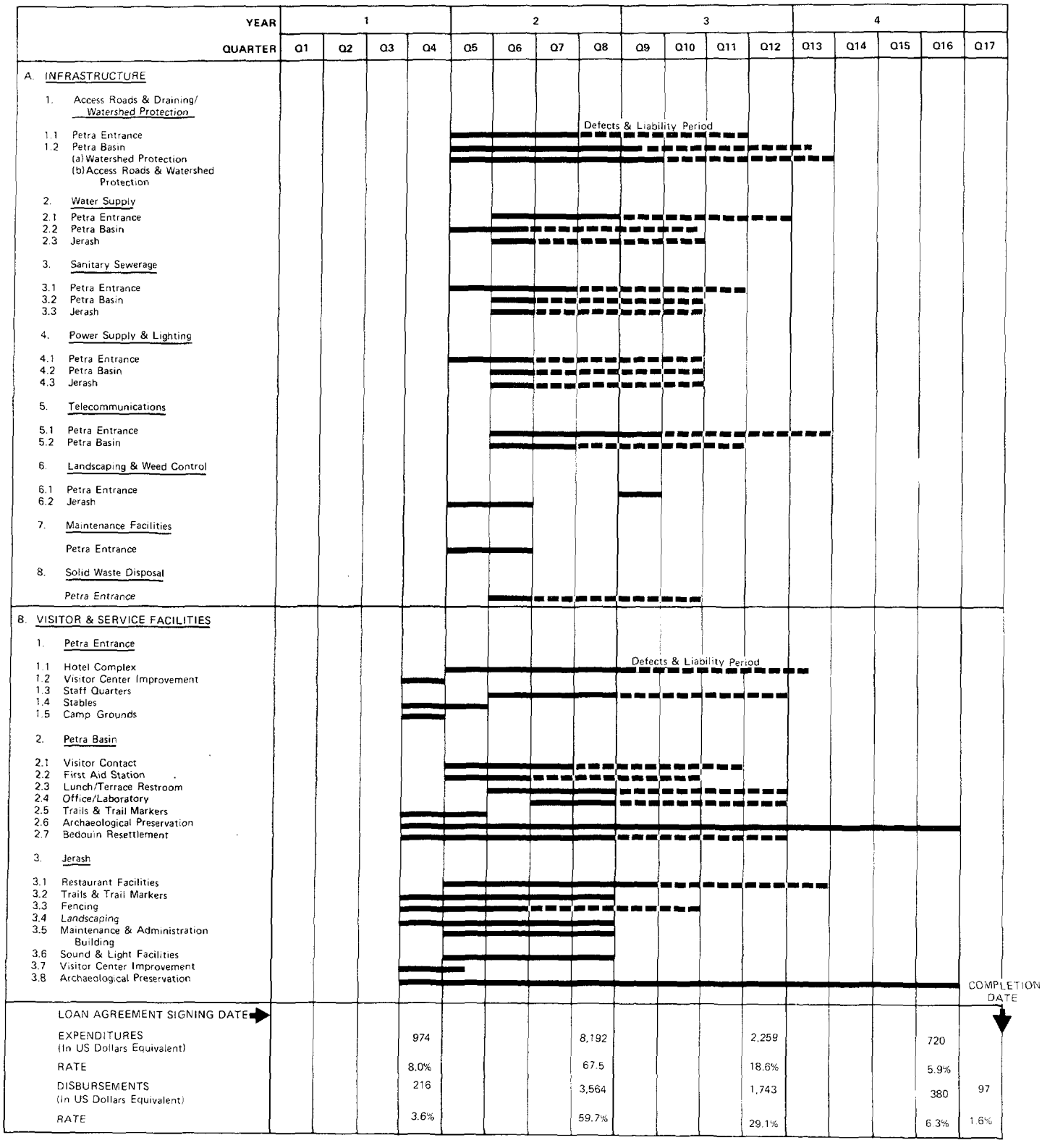
35. Another way of interpreting these results is to conclude that the proposed project's investments over and above those necessary to charge entrance fees yield internal rates of return higher than 14% in both sites (15.8% in Petra and 20.6% in Jerash).1/

1/ The relevant marginal revenues exclude entrance fees.

JORDAN: TOURISM PROJECT

**Schedule of Implementation, Expenditure, and Disbursement**

(US$ '000)

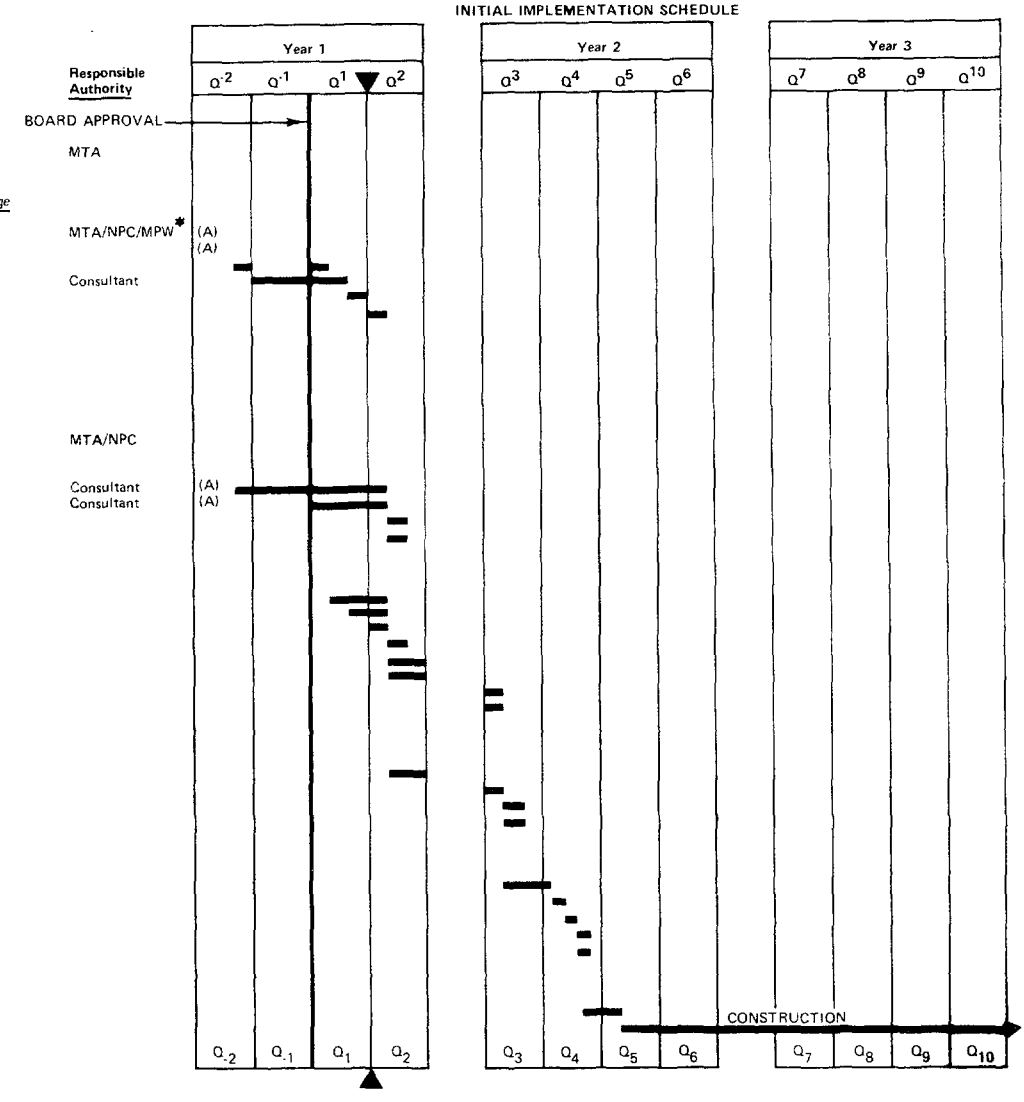



January 1976

World Bank 15746

# JORDAN: TOURISM PROJECT
## INITIAL IMPLEMENTATION SCHEDULE BY QUARTERS

INITIAL IMPLEMENTATION SCHEDULE

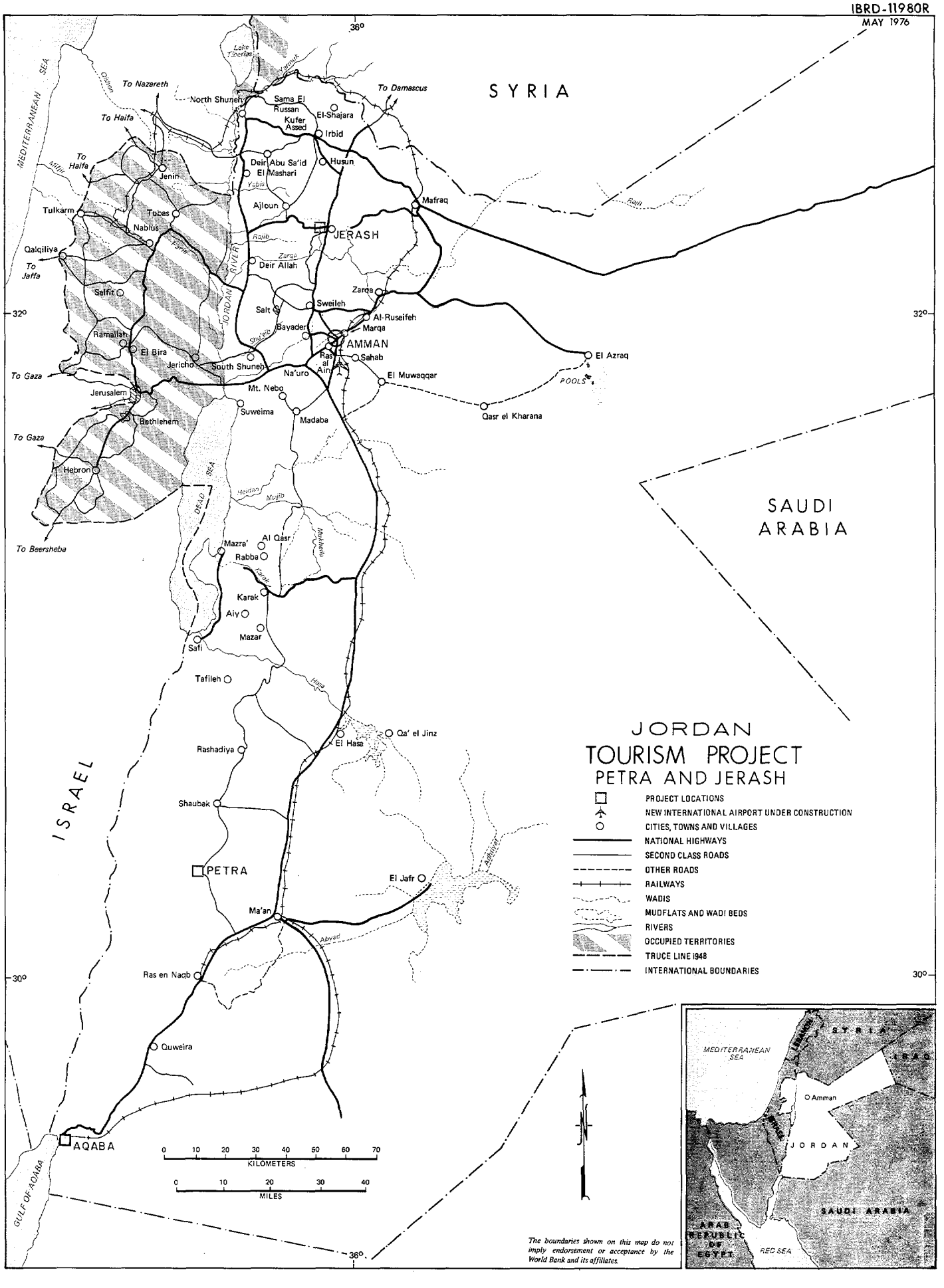



* MTA — Ministry of Tourism & Antiquities
MPW — Ministry of Public Works
NPC — National Planning Commission
(A) Will be completed before Bank loan approval.

December 1975

World Bank—15747

IBRD-11980R
MAY 1976

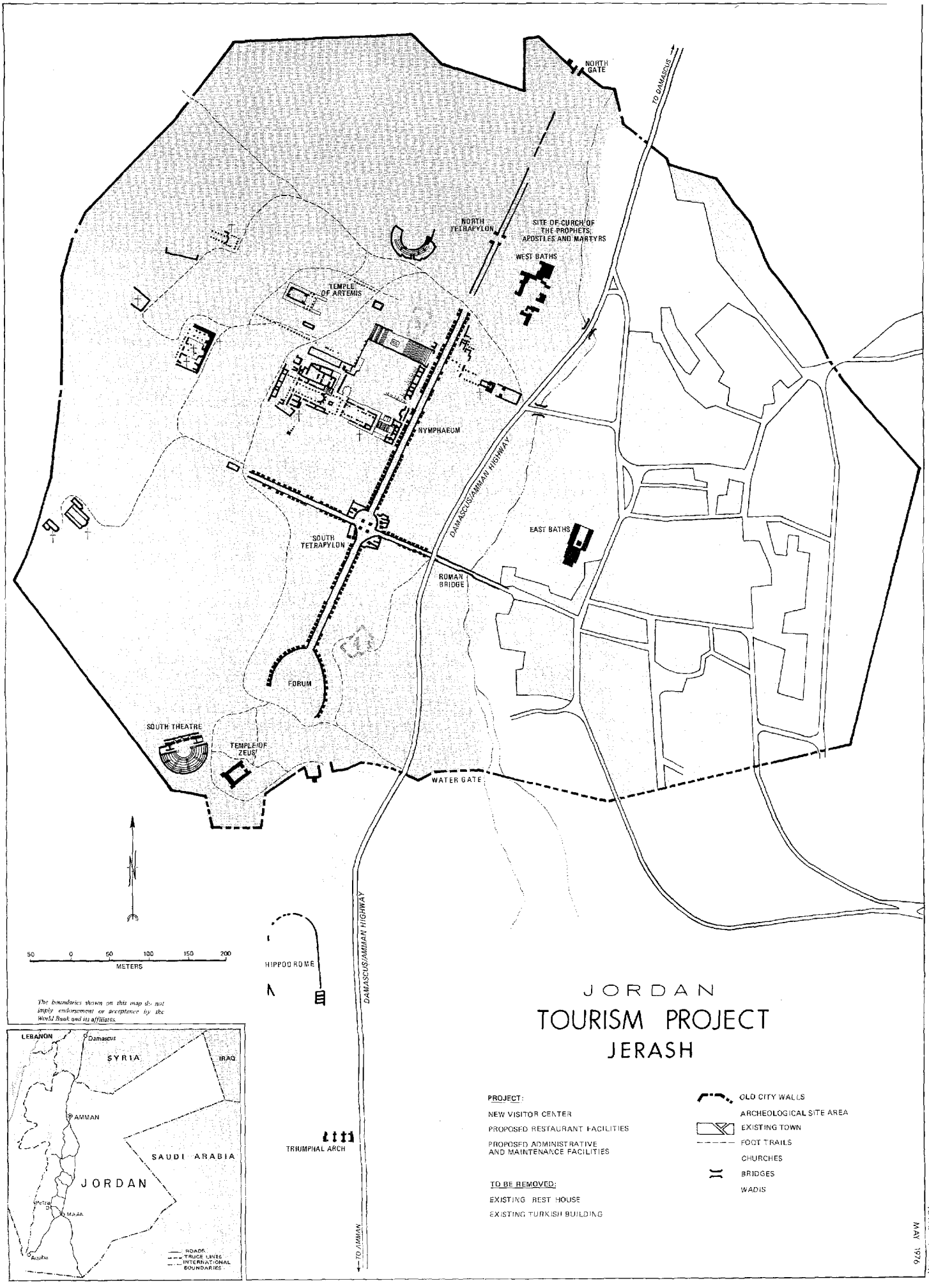



# JORDAN
# TOURISM PROJECT
## PETRA AND JERASH

- PROJECT LOCATIONS
- NEW INTERNATIONAL AIRPORT UNDER CONSTRUCTION
- CITIES, TOWNS AND VILLAGES
- NATIONAL HIGHWAYS
- SECOND CLASS ROADS
- OTHER ROADS
- RAILWAYS
- WADIS
- MUDFLATS AND WADI BEDS
- RIVERS
- OCCUPIED TERRITORIES
- TRUCE LINE 1948
- INTERNATIONAL BOUNDARIES




*The boundaries shown on this map do not imply endorsement or acceptance by the World Bank and its affiliates.*




*The boundaries shown on this map do not imply endorsement or acceptance by the World Bank and its affiliates.*

# JORDAN
# TOURISM PROJECT
# JERASH

PROJECT:

NEW VISITOR CENTER

PROPOSED RESTAURANT FACILITIES

PROPOSED ADMINISTRATIVE AND MAINTENANCE FACILITIES

TO BE REMOVED:

EXISTING REST HOUSE

EXISTING TURKISH BUILDING

OLD CITY WALLS

ARCHEOLOGICAL SITE AREA

EXISTING TOWN

FOOT TRAILS

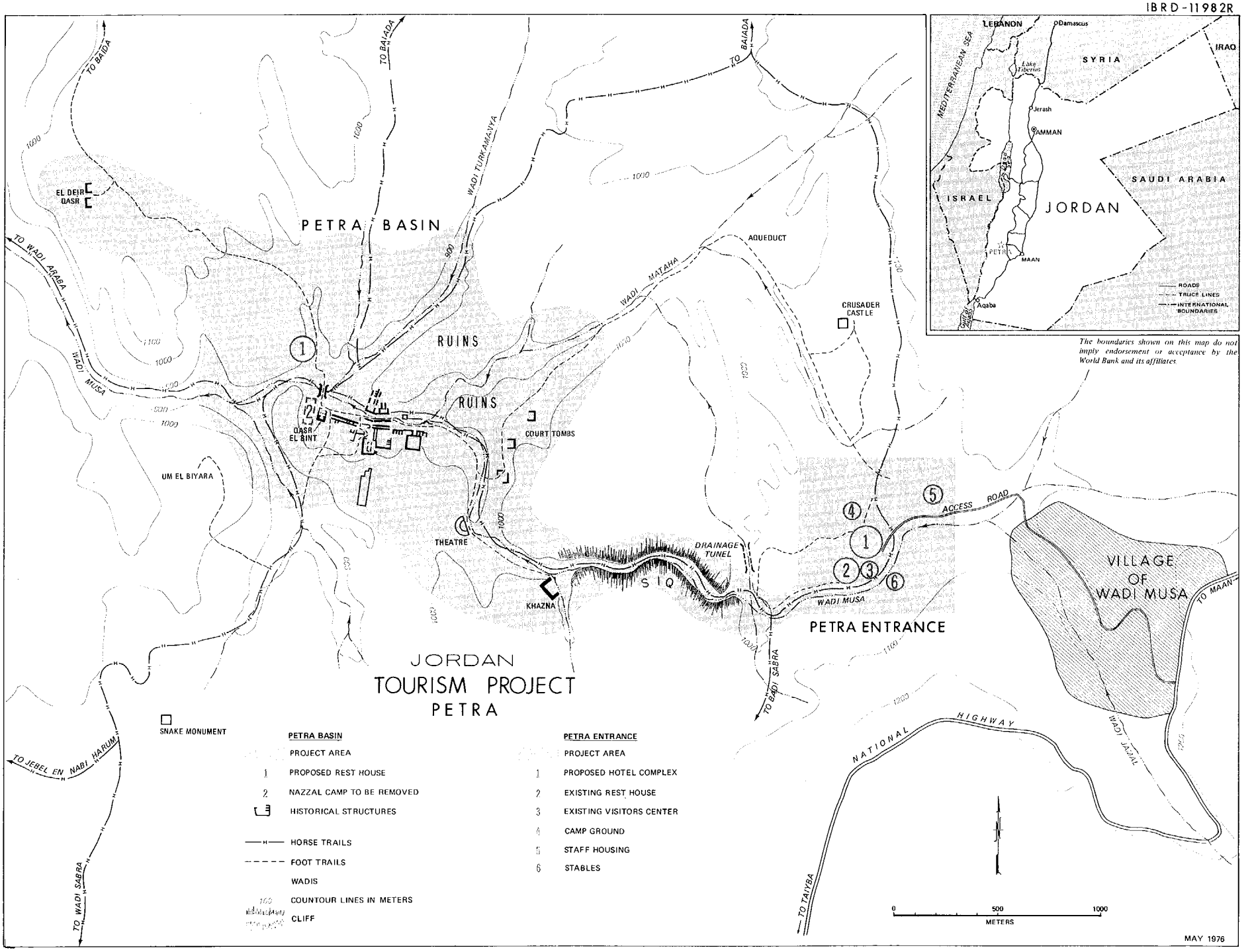
CHURCHES

BRIDGES

WADIS

MAY 1976

IBRD-11982R




*The boundaries shown on this map do not imply endorsement or acceptance by the World Bank and its affiliates*

# JORDAN
# TOURISM PROJECT
# PETRA

**PETRA BASIN**

- PROJECT AREA
- 1 PROPOSED REST HOUSE
- 2 NAZZAL CAMP TO BE REMOVED
- HISTORICAL STRUCTURES
- HORSE TRAILS
- FOOT TRAILS
- WADIS
- 100 COUNTOUR LINES IN METERS
- CLIFF

**PETRA ENTRANCE**

- PROJECT AREA
- 1 PROPOSED HOTEL COMPLEX
- 2 EXISTING REST HOUSE
- 3 EXISTING VISITORS CENTER
- 4 CAMP GROUND
- 5 STAFF HOUSING
- 6 STABLES

MAY 1976