

## **CHAPTER 13**

### **PHYSICAL INFRASTRUCTURE**



## **13. PHYSICAL INFRASTRUCTURE**

This chapter reviews the progress made during the Third Plan period in providing the Kingdom with an integrated infrastructure system. It covers:

- Transport Infrastructure
- Transport Operations
- Postal Services and Telecommunications
- Municipal and Community Development
- Housing

In addition, the chapter presents a summary of the public sector's objectives and policies for the Fourth Plan and outlines the expenditure programs that will be implemented by the government agencies.

### **13.1 TRANSPORT**

#### **13.1.1 BACKGROUND**

Transport is a critical sector in a large, sparsely populated country like Saudi Arabia. While road transport is the dominant mode for inter-city passenger travel, the national air network is highly developed and accounts for 20 percent of inter-city journeys and 40 percent of inter-city passenger kilometers, reflecting the longer average distance of air trips. Public transport modes (air, bus, rail and taxi) account for 30 percent of all inter-city passenger journeys.

Freight is almost entirely carried by road, although the railway has an increasing share of the Dammam-Riyadh traffic and pipelines are also gaining in importance. The ports at Dammam and Jeddah are the largest traffic generators in the Kingdom for freight transport. By the end of the Third Plan 80 percent of freight was transported by road, 16.5 percent by pipeline and 3.5 percent by rail.

Traffic volumes continued to increase during the Third Plan, with high growth rates in the first half of the period, followed by lower ones in the latter half. This trend was most marked in international traffic. Even so, government spending on transport during the Third Plan exceeded Plan projections in absolute terms, as well as in percentage of overall spending. This explains why the transport sector capacity compares more favorably with demand at the end of the Third Plan than it did at the beginning. For the most part, the existing transport infrastructure is adequate to meet the demand foreseen for the Fourth Plan. Therefore, emphasis during the Fourth Plan will be on the completion of current projects and on increased efficiency of operations and maintenance.

## 13.1.2 PRESENT CONDITIONS AND REVIEW OF THIRD PLAN PROGRESS

### 13.1.2.1 Air Transport (SAUDIA)

In the period under review SAUDIA increased its position to rank among the top 15 airlines in the world in terms of scheduled passenger kilometers.

The total number of passengers carried increased from 9.5 million in 1400 to 11.4 million in 1403. This growth has been generated by increases in population and income in the Kingdom during the Third Plan. Over the same period, the average trip length grew from slightly over 1,000 kilometers to 1,280 kilometers, while revenue passenger kilometers increased by 47 percent, as shown in Table 13-1.

**Table 13-1**

#### SAUDIA PERFORMANCE INDICATORS DURING THE THIRD PLAN

	1400	1403	1405*
Revenue Passenger Kilometers (Million)	9,938	14,621	16,714
Percentage of Plan Target	94%	98%	—
Employees	18,775	23,354	24,266
Percentage of Plan Target	102%	98%	—
Passenger Load Factor Systemwide	60%	67%	64%
Percentage of Plan Target	90%	102%	—

★ Estimated

SAUDIA owned 62 aircraft in 1404, compared with 38 in 1399. The fleet includes 26 new aircraft: 5 L-1011s, 10 B-747s, and 11 A-300s. The expansion in the fleet reduced dependence on leased aircraft.

L-1011 base checks, all aircraft engine overhaul, and some major checks for B-747 aircraft are now carried out in the Kingdom. SAUDIA has had little difficulty in attracting Saudis for technical jobs, such as aircraft maintenance.

By the end of the Third Plan, SAUDIA's domestic operations were becoming affected by a growing incompatibility between their increasingly wide-body fleet and the Kingdom's airport handling capabilities. The use of wide-body aircraft is confined currently to four airports in the Kingdom: Riyadh, Jeddah, Dhahran, and Abha.

Table 13-2 shows that the Kingdom's airports are expected to handle 28.6 million passengers in 1405, an average annual increase of 7 percent over 1400. Approximately 80 percent of the passenger traffic is handled at the three major airports. King Khaled International Airport in Riyadh shows the highest growth rates, mainly due to the increase in direct international connections.

**Table 13-2**

**PASSENGER TRAFFIC AT SAUDI ARABIAN AIRPORTS (1400-1405)**  
(Arrivals and departures, in millions)

<u>Airport</u>	<u>1400</u>	<u>1403</u>	<u>1405*</u>
King Abdul Aziz International, Jeddah	7.5	8.1	9.2
King Khaled International, Riyadh	5.3	6.6	8.7
Eastern Province International, Dhahran	3.3	4.3	4.9
All Others	4.0	4.9	5.8
<b>Total</b>	<b>20.1</b>	<b>23.9</b>	<b>28.6</b>

★ Estimated

King Abdul Aziz International Airport in Jeddah (KAIA) became operational in 1401 with a capacity of 8 million passengers per year. King Khaled International Airport in Riyadh (KKIA) was opened in 1404, with a planned annual capacity of 18 million passengers. Development of the new Eastern Province International Airport (EPIA) began in 1403; the first operational stage will allow the handling of 10 million passengers.

Construction of the new Baha airport, phase three of the Dhahran airport, the new Al-Ahsa airport, and the Taif airfield upgrading project were all accomplished during the Third Plan.

An air traffic control improvement program was completed in 1404 and National Civil air regulations were developed. A program for testing crew members on the Royal Saudi Air Force C-130 aircraft is now in operation. Emergency response capability of all airports was brought up to international standards in 1403.

#### **13.1.2.2 Road Transport**

The basic structure of the Kingdom's road network is now largely complete. All of the major cities and many rural areas are connected, and adequate pilgrim access to Makkah and Medina is provided. This includes major segments of five new expressways:

Riyadh-Hijaz (1273 kilometers), Riyadh Ring Road (140 kilometers), Riyadh-Al-Qassim (353 kilometers), Dammam-Riyadh (388 kilometers), and Makkah-Medina (512 kilometers). Targets were exceeded during the Third Plan as shown in Table 13-3.

**Table 13-3**

**ROADS COMPLETED DURING THE THIRD PLAN PERIOD**

<u>Road Type</u>	<u>Kilometers</u>	<u>Percent of Third Plan Target</u>
Main Roads	6,260	121
Secondary and Feeder	2,144	150
Rural Roads	24,178	138
<b>Total</b>	<b>32,582</b>	<b>135</b>

As shown in Table 13-4, the total number of licensed vehicles in the Kingdom reached 2,163,000 in 1403 — an increase of over 200 percent since 1398. The number grew at an estimated annual rate of 13 percent during the period 1400-1403.

**Table 13-4**

**NUMBER OF LICENSED VEHICLES**

<u>Vehicle Type</u>	<u>Number in 1403 (Thousand)</u>
Passenger cars	1,167
Light trucks	812
Heavy trucks	146
Taxis	15
Buses, including light buses	15
Motor cycles	8
<b>Total</b>	<b>2,163</b>

During the Third Plan, one countrywide and several regional traffic counts were completed, but permanent monitoring of the main flows has not yet been introduced. Road diesel and gasoline consumption increased by 37 percent between 1400 and 1403, or at an average annual rate of 11 percent.

Figure 13-1

### Total Length of Rural Road Network (existing and planned)

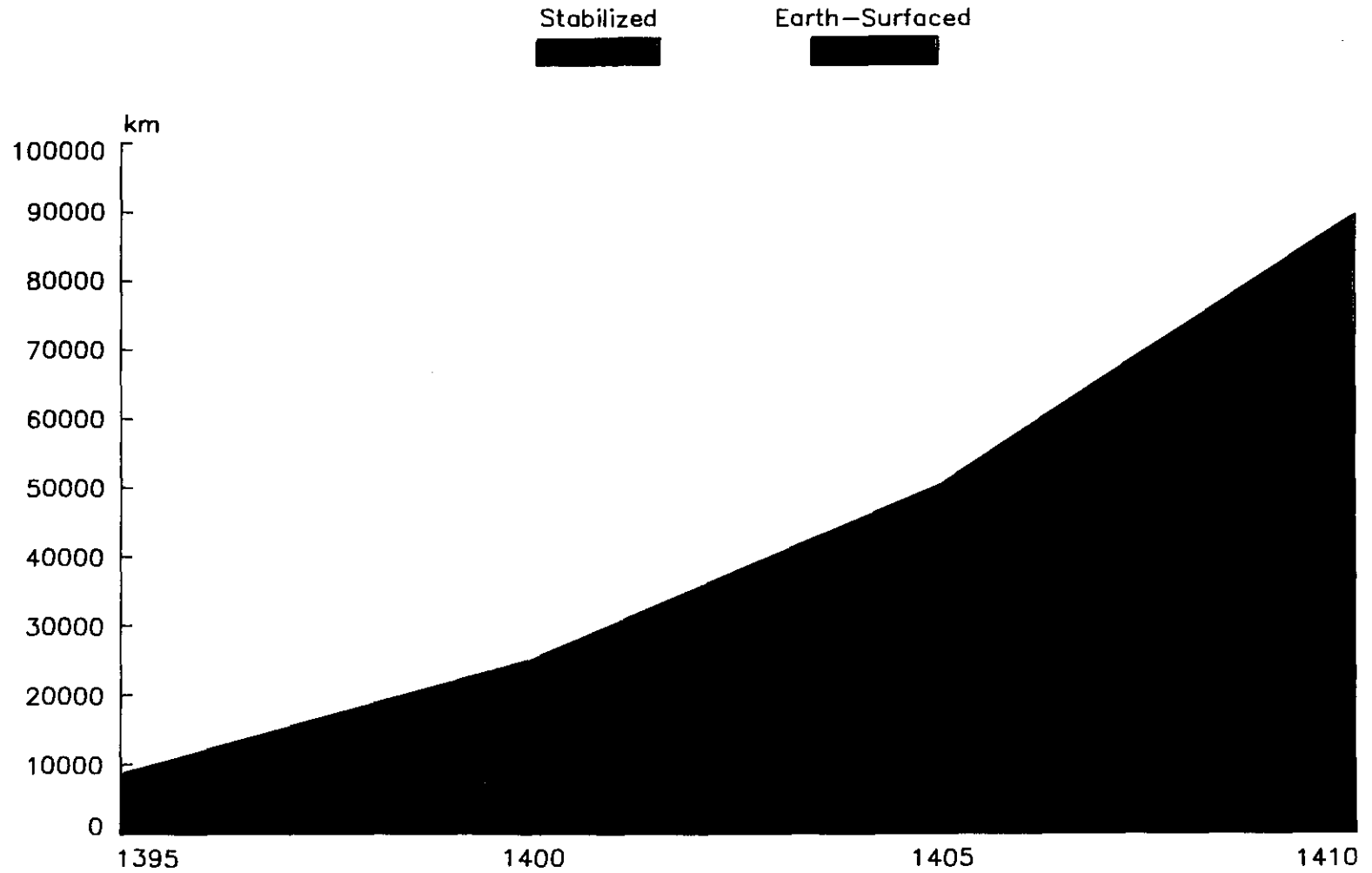
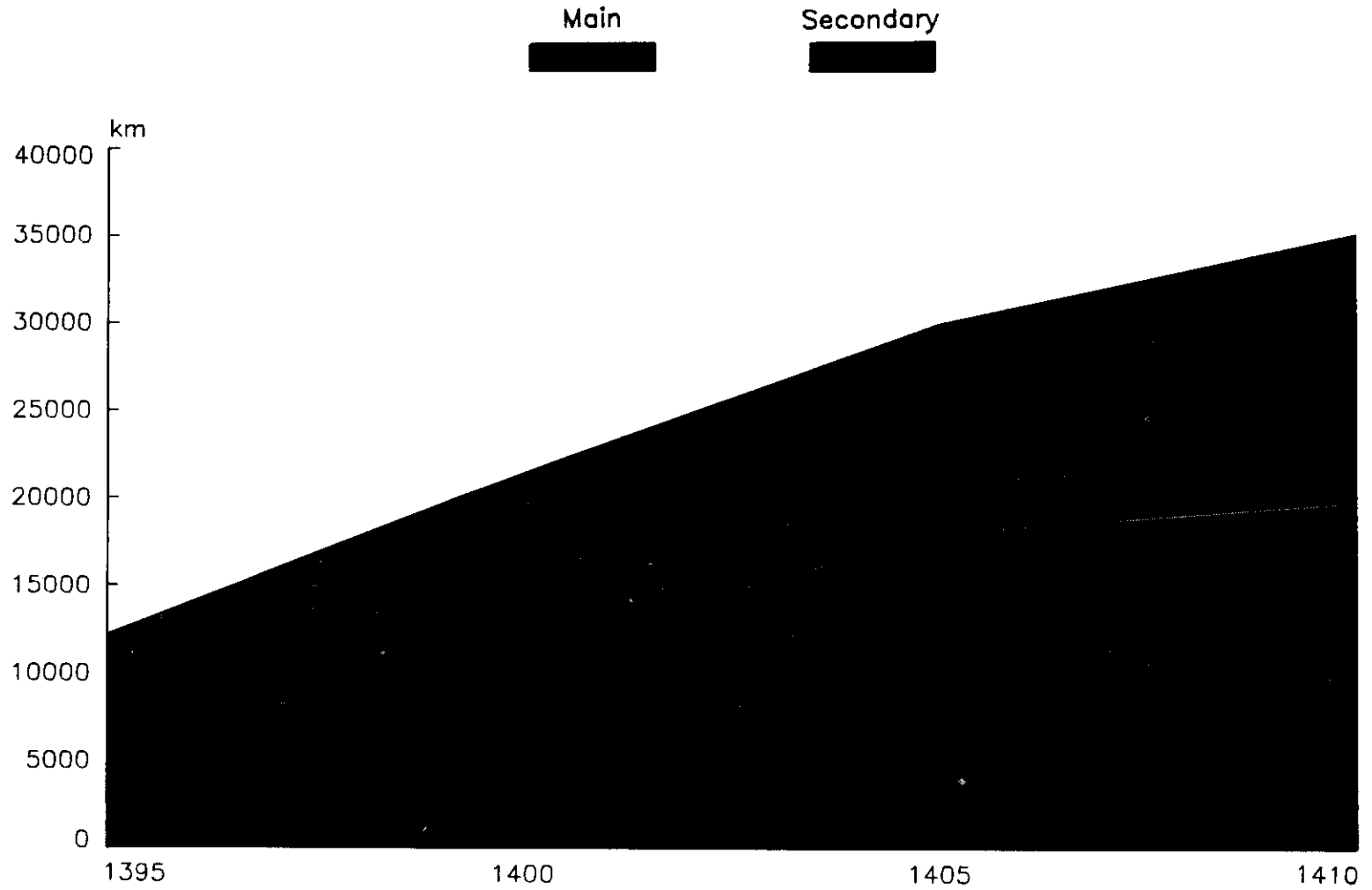






Figure 13-2

### Total Length of Paved Road Network (existing and planned)





During the Third Plan considerable development took place in Saptco Bus Services. Seven cities now have regular scheduled bus services and an inter-city bus service is being developed. Total passengers rose to 111 million in 1403 compared to 64 million in 1400. Many mini bus, limousine and taxi services were licensed, as were 900 commercial truck companies and 143 truck dispatch offices.

### 13.1.2.3 Rail Transport

The Saudi Government Railroad Organization's (SGRRO) primary role is transporting imported goods from the Dammam port. Before the dryport in Riyadh was opened, the railroad's share in goods traffic was very low. However, in the first three years of the Third Plan, freight volumes grew by 68 percent and ton-kilometers increased over 100 percent, mainly due to fast-growing container traffic. Reduced rates of growth are expected during the Fourth Plan, in line with lower overall economic growth rates. Table 13-5 shows SGRRO freight traffic volumes.

**Table 13-5**

**RAILROAD TRAFFIC IN THE THIRD PLAN PERIOD**  
(Thousand)

	1400/01	1401/02	1402/03	1404/05
Freight-Tons	1,290	1,690	2,170	2,500
Ton-Kilometers	458,500	648,300	937,700	1,097,000

During the Third Plan the line between Dammam and Riyadh was rebuilt and work begun on a second track parallel to the original one between Dammam and Hofuf. A new rail line was started between Hofuf and Riyadh along a route that is 115 kilometers shorter than the original. This will allow the introduction of fast, frequent passenger trains.

Operating equipment at the end of the Third Plan included 20 main-line locomotives, 21 switching locomotives, 2,193 freight cars and 58 passenger cars.

In spite of the 20 percent increase in employees during the Third Plan, SGRRO's operations are still hampered by the shortage in trained manpower.

### 13.1.2.4 Sea Transport

During the first half of the Third Plan, import volumes increased at very high rates, but growth slowed in the second half. Table 13-6 shows actual figures.

**Table 13-6**

**IMPORT VOLUMES AT THE FIVE COMMERCIAL PORTS  
DURING THE THIRD PLAN PERIOD  
(million tons)**

	<u>1400</u>	<u>1401</u>	<u>1402</u>	<u>1403</u>	<u>1404</u>
Imports	26.7	30.1	36.3	38.9	40.3
Annual growth rate	....	12.7%	20.6%	7.2%	3.6%

At the end of the Third Plan, the five commercial ports had 127 berths: 91 general cargo berths (including specialized berths for livestock, fruit, and dangerous cargo), 14 container berths, 13 roll-on/roll-off berths, and 9 berths for bulk cargo. Jeddah is the largest port with 51 berths, followed by Dammam (39 berths), Jubail (16 berths), Jizan (12 berths), and Yanbu (9 berths). The industrial ports in Jubail and Yanbu are reserved mainly for the Kingdom's rapidly growing exports. In all ports, the most modern cargo handling equipment is available.

The problems of port congestion were eliminated and the Ports Authority increased efficiency during the Third Plan. The average berth discharge rate grew 15 percent and cargo handling costs were reduced from SR 36 per ton in 1400 to SR 14 per ton in 1403; as a result, revenues are expected to cover operating costs in 1404/05.

The cargo discharge rates in Jeddah are now among the highest in the world. Other ports are not currently utilized at full capacity, mainly because of lower than expected imports at the end of the Third Plan and the fact that customers have not yet fully recognized the attractive alternatives in Jubail, Jizan, and Yanbu.

The large increase in trade during recent years has given rise to very rapid growth in the Saudi commercial fleet. At the beginning of 1403 there were 225 ships, with a total capacity of 5.16 million tons, representing more than a 100 percent increase in three years.

The *United Arab Shipping Company*, of whose share-capital 19.3 percent is owned by the Saudi Government, has grown into one of the largest fleet owners in the Arab world.

In 1402, the capital of the *National Shipping Company of Saudi Arabia* (25 percent government-owned) was increased from SR 500 million to SR 2 billion for the purpose of further development. The company now operates six large roll-on/roll-off container vessels, the newest of which are among the largest of this type in the world.

Figure 13 - 3

SAPTCO INTERCITY BUS SERVICES

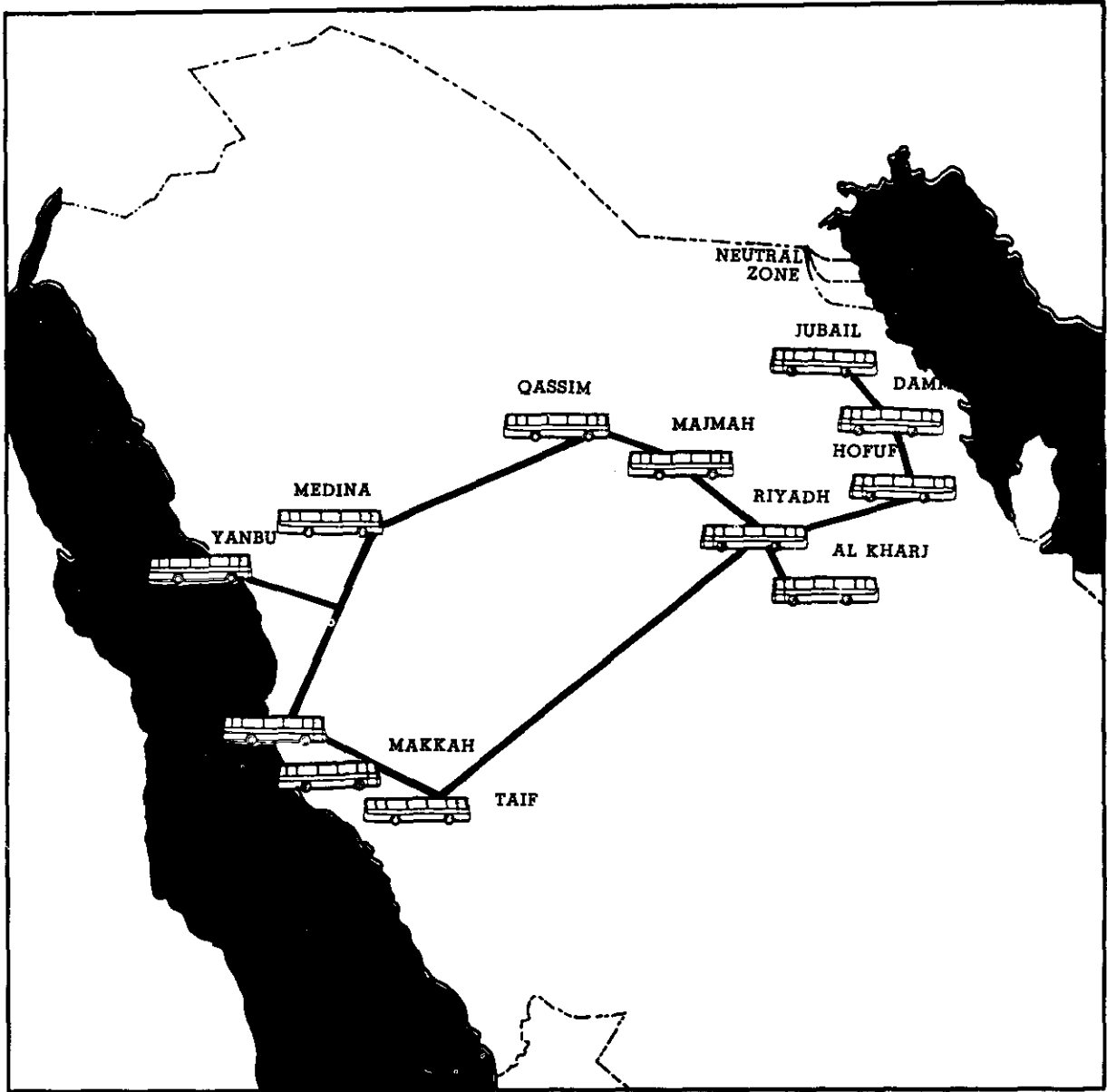




Figure 13-4

# S G R R O

## Passengers (1400-1410)

Passenger/km  
(Actual)

Passenger/km  
(Forecast)

Passengers  
(Actual)

Passengers  
(Forecast)

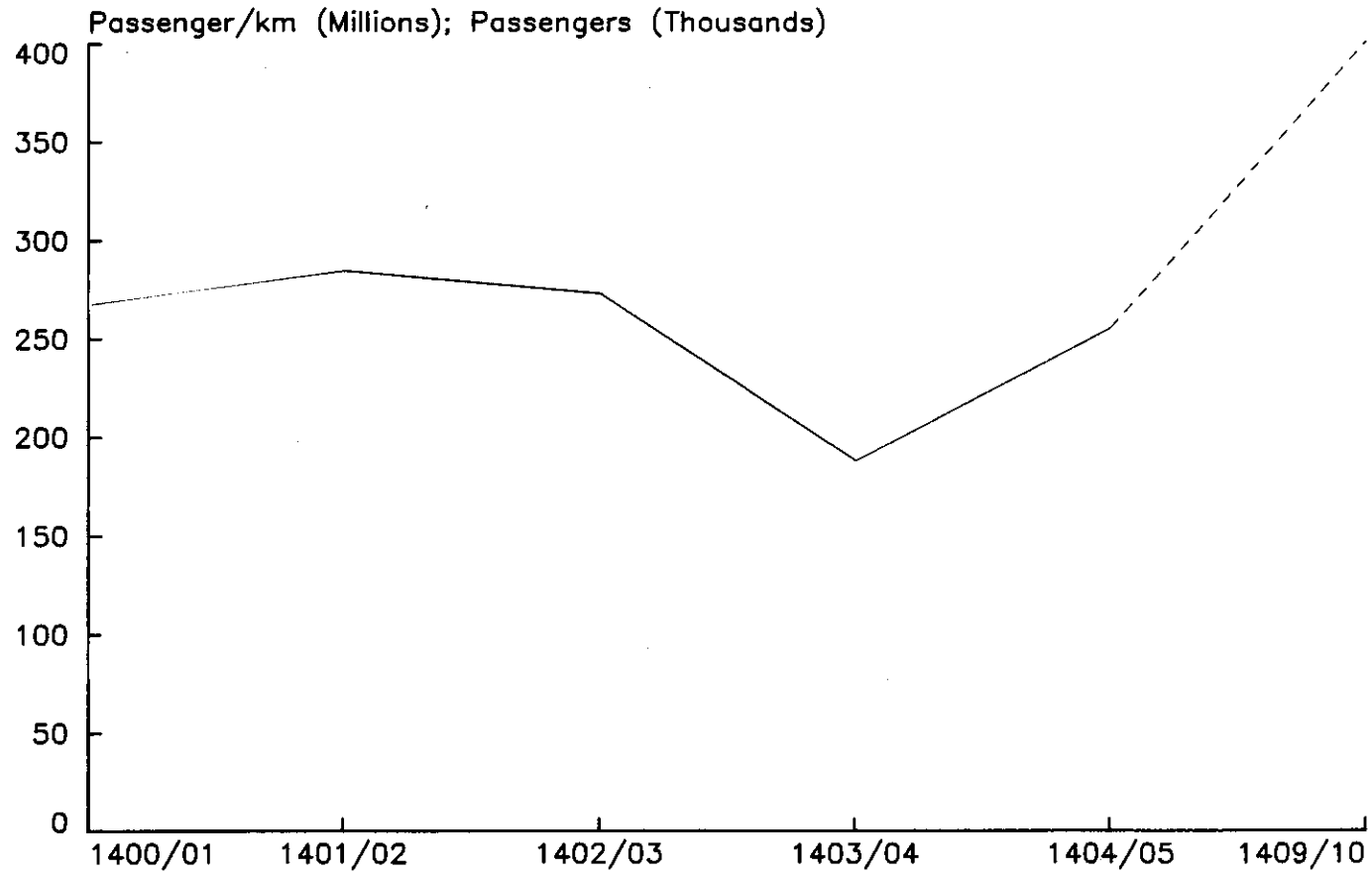






Figure 13-5

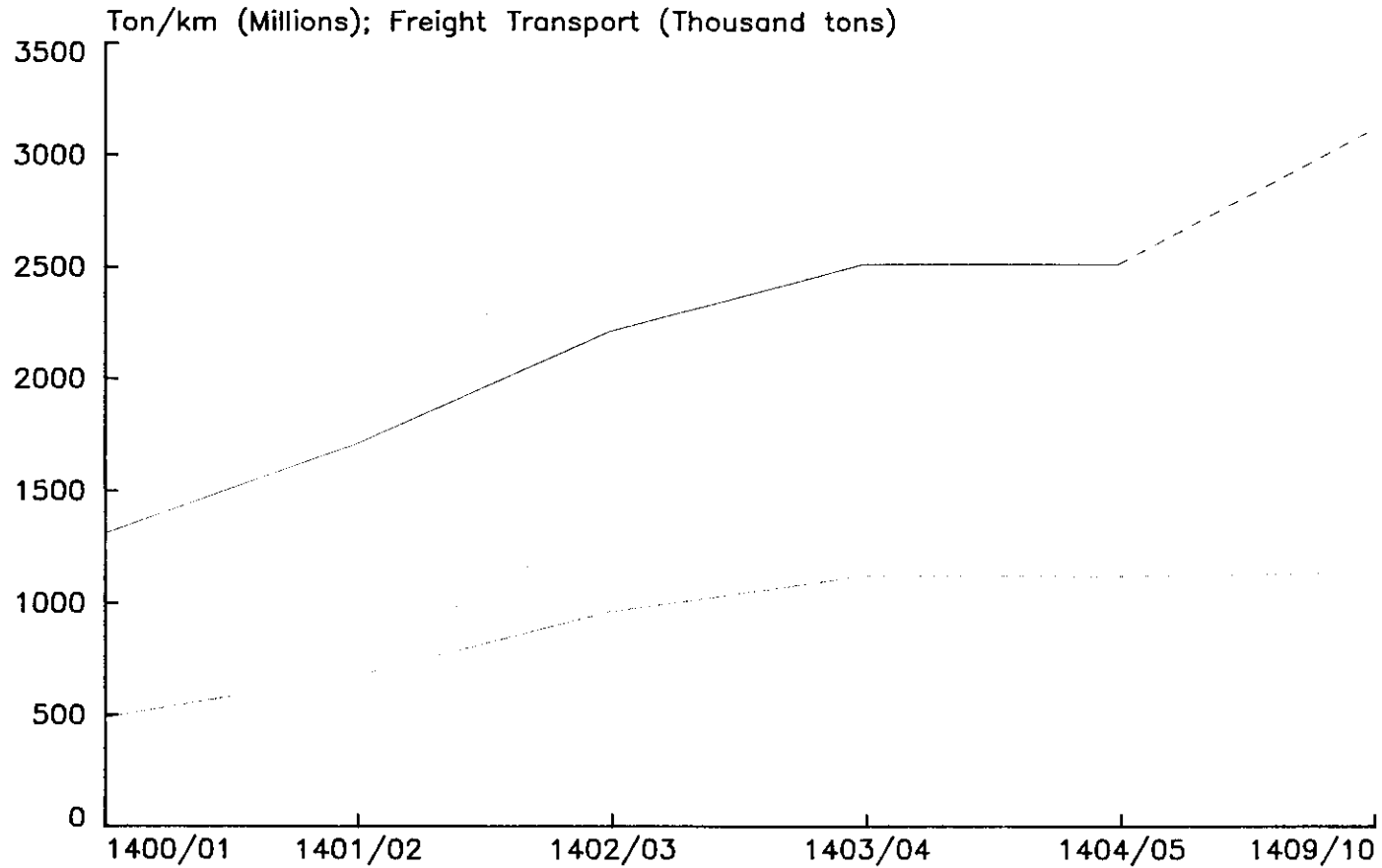
**S G R R O**  
**Freight Transport(1400-1410)**

Ton/km  
(Actual)

Ton/km  
(Forecast)

Freight Transport  
(Actual)

Freight Transport  
(Forecast)





#### **13.1.2.5 Key Issues**

Key issues for the transport sector as a whole can be summarized as follows:

- there is a need for greater coordination of investment in roads, railroads, and domestic air transport in order to avoid over-investment;
- the economic efficiency of the transport sector must be increased, by raising productivity and better asset utilization;
- there is a need for greater use of transport policy tools (tariff and fare structures, other user charges, changes in subsidies) in order to reduce overall economic costs of transport to the community.

##### ***Air Transport Issues***

##### ***Financial Performance***

Financial self-sufficiency of SAUDIA's operations is a key issue during the Fourth Plan. In 1403, SAUDIA made a net profit for the first time in ten years, but this was achieved only on the basis of the existing subsidy structure. Recently-introduced cost controls, and operational changes in response to changes in demand, will allow further financial improvements.

Possible alternatives for improved profitability include the replacement of general subsidies by route-specific government compensations, as well as suitable fare increases on low-density shorthaul airlinks, a reduction in flight frequencies, or even complete elimination of some links. Consideration will also be given to converting the long-term debt owed to government into equity capital. In the future, if SAUDIA can generate a series of annual operating profits, the Government could then sell some of the equity to the public.

The Kingdom's airports are not yet financially self-sufficient. Landing fees were recently adjusted to international levels, and other revenue-generating opportunities are being sought. Some reductions in operating and maintenance costs are expected during the Fourth Plan, through improved operations at the international airports in Riyadh and Jeddah.

##### ***Productivity***

Closely related to improved financial performance is the need to improve labor and capital productivity. SAUDIA has made considerable progress in the past two years in this area, by controlling staff costs and improving aircraft utilization and load factors. Further emphasis will be placed on these aspects during the Fourth Plan to bring SAUDIA up to highest international standards.

The operation and maintenance costs of the Kingdom's airports will be subjected to detailed scrutiny. Competition among operation and maintenance contractors in the Kingdom has already yielded considerable savings and this trend will be continued in the Fourth Plan.

### ***Road Transport Issues***

One of the main objectives of the road transport sector is to ensure the efficient and safe use of the investments made in the Kingdom's road system. This requires effective development and enforcement of vehicle and driver rules and regulations. In particular, strict enforcement of truck weight, length and height limits is indispensable for avoiding premature replacement because of damaged bridges and other parts of the road structure.

There is a high priority on greater traffic safety to reduce the Kingdom's high accident rate. Traffic engineering and driver training needs will be examined and improvements sought.

The overall efficiency of road transport will be investigated, to ensure that public passenger and freight service needs are being met in the most cost-effective way. In addition, subsidy policies for public transport need careful evaluation and monitoring. Steps will be taken to ensure that the Kingdom recoups the costs of damage to public property as a result of accidents.

### ***Rail Transport Issues***

The role of the railroad in land transport is restricted by the size of the existing network and by competition from other transport modes. The absence of road user charges and low petrol prices guarantee road traffic a competitive advantage, which can only be countered by the railroads through tariffs below the marginal cost of operation. The result is a claim for government support of the railroad's operating costs.

The feasibility of additional railroad transportation in the Kingdom must be explored on the basis of a full economic and social cost comparison between alternative transport modes. Possible expansions under consideration are the links from Dammam to Jubail and from Riyadh to Jeddah and Qassim (where there are mineral deposits).

### ***Sea Transport Issues***

Prior to the Third Plan, the emphasis of port development was on the construction of sufficient capacity for imported goods and materials. In the Third Plan attention turned increasingly to efficiency aspects: average berth discharge rates were increased, and cargo handling costs were reduced. By the end of the Third Plan financial self-sufficiency was achieved for the first time. The key issue in the Fourth Plan is to maintain these results and to cover the costs of port operations from revenues.

Of all the Kingdom's imports by sea, 83 percent come through Jeddah or Dammam. Incentives might be provided to encourage the routing of some cargo through other ports, so as to relieve congestion at Jeddah, and reduce trucking costs for goods.

***Airport Efficiency Improvement Program:*** Considerable improvements are expected in contract maintenance due to changed bidding procedures (public tendering) and the availability of more capable contractors. Possibilities for revenue generation will be investigated for both airports and airways, focusing mainly on passenger service charges and lease agreements for various private sector activities at airports.

***Air Traffic Safety Program:*** This program includes operation and maintenance of airways (air traffic control, air navigation, and communication) and air traffic safety procedures such as surveillance, flight inspection, and flight and ground procedures. The program will facilitate the implementation of high technical and safety standards.

***Airport Development Program:*** Changes in transport demand, and in the type of available aircraft, require a continuing upgrading of activities. Ongoing construction works will facilitate wide-body use at Medina, Tabouk, Qassim, and Jizan and B-737 use in Qaisumah and Qurrayat. Terminal expansion will be carried out at King Abdul Aziz Airport in Jeddah. Stage I of the Eastern Province International Airport will be completed during the Fourth Plan. A feasibility study will provide final information about the optimum location of an airport in Wadi Dawasir.

***Human Resources Program:*** Training programs will be undertaken to increase Saudiization and to introduce new and sophisticated systems for improving efficiency in the management, operations, marketing, and maintenance areas. In addition, ongoing training to meet air safety and proficiency standards will be provided.

***Marketing Improvements Program:*** International air travel standards are constantly being upgraded. To keep ahead of the competition and effectively utilize its new wide-body aircraft, SAUDIA will expand its marketing activities and upgrade its image where this may be required.

***Equipment Program:*** This program aims to raise productivity and reduce ground staff requirements by increasing the computer-based automation of administrative and maintenance functions. It will also provide new equipment for ground support and for the maintenance and overhaul of aircraft. Improved communications between SAUDIA offices in the Kingdom are planned to meet expanding workload requirements.

***(ii) Road Transport Programs***

The following programs will lower freight costs, increase accessibility, reduce travel time, and enhance safety.

***Road Construction Program:*** During the Fourth Plan, emphasis will be on secondary and feeder roads, as well as on links to new and expanding agricultural areas. Secondary and feeder roads

As a main objective of its sea transport policy, the Kingdom aims to carry a 40 percent share of its non-oil seaborne traffic in vessels under the Saudi flag. This objective requires an increase in the capacity of the Saudi-owned fleet.

### 13.1.3 DEVELOPMENT STRATEGY

The main theme of the transportation sector strategy is an improvement in efficiency and productivity. Now that the basic infrastructure for ports, most airports, and main roads is completed, and existing capacities require only minor expansion to cope with expected increases in demand, emphasis in the Fourth Plan will be on achieving high standards of operation and maintenance, while keeping costs under control. In addition to contracting with the private sector, the strategy also aims at improving transport safety and training Saudi manpower to operate and manage the transportation facilities.

#### 13.1.3.1 Objectives and Policies

The Government's main *objectives* in the transport sector are:

- to improve efficiency and productivity;
- to improve safety standards;
- to develop services to rural and sparsely populated areas.

Supporting *policies* will:

- use transport policy instruments (tariffs, user-charges adjustments, subsidization) to minimize economic transport costs to the community;
- develop effective management and cost controls;
- provide opportunities to the private sector;
- meet national and international standards of safety, security, and disaster protection;
- enforce licensing regulations, and laws designed for safety;
- evaluate existing facilities and operations for safety;
- replace air service by bus service in areas with low transport demand;
- build roads to connect remote areas to the network;
- encourage use of outlying port facilities.

#### 13.1.3.2 Public Sector Programs

##### (i) Air Transport Programs

The following programs reflect the re-orientation of strategy from construction to operation and maintenance, based on the completion of most of the air facilities. Domestically, air transport generates high wages and skilled jobs.

provide access to remote areas and connect village clusters. The target is to construct about 3,350 kilometers which will bring the Kingdom's total length of these roads to 15,200 kilometers. Another 32,800 kilometers of rural roads will be added to the existing network of 48,400 kilometers. Main roads for which construction was started prior to the Fourth Plan will be continued. By the end of 1410, more than 2,000 kilometers of main roads will have been added to the present network of 18,000 kilometers.

**Road Maintenance Program:** The 28,500 kilometers of paved roads in the Kingdom will be maintained. Improved quality and reduction in maintenance costs will result from the increased availability of capable Saudi maintenance contractors. Reductions in preventive maintenance are expected from the strict enforcement of truck load regulations.

**Transport Research and Studies Program:** A number of studies will be carried out, including a road safety study, a highway traffic monitoring program, a study of the road freight market and its economics, and a national rail study. These studies will provide necessary inputs for developing the future directions of land transport investment, and the further refinement of rules and regulations governing the use and control of road transport infrastructure. Inputs will also be supplied to country-wide and local transport master plans, which are especially necessary for all larger cities. Studies will also be carried out for the further development of an efficient modern Saudi-owned/registered merchant fleet. High performance standards will be facilitated through further developing the planning, library, budget, follow-up, and statistical units. Training courses will be provided to meet Saudiization goals in these important fields.

**Transport Performance Monitoring Program:** This program covers licensing of motor carriers, determining effective roles for each mode, monitoring performance to ensure compliance with existing regulations, setting tariffs, and dissemination of information. The overall aim is to improve transport services and traffic safety. A related program covers the supervision of Saptco, including services, fares and subsidy levels.

### **(iii) Rail Transport Programs**

**Track Program:** This program covers the upgrading of existing facilities and the completion of the new direct line from Hofuf to Riyadh via Khurais, a distance of 307 kilometers, and the double line between Hofuf and Dammam (140 kilometers).

**Rolling Stock and Equipment Program:** This program provides for rolling stock and other equipment to accommodate anticipated traffic growth during the Fourth Plan.

**Facilities Program:** Passenger stations at Dammam, Hofuf, and Riyadh will be completed. This program also provides for the second phase of the new locomotive workshop and wheel shop in Dammam, the locomotive workshop in Riyadh, and the freight car workshop in Dammam. The capacity of Riyadh Dry Port will be increased and facilities upgraded.

**Training Program:** There is a shortage of trained railroad operations personnel. Therefore, over the Fourth Plan, 200 employees will receive on-the-job training each year. The training center will be developed and staffed. Officials will go abroad for specialized training.

**Studies Program:** The planned studies deal with market development, performance standards, personnel development, and accounting and costing systems. Also planned are studies of utilization and maintenance of equipment, and the proposed line to Jubail. A rail expansion feasibility study will be performed.

**(iv) Sea Transport Programs**

Because stable lower volumes of imports are expected during the Fourth Plan, the development strategy focuses on the smooth and rationalized handling of cargo, rather than on further port expansion. As ports become financially self-sustaining during the Fourth Plan, efficient operation will mean lower unloading costs of imported goods.

**Port Development Program:** The Fourth Plan target of this program is to handle expected cargo volumes without increasing the number of berths. This can be achieved despite reducing operating time to 18 hours per day and six days per week, if Jeddah's discharge rates are reached in the other ports.

The minor ports in Duba and Qunfudah will be upgraded during the Fourth Plan mainly to encourage the local fishing industry. Another target is the completion of the anti-pollution program for all ports.

**Marine Transport Safety Improvement Program:** Safety in the coastal waters of the Kingdom will be increased by additional navigational aids and the completion of the radio pilotage system. Provisions to ensure the safe navigation and pollution-free passage of vessels in national sea areas will be provided and enforced.

**Management, Operations, and Maintenance Improvement Program:** Further improvement in management, operations, and maintenance are expected from the training program. Coordination of all professional and technical teaching staff will enable employees in all ports to increase their skills and knowledge.

**Saudi Marine Development Program:** Development of an efficient modern Saudi fleet will be enhanced by developing vessel regulations in accordance with international standards, and by monitoring and inspecting vessels to ensure compliance.

**13.1.3.3 Program Expenditures: Transport Sector**

The planned government expenditures for each program in the transport sector during the Fourth Plan are shown below in Table 13-7.



Table 13-7

**TRANSPORT SECTOR PROGRAM EXPENDITURES**

	<b>Fourth Plan Total</b>
	<b>(SR million)</b>
<b>Presidency of Civil Aviation</b>	
Operation and Maintenance Improvement	8,759.2
Air Traffic Safety	3,323.9
Airport Development	2,608.3
Administrative Efficiency Improvement	1,566.6
Training	859.6
New Airports	4,547.5
<b>Sub-total</b>	<b>21,665.1</b>
(Expected Revenues)	(2,768.0)
<b>SAUDIA</b>	
Operating Revenue	43,058.0
Operating Expenditure	42,922.0
Operating Profit	136.0
Depreciation	3,802.0
Total Financing Resources	3,938.0
- less loan repayment	(5,224.0)
Surplus (deficit)	(1,286.0)
Government Subsidy required	1,291.0
<b>Ministry of Communications (Roads)</b>	
Main Road Development	8,386.3
Secondary and Feeder Road Development	2,013.0
Rural Road Development	2,397.4
Settlement of Completed Projects	1,917.0
Operation and Maintenance	2,849.8
Administrative Efficiency	1,659.1
Technical and Economic Studies	61.5
<b>Sub-total</b>	<b>19,284.1</b>
(Expected Revenues)	(131.0)

**Table 13-7**  
**(Continued)**

	<b>Fourth Plan Total</b>
	<b>(SR million)</b>
<b>Deputy Ministry for Transport Affairs</b>	
SAPTCO Development	1,496.0
Land Transport Development and Performance Monitoring	12.0
Saudi Maritime Development	9.0
Transport Research, Development, Training	7.0
Transport Safety Improvement	5.0
Hajj Transport Improvement	5.0
<b>Sub-total</b>	<b>1,534.0</b>
<b>Saudi Ports Authority</b>	
Major Port Development	2,152.3
Marine Transport Safety Improvement	137.1
Minor Port Development	186.0
Training	75.3
Management, Operation and Maintenance*	6,413.8
<b>Sub-total</b>	<b>8,964.5</b>
(Expected Revenues)	(6,653)
<b>Saudi Government Railroad Organization</b>	
Management, Operation and Maintenance**	1,126.8
Track	643.7
Rolling Stock and Equipment	168.9
Maintenance Improvement	77.0
Riyadh Dry Port Development	57.0
Manpower Training	21.0
Studies	18.0
<b>Sub-total</b>	<b>2,112.4</b>
(Expected Revenues)	(551.5)

★ Funded from revenues

★★ Partly funded from revenues

#### **13.1.3.4 Private Sector Considerations**

Transportation is indispensable for commerce, which is fully in the realm of the private sector, especially in surface transport.

More than half of the transport program expenditures during the Fourth Plan will be for the operation of airports and seaports, and the construction and maintenance of roads. Much of the operations and maintenance work is currently performed by Saudi contractors. As the number, size, and capabilities of these companies increase during the Fourth Plan, the amount and proportion of work performed by local companies will increase. This will contribute to the development of management and operational skills of Saudis, decreasing requirements for foreign manpower and increasing government efficiency.

The private sector is the major beneficiary of infrastructure development in all modes of transporting passengers and goods. In road services and sea transport, most of the transportation operations are performed by the private sector.

The National Shipping Company of Saudi Arabia is 75 percent privately owned. The newest of its roll-on-roll-off container ships are among the largest in the world, and provide services to Europe, Asia, and North America. Other independent vessels in the Saudi commercial fleet are primarily involved in regional trade routes.

#### **13.1.3.5 GCC Considerations**

During the Fourth Plan cooperation with other GCC countries will be intensified and fields of common interest explored with the objective of further strengthening the physical and institutional links between the member states.

Infrastructure improvements will be studied, including the possibility of a Gulf railway. The Bahrain causeway will be completed and further road improvements made. Efforts will be made to improve cooperation between the ports of GCC states and to standardize regulations covering such topics as port and vessel rules, pollution control, and pilotage. Further cooperative moves will also be made by the GCC air carriers to facilitate movement by air between the GCC countries.

### **13.2 POSTS AND TELECOMMUNICATIONS**

#### **13.2.1 BACKGROUND**

Fast and reliable domestic and international communications are a prerequisite for social and economic development. As producing and service sectors become more decentralized, and as modern society develops in all parts of the Kingdom, it is of outstanding importance to secure the

availability of adequate channels of communication throughout the country. Posts and telecommunications include postal, telephone, telex, telegraph, and marine radio services.

### **13.2.2 PRESENT CONDITIONS AND REVIEW OF THIRD PLAN PROGRESS**

Substantial growth in both postal and telecommunication services occurred during the Third Plan, and is expected to continue during the Fourth Plan. This growth has been accompanied by the increased use of high-technology equipment.

#### **13.2.2.1 Postal Service**

Additions to the postal network facilities provided during the Third Plan included 3 postal complexes, 61 post offices, 25 branch offices, and 4 post office box buildings. There are now about 168,000 post office boxes in the Kingdom, and about 3,700 towns and villages have postal services.

The annual volume of mail increased during the Third Plan from 402 million pieces to 713 million pieces, an annual growth rate of over 15 percent. Employee productivity increased from an annual average of 55,000 pieces handled to 95,000 pieces. This increase in productivity was due largely to increased mechanization. The quality of postal service was improved by the introduction of express mail (Bereed Mumtaz) in 1404. This new service responds especially to business needs for fast mail service.

During the Third Plan, 1,100 persons graduated from postal training institutes and over 3,000 persons participated in other postal training courses in the Kingdom and abroad.

#### **13.2.2.2 Telephone Service**

During the Third Plan, exchange line capacity grew from 462,000 to 1,216,000 lines and working telephone lines increased from 270,000 to 903,000 lines. The number of telephones increased from 2.9 to 7.7 per 100 population.

Long distance communications improved considerably. About 300 towns and villages had telephone service at the end of the Third Plan, and 3,300 international trunk lines connected the Kingdom's network to other countries. In contrast, at the end of the Second Plan, only 76 towns and villages were served and only 933 international trunk lines were available.

Mobile telephone service was introduced during the Third Plan. The system's capacity is about 19,000 mobile units, with about 10,000 car telephones in service.

During the Third Plan, about 2,000 persons graduated from telecommunications training institutes and numerous persons participated in other telecommunications training courses in the Kingdom and abroad.

Figure 13-6

# Telephone Lines Utilized Capacity

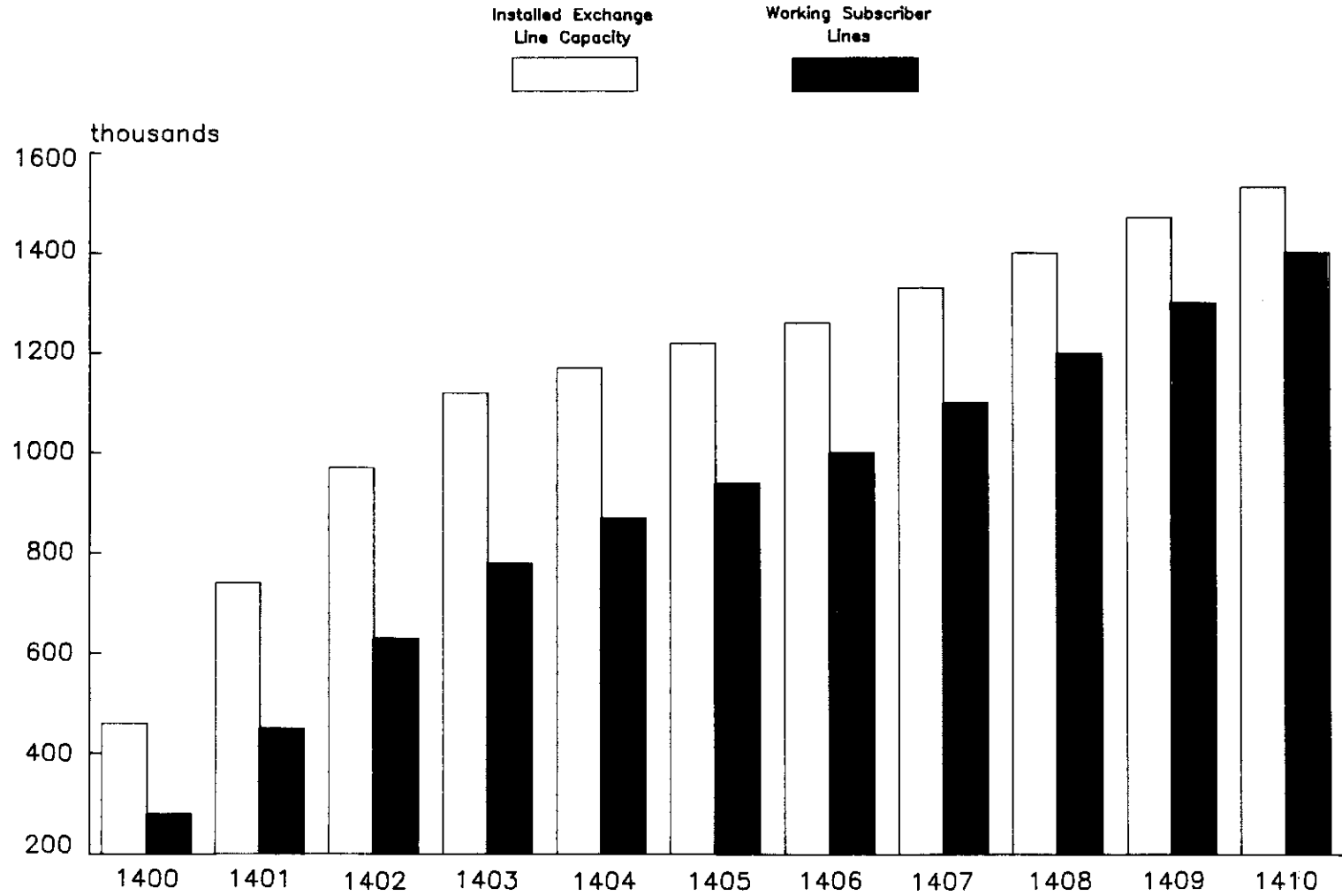
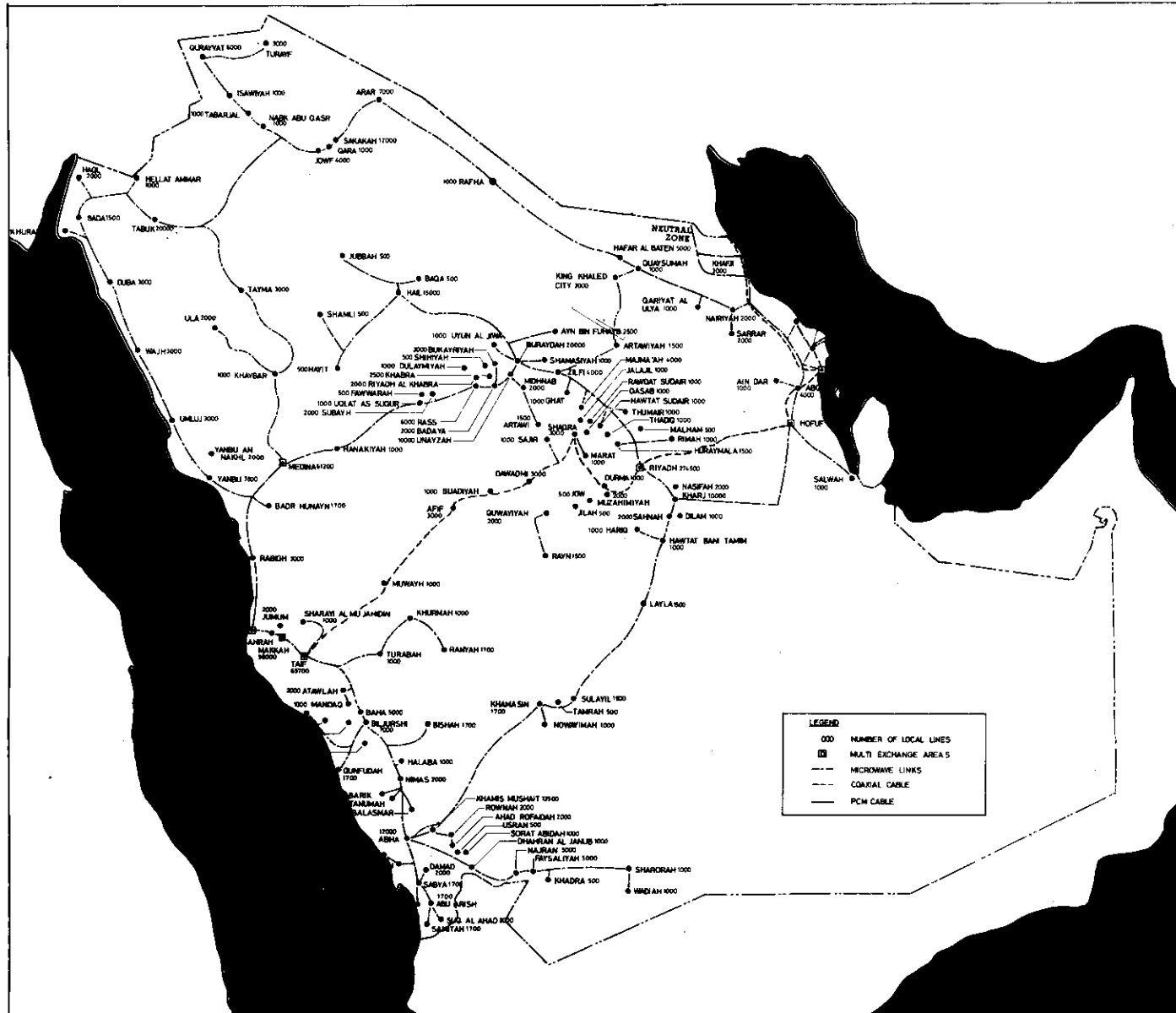




Figure 13 - 7  
TELEPHONE NETWORK IN 1405







#### **13.2.2.3 Telex Service**

During the Third Plan, the number of telex subscribers increased from 7,042 to about 17,000. New telex exchanges became operational in Jeddah, Dammam, and Riyadh. Exchange capacity increased to 60,000 lines and the available capacity to 30,000 lines.

#### **13.2.2.4 Telegraph Service**

Currently there are about 250 telegraph offices operating in Saudi Arabia. The high-frequency radio equipment presently used in the telegraph operation is being updated, as long distance network transmission facilities extend into rural areas. As yet, there is no telegraph message switching system in the Kingdom.

#### **13.2.2.5 Marine Radio Service**

Each of the coastal radio stations in Jeddah and Dammam, which are linked to substations, use terrestrial radio frequencies to provide telephone, telex, and telegraph service to ships in the Red Sea and in the Arabian Gulf.

International maritime mobile satellite services are being provided by INMARSAT earth stations in Great Britain and Japan. These arrangements are temporary and are limited to automatic telex service only, pending completion of the Kingdom's own INMARSAT earth station at the Jeddah complex in 1406.

#### **13.2.2.6 Key Issues**

Economic and social development has been hindered by the incomplete coverage and slow service of the postal and telecommunication systems. Many villages are not served, and in 1401 the delivery time for 53 percent of the letters handled was more than four days. In most industrialized countries there are 30 to 50 telephones per 100 population, compared with 7.7 in the Kingdom. The majority of villages have no telephone service.

There is also a substantial imbalance between existing exchange line capacity and the capacity of local cable networks. This means that switching capacity has been installed without subscribers being able to use it. By expanding existing local cable networks, another 250,000 subscribers could be given access to the telephone network.

Numerous analogue switches are connected to digital junction facilities and require costly digital to analogue conversions, as do analogue long-distance microwave radio links to digital exchanges. To save the costs of conversion and to condition the network for data transmission, a shift to all-digital switching and transmission is required.

Growth of data communications by means of dedicated lines or telephone lines is uncontrolled. If this trend continues, data circuits and private networks will have a wide variety of equipment attached to the lines. This incompatibility of services may turn out to be an impediment to business and administrative communications. To ensure an orderly approach to data communication needs, a data network should be installed.

The introduction of a radio frequency spectrum management system is a prerequisite to the efficient use of the available frequencies. Without a frequency management system there is likely to be interference in communication channels that will adversely affect service and result in high replacement costs.

Management, operations, and maintenance expenditures have grown rapidly in recent years, making efficiency a prime consideration in the Fourth Plan, especially as unit costs per subscriber line are very high in comparison with international standards.

### **13.2.3 DEVELOPMENT STRATEGY**

During the Fourth Plan, communication services will be improved and expanded to cover a greater portion of the population and many more towns and villages. This will be accomplished, in large part, by the increased use of high-technology equipment.

#### **13.2.3.1 Objectives and Policies**

The government's main *objectives* in the field of posts and telecommunications are:

- to expand the coverage of services;
- to improve the quality and efficiency of services.

Supporting *policies* will:

- establish additional postal facilities;
- increase the number of telephone lines;
- increase the speed of service;
- increase the use of high-technology equipment.

#### **13.2.3.2 Public Sector Programs**

##### **(i) Postal Service Programs**

**Expansion Program:** This program will introduce postal service to 1,200 villages, and 240 part-time agents will be appointed for this purpose.

**Construction Program:** Five central offices will be constructed in Taif, Hail, Al-Rass, Hafr AlBatin, and Najran. A post office box hall with 20,000 post office boxes will be established in Dammam.

**Equipment Program:** Approximately 400 franking machines, 180 stamping machines, 400 post boxes, and 72,000 post office boxes will be added.

**Development of Postal Methods:** Since postal codes help significantly to facilitate sorting procedures, the present campaign for creating postal code awareness will be extended.

**Training Program:** To keep pace with increasing mail volume, the number of employees will rise by 600. About 900 graduates is the cumulative target for the three postal training institutes, and 2,000 employees will attend training courses. Approximately 80 students will be sent abroad for training.

**Management, Operation, and Maintenance Program:** This program is for the ongoing management, operation, and maintenance of the postal service.

**(ii) Telecommunication Service Programs**

**Telephone Program:** Local networks will be enlarged to give 250,000 new subscribers access to the installed exchange capacity. The network switching capacity will be increased by 300,000 lines. Rural subscribers in 100 locations will be given access to the telephone networks by radio telephone.

**Text and Data Communications Programs:** Besides further expansion of the existing telex network to about 28,000 subscribers, a 'packet switching' data network will be introduced. The data network will start with three nodes, having an initial capacity of 5,000 subscribers.

**Support Systems Program:** A frequency management system will be established and the Riyadh computer facilities will be expanded correspondingly.

**Long Distance Communications Program:** National and international microwave, cable, and satellite links will be provided according to estimated traffic needs. Expansions will use digital transmission. An international submarine cable, linking Europe to East Asia through Saudi Arabia, will serve as an effective alternative to the use of satellites.

**Construction Program:** Building requirements will be modest, with every effort being made to promote the combined use of buildings for different purposes.

**Management, Operation, and Maintenance Program:** This program will concentrate on reducing cost of operation and maintenance by 30 percent through increasing efficiency and productivity.

**Telegraph Program:** Provision of telegraph services will be mainly concentrated in remote areas where other communication services are not available, as well as on effective utilization of automation for saving manpower and facilitating the telegraph services.

**13.2.3.3 Program Expenditures: Posts and Telecommunications**

The planned government expenditures for posts and telecommunications programs during the Fourth Plan are presented below in Table 13-8.

**Table 13-8**

**POSTS AND TELECOMMUNICATIONS PROGRAM EXPENDITURES**

<u>Postal Services</u>	<u>Fourth Plan Total</u> (SR million)
Management, Operation and Maintenance	3,100.0
Expansion	30.0
Construction	39.0
Equipment	15.0
Development of Postal Means and Methods	9.0
Training	75.0
<b>Sub-total</b>	<b>3,268.0</b>
(Expected Revenues)	(1,286.0)
<u>Telecommunication Services</u>	
Telephone	5,096.0
Text and Data Communications	444.0
Support Systems	344.0
Long Distance Communications	1,411.0
Construction	136.0
Telegraph	100.0
Management, Operations, and Maintenance	17,782.0
<b>Sub-total</b>	<b>25,313.0</b>
(Expected Revenues)	(27,074.0)
<b>Total</b>	<b>28,581.0</b>

**13.2.3.4 Private Sector Considerations**

Fast and dependable communications are important to the country's economic and commercial activities. The expansion and improvements in communications planned for the Fourth Plan will contribute to the infrastructure needed by commerce for efficient business operations. In addition, firms operating directly in the communications field will participate in the growth of that industry. For example, private companies now handle the ground transportation of mail between post offices, and their businesses will grow as the mail volume and service areas of the postal service increase. Possibilities for future private sector participation include the sale of terminal equipment, such as telephones.

During the Third Plan, substantial improvements were made throughout the Kingdom in the quality and quantity of municipal infrastructure. Communities were provided with many new parks, abattoirs, and other facilities. Environmental improvement and public sanitation programs contributed to improvements in the functional quality of new construction. Over 300 major infrastructure projects at the municipal level were completed and over 600 construction projects at the national level were supervised. The completion rate of municipal projects is presented in Table 13-9.

**Table 13-9**

**COMPLETION OF MUNICIPAL PROJECTS  
DURING THE THIRD PLAN  
(as of 1404)**

<b>Program</b>	<b>Approved Projects</b>	<b>Projects at Various Stages of Completion</b>		
		<b>100 %</b>	<b>25-99 %</b>	<b>0-25 %</b>
Buildings	85	34	41	10
Public Utilities	299	144	125	30
Other Construction	54	18	29	7
Studies	29	9	16	4
Land Acquisition	139	139	0	0
<b>Total</b>	<b>606</b>	<b>344</b>	<b>211</b>	<b>51</b>

Investments were still concentrated in the large cities, while involvement in rural areas was moderate. Water and street projects and public utilities maintained priority over the other municipal programs. Sewerage projects, though small in number, absorbed a major share of the allocated budget.

Through the formation of several "regional municipalities" during the Third Plan, the total number of cities and towns in the Kingdom was reduced from 106 to 102. The number of village clusters was increased from 16 in 1400 to 43 in 1404.

The overall result during the Third Plan was a general increase in the quality of life throughout the Kingdom, although the increase was greater in urban areas than in rural areas. By the close of the Third Plan, large-scale migration had slowed and the basic infrastructure needs of the cities were being adequately met. The demand for infrastructure in the rural areas remains relatively high, in spite of the great achievements realized.

### **13.2.3.5 GCC Considerations**

Posts and telecommunications play a major role in the exchange of information among the GCC states. The means of communication include television and radio broadcasts and individual data and speech transmissions. The GCC states are currently cooperating in the provision of satellite and terrestrial long distance communication systems, with links between Saudi Arabia and Bahrain, Kuwait, Qatar, and the United Arab Emirates. In 1404, express mail service was instituted in cooperation with the GCC states. During the Fourth Plan, Saudi Arabia will work with the other GCC states to ensure that adequate communication facilities and services are maintained to serve the joint interests of member states.

## **13.3 MUNICIPAL AND PUBLIC WORKS**

### **13.3.1 BACKGROUND**

Municipal and public works include: the administration, infrastructure provision, and related activities in cities, towns, and villages; planning at the regional level; the development and enforcement of Kingdom-wide building codes; and the design, construction supervision, and maintenance of buildings for certain ministries.\*

Municipal and public works agencies (the Deputy Ministry of Public Works and the Ministry of Municipal and Rural Affairs) provide much of the basic infrastructure needed for stable social and economic development. In some cases, the provision of such infrastructural facilities was constrained during the Third Plan by the inability of municipal and public works agencies to keep pace with the rapid economic growth of the cities, and the substantial migration into the metropolitan areas. The large demand that this growth and migration placed on available resources also meant less attention to the needs of the rural areas. As a result, there continue to be urban-rural disparities in the quality of services. These disparities, and the remaining needs of the municipal areas, will be addressed during the Fourth Plan. Some related issues are covered in the chapter on regional development strategy.

### **13.3.2 PRESENT CONDITIONS AND REVIEW OF THIRD PLAN PROGRESS**

During the Third Plan, the most dramatic transformation of urban areas in the Kingdom passed its peak. In the cities, the demand for community infrastructure and commercial and residential spaces has become widely satisfied. Construction, though still among the largest economic sectors, slowed considerably in the last two years of the Plan. After two development plan periods of providing mainly elementary municipal infrastructure in the cities, emphasis during the Third Plan began to shift towards the creation of the most basic facilities and services in rural communities and the support of economic potential in small towns. The demographic pattern in the Kingdom has started to stabilize after a phase of large-scale migration into the cities.

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\* The provision of water, sewerage, drainage, and flood control systems is also a municipal and public works activity, but is discussed in the Water section of the Natural Resources chapter in order to provide a complete picture of the Kingdom's water resource activities. Likewise, the provision of municipal streets is discussed in the Transport section of this chapter.

In addition to achievements in construction, land acquisition, and planning, improvements have been made in street cleaning, public sanitation, and garbage collection, while administrative structures throughout the Kingdom have been reorganized. The classification of several municipalities has been adjusted according to growth and importance.

### **13.3.3 KEY ISSUES**

The quality of some construction continues to be less than desirable and suggests that more stringent building codes or stricter enforcement of existing building codes is needed.

Urban-rural disparities in infrastructure remain significant.

### **13.3.4 DEVELOPMENT STRATEGY**

During the Fourth Plan, municipal and public works agencies will focus on achieving more equality in living conditions throughout the Kingdom. Special efforts will be devoted to improvements in the quality of construction and to the efficient operation and maintenance of public facilities. In accordance with the overall strategy on infrastructure provision during the Fourth Plan, the primary focus will be on improvements in the quality and efficiency of the infrastructure, with quantitative improvements being undertaken, as needed, to meet demand or correct disparities.

#### **13.3.4.1 Objectives and Policies**

##### ***Objectives***

The Government's main objectives in the field of municipal and public works are:

- to improve the standards of work throughout the construction industry;
- to provide a more equitable distribution of municipal infrastructure and services throughout the Kingdom;
- to plan and coordinate with other ministries and agencies the spatial development of localities and regions;
- to improve the economic efficiency of municipal infrastructure and services.

##### ***Policies***

Supporting policies will:

- institute systematic building inspections;
- accelerate the formation of village clusters;
- prepare and regularly update comprehensive physical plans;
- encourage development that will utilize existing infrastructure.

#### 13.3.4.2 Public Sector Programs

**Construction Program:** The new Ministry of Public Works and Housing headquarters will be completed and other buildings will be constructed for municipal agencies. Equipment will be purchased for construction research and soil testing laboratories, and six mobile laboratories will be purchased.

**Development Program:** A central office for construction and building affairs will be established. A center for continuing engineering training will be established. Various training programs will be offered to staff members. A national depository for public building drawings will be established. Computer and library facilities will be upgraded. An operations and maintenance department will be established by the Deputy Ministry of Public Works. Consultants will be hired to assist in organizational review and development.

**Markets and Public Utilities Program:** Infrastructure, such as markets, will be provided in urban and rural areas, and urban-rural disparities will be addressed. Included will be 47 markets, 44 slaughter-houses, 50 parks and playgrounds, and other community facilities.

**Street Lighting and Asphaltting Program:** Streets will be paved, equipped with sidewalks and lighting in 295 projects in various parts of the Kingdom. In some cities over- or under-passes, parking facilities and street naming will be provided. These facilities will improve traffic flows, safety, and cleanliness, and will attract investors to communities with development potential.

**Environmental Improvement Program:** Swamp-filling and similar activities will be undertaken to improve the quality of water. Refuse disposal will be provided.

**Planning Program:** Urban and regional physical plans will be developed and updated.

**Other Programs:** Management, operation, and maintenance of public works offices and infrastructure will be provided. Land will be purchased for public use. Building codes will be revised and strictly enforced.

#### 13.3.4.3 Program Expenditures: Municipal and Public Works

The planned government expenditures for municipal and public works programs during the Fourth Plan are presented in Table 13-10.



Table 13-10

**MUNICIPAL AND PUBLIC WORKS PROGRAM EXPENDITURES**

	<b>Fourth Plan Total</b>
	<b>(SR million)</b>
<b>Ministry of Municipal and Rural Affairs</b>	
Water	11,185
Sewage	12,079
Rainwater Drainage	1,216
Flood Control	536
Markets	448
Public Utilities	4,301
Municipal Streets	9,277
Government Buildings	379
Environmental Improvement	38
Planning	768
Training	70
Others	22,103
<b>Sub-total</b>	<b>62,400</b>
<b>Deputy Ministry of Public Works</b>	
Management and Administration	600
Operation and Maintenance	18
Ongoing Construction	357
Development and Consultancy	125
<b>Sub-total</b>	<b>1,100</b>
<b>Total</b>	<b>63,500</b>

**13.3.4.4 Private Sector Considerations**

The stricter enforcement of building codes will require the construction industry to pay closer attention to construction details, and to make certain that appropriate quality building materials are used, through careful supervision of construction projects. The more stringent building codes may increase the initial costs of construction, but any increase should be more than compensated by decreases in the costs of maintenance and replacement.

Many of the projects to be undertaken in the field of municipal services and public works will be contracted out to the private sector, with substantial revenues accruing to Saudi construction companies and Saudi operations and maintenance companies.

## **13.4 HOUSING**

### **13.4.1 BACKGROUND**

Shelter is one of the basic human needs, and the provision of adequate housing acceptable to Saudi cultural norms is essential to the social and economic development of the Kingdom. Saudi Arabia's population is young and is increasing rapidly. Sustained housing construction is needed through the Fourth Plan and beyond to meet its needs. Despite the tremendous improvement that has been made, there remains a substantial amount of housing that requires upgrading.

Saudi Arabia's response to a shortage of adequate, modern housing during the Second and Third Plans was to make available a massive amount of resources to finance housing construction. Lack of housing has now ceased to be the critical constraint to development that it once was.

No single government agency has overall responsibility for this activity. Housing has primarily been provided by the private sector, with public agencies assisting in construction finance and in the supply of necessary infrastructure. However, there has also been substantial public sector construction, such as public housing for low-income Saudis and housing for public agency employees (including students of educational institutions).

### **13.4.2 PRESENT CONDITIONS AND REVIEW OF THIRD PLAN PROGRESS**

The rate of housing construction was stepped up during the Third Plan and far exceeded expectations. Overall, the supply of housing in the cities has exceeded demand. In rural areas, less progress has been made and, generally, demand still exceeds supply. A significant portion of the existing housing stock throughout the Kingdom is in need of rehabilitation or renovation.

#### **13.4.2.1 Housing Completions**

Actual housing construction during the Third Plan is compared with Third Plan targets in Table 13-11. The greatest deviation from the Third Plan targets was in public employee housing and publicly financed housing. In total, the Third Plan target was exceeded by 170,600 units. Most of the excess housing was constructed in the major cities and resulted in high vacancy rates. The reduced targets for the Fourth Plan reflect, among other considerations, the fact that a substantial number of vacant units, estimated to be about 100,000, exists at the beginning of the new Plan period.

Table 13-11

**HOUSING COMPLETIONS DURING THE THIRD PLAN  
AND TARGETS FOR THE FOURTH PLAN**

<u>Housing Type</u>	<u>Housing Units</u>		<u>Deviation From Target</u>	<u>Share of Third Plan Supply</u>	<u>Fourth Plan Target</u>
	<u>Target</u>	<u>Actual</u>			
<b>Public Sector (total)</b>	<b>86,200</b>	<b>139,400</b>	<b>62</b>	<b>32</b>	<b>75,000</b>
Low-income	32,900	17,800	-46	4	7,800
Public employee	53,300	121,600	128	28	67,200
<b>Private Sector (total)</b>	<b>181,000</b>	<b>298,400</b>	<b>65</b>	<b>68</b>	<b>210,000</b>
Publicly financed	103,000	195,000	89	44	150,000
Privately financed	78,000	103,400	33	24	60,000
<b>Total</b>	<b>267,200</b>	<b>437,800</b>	<b>64</b>	<b>100</b>	<b>285,000</b>

**13.4.2.2 Private Sector Housing**

Government loans (through the Real Estate Development Fund) are estimated to have assisted in the construction of 44 percent of all housing completions during the Third Plan, about 195,000 units in all. The regional distribution of government lending under the personal loan program has marked disparities, as shown in Table 13-12, with the Southern and Western Regions receiving less than the size of their populations would suggest and with the Central Region receiving considerably more, largely as a result of the rapid development of the Kingdom's capital city. Most of the loans made under the Government's investor loan program have also been made in the Central Region. (The greater availability of resources in the Central Region has been reflected in the better condition of its housing.)

**Table 13-12**  
**REGIONAL DISTRIBUTION OF GOVERNMENT PERSONAL HOUSING LOANS**

<u>Region</u>	<u>Distribution of Loan Contracts</u>		<u>Per Capita Distribution of Loans *</u>	
	<u>Second Plan</u>	<u>Third Plan</u>	<u>Second Plan</u>	<u>Third Plan</u>
	<u>(Percent)</u>		<u>(Index)</u>	
Central	40.2	43.2	165	177
Western	20.4	23.4	64	73
Eastern	16.9	13.8	131	107
Northern	14.2	9.0	133	84
Southern	8.3	10.6	41	53
<b>Total</b>	<b>100.0</b>	<b>100.0</b>		

★ The index compares the region's share in total REDF loans to the same region's share in the Kingdom's total population. Values under 100 indicate relatively "under-supplied" regions; values over 100 relatively "over-supplied" regions.

Privately financed construction is estimated to have been responsible for about 24 percent of total Third Plan housing completions, or more than 100,000 units, including houses and apartments constructed for rental purposes by investors. Investors were encouraged by the economic environment and by the high rents that were being paid at the start of the Third Plan, and were slow to react to the emergence of housing surpluses.

#### 13.4.2.3 Public Sector Housing

During the Third Plan, 17,819 housing units for low-income Saudis were constructed. An additional 7,883 houses and 3,631 serviced building plots were in an advanced state of progress by the close of the Third Plan.

Public employee housing is estimated to account for 28 percent of all Third Plan housing completions, or about 120,000 units. Among the agencies providing this housing are the military and security forces, the universities, the Royal Commission for Jubail and Yanbu, and other government agencies.

#### 13.4.2.4 Condition of the Housing Stock

The boom in residential construction during the Third Plan brought about a marked improvement in the condition of the housing stock. This is particularly noticeable in the larger cities, where much of the housing is now of modern construction. Nevertheless, areas of sub-standard housing are still to be found in the cities. In 1399, about five percent of dwellings were some form of temporary structure. During the Third Plan, the number of such dwellings declined sharply.

Reinforced concrete has become the predominant method of construction for new dwellings. Strong and durable, it has much to recommend it. However, as a consequence of the boom conditions that have prevailed in housing construction, the standard of work achieved has often fallen short of reasonable expectations. This is reflected in the incidence of poorly installed mechanical and electrical systems, low standards of thermal insulation, and under-strength concrete.

Standards of housing in the rural areas and in smaller cities are more variable than in the metropolitan cities. Generally higher standards can be found throughout the Central and Eastern Regions, reflecting the greater availability of government housing loans.

#### **13.4.2.5 Key Issues**

Lack of building code enforcement has contributed to unnecessary deterioration of the housing stock due to poor quality construction. During the Fourth Plan, building codes will be more strictly enforced.

The private sector is suffering from lack of data on the quality and quantity of the housing stock. Adequate planning to meet the housing needs of the Kingdom's citizens in a cost-effective way cannot be made without significant improvement in the collection and maintenance of housing data. New data collection procedures will be adopted during the Fourth Plan.

#### **13.4.3 DEVELOPMENT STRATEGY**

The overall Fourth Plan objective of the housing sector is to meet the housing needs of the Kingdom's citizens in a cost-effective manner. Support for the private sector will continue as the most important form of government participation. However, there will be new emphasis on qualitative considerations and on the efficient utilization of the existing stock. It is expected that there will be a considerable change in the location of new construction, as less public housing is built in the major cities, and as investors respond to the surpluses of housing there.

During the Fourth Plan, 285,000 housing units are targeted for construction. These new units, plus the estimated 100,000 vacant units at the beginning of the Fourth Plan, will provide a total of 385,000 units to meet the demand of an estimated 325,000 new household formations during the Fourth Plan and to reduce by 60,000 the number of families living in inadequate housing.

##### **13.4.3.1 Objectives and Policies**

The Government's main *objectives* in the field of housing are:

- to provide appropriate, safe and sanitary housing for all Saudis;
- to increase home ownership by Saudis;
- to raise housing standards in rural areas.

Supporting *policies* will:

- make public housing available to low-income Saudis;
- provide subsidized loans on a selective basis for the construction of housing by Saudis;
- develop and enforce strict building codes for housing construction;
- limit the construction of public housing to cases of special need or to areas requiring additional housing.

#### 13.4.3.2 Public Sector Programs

**Management, Operation, and Maintenance Program:** This program provides for the ongoing operation of the Deputy Ministry of Housing.

**Building Code Program:** The Deputy Ministry of Public Works will develop and enforce a building code for all housing construction.

**Data Collection Program:** The Central Department of Statistics will undertake a complete and systematic collection of base-line housing data and will update the data base as needed.

**Loan Program:** The Real Estate Development Fund will continue to provide subsidized loans for private sector construction of housing.

**Construction Program:** The work begun during the Third Plan on 7,883 houses for low-income Saudis will be completed.

#### 13.4.3.3 Program Expenditures: Housing

The planned government expenditures for Deputy Ministry of Housing programs during the Fourth Plan are presented below in Table 13-13.

**Table 13-13**  
**HOUSING PROGRAM EXPENDITURES \***

	<b>Fourth Plan Total</b>
	<b>(SR million)</b>
<b>Deputy Ministry of Housing</b>	
Management and Administration	190.0
Operation and Maintenance	238.0
Housing Construction	3,338.6
Pilgrim facilities in Mina	61.4
<b>Total</b>	<b>3,828.0</b>

★ The housing-related expenditures of the Deputy Ministry of Public Works, the Central Department of Statistics, the Real Estate Development Fund, and other public agencies are presented in previous sections and chapters that discuss in detail the activities of those agencies.

#### **13.4.3.4 Private Sector Considerations**

The private sector, with the strong support of the Real Estate Development Fund, will continue to be the most important component of the housing sector. However, reduced housing construction during the Fourth Plan is expected to result in a smaller number of housing contractors. The continuance of open tendering and strict enforcement of the 30 percent rule, as discussed in the Construction section, will mitigate the impact on housing contractors.

The high vacancy rates in the major cities at the beginning of the Fourth Plan, and the expected decline in the number of foreign construction workers during the Fourth Plan, are expected to result in continued downward pressure on housing rents. This, in turn, is likely to reduce the supply of new investor-constructed rental housing.

During the Fourth Plan, the maintenance, rehabilitation, and renovation of existing housing units are expected to become more important components of housing contractors' businesses, as discussed in the Construction section.

#### **13.4.3.5 GCC Considerations**

During the Third Plan, the privilege of constructing and owning houses in the Kingdom was extended to the citizens of all GCC countries. Cooperation among the GCC countries in the field of housing will continue during the Fourth Plan.

