

CHAPTER 8

LEGISLATION, FINANCE AND OPERATION

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Transport master plan, or any action of government, cannot be implemented and becomes meaningless if it is not legally justified and financially supported. This chapter describes the present legal and financial situation related to transport.

8.1 LEGISLATION

8.1.1 Existing Legislation

Many laws and regulations are related to the problems of transport. Main laws and regulations commonly issued/promulgated with regard to the policy/administration of transport system are as listed below:

Law/Regulation	Main Items to be Covered
Transportation Business Law	Taxi business, bus business, trucking business, para-transit business
Traffic Law Road Law	Traffic rule/regulation, driver's license, compulsory insurance Power and responsibility of road administer, geometric design standard
Regulation of Vehicle	Safety requirement, vehicle inspection, vehicle registration, parking place, weight and dimensions
Urban Planning Law/Building Code	Regulation on land use/development, parking facility for large building, prohibition of building with no access road

In Cambodia, the following major laws and regulation have been issued.

Subject	Laws of Cambodia
Traffic	Law on Overland Traffic, 1991 (New law is under preparation)
Regulation of Vehicle	Sub-decrees for registration procedures and taxation
Urban Planning	Laws on the Country Planning, Urbanization and Construction, 1994 Land Laws, 1992, Land Acquisition Law (under preparation) Sub-decree on Construction Permit

These major laws and regulations related to transport are summarized in Appendix 8-1.

Principal laws/rules which are considered to be necessary but have not been promulgated are as follows:

- (1) Law on Transport Services (Both for Passenger and Cargo Transport)

This type of legislation is necessary to secure required level of services of transportation businesses. The main items to be to be stipulated are;

- (i) Safety measures including vehicle maintenance and health control of drivers, and

(ii) Outline of operation including route and fare level.

Currently, bus services are controlled by administrative actions such as issuance of permit for bus operation.

(2) Road Law

Road is an important public asset. Any obstruction to its function may infringe public benefit. In case of the Study Area, illegal usage of road, such as parking on sidewalk, are hindering safe and smooth traffic flow as described in Chapter 7. This illegal usage needs to be rectified with legal authority. The law is also necessary to clearly define the legal responsibilities of the Government as a road administrator to let the Government make full effort to meet the requirement as well as to lay firm basis for the budget allocation.

(3) Building Code for Mandating Provision of Parking Space

Illegal on-street parking and on-sidewalk parking is hampering safe and smooth traffic of both vehicles and pedestrians. One of the effective measures for such illegal parking is to mandate the provision of parking space in each building.

Although there are no stand-alone laws/regulations on the subjects described in (1) to (3) above, these subjects are currently managed with the existing relevant laws/regulation.

The following subsections describe practical systems to support/supplement the existing laws and regulations.

8.1.2 Vehicle Registration Systems and Inspection

Data of vehicle registration are basic information for formulating policies of transport. The revenue of registration can be utilized for projects/measures of transport.

Motorcycle registration procedure

The new motorcycle registration procedure was introduced in June 2000.

The applicant who owns a motorcycle is required to pay tax, which includes basic tax (20%), special tax (0 to 10%) and VAT (10%) in accordance with the schedule set out by the Tax Authority of Ministry of Economy and Finance (MEF).

With an official receipt for the payment of such tax, the applicant makes an application at the motorcycle registration office for the registration and plate with the payment of (a) The new motorcycle certificate & new plate (34,500 riels) (b) The new certificate for old plate (21,500 riels).

Vehicle registration system

The same procedure is applied to vehicles as to motorcycles. In the case of vehicles the basic tax rate is varied from 30% to 120% and the special tax rate is 20 to 30% in accordance with the year of production and displacement volume of the engine. VAT is 10%. Fee for registration and number plate is US\$100.00 for passenger/commercial vehicle. Change of ownership registration costs US\$170.00 for a model produced after 1996, and US\$140.00 for a model produced in and before 1995.

Inspection of vehicle

Inspection of vehicle is made when user/owner registers the vehicle at the registration office. No periodical inspection is currently made. Inspection items are engine number, body number, chassis number, color of the body, year of the model and driver position.

8.1.3 Driving License System for Car and Motorcycle

One of the main problems of the traffic in the Study Area is undisciplined driving behavior. Good

iving license system is one of the keys to improve driving behavior.

Driving Test and License costs US\$50.00. Driving School for one month and driving license costs US\$80.00. The school gives the applicant four sessions of lectures and driving practice.

Article 30 of the Present Traffic Law (1992) stipulates five kinds of Driver's License

- (a) Driver's license for motorcycles: The bearer of this license can drive scooters and motorcycles with engine capacity of 100 cm³ and over. The bearer must be 18 years old or more
- (b) Driver's licenses for small cars or tourist vans and medium buses with gross weight less than 3,500 kg: The holder must be 18 years old and above
- (c) Passenger bus license: The bearer of this license can drive buses with gross weight of 3,500 kg and over. The driver must be 22 years old or more
- (d) License for heavy van: Any person who drives a van with gross weight of 3,500 kg and above requires this license. The driver must be 22 and above
- (e) License for farm tractor: The bearer of this license can drive a tractor with or without trailers. The driver must be 18 years old or more.

For construction equipment, the driver has to hold a truck license and a certificate showing the capability of using the said construction equipment issued by the employer.

8.1.4 Compulsory Insurance

One of the measures to alleviate the misery of traffic accident is to establish monetary compensation system.

The new insurance law was promulgated on July 25, 2000. The Law stipulates and introduces, for the first time, compulsory insurance for motor vehicle owners and operators of passenger transport businesses in articles No. 36 and 42 of the Traffic Law. Details such as type of commercial motor vehicle and means of transport that requires to be insured are not officially announced yet.

8.1.5 Penalties and Fines on Violation of Traffic Regulation

Revenue of penalties and fines for traffic violation can be a source of fund for projects/measures of transport.

The present Traffic Law stipulates penalties and fines in Article 43 and Articles 46 to 61 in Chapter 6 (penalty provision on violation of traffic regulation. Article 43 defines the authorities who determine the fines for traffic violations as shown in Table 8.1-1. The fines are added the state budget after setting aside 40% for rewards to traffic police officer or traffic police units. Details of penalty provision on violation of traffic regulations are shown in Appendix 8-2.

Table 8.1-1 Competent Authorities and Fines to Solve Traffic Violations

Competent authorities	What is entitled	Fines
Traffic Police Officer	Instruction and warning	From 500 riel to 1,500 riel
Traffic Police Office	Compensation of material damages (If the compromise is not reached, the file shall be sent to provincial or Municipal police department to make decision.)	From 1,501 to 12,000 riel
Provincial or Municipal Police Department	Dispossession of driver's licenses set by the Ministry of Interior Making a compromise about the compensation of material damages (If the compromise fails, the file shall be sent to the Provincial or Municipal Court.)	From 12,001 riel to 40,000 riel

Source: Law on Overland Traffic, 1992 (translated by The Study Team).

8.2 INSTITUTIONAL STRUCTURE AND FUNCTIONS

8.2.1 The Government

There are a total of 26 ministries in the Government of Cambodia as shown in Appendix 8-3-1. The major Governmental Organizations related to the urban transport sector are shown in Appendix 8-3-2.

The Government Budget and Finance

The Budget and Finance of the Cambodian Government is presented in the Table 8.2-1. Because of a shortage of domestic financing, the Government budget is heavily reliant on foreign financing, especially on the Official Development Assistance by bilateral donors and multilateral agencies, such as the World Bank and Asian Development Bank (ADB). Table 8.2-2 shows a summary of External Assistance Disbursement by Donors.

Table 8.2-1 Government Budget and Financing

Unit: Billion Riel unless otherwise indicated

Category	Year	1995	1997	1998	1999	2000	2001 Plan	2002 Plan	2003 Plan
Tax Revenue		445.5	597.4	679.4	961.4	1060.0	1213.0	1567.5	n.a.
of which custom duties		320.8	347.3	354.0	433.0	373.0	356.0	n.a.	n.a.
Non-tax revenue		189.8	271.3	230.1	354.0	359.0	445.0	610.5	n.a.
Total Revenue		643.0	881.0	942.7	1330.0	1505.0	1803.0	2193.0	2540.4
Current Expenditure		698.6	815.9	933.9	1095.0	1315.0	1490.0	1650.0	n.a.
of which defense		398.2	424.3	453.4	468.1	455.0	469.1	484.8	n.a.
Capital Expenditure		511.1	451.9	630.0	223.6	1020.0	1260.0	1780.0	2305.0
Total Expenditure		1200.6	1267.8	1563.8	1319.5	2335.9	2750.0	3430.0	4135.0
Overall Balance		-557.7	-386.8	-621.1	10.5	-830.0	-947.0	-1237.0	-1594.6
Financing: Domestic		-1.6	-61.0	120.4	223.6	320.0	350.0	580.0	745.0
Financing: Foreign loans		559.3	447.8	509.5	0.0	700.0	910.0	1200.0	1560.0
Ratios (% of GDP)									
Revenue		8.9	9.7	8.7	11.1	11.6	12.5	13.7	13.9
Expenditure		16.7	13.9	14.4	11.0	17.9	19.1	21.5	22.6
Current		9.7	9.0	8.6	9.2	10.1	10.3	10.3	n.a.
Defense/Security		5.5	4.7	4.2	3.9	3.5	3.3	3.0	n.a.
Overall Balance		-7.7	-4.3	-5.7	0.1	-6.4	-6.6	-7.7	-8.7
GDP, Current (Billion Riels)		7579	9149	10548	11646	11923	13900	15973	18300

Source: Current Revenue and Expenditure 1994 -2003, Ministry of Economy and Finance, and Socio-Economic Development Requirements and Proposals, (May 2001)

Table 8.2-2 Summary of External Assistance Disbursement by Donors

Unit: Million US\$

Donors	1995	1997	1998	1999	2000 Provisional	2001 Planned
Multilateral Donors	169.6	126.0	164.6	155.8	202.3	266.5
Bilateral Donors	328.1	202.8	212.6	203.2	221.1	206.6
NGO	21.1	49.9	56.1	55.0	55.0	55.0
Totals	513.3	383.2	433.3	414.0	478.4	528.4

Source: Socio-Economic Development Requirements and Proposals May 2001.

Cambodia Development Resource Institute reports in their Working Paper No. 14 (p31) that Official Grants are estimated to be US\$215million, Official Loans (net) US\$96million and Foreign Direct Private Investment US\$180million for the year 2000.

In this Study, these figures are adopted to prepare the financial plan as stated in Chapter 19.

Ministry of Public Works and Transport (MPWT)

Sub-Decree No.14 dated March 3, 1998, has newly declared the duty and organization of the Ministry of Public Works and Transport (MPWT). According to the sub-decree, the MPWT has the following duties, (though a part of the duty has been transferred to the Ministry of Urbanization and Construction created under the new Government in December 1998):

- (i) Organize the practice of national policies on general public construction by law, and cooperate with other institutions for the development of the nation;
- (ii) Maintain and organize the infrastructure such as roads, bridges, ports, railways, waterways and public buildings;
- (iii) Make regulations on activities of infrastructure such as ports, railways, waterways;
- (iv) Make regulations on and control transportation by roads, railways, waterways;
- (v) Participate and cooperate in making laws and regulations which are related to construction;
- (vi) Other constructions that are to be achieved by the Royal Government of Cambodia; and,
- (vii) Cooperate with the Secretariat of Civil Aviation and all construction on airways.

A summary of annual budget allocation in the past seven years is presented in the Table 8.2-3. Out of its capital expenditure indicated in Table 8.2-1, there are no figures for transport sector investment in Phnom Penh.

Table 8.2-3 Budget of MPWT

Unit: Riel million

Category	1994	1995	1996	1997	1998	1999	2000
Salaries & Indemnities	2,286	1,315	1,175	1,140	1,363	1,467	1,659
Operational Expenditure and Small Repairs	1,562	605	585	710	700	1,000	1,760
Public Administration and Subsidies	2,973	2,245	2,950	2,000	1,400	36,700	37,500
Social & Cultural Expenditure	64	65	50	40	30	20	70
Capital Expenditure	159,120	107,500	12,987	12,340	44,990	0	0
Total	166,005	111,730	17,747	16,230	48,483	39,187	41,039

Source: Document presented by Department of Accounting and Finance, Ministry of Public Works and Transport

8.2.2 Municipality of Phnom Penh (MPP)

The organizational structure of Municipality of Phnom Penh is shown in Figure 8.2-1.

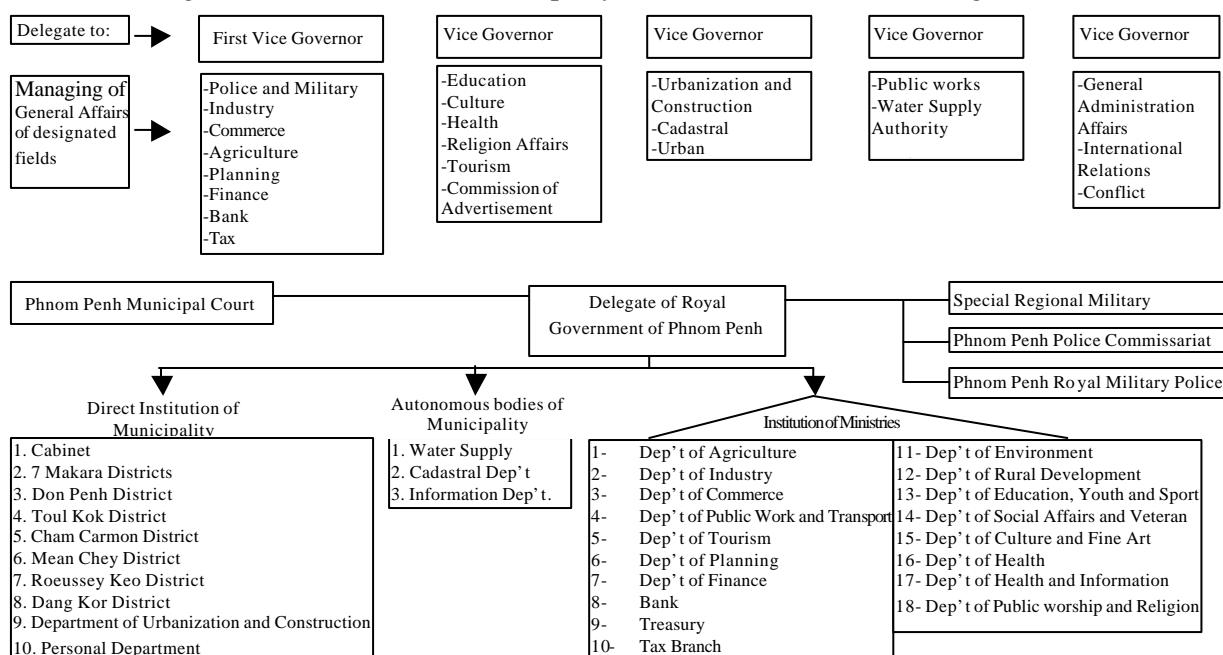


Figure 8.2-1 Organization Chart of the Municipality of Phnom Penh

The Municipality of Phnom Penh is presently managed by a royally appointed First Vice Governor. There are one first vice-governor and four vice-governors each responsible for specific tasks. The Chief of Cabinet is under the First Vice Governor, and there are five Deputy Chief of Cabinet under the Chief of Cabinet.

The Municipal Court, Special Regional Military and Municipal Police are under the direct control of the First Vice Governor. All the other functions of the Municipality are under the Deputy Chief of Cabinet or directly under the Chief of Cabinet. There are a total of 18 line ministry institutions, namely 16 departments, the Tax Office and Bank. Direct Municipal institutions are an autonomous body comprised of PPWSA (Phnom Penh Water Supply Authority), Cadastral Office, Department of Urbanization and Construction, administrative offices, and seven (7) Districts (Khans).

All the line ministry departments are under the control of both Vice Governors of the Municipality and the Ministers of the Government. However due to the strong independence of the Phnom Penh Municipality, each department is strongly influenced by the Municipality.

Of the line ministry departments, the Department of Public Works and Transport (DPWT) is the agency responsible for urban transport of the Municipality.

The organization related to urban planning is the BAU (Bureau des Affaires Urbaines). BAUs are the implementing arm of the CATUC and the BAU for Phnom Penh is only the active one at present. The BAU is in charge of inter-sectoral coordination and urban planning in Phnom Penh. The BAU is designated to prepare urban planning documents and carry out technical coordination with provincial BAUs.

The BAU is managed independently of the other municipal government units, under the authority of the President of CNATUC. However, this office is located at the Municipality and does interact with and seek approval from the Municipality of Phnom Penh for its initiatives. Since 1995, the Phnom Penh BAU has received technical assistance from the APUR (Atelier Parisien d'Urbanisme = Town Planning Agency for Paris), financed by the European Union.

The Department of Urbanization and Construction is a department under the Municipality of Phnom Penh. It is directly under the Chief of Cabinet and controlled by no line ministries. This department participates in city planning and land use in the Municipality of Phnom Penh.

There are seven (7) Khans in the Municipality of Phnom Penh, four (4) (Dau Penh, Tuol Kork, Prampi Makara, Chamkar Mon) inside the inner dike and three (3) (Dang Kao, Mean Chey, Russey Kaeu) outside. A Khan is divided into Sangkats (Communes). (A sangkat usually consists of 1,000 to 2,000 families.) In total, there are 76 Sangkats in Phnom Penh. Sangkat officials are involved in land observations. A land observation is the process by which property boundaries are documented. This is a necessary step for selling property or for the solution of disputes regarding legal property ownership.

There are a total of 11,241 members of staff in the Municipality of Phnom Penh as of May 1998. The Municipality of Phnom Penh is as dependent on the national budgeting process as the provincial governments.

The budget for the line Ministry Institution as presented in the organizational structure is decided and allocated by each ministry. The budget of the Municipality of Phnom Penh is shown in Table 8.2-4.

Table 8.2-4 Budget of Municipality of Phnom Penh

Unit: Million Riel

Item	1994	1995	1996	1997	1998	1999	2000
Salaries & Indemnities	8,425	8,852	8,423	8,452	9,666	13,055	13,892
Operational Expenditure and Small Repairs	3,724	1,720	2,338	2,081	2,681	2,855	3,045
Public Administration and Subsidies	342	1,381	2,159	2,615	2,399	0	0
Social & Cultural Expenditure	4,194	4,679	7,280	6,022	5,678	8,026	9,327
Capital Expenditure	907	455	1,985	481	0	56	0
Total	17,593	17,099	22,185	19,651	20,423	23,991	26,264

Source: Document presented by DPWT, Municipality of Phnom Penh

The total budget amount of 17,593 million riel in 1994 decreased to 17,099 million riel in 1995. The budget increased to over 20,000 million riel in 1996. Of the total budget, salaries and indemnities share approximately 50%. This is a large burden for the Municipality that lacks the resources to address even the most basic infrastructure. On the contrary, the budget allocated to the capital expenditure is very small. Operational expenditure and small repairs is maintained at 12% of the total budget.

Department of Public Works and Transport (DPWT), MPP

The Department of Public Works and Transport (DPWT) is responsible for development, operation and management of infrastructures in the Municipality. The DPWT of MPP is the largest of the provincial level Public Works Departments. The DPWT is under the dual supervision of the Ministry of Public Works and Transport (MPWT) and of the Vice Governor of the MPP in charge of infrastructure.

The organizational structure of the DPWT is presented in Figure 8.2-3. There are four (4) Deputy Directors responsible for Public Works, Transport, Solid Waste & Drainage/Sewerage, and Administration/Finance.

The job descriptions of the Divisions, Offices and Authorities are yet to be prepared, and, therefore, the function and responsibility of each Division/Office/Authority is not clearly defined. Generally, however, matters related to urban transport are handled by the Divisions/Offices/Authorities as following:

- Road and bridge (maintenance, rehabilitation etc.): Road and Bridge Division
- Traffic Management : Transport Office, Pound Division and Public Lighting Division in collaboration with Phnom Penh Traffic Police
- Public Transport : Public Transport Unit of Transport Office (with very limited capacity)

Two specific transport matters under the jurisdiction of DPWT, MPP are handled as follows:

- Registration of motorcycles : Motorcycle Registration Authority
- Bus operation between Phnom Penh and Ho Chi Min City, Vietnam Transportation Authority of Phnom Penh

Overall planning and financial matters are the responsibility of the Finance and Planning Office which reports directly to the Director, while general planning of engineering matters, especially those of road and traffic, are handled by Public Works Office.

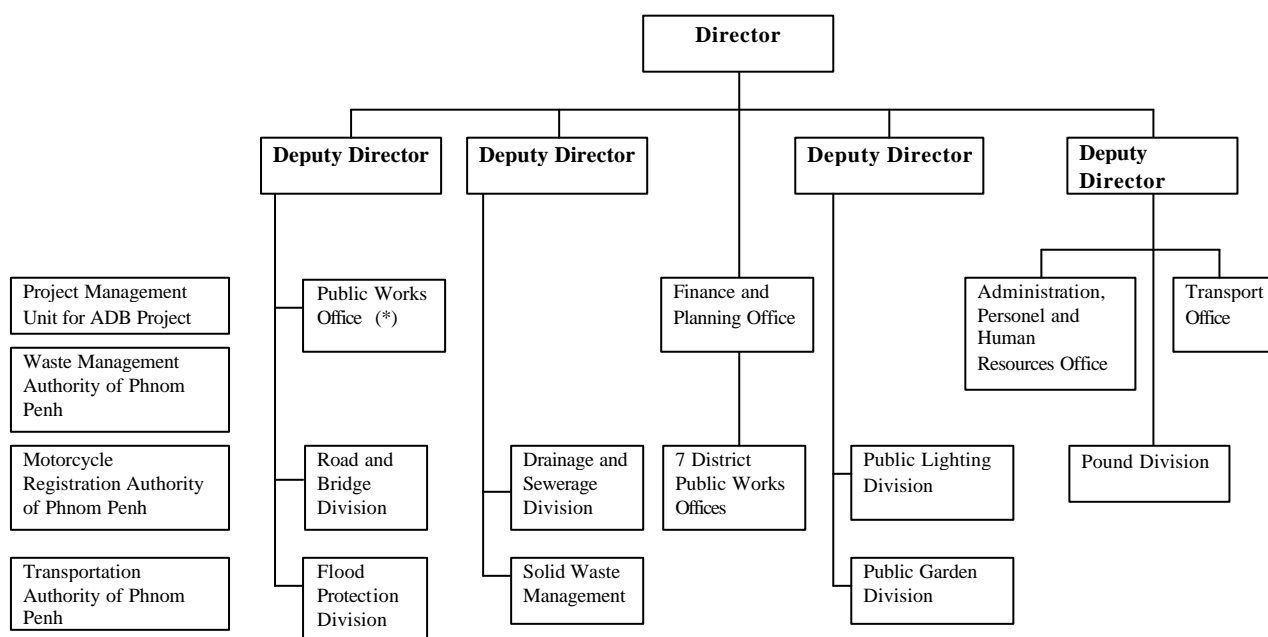
Decisions related to the DPWT sometimes are made outside of the Municipality. Officials of the DPWT are appointed by the MPWT. All funds for salaries, materials and equipment come from the MPWT.

The Ministry, based on annual plans, prepares all investment budgets, the recurrent budget, and the operation budget. Technical advice and guidance are also given by the MPWT.

There is, however, considerable influence from the MPP due primarily to the independent role played by the Municipality prior to 1993.

The number of DPWT staff in January 2001 totaled 1,293, of which full-time staff numbered 558. The details of the staff are shown in Table 8.2-6.

The present DPWT staff capacity is not enough given the responsibility of the DPWT. To cope with the problems of transport/traffic which are growing every year, the capacity of DPWT needs upgrading. (see Chapter 18 for capacity development).



As of July 05, 2001

Figure 8.2-3 Organization Chart of Department of Public Works and Transport, MPP

Remarks: (*) Former "Technical and International Relations Office" was renamed.

The DPWT budget for the past seven years is as shown in Table 8.2-5:

Table 8.2-5 Budget of DPWT

Unit: Million Riel

Item	1994	1995	1996	1997	1998	1999	2000
Salaries & Indemnities	673.00	535.70	673.00	750.00	761.30	920.40	1,130.00
Operational Expenditure and Small Repairs	115.00	120.00	115.00	85.00	36.00	244.00	8,801.00
Public Administration and Subsidies	0.00	0.00	0.00	0.00	0.00	0.00	558.00
Social & Cultural Expenditure	7.50	8.40	7.50	20.00	5.70	108.69	201.00
Capital Expenditure	1,384.70	1,335.94	249.31	668.80	0.00	55.60	0.00
Total	2,180.20	2,000.04	1,044.81	1,523.80	803.00	1,328.69	10,690.00

Source: Data presented by DPWT.

The budget for financial year 2000 is drastically increased compared with those of previous years. This is due to the implementation of the infrastructure projects financed by the international aid agencies including the World Bank. Accordingly, it is expected that a similar level of budget will be available for the next few years. Large-scale projects cannot be implemented if such financial aid is not available.

Table 8.2-6 Staffing of DPWT, MPP as of January 2001

Unit of DPWT	Director	Deputy Director	Division Chief	Vice Chief	Engineer	Technician	Accountant	Labor	Total	Full Time	Part Time	Remarks
Department	1								1	1	0	
Finance & Planning Office			1	2	0	2	0	13	18	17	1	
District Public Works Offices			7	7	0	0	0	10	24	24	0	
Sub Total	1	0	8	9	0	2	0	23	43	42	1	
Dpty Dir. For Lighting & Garden		1							1	1	0	
Public Lighting Div.			1	2	2	1	0	25	31	31	0	
Public Garden Div.			1	3	0	3	0	529	536	110	426	
Sub Total		1	2	5	2	4	0	554	568	142	426	
Dpty Dir. For Transport		1							1	1	0	
Adm. Personnel & Resources Office			1	1	0	4	0	26	32	32	0	
Transport Office			1	4	0	4	8	89	106	68	38	
Pound Section			1	2	1	2	0	14	20	20	0	
Sub Total		1	3	7	1	10	8	129	159	121	38	
Dpty Dir. For Roads & Bridges		1							1	1	0	
Road and Bridges Div.			1	3	4	28	8	193	237	101	136	
Technical and Intl Rel. Office			1	2	13	26	0	5	47	47	0	incl. Pjt Mgm't Unit
Dump & River Deck Div.									0			
Sub Total		1	2	5	17	54	8	198	285	149	136	
Dpty. Dir. For Drainage & Waste		1							1	1	0	
Solid Waste Management Div.									0			sub-contract
Drainage & Sewerage Div.			1	2	0	8	2	224	237	103	134	
Sub Total		1	1	2	0	8	2	224	238	104	134	
Total	1	4	16	28	20	78	18	1,128	1,293	558	735	
Project Management Unit			(1)	(1)	(3)	(1)	(5)	(0)	(11)	(11)	(0)	

Source: DPWT, MPP, Jan. 2001

8.3 ADMINISTRATION AND BUDGETARY SYSTEMS

Procedure to determine the budget of DPWT

The MPWT authorizes funds for the operating and capital budgets used by the DPWT. This includes salaries, equipment and materials. The DPWT prepares annual budgets, reviews them with the Governor and after receiving support at the Municipal level makes a submission to the Directorate General of Public Works and Construction of the MPWT. Standard unit costs of material and labor are used in preparing and reviewing budget estimates. Once the proposed budgets from all provincial agencies are reviewed and accepted at the technical level, they are reviewed by the Department of Accounting and Financing of the MPWT and ultimately submitted to the Ministry of Economy and Finance. The process is time consuming and has caused substantial delays in the past.

Procedure to determine the budget of MPWT

The line ministries shall prepare the sectoral public investment projects and programs in cooperation with the Ministry of Planning and Council for the Development of Cambodia (CDC), and are responsible respectively for the implementation of their relevant projects and programs.

In the management of the public sector investment, the roles and responsibilities of CDC are the following:

- (1) CDC is the coordinator for setting the strategic and conceptual frameworks and the public investment policies as well as setting up the priorities for public investment projects for the medium-term and for one year.
- (2) The Ministry of Foreign Affairs and International Cooperation shall be the diplomatic window.
- (3) The Ministry of Planning shall prepare the 5 Year Plan and the public investment program, in cooperation with the relevant ministries and institutions.
- (4) The Ministry of Economy and Finance shall prepare the macroeconomic framework for the medium-term and the budget for implementing the annual public investment programs and shall control the allocation of financing.

The World Bank is now extending a Technical Assistance to MPWT for Institutional and Capacity Building under IDA credit for Road Rehabilitation Project. It includes some important points which will affect in the near future the planning, organizing, directing and controlling road construction and maintenance in Phnom Penh Municipality.

8.4 TRANSPORT SECTOR INVESTMENT

8.4.1 Public Sector Investment

According to “Socio-Economic Development Requirements and Proposals, 2001 - 2003” (May 2001) prepared for and presented to the Donors Meeting by the Royal Government of Cambodia, public sector investment allocated to transport sector for the period 2001 to 2003 amounts to about US\$364million or 24 percent of the total Public Investment Program (PIP), of which about US\$255million (70%) is for the roads sector.

The Public Sector Investment for Transport Sector is summarized in Appendix 8-4.

The sub-sector allocation of total project cost (total US\$872.7million for the period 1998 to 2003) is; for Road sector US\$656.5million or 75.2%, Rail sector US\$86.4million or 9.9%, Ports and Waterways sector US\$110.9million or 12.7%, and Aviation sector US\$18.9million. or 2.1% respectively. National road rehabilitation and reconstruction projects are a major portion of the action plan. In this plan, only one project for the Municipality Phnom Penh appears in the list.

Major investments in the roads sector include the ongoing construction of a bridge over the Mekong River at Kompong Cham with the assistance of Japan, Asian Highway Phase I (NR1, Neak Luang-Boader), and Rural Infrastructure Improvement with the assistance of ADB. (See Appendix 8-4).

8.4.2 Private Sector Participation

The current situation of private sector participation in the transport sector on road, land transportation and airports is described in Appendix 8.5.

With regard to Build, Operate and Transfer (BOT) arrangements undertaken in transport infrastructure, there is a 6.2 km 2-lane toll road for trucks and other heavy vehicles, running in the east-west direction to the south of Pochentong Airport, Phnom Penh. The road was constructed and is operated by a private investor on a BOT arrangement. However, the pavement condition of this road has extensively deteriorated with many pot holes occurring along the road. The road operator has made little attempt to maintain the road and repair the pavement deterioration. It can be said that BOT arrangements will not be successfully introduced into the transport sector should there be no obligation for operators to properly maintain the works to ensure a satisfactory level of service.

The principal development strategies for private sector participation in the transport sector set forth by the Socioeconomic Development Plan emphasize that private investment in transport infrastructure and operation be promoted and expedited ensuring a high quality of standards and adherence to the operational regulations, management and procedures for convenience and safety of the users. In drawing up a financial package classification, the cost distributions for construction and operations as well as maintenance between public and private sectors shall be carefully taken into account.

There are four (4) major types of financial package for private sector participation in the transport sector as described below:

Type 1: Involvement of Private Resources with Government Responsibility

Various types of private resources are to be involved for financing the transport infrastructure development project, but construction, operation and risk guarantees are responsibility of the government;

Type 2: Private Finance with Government Involvement

The investment required for the infrastructure development project is financed with private capital. Construction of the facility is to be executed by the private bodies, but in view of the nature of the facility to be of public service, the government may be fully or partly responsible for operation and management;

Type 3: Private Finance with Government Guarantee

Financing, construction, operation and management of the infrastructure facility shall be the responsibility of the private bodies. Guarantee may be provided by the government; and

Type 4: All-Private Involvement

Financing, construction, operation including maintenance and management of the infrastructure facility and services shall be exclusively executed by the private sector. This type of solution is feasible under the conditions that the private investment project can earn enough profit and at the same time public service requirements are complied with and warranted.

The BOT scheme, which may fall into the Type 3 or Type 4 financial package depending on guarantees to be provided by the government, is the typical practice for transport infrastructure development projects. The so-called “Build, Transfer (BT)” scheme may be categorized as Type 2 and Type 1, but this scheme has not yet been put into practice for infrastructure developments projects.

8.5 PROBLEM IDENTIFICATION AND EVALUATION

8.5.1 Legislation and Institutional Structure

(1) Legislation

- The laws are promulgated, but the sub-decrees which provide details of the enforcement are not announced and the expected effects of the legislation therefore is ineffective.
- New Traffic Law is being prepared to cope with the present situation, but has not yet been promulgated.
- New Insurance Law which mandates vehicle insurance has been promulgated. However decrees or orders stipulating the details of the Law have not been issued and the Law is not effective in reality.
- There is not a rule to mandate vehicle inspection except at the time of registration and the condition of a vehicle cannot be checked. As a result, vehicles in unsafe condition are allowed to operate.
- There is no data base system for vehicles and drivers.

- There is no written rule on public transport services.
- There is no regulation on building to mandating provision of parking space.

(2) Institutional Structure

The identified problem areas facing the DPWT in connection with the implementation of the projects proposed in the Study are as follows:

- Insufficient budget allocations for improvement and maintenance of the transport infrastructure facilities.
- Unclear goals and unclear responsibilities of the middle management and engineering (engineer and technician) levels,
- Inadequate legislation for decentralization to improve revenues, including land law,
- Improper organizational structures to match the changing economic and social environment,
- Insufficient technical skills on each specific field at the engineering level,
- Poor physical working conditions of the personnel at lower levels,
- Low motivation and morale of the personnel at lower levels, and
- Insufficient dissemination of the information on DPWT activities to the citizens.
- Overstaffing and insufficiency in competent staff.

8.5.2 Investment and Financing

(1) Public Investment

- The Municipality of Phnom Penh does not have its own fund to construct and maintain the transport infrastructure. The Ministry of Public Works and Transport plans and executes the transport projects.

(2) Private Direct Investment

- There is no one-stop law for foreign direct investment.

(3) Independent and Self Financing

- The size of domestic financing in the government budget is still small compared with foreign financing (Official Assistance) although it is becoming larger due to the introduction of VAT. In addition the Municipality does not have autonomy over the budget, tax and other revenues.
- The road sector has potential to generate financing resources such as road construction tax on gasoline, roadside parking fee, registration fees and fines. However, it has not been implemented.

CHAPTER 9

ENVIRONMENTAL CONDITIONS

CHAPTER 9

ENVIRONMENTAL CONDITIONS

9.1 ENVIRONMENTAL LEGISLATION

Currently, the Royal Government is reviewing the legislation system regarding the requirements of environmental management. At present there is one environment law, which is:

- Law on Environmental Protection and Natural Resource Management

This law was approved by the National Assembly on December 1996 and issued and distributed on January 1997. In addition, there are the following three sub-decrees, which are issued, based on the approval of the Prime Minister:

- Sub-decree on Environmental Impact Assessment Process
- Sub-decree on Water Pollution Control
- Sub-decree on Solid Waste Management

There is also the following sub-decree, which is still a draft under preparation:

- Sub-decree on Air and Noise Pollution Control

The Ministry of Environment (MOE) prepared declarations and guidelines for the process of environmental impact assessment and other related fields, which include:

- Declaration on Guideline for Conducting Environmental Impact Assessment
- Guideline for Conducting Environmental Impact Assessment Report
- Declaration No. 1033 on Protected Areas
- Guideline for Conducting Water Pollution Control
- Guideline for Conducting Solid Waste Management
- Declaration on Providing Duties to Provincial and City Environment Department to Implement Sub-decree on Water Pollution Control and Solid Waste Management
- Declaration on the Organization and Function of the Ministry of Environment
- Declaration on the Organization and Function of Provincial and City Environment Department

In other related fields, there is also a law and sub-decrees with the special purpose of protecting the cultural heritage, especially the region of Siem Reap, which are:

- Law on the Protection of Cultural Heritage
- Sub-decree on the Establishment of Protected Cultural Zones in Siam Reap /Angkor Region
- Sub-decree on the Establishment of a National Authority for the Environment Protection and Management of Siam Reap / Angkor Region

The government has adopted the Law on Land Use Planning, Urbanization and Construction, all with a view to insure the effective control of such activities and for maintaining the environmental quality. In response to some weakness in existing forestry laws, while awaiting for the adoption of a new draft forestry law, the government has passed many ad-hoc laws intended to suppress activities deemed detrimental to the government. These laws affected the export of forest products, log marking practices, responsibility for enforcement and rights to possess or import logging equipment.

Regarding the proper management of protected areas, the Land Law was issued in 1992 to liberalize the grant of use rights in land. On the mining and petroleum sector, the government is striving to create a proper legal framework to regulate both sectors by requiring firms to carry out

environmental and social impact assessments before conducting petroleum or mining operations. The following sections present a summary for related laws and decrees.

The following environmental law and sub-decrees are directly related to the projects expected to be developed under the transport master plan for Phnom Penh. The master plan as a whole, and the projects need to be designed to meet the requirements stipulated in the law and sub-decrees.

9.1.1 Environmental Law

The Law on Environmental Protection and Natural Resource Management was issued in January 1997 with the following purposes as stated in the general provisions of the Law:

- To protect [and] promote environmental quality and public health through the prevention, reduction and control of pollution
- To assess the environmental impact of all proposed projects prior to the issuance of a decision by the Royal Government
- To insure the rational and sustainable conservation, development, management and use of the natural resources of the Kingdom of Cambodia
- To encourage and enable the public to participate in environmental protection and natural resource management
- To suppress any acts that cause harm to the environment.

Drafting of the Law took approximately three years with various versions and it prevails over other laws or legal instruments related to the protection, conservation and management of natural environments. The Law has eleven chapters in total, six of which are the key to environmental protection. Until the end of the year 2001, the government may extend, for activities presently in process, the period to comply with a specified sub-decree on the prevention, reduction and control of airspace, water [and] land pollution, noise and vibration as well as toxic substances, and hazardous following a proposal of the MOE.

9.1.2 Sub-Decree on Environmental Impact Assessment

This sub-decree was issued on 11 August 1999 under the number of 72 ANRK BK. It contains eight chapters and one annex. Chapter 1 gives the objectives of the sub-decree, which are:

- To determine an environmental impact assessment (EIA) on all projects and activities undertaken by the private or public sector and examined and evaluated by MOE before being submitted to the Royal Government for decision
- To define the nature and size of the proposed, existing and in-process activities undertaken by both private and public sector which are subject to environmental impact assessment;
- To encourage public participation in the environmental impact assessment process in recognition that their concerns should be considered in the project decision-making process.

The MOE shall evaluate and review the environmental impact assessment reports in collaboration with other government ministries and agencies concerned. In addition, the MOE will conduct surveillance, monitor and take actions to ensure that the environmental management plan, described in an approved EIA report, is implemented by the project owner both during project construction, operation and closure. A summary of the EIA general process applied by the MOE for central projects and district/municipal environmental departments for local projects is shown in Figure 9.1-1.

9.1.3 Sub-Decree on Air and Noise Pollution Control - Draft

This sub-decree is still under preparation and the following description is based on the draft of the sub-decree. It contains eight chapters and eight annexes. The general provisions of the sub-decree state that the purpose of the sub-decree is to protect the environmental quality and public health from air pollutants and noise pollution through monitoring, curb and mitigation activities. The sub-decree applies to all movable sources and immovable sources of air and noise pollution.

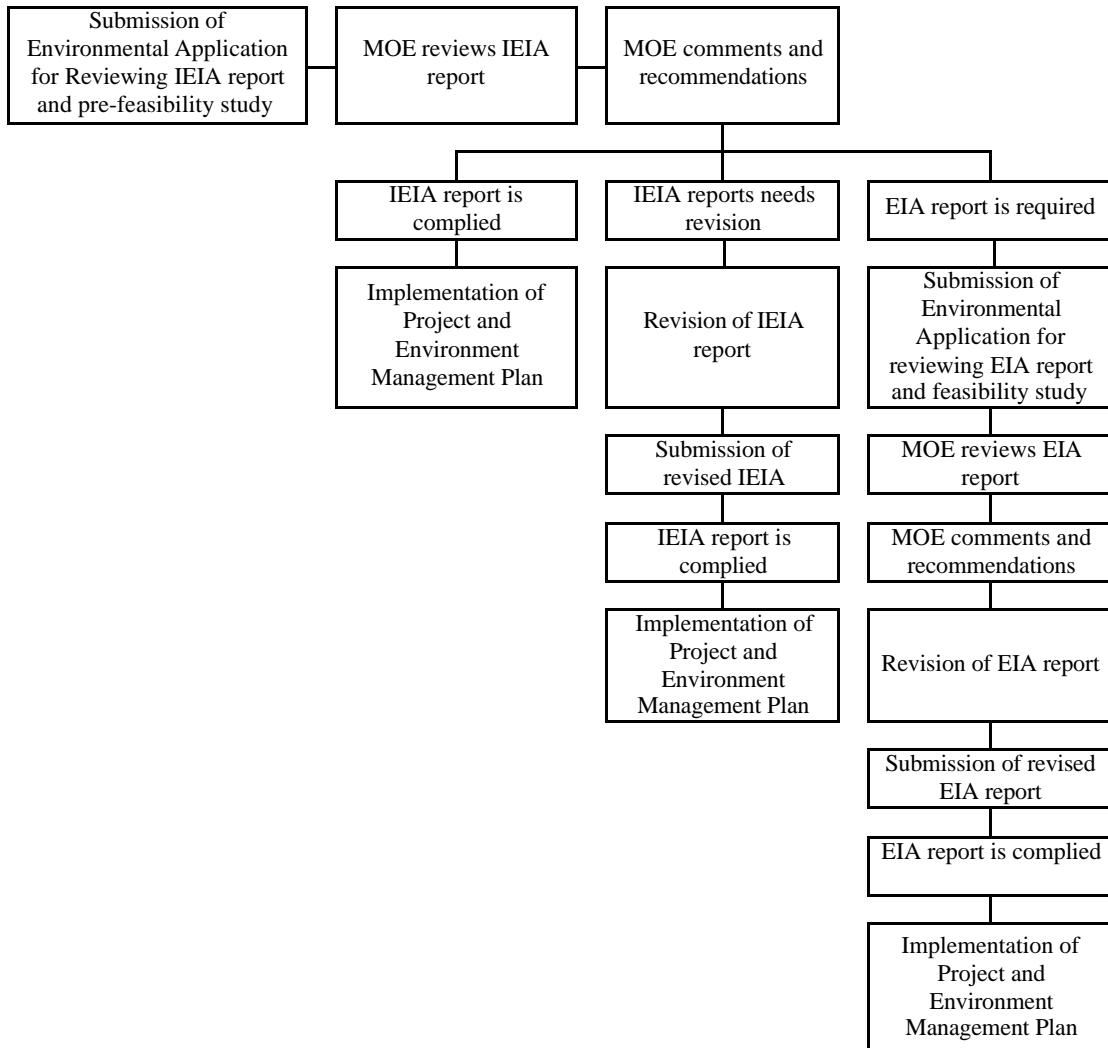


Figure 9.1-1 EIA General Process

The sub-decree includes provisions on emission of air and noise pollution to keep the air quality standard as specified in the annexes of the sub-decree. The standard for noise emission from various sources like vehicles, manufacturing places and residential areas are also presented as annexes. The emission of pollutants into the atmosphere and noise pollution exceeds the standard limits, as well as the discharge or leakage of various flammable substances shall be strictly prohibited.

9.2 ENVIRONMENT MANAGEMENT SYSTEMS AND FUNCTION

The Ministry of Environment (MOE) was established based on the Royal Declaration No. NS/RKM/0196/21 dated 24 January 1996 promulgating the Law on the Establishment of the MOE. MOE was created, however, since November 1993, to develop long-term resource-use and pollution control strategies in conjunction with other government agencies. Such strategies should be preceded by a better understanding of existing conditions, identify priority problems and critical concerns, specify casual factors and provide overall plans for corrective and preventive actions that are rooted in policy and institutional response. Under the ministry, there is the Phnom Penh Environment Department, which gets its budget from the ministry, which is managed by the Municipality of Phnom Penh. The Governor who is royally appointed heads the Municipality of Phnom Penh. It has five technical departments supervised by vice governors and directors.

The organization charts of the Ministry of Environment as well as for the Phnom Penh Environment Department are presented in Figure 9.2-1 and 9.2-2 respectively.

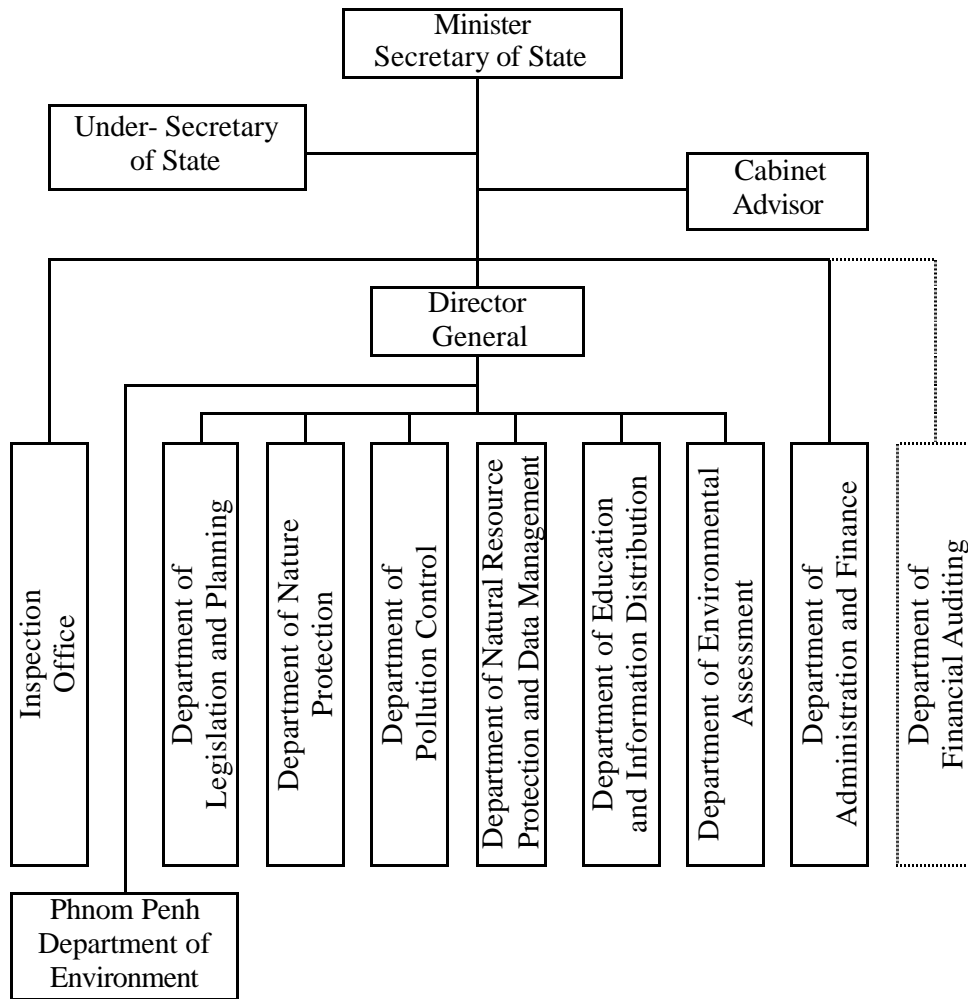


Figure 9.2-1 Organization of the Ministry of Environment

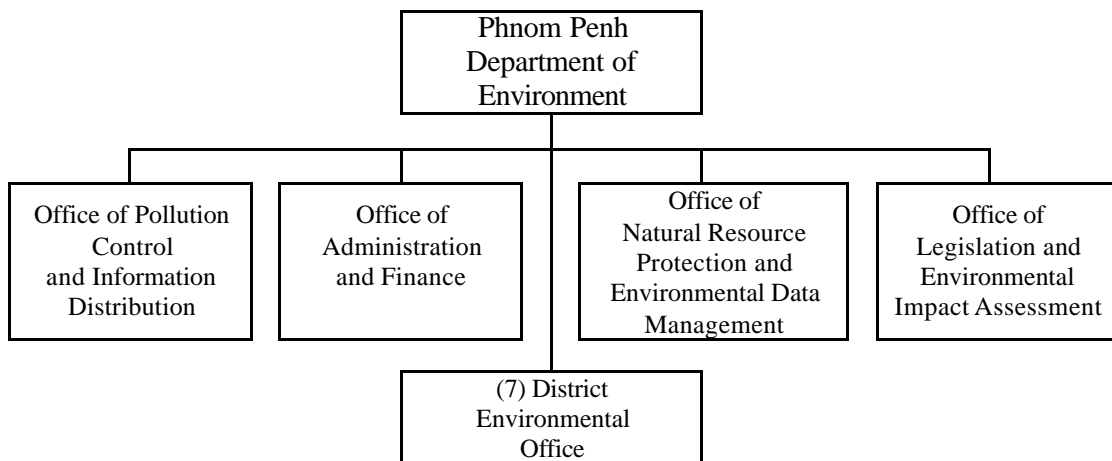


Figure 9.2-2 Organization of Phnom Penh Environment Department

9.3 ENVIRONMENTAL STANDARDS

The MOE set up required standard for the monitoring and management of environment pollution. Annexes of the sub-decrees include tables for water, air and noise quality standard as summarized and presented in the following sections. The tables from 9.3-1 to 9.3-6 present the applied standards.

Table 9.3-1 Water Quality Standard in Public Water Areas

Parameter	Unit	Standard value		
		River	Lake and Reservoir	Coastal Water
PH	mg/l	6.5 – 8.5	6.5 – 8.5	7.0 – 8.3
BOD5	mg/l	1 – 10	1 – 8	2 – 8
Suspended Solid	mg/l	25 – 100	1 – 15	2 – 7.5
Dissolved Oxygen	mg/l	2.0 – 7.5	2.0 – 7.5	< 1,000
Coliform	NPN/100ml	< 5,000	< 1,000	0
Total Nitrogen	mg/l	-	0.1 – 0.6	0.2 – 1.0
Total Phosphorus	mg/l	-	0.005 – 0.05	0.02 – 0.09

Table 9.3-2 Ambient Air Quality Standard

Parameter	Average in 1hr mg/m ³	Average in 8hr mg/m ³	Average in 1 year mg/m ³
Carbon monoxide (CO)	40	20	-
Nitrogen dioxide (NO ₂)	0.3	0.1	-
Sulfur dioxide (SO ₂)	0.5	0.3	0.1
Ozone (O ₂)	0.2	-	-
Lead (Pb)	-	0.005	-
Total Suspended Particulate (TSP)	-	0.33	0.1

Table 9.3-3 Gas Emission Standard of Mobile Sources

Vehicle Category	Fuel	Level of Emission				Dark Fume (%)
		CO (%)		HC (ppm)		
		A	B	A	B	
Motorcycle (2-cycle)	Benzene	4.5	4	10,000	3,000	-
Motorcycle (4-cycle)	Benzene	4.5	4	10,000	2,400	-
Car	Benzene	4.5	4	10,000	800	-
Car	Diesel	-	-	-	-	50

Table 9.3-4 Sulfur and Lead Standard in Fuel

Combustion Substance	Sulfur (S)	Lead (Pb)
Dark Fuel	1.0 %	-
Diesel	0.2 %	-
Petrol	-	0.15 g/l
Benzene	1.5 %	-

Table 9.3-5 Vehicle Noise in Public and Residential Areas

Vehicle Category	Maximum Permitted Noise Level – dB(A)
Motorcycle – engine capacity ≤ 125 cc	85
Motorcycle – engine capacity > 125 cc	90
Motorized Tricycle	90
Car, Taxi, Minibus – capacity ≤ 12 passenger	80
Bus – capacity > 12 passenger	85
Truck – capacity ≤ 3.5 ton	85
Truck – capacity > 3.5 ton	88
Truck – engine power > 150 KW	89
Tractor / Others	91

Table 9.3-6 Noise Level in Public and Residential Areas

Area	Noise Level – dB(A)		
	06hr-18hr	18hr-22hr	22hr-06hr
Quiet Area Hospital – Library – School	45	40	35
Residential Area Hotel – Housing – Office	60	50	45
Commercial Areas Service Areas	70	65	50
Light Industrial Area mixed with Residential Area	75	70	50

9.4 NATURAL ENVIRONMENTAL CONDITION

Topography and Geology: Phnom Penh began to expand rapidly at the beginning of this century as a colonial capital and the core of the area. This expansion was geographically based on hydrological considerations for the river and created crescent-shaped levees with landfill activities, while the surface water drained in the western and southern directions. In the last decade, the physical improvement of Phnom Penh has been limited to infrastructure repair and rehabilitation without giving much attention to environmental protection measures. Now, the city is growing rapidly and protecting the natural environment has imposed itself as one of the important tasks to be fully considered regarding any proposed infrastructure development scheme.

The city is located on a flat alluvial plain at the western bank of the confluence of the Mekong River with the Tonle Sap River and Bassac River. The only significant relief is a hill (Wat Phnom) with a height of about 20 meters. This flat plain contains a dynamic hydrological system, which mainly handles the vast volumes of water generated during the monsoon months. The most important features include the high embankments along both sides of the main rivers and low-lying land behind these embankments, which presents a series of lakes and ponds interconnected by streams and tributary rivers. Further west, the land slowly begins to rise and the system of lakes and ponds receives considerable runoff from these higher lands.

The city lies on alluvium deposits, which overlay weathered rock and clay at a depth of 30 – 50 meters, with hard crystalline rock at the base. Hydrologically, groundwater is found within the alluvium with variable qualities, often containing high concentration rate of iron.

Air and Noise Pollution: In general, noise and air pollution due to traffic or other sources do not create great problems in the Municipality of Phnom Penh as they are still below applied standards at present. The most serious problem regarding the natural environment is drainage and water pollution due to improper systems of solid waste and drainage of wastewater from houses, factories and hospitals in addition to the risk of flooding.

Flooding, Drainage and Water Pollution: Phnom Penh has a high potential to face the risk of flooding due to four main possible causes, which are:

- Mekong River Floods
- Rainfall on Phnom Penh City
- Streams of Northwestern Hills
- Rainfall on Kompong Speu Mountains

Surface water drainage and the management of monsoon flooding have had a fundamental influence of the city. The municipality is making some efforts for the management of both solid and liquid wastes but the problem is the lack of strong measures, regulations and financial resources.

A number of factors influence the quantity and behavior of surface water runoff, with topography as

the most important. Other factors that determine the amount of generated runoff include the permeability of the soil and the land-use, together with the rainfall intensity. It is important to conclude that the surface water drainage is closely associated in the municipality with road conditions and road network planning and programs. In this regard, the Cambodia Urban Environment Improvement Project, ADB 1997, concluded that there is an urgent need for improvements to water supply, water distribution system, sewage system, drainage, solid waste collection and disposal; need for education program on water usage, general public area cleanliness and the disposal of hospital and industrial wastes.

In addition, road drainage is of particular importance since the existing road network is subject to flooding during the rainy season. Storm water flows are discharged into a pipe/channeled drainage system which through years of neglect has almost ceased to function.

9.5 SOCIAL ENVIRONMENTAL CONDITION

Urban Population: According to the General Population Census of Cambodia, 1998, the urban population of the country is about 15.7% of the total population of 9.5 million inhabitants. The UNFPA figures of 1993 give an urban population rate of 15%, which is almost the same. That does not mean that urbanization is slow in the country, as after the political stability more people are expected to return to cities, especially Phnom Penh. About 57% of the nearly 1.0 million population of Phnom Penh are living in the built-up urban area while 47% are living in the surrounding rural areas of the municipality.

The majority group is the Khmer although there are some minority ethnic groups of Muslim Cham who are living on the outskirts of the city, people of Vietnamese origin living mostly in low-income areas, and the Chinese minority group which is most integrated with the majority Khmers. Migration to the city from rural areas is expected to increase especially on seasonal base during the dry season and between planting and harvesting the rice crop, to look for casual employment opportunities.

Informal Housing: Due to different instabilities and other economic factors, a random settlement pattern resulted in non-market driven housing allocation. There are a considerable number of informal housing areas, which accommodate poor settlements and squatters. Urban infrastructure services hardly exist in squatter areas, and drainage and wastewater are identified as great problems. Squatters in Phnom Penh are mostly food sellers, small traders, cyclo drivers, construction workers and a small number of low-level government workers. They are located where they are to be close to work opportunities. It seems that the city needs the poor as developing the city depends on plenty of cheap labor. It is estimated that more than 180,000 people live in informal settlements.

The number of informal housing is increasing rapidly, primarily along river embankments, and outside the dikes, which encircle the city. The government policy towards squatters is that they are illegal and should be removed to appropriate locations outside city centers. Evictions of some small squatter communities have taken place to some relocation areas near the municipal boundaries.

Motodop Drivers: From the transport point of view, Phnom Penh is connected with other cities and towns in the country through the transport modes of inter-city buses and shared-taxis. Conversely, motodops, and to some extent cyclos (tricycles), are the dominant transport means as a para-transit mode mostly for intra-city trips of both passengers and goods. In the absence of an urban public transport system, motodops are the entire transportation system in the city. The introduction of other advanced public transport systems is expected to affect people working in the transport industry. The results of on-going traffic surveys under this study will show the scale of the problem in order to develop other employment opportunities for affected drivers.

A study on motodop drivers in 1998 by the urban resource center (URC) of Cambodia concluded

that although this mode contributes to congestion and traffic problems, it provides a substantial income for thousands of families to survive. Most of the drivers are in the employable age between 25-35, and educated. As job opportunities in the formal sector are very low and unemployment is very high, the motodop business is easy to enter providing that a motorcycle is available. Recommendations of the Study include organizing an association to assist, take care and solve the problems of, motodop drivers.

9.6 ENVIRONMENTAL ISSUES AND ASSESSMENT

Developing the transport system of Phnom Penh is expected to improve, to a large extent, the environmental conditions through the decrease in traffic congestion and travel time, in addition to the benefits of providing an efficient public transport system. Traffic volumes are expected to increase in the future and the transport development plan should handle such demand without degrading both natural and socioeconomic environment. There are several environmental issues, which should be considered in the planning process of the transport system in the study area in order to provide an environmental-friendly transport plan and a high standard of urban amenity.

Natural Environment:

- It is expected that improving the urban transport system as a whole will improve environmental conditions to a large extent. Environmental considerations, however, should be given during the planning process of each individual project.
- Minimizing the air pollution and noise generated by traffic through the adoption of optimum alternatives, which provide less gross travel time (vehicle-hour) and travel distance (vehicle-kilometer) values for daily vehicular trips.
- Planning should be concentrated on the minor improvements that produce great impact on improving traffic conditions, such as pavement of primary and secondary streets and the application of effective traffic management procedures. Structural alternatives in urban areas, which require high financial burden and cause visual intrusion that may damage the landscape of the city, should be avoided as much as possible.
- Transport and road network development projects should avoid areas with historical, cultural and heritage characteristics.
- Heavy vehicles cause physical damage to the road itself, roadside objects, and road-users and to the urban environment as a whole. Adequate road design and maintenance with restrictions on the access of heavy vehicles appear the only available remedy.
- The flooding and drainage issues should be carefully considered during the planning and design stages of proposed projects.
- A plan for construction material sources and material disposal for proposed construction projects should be carefully prepared ensuring that there will be no damage on the natural environment of the area.
- During the future construction stage of proposed projects, measures should be applied to mitigate any negative impact which may result due to the construction activities and the disposal of materials.

Socioeconomic Environment:

- The Motodop is considered as inconvenient and unsafe mode of transport especially for elderly people, handicapped and children. Introducing a bus system for public transport, with reasonable fare, will provide.
- When dealing with roundabouts that decrease the capacity of intersections, their historical and landscape values should be considered.
- Ethnic groups do not form a high percentage of population in the Study Area, however, the social stability of people should be considered in project prioritization.
- With the expected growth in traffic volumes and higher speeds on improved roads, safety measures should be applied through educational, enforcement and engineering procedures in order to decrease traffic accidents.

- Minimizing the need for land acquisition for transport infrastructure development in order to keep the social problems as minimum as possible.
- Early preparation is required regarding resettlement schemes for the relocation of families affected by any development scheme.
- Providing employment opportunities for motodop drivers affected by introducing an advanced public transport system
- Private developments are out-pacing public reforms. Unless some effort is put into the planning and implementation of strategic service provision, then infrastructure development will become harder to implement without massive land acquisition and resettlement schemes.
- As the peripheral environment around the built-up area of the city is degrading due to the increase of informal settlements without adequate planning control, the design of future transport facilities should be done in such a manner not to encourage informal settlers.