CHAPTER I

PRESENT CONDITIONS

Infrastructure

Roads

Network. The road network comprises more than 6,000 kilometers (km) of national roads, of which 3,300 km are primary highways. The remaining network of more than 2,700 km of secondary national roads and 15,000 km of provincial roads is either gravel or earthen (Table 1).

The national primary road network largely consists of the ring road (Herat–Kandahar–Kabul–Mazar-e-Sharif–Sheberghan–Mehmana–Herat) and the international links to neighboring countries (Iran, Pakistan, Tajikistan, Turkmenistan, and Uzbekistan). The 615-km Sheberghan–Herat section of the ring road is only partly constructed and is generally unpaved (Table 2, Map 1).

The coverage and condition details of the tertiary road network consisting of village access roads are not known,[1] except that these roads are all unpaved. Though the road density of 0.03 km of road per square km and 0.88 km per 1,000 people is far lower than most developing countries, the road network touches all the major population centers and reaches to a certain extent into remote areas. The recorded traffic during the preconflict period on the primary network varied between 250 and 1,000 vehicles per day. However, traffic levels were rapidly improving and in most cases exceeding these figures.

Condition. More than 2 decades of conflict, combined with a prolonged lack of maintenance, have resulted in damage to long sections of roads, critical structures, bridges, and the snow galleries on the approach to the Salang Tunnel. The 2.8-km tunnel has some localized damage and lacks ventilation and lighting. Overall, the road network has been rendered only partially usable and even then at a significantly high transportation cost. According to the last condition survey[2] undertaken in 1994, 17% of the network was in good condition, 35% in fair condition, and the remaining 48% in poor condition. The situation has deteriorated since then. While the percent-

A nonfunctional culvert is all that remains of this section of road between Kabul and Kandahar.

1 According to rough estimates, about 15,000– 20,000 km.

2 Afghanistan Road Condition Survey (ARCS) database, 1991–1994, by Afghanistan Construction and Logistics Unit and the United States Agency for International Development.

Table 1. Major Road Network

Road Classification	Length (km)
National Primary	3,280
National Secondary	2,785
Subtotal	6,065
Province Primary	8,882
Province Secondary	6,043
Subtotal	14,925
Total	20,990

Source: CNA Mission estimates.

has deteriorated since then. While the percentage of national roads in good condition is more or less the same, only 26% remain in fair condition and those in poor condition have increased to 54%. Large sections of the roads in the south (Kabul–Kandahar–Spin Boldak) and east (Kabul–Jalalabad–Torkham) have been lost. The concrete road in the west (Kandahar–Herat–Torghundi) is only partly traffic-worthy due to joint failures and other damage. Only the road to the north (Kabul–Pol-e Khomri–Konduz–Mazar-e-Sharif) is generally in a better condition, at least beyond the Salang Pass. Between Kabul and the Salang Pass, replacement of 13 bridges, reconstruction on some sections, and deep patching and strengthening on other sections are required. The Salang Pass, at a 3,300-meter (m) elevation, is a major constraint, as the road is badly damaged and usable only for one-way operation over about a 10-km section that includes the tunnel.

Though the pavement structures have been severely damaged, the road embankments have held up reasonably well despite 2 decades of neglect and conflict conditions. The effect of the military actions is more pronounced in the form of damaged bridges. For example, 11 bridges have been damaged between Kabul and Mazar-e-Sharif, one between Kabul and Torkham, and two between Kandahar and Spin Boldak.

Table 2. Travel Time on Primary Road Network

Road	Length (km)	Travel Time (hours)	Average Speed (km/hr)
Kabul–Torkham	227	6.5	35
Kabul–Kandahar	506	20.0	25
Kandahar–Spin Boldak	105	2.5	42
Kandahar–Herat	560	8.5	66
Kabul–Mazar-e-Sharif	399	15.0	27
Mazar-e-Sharif–Hairatan	57	2.0	29
Pol-e Khomri–Shirkhan Bandar	164	12.0	14

Source: CNA Mission.

Some road improvement activities were undertaken during the Taliban period (1996–2001). These include asphalt overlay on a 50-km section of the Kabul-Kandahar road beginning from the outskirts of Kabul. Although all 50 km received the base course, the wearing course could only be laid on some 40 km. Similarly, about 195 km of the concrete Kandahar–Herat road were repaired by sealing the transverse cracks to provide a better riding surface. Interestingly, in the absence of any government-financed initiative, patching and minor repairs works were being undertaken by enterprising transporters, particularly on the Kandahar–Spin Boldak road, to reduce vehicle-operating costs.

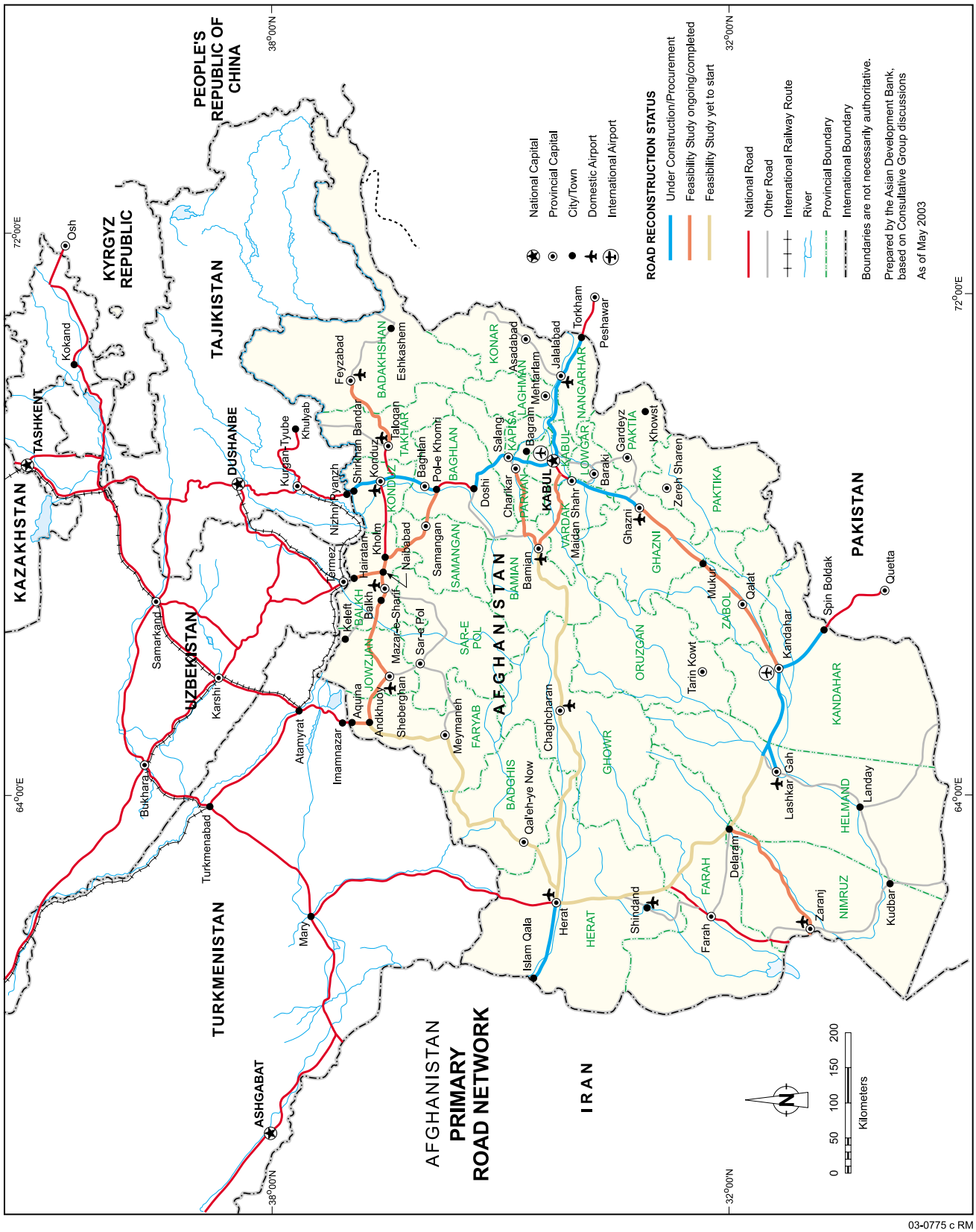
The condition of the roads is also reflected in travel time. During field visits in March–April 2002, data were collected on actual travel time taken by a four-wheel-drive vehicle on major road sections. Table 3 summarizes this information.

This post at the border with Pakistan indicates one of Afghanistan's six international road links to neighboring countries.

Based on road condition surveys undertaken in March–April 2002, the following road improvement needs were identified:

- Kabul–Kandahar: 127 km need embankment reconstruction, 281 km need subbase reconstruction, 296 km need base reconstruction, and 462 km need asphalt overlay.
- Kandahar–Spin Boldak: 42 km need base reconstruction, and the whole 105-km length needs asphalt overlay.
- Kandahar–Herat: 154 km are fair and need only repair of transverse joints; the balance of about 200 km requires other treatments, including replacement of some sections; and six bridges urgently need rehabilitation/reconstruction.
- Kabul–Jalalabad–Torkham: 12 km need sub-base reconstruction, 42 km need base reconstruction, and

Map 1. Principal Features of Afghanistan's Transport Sector



84 km require asphalt overlay, in addition to repairs to existing asphalt surface from Jalalabad to Torkham.

- Kabul–Mazar-e-Sharif: urgently needs approximately 9,000 square meters (sq m) of deep patching and 5,000 sq m of light patching, about 3,000 cubic meters of retaining walls, repair of snow galleries and the Salang Tunnel, and replacement of 13 bridges.
- Mazar-e-Sharif–Hairatan: condition is very good and requires only bulldozing of sand off the road at several locations.
- Pol-e Khomri–Shirkhar Bandar: road is in good condition up to Baghlan, but after the first 32 km requires reconstruction all the way up to Konduz, and onward to the border needs deep patching and asphalt overlays.

A summary of the road conditions and rehabilitation/reconstruction costs is shown in the Chapter III.

Cost Recovery. Achieving a higher degree of cost recovery is critical to ensuring both efficiency in resource allocations and long-term sustainability of road sector investments. To this end, the Ministry of Public Works (MPW) has already revived toll collection activities through its Toll Department, staffed with 374 personnel, including those manning 73 toll stations in four provinces: Ghazni, Vardak, Samangan, and Jowzjan. The present rates for the six categories of vehicles being tolled: passenger cars—Afghanis (AFA).178/km, minibuses—AFA.244/km, microbuses—AFA.276/km, trucks and large buses—AFA.406/km, multi-axle vehicles—AFA.731/km, and articulated truck-trailers—AFA.812/km. The original practice of MPW was to utilize these resources for road maintenance. At present, however, the collected tolls serve as a revenue source for the cash-strapped provinces, although there is a certain amount of leakage in the system and the full toll amount is not passed on. An acceptable arrangement between the provinces, MPW, and the Ministry of Finance (MOF) for enhancing the tolls rates and using them for road maintenance activities was being attempted, but MOF was contemplating diverting the toll revenues to the central treasury. At the time of the Comprehensive Needs Assessment (CNA) Mission, the situation remained very unclear. Moreover, no details were available on the amount of toll revenues being collected.

The traffic police department is responsible for collecting annual vehicle licensing fees and fines for traffic offenses. The Ministry of Transport (MOT) collects charges for outstation travels for passengers and freight, and for initial registration of vehicles. No data are available on the revenues collected.

Table 3. Major Road Network and International Links

Road Section	Length (km)	Links to
Ring Road		
Kabul–Ghazni–Kalat–Kandahar	506	–
Kandahar–Herat	560	–
Herat–Maymana–Sheberghan	615	–
Kabul–Jabalus Sairaj–Pol-e Khomri–Mazar-e-Sharif–Sheberghan	546	–
International Links		
Kabul–Jalalabad–Torkham	227	Pakistan
Kandahar–Spin Boldak	105	Pakistan
Pol-e Khomri–Konduz–Shir Khan	164	Tajikistan
Naibabad–Hairatan	57	Uzbekistan
Herat–Qila Islam	124	Iran
Herat–Torghundi	116	Turkmenistan
Andkhoy–Aqina	40	Turkmenistan

Source: CNA Mission.

Role of the Private Sector. As a consequence of the prolonged state of conflict over the past decade, a number of Afghan road contractors, transporters, and equipment suppliers have relocated to neighboring Pakistan and Iran, where they continue to pursue their respective business activities. There are some 24 small Afghan road construction contractors[3] operating in the two countries who are now keen to return to Afghanistan in view of the potential for major development activities. However, their equipment capabilities are limited, and they will need access to financing and capacity building in contract management to gradually take up major road construction contracts directly. Since the beginning of 2002, several of these contractors have returned and established offices in Afghanistan in anticipation of the upcoming development activities.

Very few domestic private road construction or maintenance firms have been actively engaged in Afghanistan in recent years. However, several externally financed "food for work" and "cash for work" programs have undertaken construction or improvement of small-scale (community level) road and drainage infrastructure. mostly through

3 With an average annual turnover of about $1 million each, these contractors are mostly working as subcontractors for civil work activities related to earthworks, aggregate and equipment supply, and some base course and subbase course works.

international and local nongovernment organizations (NGOs). These agencies typically retain a cadre of engineers and technical staff that gives them the capacity to identify, design, and carry out simple infrastructure works using labor-intensive methods.

Afghans have traditionally had a very strong presence in the road transport business. A large number of privately owned trucks are registered within Afghanistan.[4] In addition, a considerable number of Afghan transporters that have relocated to Pakistan over the past decade have in the past been actively engaged in goods transport within Pakistan as well as across the border to various destinations in Afghanistan. Their business has been facilitated by easy availability of competitively priced used European trucks and spare parts, low-priced (smuggled) fuel, almost nonexistent road use charges, low labor costs, a flourishing reexport market, and lack of competing transport modes. Given the sharp increase in transportation needs associated with the reconstruction of Afghanistan, it is expected that the private sector transporters will greatly benefit.

With the returning refugees and substantial inflows of goods across the borders, overloading of trucks has lately become a serious problem. Many shippers are also reluctant to pay for loads above the theoretical capacity of the trucks due to increased risks. The truck tariff system operates on fixed rates between cities based on a full one-way load and empty return, irrespective of the weight of the goods being transported. MOT is responsible for regulating axle load limits and vehicle sizes and dimensions, but is constrained by lack of resources for enforcement and, more importantly, lack of an enabling environment for such enforcement. This is a critical issue because of the plans for reconstruction of the road network.

Mine and Ordnance Clearance. Afghanistan is more heavily impacted by mines and unexploded ordnance (UXO) than any other country in the world: 732 sq km is known to be mined, an additional 100 sq km suspected to be mined, and about 500 sq km is UXO-contaminated battle area. The actual presence of mines in strategic corridors is a strong constraint to highway rehabilitation. It is essential that mine survey and necessary clearance be undertaken on the core highway network on a priority basis (in addition to the ongoing mine clearance program) to allow the rehabilitation work to proceed without more delay. Mine survey and clearance would need to cover sufficient width along the network to carry out rehabilitation activities, while also allowing for temporary redirection of traffic and detour roads. Additional areas will need to be cleared as well to allow construction of and access to construction camps, site facilities, materials storage, and other site infrastructure.

Trucks detour around a section of destroyed causeway between Kandahar and Spin Boldak.

Minefield survey and clearance work, known as the mine action program for Afghanistan (MAPA), is being done under the supervision of the United Nations Office for Coordination of Humanitarian Assistance through 15 implementing partners (eight Afghan and four international NGOs and three other organizations) and is actively funded by several bilateral aid providers, with 5,000 personnel in the field. It is anticipated that additional mine survey and clearance groups will be inducted to meet the increased need of mine clearance support for a variety of infrastructure development activities. One option would be to include the mine clearance work within the overall scope of the higway rehabilitation contracts.

4 Nationwide statistics are not available, but approximately 35,000 trucks are reported registered in Kabul province alone.

An automobile skirts unrepaired damage on a stretch of the 190-meter bridge between Kandahar and Spin Boldak.

During meetings and discussions with the Afghan Assistance Coordination Authority (AACA) and other concerned IAA agencies, it was agreed in principle that mine clearance should remain humanitarian-based and that the Government would take responsibility for clearing all road sections that were to be included in externally funded programs before any contracts were let and contractors moved onto the sites. This would mean clearing a sufficiently wide corridor (of about 50 m) from the centerline on both sides of the road. Any additional mine clearance required by the contractor, for example, in sites of quarries and work camps, would be the responsibility and at the cost of the contractors. This does appear to be a reasonable and equitable approach, though the modalities for guarantees of clearance and continuing safety concerns have to be agreed with the Government.

Civil Aviation

Infrastructure. Afghanistan is a landlocked country with large mountainous regions, and relies significantly on the civil aviation sector for international and domestic passenger movement, as well as for the supply of much-needed goods to remote communities. There are two major gateways, Kabul International Airport, serving the capital, and Kandahar International Airport, serving the southwest of the country. The two airports were operated in the past under Instrument Flight Rules (IFR), with day and night operations. Five regional hub airports with airside pavements and IFR operations provide air connections to the major cities. In addition, there are 15 smaller domestic airports spread over the country, serving the smaller, more remote areas. These airports have mainly gravel-paved airside facilities and operate under Visual Flight Rules). The civil airport infrastructure is administrated, developed, operated, and maintained by the Ministry of Civil Aviation and Tourism (MCAT). However, the design and construction of pavements was undertaken by MPW.

Safety. The prolonged state of conflict in Afghanistan has resulted in large-scale deterioration of the civil aviation infrastructure and depletion of its skilled manpower. In addition to lack of maintenance, the deterioration was further accelerated by the heavy damage inflicted during the recent military operations. The deteriorating conditions were regularly monitored by the International Civilia Aviation Organization (ICAO) and the United Nations Development Programme (UNDP), through several technical missions in 1991–2002. To bring the airports and MCAT up to the international standards and recommended practices set by ICAO and international civil aviation, a massive rebuilding effort is required.

Institutions

Roads

MPW is responsible for development operations and maintenance of the primary and secondary road networks in the country. In addition, it has a multitude of other responsibilities, such as construction of airports, housing, water supply, city planning, and collection of road tolls. MPW is also involved in maintenance of the airport pavements and the management of several state-owned construction units for housing, roads, and airports.

Theoretically, MPW has 15 departments, of which five have administrative functions, four are for technical planning, and six are operational, involving construction and maintenance of roads, airports, housing, and water supply. At least three of the operational departments are state-owned construction enterprises previously engaged in construction of roads, airports, commercial and industrial buildings, and housing. MPW is headed by a Minister, assisted by two deputy ministers and three advisers.

Most of MPW's more than 6,000 staff are ill-equipped to perform their duties, hence MPW finds it difficult to carry out its responsibilities. The staff is experienced, but since almost no substantial road construction or maintenance has taken place over the last 2 decades, many of them need reorientation training and

of funding to undertake even regular routine maintenance[5] of the road network.

MOT manages the government-owned vehicle fleet and regulates the private sector transport industry. Of the 2,500 trucks MOT owned in the early 1990s, only 200 are presently available and operational. Similarly, only 100 of its former fleet of 1,000 buses are now operating. As a result, MOT has been forced to cut its transport enterprises from nine to three, which are Administration, Planning and Technical Services, and Private Sector. With a present staffing level of 1,100, MOT is coordinating agreements between the private sector and international transporters, and has established eight offices in neighboring countries to facilitate international trade. As with other government agencies, lack of trained manpower, furnished offices, equipment, vehicles, and other resources are a major impediment in restoring the functioning of these two ministries.

The Ministry of Rehabilitation and Rural Development (MRRD) is responsible for development of rural infrastructure, including rural roads. (MRRD is also responsible for provision of health care, education, and other rural social services.) Very few villages have all-weather access, and no tradition of community-based rural road maintenance exists. Rural roads financed by external funding agencies and built during the conflict period as food-for-work programs through NGO) have rapidly deteriorated due to lack of maintenance.

Kabul International Airport, one of the country's two major international airports; in addition, five major domestic airports and 16 regional airports move passengers and goods around the landlocked country.

Civil Aviation

MCAT is responsible for operations and the maintenance of the country's two international airports at Kabul and Kandahar, four major domestic airports, and 16 regional airports providing access to extremely remote areas. In addition, MCAT owns and manages the national airline, Ariana; owns two major hotels; and is responsible for promoting the tourism industry and providing related services. Reporting to the deputy technical minister, MCAT is divided into eight presidencies dealing in operations, meteorology, technical, administration and finance, documents and licenses, planning, law and regulations, and Kabul International Airport). The present staffing level is about 1,200.

The deterioration in infrastructure has rendered MCAT incapable of providing an air traffic control service for Afghanistan airspace. The existing numbers of qualified controllers and technical support staff are inadequate to assure the safety of flights, as are the available communications, surveillance, and navigation systems. Urgent attention is necessary to bridge the safety gap. At present, due to the lack of trained personnel, qualified controllers and technical support staff from abroad are needed to operate and maintain an air traffic control system nationwide. In the event the international forces withdraw their present level of airspace management, which does not include providing air traffic control services beyond the vicinity of the airfields they operate, a serious flight safety situation will exist.

Challenges in the Transport Sector

5 Sealing of surface cracks, repair of guardrails, cleaning of draining structures, pothole and edge repairs, and removal of vegetation and other obstructions to improve sight distances and safety.

the vicinity of the airfields they operate, a serious flight safety situation will exist.

Challenges in the Transport Sector

Mobilization of Resources

The biggest challenge to reconstruction and development, particularly infrastructure including roads, is mobilization of resources. Given the need of over $600 milllion for rebuilding just the priority primary roads network, and about $2 billion for the entire road network over a 10-year horizon, it is unlikely that grant resources of such a level will be available. Hence, the Government will need to consider borrowing from multilateral institutions that are willing to provide soft loans on very favorable terms.

Capacity of the Line Ministries

Capacity of the line ministries in the transport sector is another constraint that affects implementation of projects. A generation of professional expertise has been lost during the 20 years of conflict. Almost all transport sector institutions lack both adequate numbers of skilled professional staff and knowledge of modern methods of maintenance or construction. The sector institutions also do not possess any significant amount of construction equipment. The capacity of local contractors, of whom there are only a small number in the country, is limited. The ongoing capacity building provided under the technical assistance cluster assisted by ADB is expected to improve the situation considerably in the short to medium term by enhancing operational efficiency. However, it may take some time before these institutions are capable of operating independently.

Security Situation

The security situation in Afghanistan remains precarious. In fact, it deteriorated in the months following the CNA mission: an attempt was made on the life of Afghan Interim President Hamid Karzai in Kandahar, and bomb blasts occurred in Kabul and Khost. This creates major difficulties in mobilizing staff consultants and contractors. The United Nations provides continuuous guidance to expatriates on the security situation, which is is widely disseminated; a security briefing is given for new arrivals in the country.

Two trucks stir pass on an unpaved section of road between Kandahar and Spin Boldak. Substantial sections of even major highways have disintegrated from pavement into dirt and gravel.

CHAPTER II

DEVELOPMENT AGENDA

Objectives and Strategy

Objectives

The Government's development objectives are reflected in its aspirations that international assistance be an instrument to reduce poverty, reestablish sovereignty and national unity, and lay a foundation for sustainable prosperity. To achieve these objectives, the Government has proposed three pillars of development strategy in its NDF:

- To use humanitarian assistance and social policy to create the conditions for people to leadsecure lives and lay the foundations for sustainable human capital;
- To use external assistance to build the physical infrastructure that lays the basis for a private sector-led growth strategy supporting human and social capital; and
- To create sustainable growth with a competitive private sector as the engine of growth and instrument of social inclusion through the creation of opportunity.

Strategy

The strategic focus of rehabilitation and reconstruction in the transport sector, particularly the road subsector, is to facilitate humanitarian aid, returning refugees, and necessary trade; improve access to remote areas; develop the private sector; create employment opportunities; build the capacity of the line ministries; and enhance international cross-border trade. In more detail:

- Rehabilitating and reconstructing key sections of the primary road network and removing bottlenecks, such as damaged bridges/culverts, tunnels and other structures;
- Improving international road links to neighboring countries;
- Implementing a program for improving and constructing key secondary and tertiary roads to provide access to each district and connect it to the primary road network;
- Re-opening Afghan airspace for safe international overflights, improving communication links between Kabul and other airports, and rehabilitating and improving major airports;
- Building capacity and carrying out institutional restructuring of the ministries involved in the transport sector for implementation of the recovery and reconstruction initiatives;
- Promoting private sector development through (i) capacity building of the local consulting and contracting industry involved in the transport sector; (ii) creating an enabling environment, through appropriate legislation and other means, for the return of the Afghan-origin private sector that moved to neighboring and other countries during the conflict period; and (iii) initiating a privatization program starting with the state-owned enterprises (SOEs); and
- Gradually initiating necessary sector reforms such as road safety, axle-load controls, sustainable funding for maintenance, etc.

Policy and Institutional Framework

Roads

Institutional Strengthening. In accordance with the guidelines provided in the preliminary needs assessment (PNA), the role of the Government in the transport sector should be limited to that which is necessary to fulfill national and social objectives. This includes

The piers of this bridge between Mazar-e-Sharif and Sheberghan have literally been scoured away by seasonal floodwaters.

- monitoring the performance and efficiency of transport systems, including tariff charges levied by public enterprises and private monopolies; and
- licensing transport services for the purpose of ensuring that acceptable safety and environmental standards are met.

The institutional structure of the existing road agencies needs to be reviewed based on these principles, and work plans prepared for gradual implementation of the institutional reforms.

Three areas in MPW have been identified for immediate reforms. First, the current practice of road maintenance utilizing manpower within MPW (force account) should gradually be replaced by the outsourcing of maintenance to the private sector. Second, the SOEs responsible for construction of roads, airports, and housing should be gradually privatized. And third, functions of the transport sector that are currently spread over several ministries need to be consolidated into one ministry (called the Ministry of Transport), with departments dealing with each subsector such as Department of Roads, Department of Civil Aviation, etc. In all these activities, care should be taken to avoid creating unemployment, by ensuring that the affected staff is either adequately compensated or reemployed by the private sector institutions, or alternatively, provided with skills to work as local community contractors. Appropriate legislation may be needed before any institutional reforms are undertaken.

Capacity Building. A generation of professional expertise has been lost in more than 20 years of conflict. In almost all government agencies, knowledgeable professional staff members are reaching retirement age; a major capacity-building effort will be required to train the younger generation to take their place. Even the experienced staff members require refresher training, as their knowledge base is outdated. Hence, a human resource development plan is needed to address the capacity-building needs of the road sector agencies for the immediate and long-term future.

To compensate for the present lack of capacity and to undertake planning and implementation of projects identified as immediate needs, MPW will be initially assisted by a team of international and capable domestic experts. It will develop MPW's capacity to coordinate with AACA in reviewing external funding agencies; project proposals under the overall road subsector development framework; monitoring and implementing approved projects; initiating and coordinating data collection activities; establishing an archive of the available documents; overseeing programs for capacity building of the local private sector (consultants and contractors); and ensuring gradually increasing local involvement in road subsector reconstruction efforts. The role of the international experts is to gradually shrink as the retrained local staff takes on more responsibilities.

To satisfy long-term professional manpower needs, formal education is essential. A significant engineering output from the Kabul University and the Polytechnic Institute is planned for the medium and long term. This will be coupled with refresher courses for engineering graduates. Kabul University is considering offering 1–3-month refresher courses in the road engineering disciplines. Another longer-term approach to address the serious institutional deficiencies might be via a twinning arrangement with road agencies in other countries. Experience of other road agencies operating under similar conditions and moving away from the policy of reliance on force-account methods for all road services would be beneficial.

Decentralization of Network Management. MPW's current centralized operations in managing the

and moving away from the policy of reliance on force-account methods for all road services would be beneficial.

Decentralization of Network Management. MPW's current centralized operations in managing the road network need to be reviewed to ensure responsiveness to local needs, improved utilization of local resources, and efficient overall mode of operations. This requires early creation of a functional balance between the central office in Kabul and the provincial offices during initial stages, by delegating to each the responsibility for the roads within its province. This may not be fully viable in provinces with low capacity; as an alternative, regional offices with responsibility for roads in more than one province can cover. For strategic reasons, the primary network consisting of the ring road and international links will continue to be managed from the center. Providing gradual autonomy to the provincial/regional offices will be the next step in the decentralization process and should coincide with the Government's decentralization program.

Sector Financing, Cost Recovery, and Sustainable Maintenance. To protect the major investments envisaged for reconstruction of the road subsector, it is critical that sustainable means of financing become available for operations and maintenance. This requires preparation of a plan for cost recovery from road users by means of localized tolls on specific sections of the primary network or through levies on fuel. The cost recovery plan should be articulated early on, to provide enough lead time for development of legislative cover and to begin implementation to gain full financing for the subsector from road users.

A legislative basis appears to exist for levying tolls on specific roads and collecting vehicle license fees and fuel levies. While MPW collects tolls usually earmarked for road maintenance, the traffic department of the Ministry of Interior collects vehicle license fees. The fuel levy is not being collected at present. Though overall annual revenue figures from these sources are not available, cost recovery for the road transport sector appears to be low.

Private Sector Development. As articulated in the PNA, the Government is committed to increased private sector involvement in all areas of the economy. The involvement of the private sector will assist in mobilizing resources and facilitating the adoption of changes in the economic environment and technology. In most cases, the private sector will foster these characteristics much more than SOEs. Privatization of SOEs will help make the best possible use of existing assets, improve efficiency, and promote flexibility in the management of organization and personnel.

The Government is keen to seek a role for major international firms in rebuilding the transport sector, and has expressed interest in exploring the possibility of build-operate-transfer-type concession arrangements for reconstruction of the primary road network. Current conditions within Afghanistan are likely to deter some international contractors, however, and this is another factor that may help the local construction industry to get an appropriate share of the reconstruction program works. Creation of an enabling environment appropriate for private sector operations is urgently needed to facilitate growth of a local construction industry and attract the indigenous private sector that left the country during the conflict period. It is also important to develop a program for capacity building of the local consulting and contracting industry in the transport sector, to enable them gradually to take the lead and play a needed role in the recovery and reconstruction of Afghanistan.

Employment Generation. The scope for generating employment opportunities in the road sector is consid-

Graders are hard at work resurfacing the road between Kandahar and Spin Boldak, on the border with Pakistan; large sections of this major national route were lost due to war damage and neglected maintenance.

erable, because the nature of the work lends itself to the deployment of a large labor force. Utilizing methods that maximize the uuse of local labor for rural road construction can further enhance employment opportunities. Improved access to wage-earning opportunities will assist in the demobilization of ex-combatants and help others who have been adversely affected by the conflict, including single-parent families, to reintegrate into society. The reconstruction and maintenance programs will therefore create sustainable job opportunities, facilitate skill development, and encourage community involvement.

Community Participation. Involvement of communities to harness the energy of Afghans to meet their recovery and reconstruction needs is one of the guiding principles outlined in the PNA. The role of communities will be much more pronounced in improving the rural access road network, where they will be directly involved in reconstruction and maintenance efforts. The communities will supplement the current low capacity of the local contracting industry. Local community contractors will operate in a combined program aimed at generating employment as well as developing a private sector construction industry. NGOs will play a critical role in mobilizing communities and building their capacity to undertake road-related responsibilities. It is to be hoped that the local construction industry will become capable of working in other sectors for the overall reconstruction effort; in the future, after the initial reconstruction works are finished, this industry should take over the maintenance of the rural road network, thus enabling more permanent employment opportunities. Such local maintenance would support sustainability in road maintenance, as well as the Government's stated aim to let private sector initiatives drive the reconstruction process in the country.

Impact on Vulnerable Groups. Improved access in rural areas can have a dramatic effect on the lives of poor people. With good access, usually through improved or new roads and transport services, poor people are better able to send their children to school, visit health centers, improve nutrition through better access to markets and a wider variety of food, and sell their own produce. Good access also has a significant social impact, as people are better able to interact and participate more fully in the democratic processes of government. Local-level transport planning and consultation processes are therefore an essential part of rural road network planning. Any of numerous, well-established local-level integrated rural access planning methodologies can be used to ensure that the access being provided meets the needs of all groups within the target population.

Role of NGOs. The critical role played by NGOs during the long period of conflict needs to be recognized and expanded to allow them to become a full partner in the reconstruction effort. Though the NGOs' role in road construction and maintenance has been limited, they will be needed for social mobilization of communities to plan and participate in implementation of rural access road projects. To this end, the NGOs can develop and implement a major capacity building program to create skills in the communities to either work for the local contractors or take on a larger responsibility of managing a road section themselves under contract with the road agency.

Environment. Arresting and reversing environmental degradation and ensuring that environmental considerations are integrated into the planning and development of the projects are extremely important to the reconstruction and recovery effort, particularly for infrastructure, including roads. Most of the proposed projects are focusing on repair, rehabilitation, and reconstruction of damaged and worn-out roads, bridges, and drainage structures that are of critical importance to the economy. Considering the nature and magnitude of the potential environmental impact of large-scale reconstruction works, the proposed operations are likely to be classified as category "B" and would have to comply with external funding agencies' environmental and social safeguard policy requirements. This may imply the requirement to carry out limited environmental impact analysis before projects are approved for financing. Therefore, before appraisal, the executing agency (MPW in the case of roads) would have to agree to apply the minimum standards during implementation. These are

- inclusion of standard environmental codes of practice in the repair and reconstruction bid documents of all subprojects financed,
- review and oversight of any major reconstruction works by supervision specialists,
- implementation of environmentally and socially sound options for disposal of excess materials and debris, and
- provisions for adequate budget and satisfactory institutional arrangements for monitoring effective implementation.

Resettlement. Given the nature of the reconstruction projects, no need for land acquisition or involuntary resettlement in project areas is expected. A resettlement action plan is, therefore, unlikely to be needed before appraisal and approval of financing.

Sector Reforms. With the restoration of the primary and key secondary and tertiary road networks, road sector reforms will be needed involving road safety and

At Mazar-e-Sharif Airport, one of the country's five regional hubs, the runway has developed a dangerous dip.

Cross-Border Trade Facilitation. Landlocked Afghanistan relies heavily on road transport to meet its trade needs. In addition, by virtue of its location, Afghanistan sees itself as a center of trade and commerce in the region, providing a land bridge between Central and South Asia and between East and West. With the prospect of peace in the region, Afghanistan envisions playing this role through encouraging regional cooperation and economic integration. Hence, the barriers to this vision in the transport sector need to be recognized and a program for meeting the infrastructure and policy reform needs prepared.

Civil Aviation

International operations. In seeking to achieve the Government's general objectives in the civil aviation sector, it is necessary to consider several constraints to which the sector is subject, especially political ones. Afghanistan's international carrier, Ariana, is a shadow of its former and better days, the 1960s and 1970s. But even in an era when airlines are not the prestige national symbols they once were, and are more widely regarded as normal economic activities subject to normal economic and commercial pressures, few countries, even in the developed world, would willingly let their national airline go out of business.

If at this point Ariana were subjected to open market principles and uninhibited competition, it would quickly go under. Therefore, a policy of support and protection of the airline for a decent period is recommended, while it recovers from the effects of the last 25 years. The development framework for Afghan aviation should be one in which Ariana can be maintained and gradually develop a viable network of services; in which the Government can ensure that Afghanistan has the air communications it thinks adequate in the context of its overall economic policy; and in which it can, as circumstances allow, gradually begin to provide greater scope for competition to develop.

Domestic operations. A similar question arises: whether domestic operations are an economic area that can be left to market forces or a means of building a system of communications that the Government regards as necessary for the revival of the Afghan economy. Some domestic routes may be commercially viable and, perhaps, scope for competition. But it is equally clear that the operation of many of the 22 routes flown by Afghanistan's domestic carrier in the 1970s would have to be regarded as a public service for social and development reasons, rather than a commercially viable enterprise.

As a result, it is recommended that domestic and international services should be kept separate. It does not follow, however, that the provider(s) of domestic services need be state-owned or -operated. If there are entrepreneurs ready to provide a commercial service, even a competitive one, it would be in accordance with the Government's overall objective of maximizing private sector activity to let them try. As the economy develops, and as the road system is restored, conflicting trends may result: some air routes that might flourish in the immediate future might find profitability harder when the road system is improved; this might be especially true of cargo operations. On the other hand, increased economic activity might increase demand on some routes that are not initially profitable. The system that re-

Workers spread bitumen (asphalt) to repave a road in Kabul. The Government is using labor-intensive road maintenance and rehabilitation to generate short-term employment.

might find profitability harder when the road system is improved; this might be especially true of cargo operations. On the other hand, increased economic activity might increase demand on some routes that are not initially profitable. The system that results will need to

- allow the Government to license services on commercially viable routes;
- allow the Government to solicit competitive bids for service routes that are not now viable but that it regards as necessary for social and development reasons; and
- be flexible enough to allow the categorization of routes to change with changes in the economy and other priorities.

It is recommended that domestic aviation policy be based on a preference that Ariana should not necessarily have any privileged rights to provide domestic services, which should be subject to either a licensing procedure or a tendering procedure, depending on whether the routes in question are considered to be commercially viable.

Infrastructure. The list of the airports' infrastructural and operational deficiencies, especially those of the international airports at Kabul and Kandahar, is a very long one and will clearly take some years to carry out. Therefore, the need is to create a policy, and an organization for implementing it, that can cope with a gradual, but possibly quite long, process of returning to normality. The two most relevant objectives for airports policy are decentralization and privatization.

It seems likely that, for some time to come, not enough services will use the regional airports, or possibly even Kabul itself, to make a wholly commercial approach feasible. Airport functions are broadly divided into three broad categories: (i) airside services connection with the operation of the airport itself, such as provision and maintenance of runways, air traffic controls and landing controls, security, and safety; (ii) airside services connection with aircraft operation, such as catering and cargo, passenger, and luggage handling; and (iii) landside services, such as check-in facilities, lounges, restaurants, and shops. Different considerations apply to each of them. Some functions could be offered to the private sector, and some to regional governments and authorities, but their successful devolution would depend on whether sufficient traffic is generated.

Cost Recovery. Two main sources of revenues exist for the civil aviation subsector: aviation revenues are generated through services provided to airlines, and nonaviation revenues involve fees and concessions for catering, car parking, cargo handling, warehousing, and so on. Due to lack of records, it is difficult to assess whether revenues are adequate to cover costs. An assessment of expenditures and potential revenues as well as rationalization of revenues is needed to start the cost recovery process.

Role of the Private Sector. A major role exists for the private sector to participate in the recovery and rebuilding of the civil aviation subsector. Almost all services, including maintenance of the infrastructure and operation, and maintenance of the equipment, can be privatized. Similarly with nonaviation services at the airports, which can also be easily privatized or offered under a concession agreement.

Institutional Structure and Decentralized Management. With its present low capacity and centralized management, MCAT is unable to meet its diverse responsibilities (management, implementation, operation and maintenance of the civil aviation infrastructure, the national airline, the Inter-Continental Hotel and other hotel enterprises, and tourism), and this is having a negative affect on the recovery effort. Two areas of immediate reforms have been identified. First, the SOEs, such as the airline and the hotels, should be commercialized and privatized as early as possible. Second, a human resources

build the capacity of the existing and new staff in airport operations and maintenance, starting with Kabul, Kandahar, and Mazar-e-Sharif and eventually covering the other four major and 15 minor airports.

Sector Development Needs

Based on the assessment undertaken to date, the short-term priorities (0–2.5 years) are quite clear and the medium-term needs (2.5–5 years) can be fairly well defined. However, owing to the constraints that limit access to most areas of the country and the prevailing security environment, it is difficult to formulate a long-term (5–10 years) development framework. The projects identified for immediate needs assessment will serve the purpose of restoring the primary road network and major airports, building the capacity of the relevant agencies to start functioning, and initiating efforts to provide access to population in remote areas to reduce exclusion. To direct the sector and mold the agencies to meet the challenges and vision of the new Afghanistan, a long-term strategy for the transport sector is needed. This requires, among other things, developing a policy framework and institutional restructuring, supported by appropriate legislation and preparation of a sector development master plan. Privatization of SOEs, increasing partnership with the private sector, study of other transport modes, railways and waterways, and cross-border trade facilitation are some of the aspects that would be included in a long-term strategy, to be formulated by 2004.

Roads

Short-Term Priorities (0–2.5 years). As stated above, the immediate objective is to facilitate the growing traffic of humanitarian aid, returning refugees, and necessary trade; remove bottlenecks on the primary road network; and enhance accessibility to remote villages. The proposed short-term investment and technical assistance projects are designed to achieve this objective are identified as follows:

Investment Projects:

- Rehabilitation/reconstruction of Kabul-Jalalabad-Torkham road (227 km).
- Improvement of Kabul–Doshi (174 km) road in the north: rebuild 13 bridges and failed road sections and restore two-way traffic, including the border road connecting Afghanistan with the bridge to Uzbekistan, the railway, and the river port of Termez.
- Restoration of the Salang Tunnel (2.8 km). This project would repair damages to the approach galleries (about 850 meters are missing) and minor damages to the tunnel itself, and restore mechanical ventilation and permanent lighting of the tunnel.
- Rehabilitation and reconstruction of the Pol-e Khomri–Shirkhan Bandar border road (176 km). The Baghlan–Konduz section requires reconstruction and the Konduz–Shirkhan Bandar section needs resurfacing and some reconstruction.

Snow galleries protect traffic on the approach to the 13,000-ft.-high Salang Pass; many of them need replacement or repair.

- Replacement of damaged bridges on the primary road network.
- Reconstruction and rehabilitation of the highly trafficked Kabul-to-Kandahar highway (500 km)—now largely a poor gravel road due to total disintegration of the pavement. The project can be constructed in three sections: Kabul–Ghazni (124 km), Ghazni–Qalat (218 km), and Qalat–Kandahar (132 km).
- Rehabilitation and reconstruction of the Kandahar–Spin Boldak highway (108 km) linking Pakistan and the port of Karachi to the southern and western parts of the country.
- Repairs, rehabilitation, and partial reconstruction of the Kandahar–Herat– Torghundi border road (680km). This road was constructed with a cement concrete base course/

the port of Karachi to the southern and western parts of the country.

- Repairs, rehabilitation, and partial reconstruction of the Kandahar–Herat–Torghundi border road (680km). This road was constructed with a cement concrete base course/surfacing and is severely deteriorated due to old age and lack of timely maintenance.
- Initial rehabilitation of about 1,000 km of key secondary and tertiary roads, especially in rural communities not currently served by the primary road network, using labor-intensive methods.

The water is wide: this bridge on the road between Doshi and Sheberghan has fallen into the riverbed.

Technical Assistance Projects:

- Undertake capacity building and institutional strengthening/reform of the ministries responsible for the transport sector, to restore their functions and enable them to manage and develop the sector to promote international and cross-border trade, and play a central role in the transport sector over the short and long term.
- Undertake an overall review of the transport sector and develop an agreed framework for sector development, including institutional structure, cost recovery and financing.
- Develop the capacity of the MPW roads directorate, possibly through twinning with the roads agency in a country providing funding assistance .
- Undertake capacity building of the local consulting and contracting industry and training of local community contractors, who might include returning refugees and ex-combatants.
- Develop and promote cross-border facilitation for transport of passengers and goods.

Emergency Maintenance: The investments listed above will take time, but given the road network's current condition, immediate actions are needed to facilitate traffic flow . This involves temporary maintenance of the highly deteriorated sections of the roads and winter maintenance over mountain passes, and emergency maintenance for landslides, washouts, and avalanches. A two-pronged approach should be considered whereby, on the one hand, MPW will undertake some of these works with its own-/or external funding agency-supplied equipment, while at the same time some of these works are gradually awarded to develop the local contracting industry. The following TAs (together with funding) are proposed to undertake more detail work and prepare recommendations:

- Establish winter (and emergency) maintenance capability for key mountain range crossings; and.
- Provide intensive maintenance to improve the current driving conditions on failed sections of the primary network, where the traffic presently uses alternative routes, until such time that these road sections can be rehabilitated or reconstructed.

Medium-Term Needs (2.5–5 years). The following activities are proposed for implementation for the medium to long term:

- Construction of the Herat-Sheberghan road link to complete the ring road and improve communication between the western parts of the country and the north.
- Construction/improvements to the Central Afghan Highway (Herat-Chaghcharan-Kabul).
- Construction of the secondary and tertiary road network, providing access to all major population centers and rural communities.
- Setting up concessions for transport sector infrastructure operations and maintenance.

Civil Aviation

Short-Term Priorities (0–2.5 years). Immediate investment priorities for the civil aviation subsector include reopening Afghan airspace for safe international overflights, improving communication links between Kabul, Kandahar, Herat, and Mazar-e-Sharif, and improving and restoring operations of all airports in the country. The TA projects focus on capacity building and reviewing the organizational framework, and pro-

posing restructuring of the civil aviation subsector. The proposed TAs also include expertise on resuming commercial operations of major airports, including negotiating landing rights.

Investment Projects: The following investment and technical assistance projects have been identified as high priority to address the immediate needs in the civil aviation subsector:

- Reopen Afghan airspace for safe international overflights.
- Reestablish communication links between air traffic controls at Kabul, Kandahar, Herat, and Mazar-e-Sharif.
- Rehabilitate the Kabul and Kandahar International Airports and make safety improvements.
- Rehabilitate the Mazar-e-Sharif, Herat, Jalalabad, Konduz, and Chaghcharan domestic airports and make safety improvements.
- Improve pavements at 15 secondary airports.

Technical Assistance Projects:

- Conduct institutional assessment of MCAT and prepare recommendations for providing autonomy to its operations wing.
- Undertake capacity building of existing and new staff in managing operations and maintenance and safety and security of the airports.
- Review and prepare recommendations for commercialization of airports, including expertise to assist in negotiating international agreements on such issues as landing rights.
- Provide assistance from ICAO member countries to establish fees and tariff structure.

Medium-Term Needs (2.5–5 years). The following activities are proposed for implementation for the medium to long term:

- Improve international airports and rehabilitate major domestic and smaller regional airports.
- Expand international and other major airports.
- Privatize the SOEs (airline, hotels, etc.).

CHAPTER III

AID PROVIDERS' COMMITMENT IN THE TRANSPORT SECTOR

The CNA Mission estimates the investment needs for the restoration and reconstruction of Afghanistan's road sector at $650 million for the first 2.5 years, an additional $660 million for the period up to 5 years, and a firther $830 million over the following 5 years (years 6–10), or a total of $2.14 billion for 10 years (Table 4).

Based on the current priorities of the Government, the scenario for investment assistance has also undergone some adjustments. The ongoing infrastructure investments and technical assistance are inidicated in Table 5. Development partners' planned future investments in roads are shown in Table 6 (see also Map 2); development partners' commitments in civil aviation are shown in in Table 7.

Table 4. Ten-Year Transport Sector Investment Needs
($ million)

	Investment Projects	TA Projects	Total Needed
Short Term (0–2.5 years)	653,3	6.3	659.6
Medium Term (2.5–5 years)	660.3	7.5	667.8
Long Term (6–10 years)	832.0	0.0	832.0
Total	2,145.6	13.8	2,159.4

Source: CNA Mission.

Table 5. Development Partner Commitment in the Road Sector

Project	Agency	Duration	Amount ($ million)
Technical Assistance			
Road construction management and policy development	Japan	2003–2004	—
Training in highway engineering for Afghan official in tripartite arrangement with Malaysia	Japan	2003	4.20
Rehabilitation of Economic Facilities and Services Program	USAID	2002–2004	11.95
Economic Governance Program	USAID	2002–2004	1.50
Capacity building for key infrastructure agencies for road rehabilitation/ reconstruction	ADB	2002–2004	2.46
Capacity building for project planning in transport sector	ADB	2002–2004	0.84
Development of framework and legislation for cross-border transport	ADB	2002–2004	0.50
Transport sector review	SIDA	2002–2003	0.80
Design and supervision of Kabul–Jalalabad road	SIDA	2002–2003	3.70
Investment			
Grading of Kabul–Jalalabad road	SIDA	2002–2003	1.30
Temporary bridges for Kabul–Salang road	SIDA	2002–2003	1.10

Table 5. Development Partner Commitment in the Road Sector *(continued)*

Project	Agency	Duration	Amount ($ million)
Technical Assistance *(cont.d)*			
Kabul–Kandahar road (150 km)	Japan	2002–2005	50.00
Kabul–Kandahar road (100 km)	USAID	2002–2003	36.70
Kabul–Kandahar road (200 km grading and paving)	USAID	2002–2005	35.00
Kabul–Kandahar road (200 km grading and paving)	Saudi Arabia	2002–2005	30.00
Kandahar–Lashkar Gah road (43 km)	USAID	2002–2005	15.00
Kabul–Jalalabad (227 km)	EC	2002–2005	80.00
Kandahar–Spin Boldak (105 km)	ADB/JFPR	2002–2004	15.00
Herat–Islam Qila road (123 km)	Iran	2002–2003	—
Kabul–Doshi (182 km) and Pol-e Khomri–Shirkhan Bandar (221 km)	World Bank	2002–2006	69.00
Taloqan–Faizabad (169 km) and Charikar–Bamian (160 km)	World Bank/Italy	2002–2006	23.00
Jalalabad–Torkham (70 km)	Pakistan	2002–2005	—
Pol-e Khomri–Mazar-e-Sharif–Sheberghan–Andkhuoy (392km)	ADB	2002–2006	83.00
Naizabad–Jeyratan (55 km)	ADB	2002–2006	

Notes: — = not available; ADB = Asian Development Bank; EC = European Commission; JFPR = Japan Fund for Poverty Reduction; SIDA = Swedish International Development Csooperation Agency; USAID = United States Agency for International Development.
Source: CNA Mission.

Table 6. Development Partner Planned Assistance in the Road Sector

Road Section	Length	Agency
Herat–Meymaneh– Sheberghan	615	ADB and Iran
Herat–Torghundi	116	Afghanistan
Andkhuoy–Aqila	35	ADB
Delaram–Zaranj	216	India

Source: CNA Mission.

Table 7. Development Partner Commitment in the Civil Aviation Sector

Project	Agency
Kabul International Airport	
Runway and Taxiway Rehabilitation	WB (financed)
Operation Equipment	WB (financed)
Air Traffic Control Equipment Improvement	Japan (financed
New Terminal Building	Japan (planned)
Rehabilitation of Regional Airports	ADB (funding proposed for 2004–05
Training of MCAT Staff	ADB (financed)

Source: CNA Mission.

Map 2. Major Development Partner Commitments to Afghanistan's Road Sector