

CHAPTER 19

LEGISLATION

AND

FINANCING PLAN

CHAPTER 19

LEGISLATION AND FINANCIAL PLAN

19.1 LEGISLATION PLAN

19.1.1 Objectives

Any action of the government needs legal basis or justification. Not only for the government but also for private enterprise or private individuals, clearly written legislation often serve as the basis for planning a framework of business such as bus operation. Consequently, well-organized legislation system is imperative to smooth and effective implementation of the Master Plan as well as promoting private participation in various field of transport.

19.1.2 Problems Identified

Transport related laws and regulations were reviewed taking into consideration of other part of this Study. Laws/regulations relevant to the projects/measures are as follows:

(1) Traffic Management

- Parking facility (See Section 16.3): One of the effective measures to increase parking places is to mandate large buildings to be equipped with parking spaces. One of the effective measures to achieve this is to stipulate obligatory provision of parking space in the building code.
- Driver's license system: One of the major problem in the Study Area is undisciplined drivers behavior. Establishment of a well-organized license system is one of the effective measures to this problem.
- Other measures of traffic management can be implemented under the present legislation system.

(2) Public Transport

- Bus services can be implemented under the present legislation system.
- Private participation/foreign direct investment should be encouraged. For this purpose the existing legislation system for private investment/foreign direct investment needs to be improved.

(3) Road

- The existing legislation system needs to be revised to encourage private investment in construction/improvement of road associated with land development.

In addition to the above consideration, the following problems were identified in Chapter 8.

- (i) A new insurance law which mandates vehicle insurance has been promulgated. However, decrease or orders stipulating the details of the law have not been issued and the law is not effective in reality.
- (ii) There is no database system for vehicles and drivers.

19.1.3 Required Legislation and Supporting Systems

Among the problems described in the previous sub-section, the following three (3) subjects are proposed to be further studied for urgent actions.

(1) Vehicle Registration System

Reliable data on vehicle registration constitutes an important basic information in formulating policies of transport. The present vehicles registration systems including motorcycles and motor tricycles licenses rely on the manual works with data storage and operation in stand-alone computers. Data is limited so that the preparation of policy, planning of traffic management. The total numbers of motor vehicles are expected to increase drastically as shown in the following table. It is urgent to systematize and modernize the vehicle registration and drivers' licenses systems which the case of Phnom Penh as the starting point for the entire nation.

Table 19.1-1 Estimated Total Numbers of Motored Vehicles

Items	2000	2005	2010	2015
Car	48,132 (1.00)	77,000 (1.60)	120,000 (2.49)	166,000 (3.45)
Motorcycle	247,507 (1.00)	342,000 (1.38)	458,000 (1.85)	570,000 (2.30)

(2) Driver's License Systems

The new Law on Overland Traffic, which is still under consideration, will specify the contents and procedures of drivers' license. From application of license to delivering the license to the driver, the Government will require the computerized network systems for the purpose of management of the driver's license procedures and database. It is recommended that the study on the computerized network system to manage drivers' license procedures and database be conducted.

(3) Private Investment Law

The Government of Cambodia is making efforts to invite foreign investment and develop transport infrastructure since large city like Metropolitan Phnom Penh requires significant financial resources and a long time frame for infrastructure development. The Government of Cambodia should therefore not solely rely on the Official Development Assistance. Private investment for transport sector should also be promoted by introducing the necessary incentives into Government policy. For instance, there are many private railway and bus companies in Japan, which are operating solely under their own financing. The only contribution the Government of Japan makes for those companies is to provide a business environment suitable for the private transport business. The fare price mechanism applied for such infrastructure projects and the longer duration and lower rate of interest on the loan extended to those projects may be among of the keys for the sustainable private transport business. It is recommended that a study on the private investment laws and regulations for inducing private investment for transport infrastructure be conducted.

Regulation of mandatory parking space for large building are also important issue. MPP is currently considering to introduce this regulation. Consequently, it is considered to be appropriate that this subject be further studied after the regulation will be implemented and the actual problems associated with the regulation will become clear.

19.2 FINANCIAL PLAN

19.2.1 Objectives

Any part of the Master Plan can not be implemented without fund. This section examines the possible fund sources and discusses the amounts of funds available for the Master Plan.

19.2.2 Problems Identified

At present, the largest problem for the Government (both the Royal Government and MPP) in implementing projects and measures is shortage of fund. The shortage of the Government's fund is attributed to the limited tax collection capacity of the Government.

In addition, MPP does not have financial autonomy, and all the funds necessary for constructing, rehabilitating and maintaining the urban transport infrastructure come from the budget of the Central Government through MPWT. The MPWT budget for transport infrastructure is also heavily supported by foreign bilateral and multilateral official assistance. Consequently, availability of funds depends on the Official Development Assistance from donor countries and International Organizations such as the World Bank and ADB. However, all the cost of the projects or program is not provided by these organizations due to the restriction on financing for land acquisitions, administrative cost and so on. Self reliance on domestic financing or official revenue collection and its strengthening is always the problem to be solved in order to implement such infrastructure projects.

19.2.3 Financial Plan

(1) General Policy

In many countries, a concept of "road user tax" is introduced. Typical example of road user tax is fuel tax. The basic philosophy of this tax is that the beneficiaries or users pay the expenses. The fund sources in this category are fuel tax, vehicle tax (collected periodically) vehicle registration fee (collected at the time of registration and, sometimes, at the time of transfer of ownership). The revenue from these taxes/fees are spent on construction/improvement /maintenance of transport infrastructure.

More direct application of "the beneficiaries pay the expense" is a toll road. The users of a particular pay the maintenance cost (and sometimes construction cost) of the road.

While the expenses for transport facilities, in particular roads, are born by the users or the beneficiaries, the cost for operation of public transport, such as bus, is often subsidized with the fund of the general account. The basic philosophy of this is that the beneficiaries are the general public. (The revenue from the operation of the public transport is spent on the operation of the said public transport, but not sufficient to cover the full cost of operation. Consequently, subsidy from the government is often necessary)

Other miscellaneous revenue such as fines for traffic violation are often used in maintenance/improvement of traffic safety facilities such as traffic signals and signs. However, the amount of such revenue is relatively small and can finance only a part of the expenses of such facilities.

(2) Government Measures to Raise Revenue for Transport Sector

It is recommended that the following four (4) measures be established and/or firmly controlled by the Government for the purpose of self financing for the development of transport infrastructure. These fund sources are currently implemented, but the basic data, such as the

total amount, the flow of transferring to the Government account and usage, were not available to the Study Team. If properly implemented/collected, these revenues can meet considerable portion of fund requirement.

(i) Fuel Tax

In Cambodia, unleaded regular gasoline costs 54 cents/liter and it includes more than 33.3% or 18 cents/liter of tax, which consists of import tax, specific tax and value added tax (VAT). In case of diesel fuel oil for vehicles, cost is 38 cents/liter and it contains 7 cents or 18.4% of tax. These rates are considerably lower than those of the neighboring countries.

(Thailand: 38 cent Baht/l; tax; 53.2%. Vietnam: 25 cents/l; and tax; 40%)

The revenue so collected through gas stations are treated as general budgetary revenue and spent by the Government for general expenditure.

In introducing the purpose specific tax in the tax system of the country for the funding transport infrastructure construction and maintenance, the tax revenue so introduced should be independently managed. If the budgetary autonomy of the Municipality of Phnom Penh is authorized. It is desirable that the revenue be directly collected by the Municipality.

(ii) On-Street Parking Fee

The road is a public asset that should be managed by DPWT, MPP.

It is recommended that the Government study on the introduction of the on-street parking lots and install parking toll collection machine or arrange toll collecting officials.

The effects of this recommendation are estimated as follows.

As is presented in Table 19.1-1, the car parking places in the Central Market area are estimated to have a capacity of 10,177 cars if properly designed and executed. The demand of cars to park was 5,118 per hour (from 7:00 to 10:00, morning peak hours). Total demand is 15,354 for three (3) hours. If the Municipality can levy 1,000 riels/veh for one hour, the revenue from the car parking is estimated as follows.

$5,118 \times 3 \times 1,000 \text{ riels/hr.} = 15,354,000 \text{ riels for three hours in the morning. It means Riels } 5,604 \text{ million for a year (US\$1,401,052, US\$1.0 = Riels 4,000).}$

When in the year 2015 the demand is estimated as 8,183 cars, and the annual revenue would be 3.36 million US\$ in 2015 (1US\$=4000 Riels / 1500 Riels/hour parking fee in 2015 is assumed.).

The Government and the Municipality should consider introduction of the on-street parking fee program. It would be very helpful for the Municipality to alleviate the road maintenance financial problems.

(iii) Vehicle Ownership Tax

Vehicle and motorcycles are levied three (3) or four (4) kinds of taxes such as import tax, ownership tax, specific tax and VAT. It varies by model, production year, and displacement of engine, new or old/used. When a passenger car of 1300cc sedan type is a new model, owner has to pay US\$12,720 in addition to the CIF cost of US\$15,000. In this tax, specific tax is included and amounted to US\$4,200.

Since statistics such as number of registered car or number of used/new cars and revenue in detail is not available, the Study Team could not estimate the exact effects of this recommendation. Assuming that the number of vehicles newly registered in the Municipality of Phnom Penh is 7,000 and the average specific tax is US\$4,200, the revenue of specific tax will amount to US\$29.4 million /year.

There might be some room to raise the specific tax rate, since the total vehicle price is not

twice of the CIF cost. The MPWT should study and propose a new system of introducing specific tax on the new/used vehicles and motor bikes in order to utilize such revenue for road construction and maintenance purpose.

(iv) Fines of Traffic Violations and Over-loading

The Government is now preparing new “Law on Overland Traffic”. In the draft, Chapter 13 deals the traffic law violations and fines. It stipulates a clear principle that even simple offense be taken to the court.

The information on how much of fines was collected by the police in the past and how much was transferred to the treasury of the Ministry of Economy and Finance (or MPP) is not available. Accordingly, estimation of the fund available for the Master Plan can not be made. However, this fund can be one of the fund source for the Master Plan.

The fines should be collected by the treasury of MPP and be utilized for maintaining the traffic control facilities, traffic policemen and, if available, for repair of the road in the Municipality.

(3) Official Development Assistance Prospects

National Framework - Reform Scenario

The Government of Cambodia is pursuing sustainable socio-economic development applying drastic measures to reform governance. A report titled “Cambodia: Enhancing Governance for Sustainable Development” has been prepared and published with the assistance of ADB, which is evaluating the reforms and presenting the national framework with two scenarios, which include the latest national framework (see Table 19.2.1 and Table 19.2.2). The Study Team adopted “Reform Scenario” for the national framework after due consultation with the officials of the MPP and other relevant agencies as reported in the Interim Report.

The Assumptions on Official Development Assistance and Foreign Private Investment of Reform Scenario as shown in the following table outlines the Royal Government’s scheme on the foreign financing.

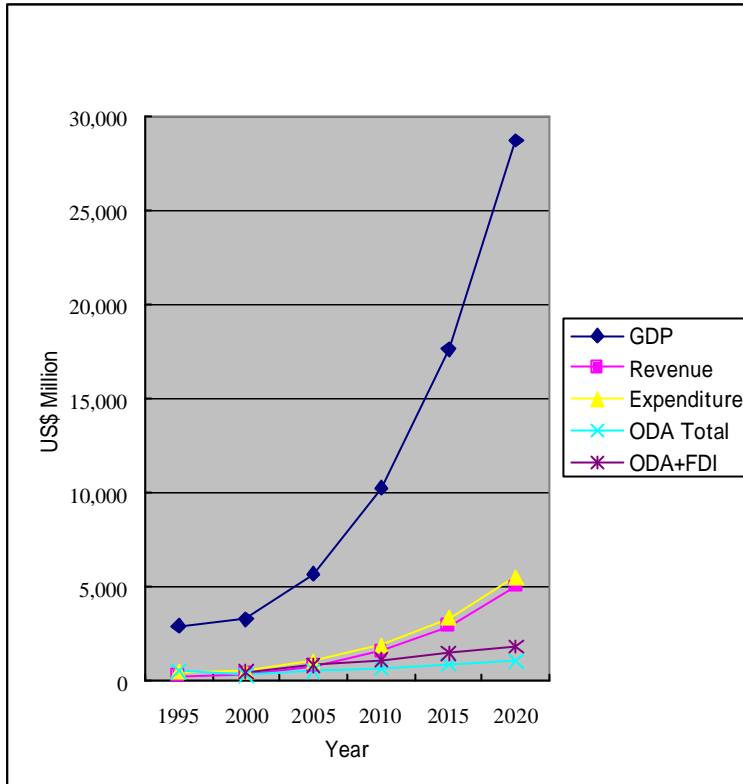
Table 19.2-1 Assumptions of Reform Scenario on ODA and Foreign Private Investment ^(*)
US\$ Million

Foreign Finance	2000	2005	2010	2015	2020	Assumptions
Official Grant	215	220	170	170	170	From 2006 to 2020: 170
Official Loan (net)	96	296	425	610	876	Ave. growth rate from 2005 to 2020= 7.50%pa
<i>ODA Total</i>	<i>311</i>	<i>516</i>	<i>595</i>	<i>780</i>	<i>1,046</i>	
Foreign Direct Investment	180	260	375	541	780	Ave. growth rate from 2000 to 2020=7.61%pa
Portfolio Investment	0	200	336	565	950	Establish financial markets in 2003. Ave. growth rate from 2005 to 2020=10.95%pa
<i>Private Investment Total</i>	<i>180</i>	<i>460</i>	<i>711</i>	<i>1,106</i>	<i>1,730</i>	
Total	491	976	1,306	1,886	2,776	

**Official Development Assistance and Foreign Private Investment will be affected by the national reforms. Calculated by the Study Team based upon the Assumptions.

Source: "Cambodia: Enhancing Governance for Sustainable Development, Working Paper No. 14, Cambodia Development Resource Institute, May 2000

Based on the “Reform Scenario” as shown in the Table 19.2-2, the expected foreign financing and available official fund source can be estimated as shown in Figure 19.2-1 and Table 19.2-3.



Source: "Cambodia: Enhancing Governance for Sustainable Development, Working Paper No. 14, Cambodia Development Resource Institute, May 2000

Figure 19.2-1 Foreign Financing Based on the "Cambodia Reform Plan"

Table 19.2-2 Assumptions of Two Scenarios: Reform and No Reform

National Reforms	Policy measures	Assumptions of Reform Scenario	Assumptions of No Reform Scenario
Public finance reform	Enhance revenue-raising capacity; increasing the efficiency of tax collection	* Increase the ratio of actual-potential tax revenues:	* Increase the ratio of actual-potential tax revenues:
		* Direct tax: increase from 16% in 2000 to 40% in 2005, and slowly to 50% from 2006 to 2020.	* Direct tax: increase from 16% in 2000 to 36% in 2020.
		* Indirect tax: increase from 28% in 2000 to 60% in 2020	* Indirect tax: increase from 28% in 2000 to 48% in 2020
		* Customs duties: increase from 55% in 2000 to 95% in 2020	* Customs duties: increase from 55% in 2000 to 75% in 2020
Public administration reform (affecting public expenditures)	Demobilize soldiers and Rationalize civil administration	* Decrease the number of armed forces (police and army) from 200,000 in 2000 to 100,000 in 2007: civil servants from 150,000 to 100,000 in 2007:	* Increase the total number of public officials (armed forces and civil servants) at population growth rates between 2000 and 2020
		* Keep same number for the armed forces up to 2020, while number of civil servant will increase by the rates of population growth between 2009 and 2020 (2.5%p.a.)	
		* Increase from \$35 in 2000 to \$150 in 2007;	* Increase by the growth rates of GDP from 2000 to 2020
		* Increase at the rates of GDP growth from 2008 to 2020	
Forestry reform	Average monthly wage rates of public officials	* Reduce from 800,000m ³ in 2000 to 600,000m ³ in 2005;	* Increase from 800,000m ³ in 2000 to 1,600,000m ³ in 2005;
	Control the volume of logging	* Continue 600,000m ³ from 2006 to 2020	* Decline rapidly to 75,000m ³ in 2010 and then keep flat up to 2020
	Official grants	* Increase from \$215 million in 2000 to \$220 million in 2005;	* Decline from \$215 million in 2000 to \$140 million in 2005;
Official Development Assistance (affected by national reforms)	Official loans (net)	* Continue at \$170 million from 2006 to 2020	* Decline to \$70 million from 2006 to 2020
		* Increase from \$96 million in 2000 to \$296 million in 2005;	* Decrease from \$96 million in 2000 to \$63 million in 2005;
		* Increase at slower rates from \$296 million in 2005 to \$876 million in 2020.	* Decrease at faster rates from \$63 million in 2005 to \$1 million in 2020
Foreign Private Investment (affected by national reforms)	FDI	* Increase from \$180 million in 2000 to \$780 million in 2020	* Remain flat at \$160 million from 2000 to 2020
	Portfolio investment	* Establish financial markets in 2003;	* Fail to establish financial markets (zero portfolio investment from 2000 to 2020)
		* Increase from \$200 million in 2005 to \$950 million in 2020	

Source: "Cambodia: Enhancing Governance for Sustainable Development, Working Paper No. 14, Cambodia Development Resource Institute, May 2000

Table 19.2-3 Impact of Reform on Cambodia's Economy: A Comparison of Two Scenarios

Items	Year	Reform Scenario						No Reform Scenario					
		1995	2000	2005	2010	2015	2020	1995	2000	2005	2010	2015	2020
GDP (current price; Million US\$)	2,923	3,302	5,713	10,263	17,631	28,718	2,903	3,275	3,867	3,966	4,402	4,953	
GDP per capita (current price; US\$)	284	274	420	671	1,034	1,522	284	272	284	259	258	262	
GDP per capita (1993 price; US\$)	212	215	267	350	447	542	212	213	230	213	214	219	
Real GDP growth (%)	8	4	8	8	7	6	8	3	3	1	2	3	
Inflation (final quarter basis: %)	4	4	4	3	4	4	4	4	11	12	12	12	
Exchange rate (Riel/US\$; end of period)	2,560	3,975	4,000	4,000	4,000	4,000	2,560	3,975	7,992	16,071	32,321	65,007	
Public revenue (% of GDP)	9	11	14	15	17	18	9	11	12	13	14	15	
Public expenditure (% of GOP)	17	16	19	19	19	19	17	16	15	14	14	15	
Current public deficit (% of GOP)	-1	1	3	4	5	5	-1	1	1	1	2	3	
Overall public deficit (% of GDP)	-8	-4	-5	-4	-2	-2	-8	-4	-3	-2	-0	-0	
Exports of goods (% of GOP)	12	20	22	30	39	46	12	20	26	21	21	21	
Imports of goods (% of GDP)	24	34	38	40	41	41	24	34	33	34	34	34	
Trade balance (% of GDP)	-12	-14	-16	-10	-2	4	-12	-14	-7	-13	-12	-13	
Current account balance (% of GDP)	-13	-13	-14	-7	-1	5	-13	-12	-4	-8	-6	-5	
External contribution to the economy (% of GDP)	21	16	15	12	9	7	21	15	10	8	7	6	
Total savings (% of GDP)	21	22	27	30	29	27	21	21	18	17	15	16	
External debts (% of GDP)	4	14	37	42	42	40	4	14	36	42	40	36	
Population (million)	10	12	14	15	17	19	10	12	14	15	17	19	
Unemployment (% of labour force)	2	4	6	5	4	4	2	4	6	9	11	13	

Source: "Cambodia: Enhancing Governance for Sustainable Development, Working Paper No. 14, Cambodia Development Resource Institute, May 2000

Based upon the Reform Scenario, the Study Team estimated the available fund and drew-up the financial plan as summarized in Table 19.2-4.

Table 19.2-4 Official Finance Sources available for Additional Capital Expenditure

Items	US\$ Million			
	2000	2005	2010	2015
Government Current Surplus/Deficit(-)	33.0	171.4	410.5	881.6
ODA	311.0	516.0	595.0	780.0
Official Finance sources Total	344.0	687.4	1,005.5	1,661.6
Government Overall Deficit (-)	-132.1	-285.7	-410.5	-352.6
Official Finance Source available for Additional Capital Expenditure (1)	211.9	401.7	595.0	1,309.0
Private Investment Total	180.0	460.0	711.0	1,106.0
Financial Plan (2)	391.9	861.7	1,306.0	2,415
Available Finance for the 5-year periods for (1) (3)	-	1,580.7	2,558.1	4,894.2
Available Finance for the 5-year periods for (2) (4)	-	3,222.4	5,567.7	9,586.1
Financial Requirements of the Study for the 5-year periods (5)	-	79.6	108.6	112.8
Share of the Study (5)/(3)	-	5.0	4.2	2.3
(5)/(4)	-	2.5	2.0	1.2

Source: Estimation of the Study Team. & Source: "Cambodia: Enhancing Governance for Sustainable Development, Working Paper No. 14, Cambodia Development Resource Institute, May 2000

The projects the Study Team selected and proposed are viable for public and private financing. However, the Government and MPP should improve institution, and establish new taxation bases such as specific purpose fuel tax for strengthening of self-financing.

The behavior of private investor is very vulnerable and sensitive to the movement of the investment climate of Cambodia. The Government needs to implement the reform as it pledged on the various international forums.

(3) Private Participation

The following three (3) schemes are recommended as fund source, especially road improvements with land development potentiality.

(i) Development Corporation

It is recommended that the MPP and the Royal Government establish a Development Corporation and employ staff who are highly experienced in real estate, land development and financial business, and let them manage the company. However, this needs diligent preparation. The most difficult problem is the shortage of operating funds during the developing period.

(ii) Control Authority

An alternative to (i) above is to establish a control authority for private developers. There are many applications from foreign developers who wish to develop land in Phnom Penh. MPP should establish a control authority, and this authority would offer land for development and select the qualified developers on the bidding basis. In this manner the Municipality can develop land under the Municipality's development master plan and collect money for the necessary infrastructure improvement. This process is easy to start but progress depends on developers' demands and intentions. Profitable land would attract many applicants while land in unfavorable development condition would not attract them.

(iii) Entrusted Partner

The other alternative is a combination of the above alternatives. In this case the Municipality would select one private developer group as the partner and establish a joint venture development company. The Municipality and the Government would give the joint venture the privilege of developing of land and road in accordance with the Municipality's development master plan and the profits would be shared. Municipality would invest money received from a soft loan and entrust this company to develop land and road. This is a promising option. However, the success of development depends on the developer's demand and capability.

Build-operate-transfer (BOT) scheme is currently being adopted in Cambodia as for some projects of transport. The followings are the candidate suitable for BOT scheme.

- Construction and operation of tolled sections on the Outer Ring Road with land development of roadsides for residence, shopping centers, parks and offices.
- Construction and operation of large-scale tolled bridge with parks.
- Public bus service operation with terminal and land development for shopping center, offices, parks and residence.
- Tolled off-street parking lots with land development for shops, offices, parks and residence.

The Municipality may establish a company with selecting a foreign company who has a most preferable business plan and intention to invest and operate the BOT scheme. When the authority does not have enough fund to invest, it can offer land ownership or lend ownership of land for certain years, such as 30 years, to the private developer. If the developer needs cash money, they may issue short-term or long-term corporate bond in the market. They may borrow money from banks or in the market with land ownership as collateral. The Municipality may establish a bank with foreign banks to join and back up the BOT scheme with their money.

19.3 IMPLEMENTATION PLAN

(1) Study on Vehicle Registration Systems

Name of Project: Study on Vehicle Registration Systems

Background of the project:

In Cambodia the vehicle registration is not provided in the traffic law and only penalty is stipulated to be imposed on the vehicle's user when it is found that the vehicle does not have ID card or plate or falsified ID card and/or license plates (Article 55). The vehicle registration and inspection is managed by the vehicle registration office in Phnom Penh by manual works with data storage in stand-alone PCs. The procedure is time consuming and the present system is not efficient, and it will soon be overloaded.

Objectives:

- To establish a data base system of vehicle registration.

Tasks:

- To study on the present vehicle registration operation and organization on the following subjects; Budget, staffs, equipment and system softwares, project operation cycles such as administrative operation, registration operation, issuance of certificate, correction operation (amendment of registered items), statistical operation, analytical operation, distribution operation of data and information, training operation.
- To study on needs of the Municipality and Ministries concerned.














- To design vehicle registration center building and the vehicle registration systems.
- To prepare training program in developed country.
- To study on the necessity of expatriate experts and assignment, and
- To prepare the overall implementation program.

Required M/M:

Assignment	M/M required
Study on present operation and organization	4
Study on needs of Ministries and Municipality	2
Designing of Building and the systems	4
Preparation of training program in developed country	2
Study of the necessity of expatriate expert and the assignment	2
Preparation of the overall implementation program	6
Administration, Coordination and Training in Cambodia	14
Total	34

Duration of the study: 3 years

Study Schedule

Items	2001	2002	2003	2004	Remarks
Fund Arrangement					By Cambodian side
Consultant Selection					Donor side
Mobilization/Settlement					
Study on Present Condition/needs					
Designing(Building/Systems)					
Preparation of Training program					
Study on Expatriate Experts and Assignments					
Preparation of Overall Implementation Program					
Administration, Coordination & Training		 			
Total M/M	0	18	15	1	Total=34M/M
Arrangement of Fund					By Cambodian side
Selection of Consultant/Supplier					Donor side

Required experts: Total 5 experts = Administration/Coordinator (1), System Engineer(2), Architect (1),
Management Expert (1)

Output: Overall Implementation Program of the vehicles registration systems

Effects of the project:

- to confirm ownership of the vehicles by the registration certificate, so that the owner can utilize it for collateral,
- to provide for the Ministry of Economy and Finance and the Municipality, with taxation basis
- to provide data and information for the formation of transport policy, traffic management measures,
- to provide data and information for the road rehabilitation and construction plan,
- to provide data and information to the security organizations and police department for enforcement and security control, and
- to provide data for the insurance company (the compulsory vehicle insurance).

Objectives:

- To study establish driver license system and enhance control over drivers.

Tasks:

- To study on the present drivers' licenses operation and organization on the following subjects;
Budget, staffs, equipment and system soft wares, project operation cycles such as administrative operation, application operation, issuance of licenses, correction operation (amendment of registered items), statistical operation, analytical operation, distribution operation of data and information, training operation,
- To study on needs of the Municipality and Ministries concerned,
- To design drivers' licenses center building and the vehicle registration systems,
- To prepare training program in developed country,
- To study on the necessity of expatriate experts and assignment, and
- To prepare the overall implementation program.

Required M/M:

Assignment	M/M required
Study on present operation and organization	2
Study on needs of Ministries and Municipality	1
Designing of Building and the systems	2
Preparation of training program in developed country	1
Study of the necessity of expatriate experts and the assignment	1
Preparation of Feasibility Study Report with overall implementation program	3
Administration, Coordination and Training in Cambodia	3
Total	13

Duration of the study: 3 years

Required experts: Total 5 experts = Administration/Coordinator (1), System Engineer(2), Architect (1), Management Expert (1)

Output: Overall Implementation Program of the drivers' licenses systems

Effects of the project:

- to provide data and information for the formation of transport policy, traffic management so as to prevent traffic accidents and loss and damages of the vehicles and the drivers, owners and the third parties,
- to provide data and information for the Master Plan,
- to provide data and information to the security officers and police officers for enforcement and security control, and
- to provide data for the insurance company (the compulsory vehicle insurance).

(3) Study on Private Investment Laws and Regulations

Name of Project: Study on Private Investment Laws and Regulations

Background of the project: In Cambodia, the Government is promoting foreign private investment in various field including the sector of transport infrastructure development. However, foreign investors' view on the climate for their investment does not necessarily agree with that of the government expectation. It is urgent and indispensable to study the means of inducing foreign private investment to the road rehabilitation and construction, because ODA finance alone is not enough for the development of the infrastructure.

Objectives: To study and to prepare implementation program of Private Investment Laws and Regulations for MPWT and MPP, and to formulate promotive measures to induce private foreign investment to the transport infrastructure development.

Tasks:

To study on Private Investment Laws and Regulations and other indispensable and required

conditions of investment for foreign investors and to make recommendations to improve the climate with concrete measures for inducing the foreign private investment.

Required M/M:

Study on present institution and organization	6 M/M
Study on needs of Ministry and Municipality	2
Study of the necessity of expatriate experts and the assignment	1
Preparation of the overall implementation program	6

Total **15 M/M**

Duration of the study: 1 year

Required experts: Total 3 experts = 1 specialist of foreign private investment (1), specialist of Cambodian laws and regulations (1), and specialist of transport infrastructure

Output: Overall Implementation Program of the Private Investment Laws and Regulations

Effects of the project: The Ministry and MPP will have concrete proposal to improve and solve the problems, and remove hindrance for the private foreign investment in transport sector in Cambodia. Naturally it will need further discussion between the Ministry/Municipality and other ministries concerned, but the proposals will contain various measures from easier measures to rather difficult but with substantial effects.

CHAPTER 20

TRAFFIC CAMPAIGN AND PUBLIC EXPERIMENT

CHAPTER 20

TRAFFIC CAMPAIGN AND PUBLIC EXPERIMENT

20.1 TRAFFIC CAMPAIGN

In the city of Phnom Penh, the number of traffic accidents (475 cases in 1999) and fatalities (133 cases in 1999) are showing signs of rapid increase. The present fatality rate stands at 11 persons /100,000 population. Fatality rates in Japanese cities with a similar population size of about one million, such as Kawasaki City and Hiroshima City, are only 3.9 and 6.3, respectively. Comparing these rates, the City of Phnom Penh has a fatality rate of 2 to 3 times that of similar Japanese cities.

Anticipating that traffic accidents and fatalities will continue to increase in the near future, traffic safety planning must be carried out and countermeasures must be implemented as quickly as possible.

One of the most effective countermeasures to reduce traffic accident problems is a “traffic safety campaign” which is often carried out in many cities of both developed and developing countries.

It was proposed that the Department of Public Works and Transport together with the Traffic Police Office and the Municipality of Phnom Penh take the initiative to devise a traffic safety campaign for Phnom Penh sponsored by JICA. The campaign was carried out to disseminate traffic safety knowledge and principles as well as traffic rules and manners to the citizens and vehicle drivers.*

20.1.1 Outline of Traffic Safety Campaign

The Department of Public Works and Transport (DPWT), the Municipality of Phnom Penh (MPP) and the Traffic Police Office, MPP carried out a traffic safety campaign in the city, sponsored by JICA, from January 27 through February 4, 2001.

The main features of the campaign are the following items:

- (1) Goal
To reduce traffic accidents and to promote smooth traffic flow
- (2) Title
Traffic Safety Campaign Week --- 2001
Subtitle “Protecting the People from Traffic Accidents”
- (3) Objectives and Target Groups
 - 1) To educate the public on traffic safety and basic traffic rules
 - 2) To educate drivers on traffic rules and safe driving
- (4) Implementation Date
January 27 (Saturday) to February 4 (Sunday), 2001
- (5) Methods
 - 1) To utilize mass media such as:
 - Television
 - Newspapers
 - Banners
 - Radio
 - Posters
 - Stickers
 - 2) Guidance and enforcement by traffic police officers at two (2) selected intersections
 - 3) Public participation
 - Distribution of stickers to drivers and pedestrians by primary school children on site,
 - Drawing contest on traffic safety by primary school children.

* Additional information on the Chapter is included in the attached report: “Approach to Traffic Management in Phnom Penh”

(6) Educational Contents

Based on the results of accident analyses and a study of the dangerous behavior of drivers, the traffic safety campaign focused on the following education items:

Part 1 (for the general public especially pedestrians)

- a. Announcing the time schedule and topics of the campaign
- b. Presenting traffic accident conditions in Phnom Penh, using statistical data and graphs
- c. Emphasizing that pedestrians have to use the designated pedestrian crosswalks when crossing the roads and obey traffic signals at signalized intersections.

Part 2 (for Drivers)

- d. Give way to pedestrians and obey traffic signals
- e. Do not drive on opposing lanes
- f. Do not drive under the influence of alcohol
- g. Do not park vehicles at or near intersections

Part 3 (Public experiment)

- h. Necessity of introducing a bus system to this city
- i. Necessity of segregating the 4wheels vehicles from the other vehicles to improve traffic operation.

(7) Practice of Driving Guidance and Enforcement

The following activities were carried out by the offices of Phnom Penh Traffic Police Department at the designated intersections of S.P.Sihanouk Blvd./ No.161 - No. 163 during the campaign period:

- Drivers and pedestrians were informed of their errant behavior or traffic violation, and instructed on proper behavior and safe driving method,
- Drivers with severely errant behavior or who committed a major violation of traffic rules were apprehended

(8) Public participation

- Distribution of stickers on site
 - Primary school children wearing yellow caps accompanied by their teachers participated in the traffic safety campaign at the intersection of Norodom Blvd./ Decho Damdin St. (154) from January 29 to February 2, 2001.
 - They distributed stickers bearing the slogan “traffic safety campaign 2001” to drivers and pedestrians,
(School children, their teachers and parents were well protected from the traffic by ample police officers at the site)
- Drawing contest on traffic safety by primary school children,
 - The contest was opened in the middle of February, and closed at the end of February 2001.
 - Children with excellent drawings were given prizes. The drawings were displayed on buses operated in the Public Experiment in June 2001, and were also included in the traffic safety education poster provided by JICA in August 2001.

20.1.2 Major Activities in the Campaign

(1) Propaganda Activities and Preparation before the Campaign

(i) Meetings in preparation for the Campaign

The following meetings with related authorities and primary schools were held to inform them of the importance of traffic safety and to instruct them on what they were expected to do during the campaign.

- Meeting held on January 23, 2001 at Preah Norodom Primary School with 24 school children and their teachers to participate in the Traffic Safety Campaign at the school.
- Meeting held on January 27, 2001 at Sisovath Primary School with 131 representatives from primary schools and kindergartens in Phnom Penh. Posters and stickers were distributed to them.

- Meeting held on January 27, 2001 at the Central Traffic Police Office with the chief of the Traffic Police Department, MPP attended by the seven (7) deputy directors of all the traffic police districts
 - Phnom Penh Governor's speech for broadcasting via TVK (Cambodia TV)
- (ii) Improvement of related facilities before implementing the Campaign
- Road surfaces and pedestrian sidewalks were improved to provide a better traffic environment at the intersections selected for the campaign
 - Traffic markings were improved or installed at the intersections selected for the campaign
 - Signal lights were checked to ensure they were working
 - Street lighting was also checked to ensure that it was working

(2) Propaganda via Mass Media

The outline of the propaganda campaign using mass media is shown in Table 20.1-1. The design of the poster and newspaper announcement is shown in Figure 20.1-1. Three types of stickers were distributed to the public, and banners carrying the campaign slogans were installed above and across the main streets.

Table 20.1-1 Outline of Propaganda via Media

Items of Media Type	Quantities
1. TV Spot	
Kinds of TV spots (45 seconds/type)	8 types
Broadcasting from 27, January to 04 February	9 days
By TVK Station and TV3 Station	4 times/day
2. Newspapers	
Advertising on "Raksmei Kmpuchea (Size ¼ with Color)	2 times
28 January and 04 February, 2001	
3. Radio	
Kinds of radio message (45 seconds/tape)	3 tapes
Broadcasting via FM 103 Station from 27 January to 04 February	8 times/day
4. Posters	
As shown in Figure 20.1-1	2,000 sheets
5. Stickers	
3 types ---- 3 types x 25,000	75,000 sheets
6. Banners	
4 types	12 sheets
7. Pamphlets of Outline of Traffic Safety Campaign	500 copies
8. Yellow Caps for School Children	
Hats with Slogan Printed	200 caps
9. Drawing Contest for Students	
Total Number of Drawings Submitted	1,018 sheets
12 excellent drawings and 100 good drawing awarded	

(3) Driving Guidance and Enforcement On Site

At the signalized intersection of Blvd. Sihanouk / No.161-No.163, traffic on each approach was controlled and drivers were guided on proper driving manner by 10 traffic police officers from January 27 through February 4, 2001.

The main activities of the traffic police officers were as follows:

- advising drivers to stop their vehicles before the stop line
- advising drivers who were driving beyond the center line to use the proper lane
- advising drivers not to park their vehicles near the intersection
- advising pedestrians to walk on the designated crosswalk
- distributing stickers of the campaign to drivers and pedestrians

- (4) Participation of Primary School Children in the Campaign
 At the signalized intersection of Norodom Blvd. / Decho Damdim St. (St. 154), twelve (12) primary school children together with their teachers distributed the campaign stickers to drivers.



Figure 20.1-1 Poster and Newspaper Announcement



Picture 2 School Children Distributing Campaign Stickers



Picture 1 Pedestrian crossing the road

20.1.3 Impact Assessment

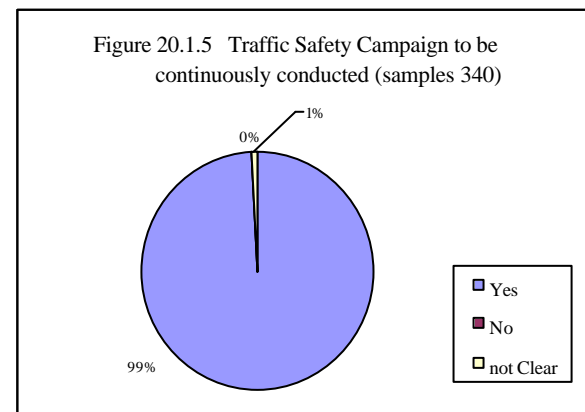
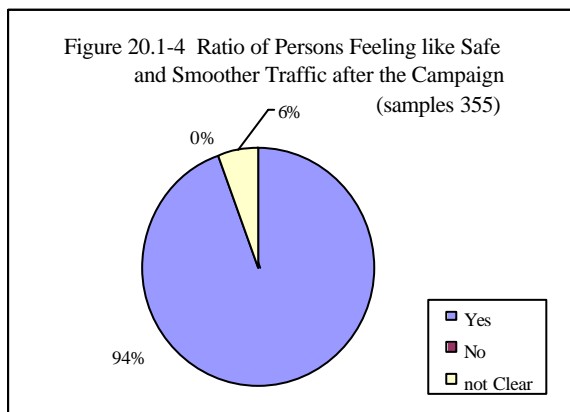
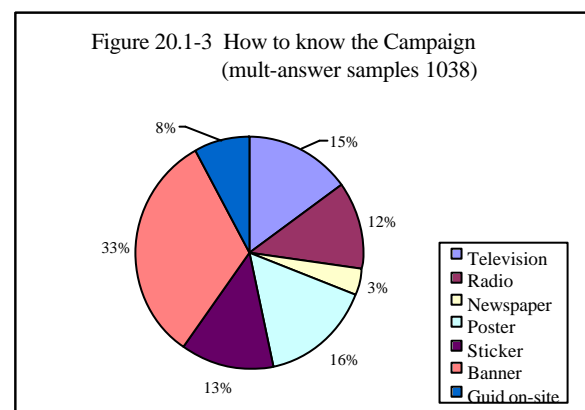
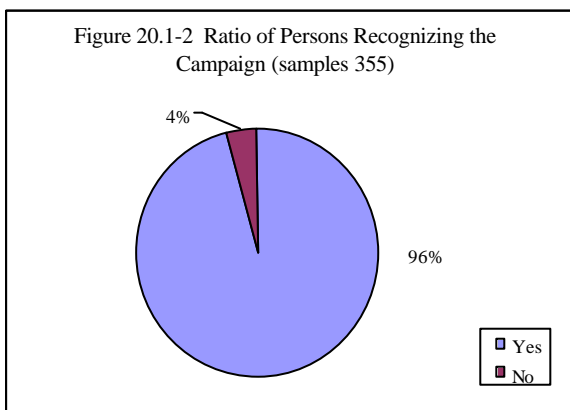
(1) Survey Methods

The following methods were used to measure the impact of the campaign activities.

- Home and on-site interview surveys before and after the campaign: Impact on the general public
- Traffic flow surveys using video camera recording before and after the campaign: Impact on drivers
- Opinion survey of school children and their teachers who participated in the campaign: Impact on the participants of the campaign

(2) Results of Home and On-site Interview (see Figures 20.1-2 to 20.1-5)

- 96 percent of the interviewees were aware of the Campaign. Only 15 persons out of 355 interviewed were unaware of the Campaign, of which 8 persons were over 40 years old.
- 33 percent of the interviewees were aware of the Campaign through the banners installed across main arterial streets. Other effective types of media were poster, television, sticker and radio through which 12 to 15 percent of the persons interviewed were made aware of the campaign.
- It was found that 96 percent of the citizens interviewed indicated that they noticed a safer and smoother traffic flow on the streets after the campaign.
- 99 percent of the interviewees wanted to see such campaign continue in the future.



(3) Results of Traffic Flow Analyses

Video recordings of traffic flows were carried out before, during and after the campaign to identify any change in driving behavior brought about by the Campaign by comparing the traffic flows. The surveys were conducted on the north side approach of the intersection where the Campaign activities were carried out. (intersection of Sihanouk / St.163)

Using the video recordings, observations were made on the following driver behavior:

- Traffic volumes on the approach surveyed
- Number of vehicles which stop beyond the stop-line during red signal
- Number of vehicles which travel beyond the center line
- Number of times when congestion occurred

(i) Driver behavior on the north side approach of the intersection of Sihanouk Blvd./ St.163

This intersection is controlled by traffic signals with fixed cycle length of 60 seconds. Traffic congestion sometimes occurs when drivers ignore the signal.

Table 20.1-2 shows the traffic volumes and the numbers of: (i) vehicles stopping beyond the stop line and (ii) vehicles traveling beyond the center line both before the campaign and after the campaign.

The traffic volumes during the period of the survey were almost the same: the number of 4-wheel vehicles were 55 to 60 per 30 minutes and the number of motorcycles were 316 to 371.

- It was observed after the campaign that most drivers stopped their cars on or before the stop line during the red signal. This was a significant improvement compared to the situation before the campaign when about one quarter of cars stepped beyond the stop-line. It was also observed that only 18 to 30 percent of motorcycles stopped beyond the stop-line after the campaign compared with more than half before the campaign
- Motorcycles stopping on or beyond the center line during the red signal decreased by 4 percent after the campaign. The number of cars stopping beyond the centerline was a very small percentage both before and after the campaign and no significant change can be discerned
- There were some drivers who did not know the meaning of the stop-line and crosswalk markings

Table 20.1-2 Comparison of Vehicle with Violation before and after the Campaign

Time Period	Survey					No. of Vehicle Stopping beyond Stop-Line		Beyond Center Line	
		Car	M' cycle	Bicycle	Cyclo	Car	Motor-cycle	Car	Motor-cycle
9:00 -9:30	Before	55	316	7	19	15 27.3%	165 52.2%	2 3.6%	58 18.4%
	After	60	371	18	20	0 0.0%	66 17.8%	5 8.3%	45 12.1%
12:00-12:30	Before	56	345	17	21	13 23.2%	213 61.7%	2 3.6%	75 21.7%
	After	58	329	5	14	2 3.4%	99 30.1%	1 1.7%	57 17.3%

(iii) Traffic flows in the intersection of Sihanouk Blvd. / St.163

After the campaign, the number of signal cycles with congestion decreased to 3 cycles per hour compared to 8 cycles before the campaign. There was no congestion in the intersection during the campaign due to the presence of the police officers. It is considered that this type of congestion will be further reduced as driving manner and behavior improves.

Table 20.1-3 shows the numbers of signal cycles with congestion (in 60 cycles/hour).

Table 20.1-3 Comparison of Traffic Flows before, during and after the Campaign

Time Period	Survey	No.of Cycles	No.of Cycles with Congestion	
9:00-10:00	Before Campaign	60	8	13%
9:00-10:00	During Campaign	60	0	0%
9:00-10:00	After Campaign	60	3	5%

(4) Opinions of School Children and Teachers

An interview was carried out with the school children and teachers who participated in the Campaign. Opinions frequently heard are as follows:

- I am afraid of traffic accident which may destroy my future,
- I must observe the traffic law from now on,
- I want teachers to integrate a traffic safety lesson into the normal educational program,
- Road conditions are not good, so that most drivers can not observe the traffic law,
- I am very happy today for the participation in this campaign,

(5) Effect on the Driving Behavior in the Entire City

It is evident that the Campaign led to smoother and better traffic flows and safer road crossing manners of pedestrians at the intersection. In particular, most of vehicles are observed to stop before the crosswalks, and less vehicles ignore the traffic signals not only at the intersections where the Campaign activities were carried out but over the entire city.

20.1.4 Future Expectations

The Traffic Safety Campaign, as a part of the Study, demonstrated to the citizens of Phnom Penh the effectiveness of traffic safety education and the importance of traffic safety and traffic regulation. If such campaigns are carried out regularly, the beneficial effects will be accumulated over time and eventually greatly contribute to a reduction in traffic accidents, increase road capacities and attain smoother traffic flow.

In addition, through such campaigns, each driver will recognize that following traffic rules with appropriate driving behavior is beneficial in shortening traveling time, decreasing the chance of accident and reducing frustration. Such understanding will eventually promote good driving behavior. The Study Team strongly recommends that such campaigns be carried out regularly.

A traffic safety campaign is relatively easy to implement because its operation cost is much less and the implementation period is shorter than that of road construction or improvement.

In particular, it was recognized that driving and pedestrian guidance/instruction by police officers on site can be easily implemented at low cost and its effects are significant.

20.2 PUBLIC EXPERIMENT

20.2.1 Bus Operation Experiment

(1) Background, Purpose and Strategies

The Bus Operation Experiment was intended not only to realize a convenient and safe transportation system for the people living in the City, thus contributing to the betterment of the urban environment in Phnom Penh, but also to improve the transport circumstances by introducing an appropriate transport system and traffic management. A better traffic environment is expected to promote better traffic behavior. At the same time, during this Public Experiment, any problem encountered would be duly noted and carefully assessed so that proper adjustments can be made not only for the bus operation plan in this Master Plan but also for the actual implementation of city bus operation which is expected in the future. The purposes of this experiment are summarized below:

- To identify the potential and effect of bus services in Phnom Penh, as one of the main topics of the Transport Master Plan of the Study Area;
- To collect data for estimating the demand for bus services;
- To find out the problems to be solved for the smooth operation of bus services in the City; and
- To help the citizens of Phnom Penh understand the merits of the bus system.

On the other hand, it is necessary to carefully consider the procedure and coverage of this Public Experiment because of the following reasons:

- If this city bus operation were implemented in an inappropriate manner as before, it is obvious that the city bus operation would be suspended again owing to the operation of the more convenient motodop para-transit mode and the large volume of motorcycle traffic.
- If this public experiment were implemented on a large scale, there is a possibility the impact would be so great that taxi-bus and motodop businesses, which provide two of the most important financial sources for the low-income level citizen, would be seriously affected. The possibility of public transport passengers shifting to city buses is a major concern to taxi-bus and motodop operators and drivers.

Considering the above-mentioned conditions and the evaluation of the previous city bus operation, it was most important to devise a plan of how to attract many passengers to the bus system and how to get across the merits of bus use to the citizens of Phnom Penh. The following strategies were established to achieve the above-mentioned purposes:

- To create a bus “catch name” and logo of widespread appeal to citizens of Phnom Penh as the new public transport system
The “catch name” and logo of *Phnom Penh City Shuttle (PPCS)* were used for publicity and displayed on the bus body and bus stops, to appeal to citizens of Phnom Penh as the new public transport system, which is totally different from the motodop. This was expected to improve the image of bus and emotionally connect with citizens to encourage bus usage
- To develop a sufficient publicity campaign
TV and radio programs were broadcast, newspaper advertisement and banners were employed and posters, pamphlets and T-shirts were distributed to the citizens to promote an understanding of the bus as a new public transport system in the city.
- To prepare a comfortable mode of transport
All buses for the experiment were to be air-conditioned to protect passengers from heat and dust and from the rain.

- To secure the punctuality of bus operation
It was necessary to develop a punctual operational schedule even during peak hours, considering estimated operational speed, stopping time at bus stops, route length and operational interval, and to display this information at the bus stops. A functional bus operation increases convenience for the bus passenger and relieves them of the anxiety generated by an irregular bus service.
- To develop a better bus operational environment
Prohibition of 2-wheeled vehicles along part of the bus route, installation of bus stop marking and control of illegal parking within the bus stop area by police officers, were measures that were implemented to improve the bus operational environment. To provide the detour routes for 2-wheeled vehicles, pavement of St.63 and St.105 was improved (Figure 20.2-2). Moreover, the Study Team requested the Phnom Penh Water Supply Authority to minimize the obstruction caused by the on-going water supply construction on Monivong Blvd.
- Others
PPCS Gallery, which was simply an exhibition of drawings on the Traffic Safety Campaign by school children in Phnom Penh City, was held in the buses to attract more bus passengers, especially school children and their parents.

(2) Outline of Bus Operation Experiment

The outline of the city bus operation of the Public Experiment, based on the above-mentioned strategies, is presented in Table 20.2-1. To implement the smooth transfer from the Public Experiment to actual future bus operation, the concept of a city bus operation was planned keeping in mind the need to impress the people living in Phnom Penh with the advantages of a bus system.

Table 20.2-1 Outline of Bus Operation Experiment

a. Bus route	Radial route and ring route shown in Figure 20.2-1
b. Bus fleet	23 air-conditioned minibus (29 seats) With logo sticker, front board and designated number
c. Fare system	800 riels flat fare (Cheaper fare of 500 riels for the first 5 days and the last 8 days)
d. Operation hours and frequency	5:30 - 19:30 (14 Hours) Every 6 - 10 minutes
e. Bus stop and bus shelter	Installation of 56 bus stops and renovation of 8 shelters Bus stop will be provided every 300 - 500m
f. Improvement of the circumstances of the bus routes	Prohibition of motorcycles along bus route (Along Monivong between Sihanouk and Charles de Gaulle) Installation of bus stop marking Prohibition of parking in front of bus stop
g. Advertisement and others	Traffic campaign Public information by TV, radio, banner and newspaper Distribution of posters and pamphlets
h. Bus passenger demand forecast	500 riels flat fare: 12,900 passengers/day 800 riels flat fare: 4,900 passengers/day
i. Measures to help smooth operation	Prohibition of 2-wheeled vehicles on a section of Monivong Blvd. between Sihanouk Blvd. and Charles de Gaulle Blvd. Also pavement of St. 63 and St. 105 was improved to provide detour routes.

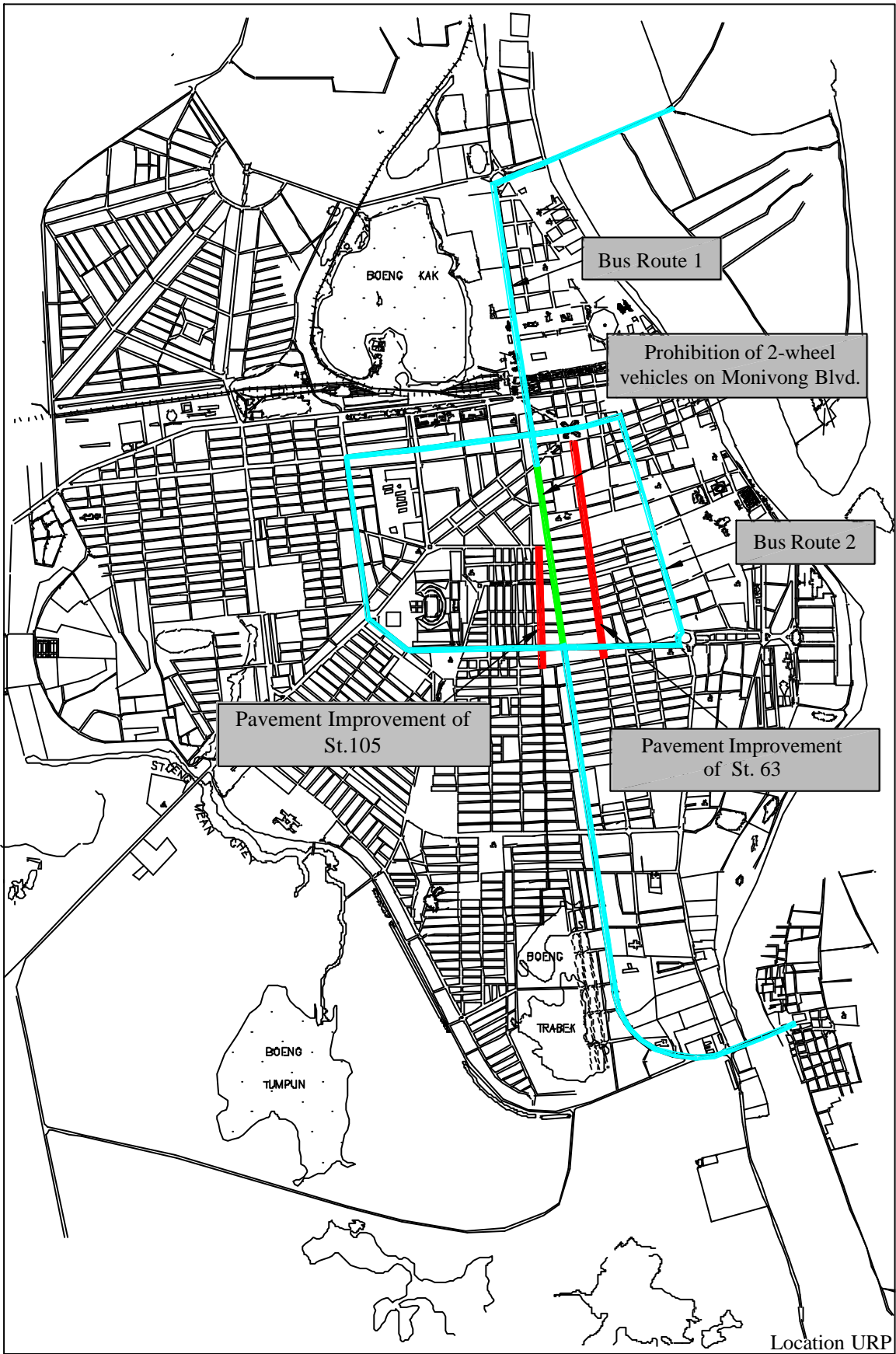


Figure 20.2-1 Location of Public Experiment

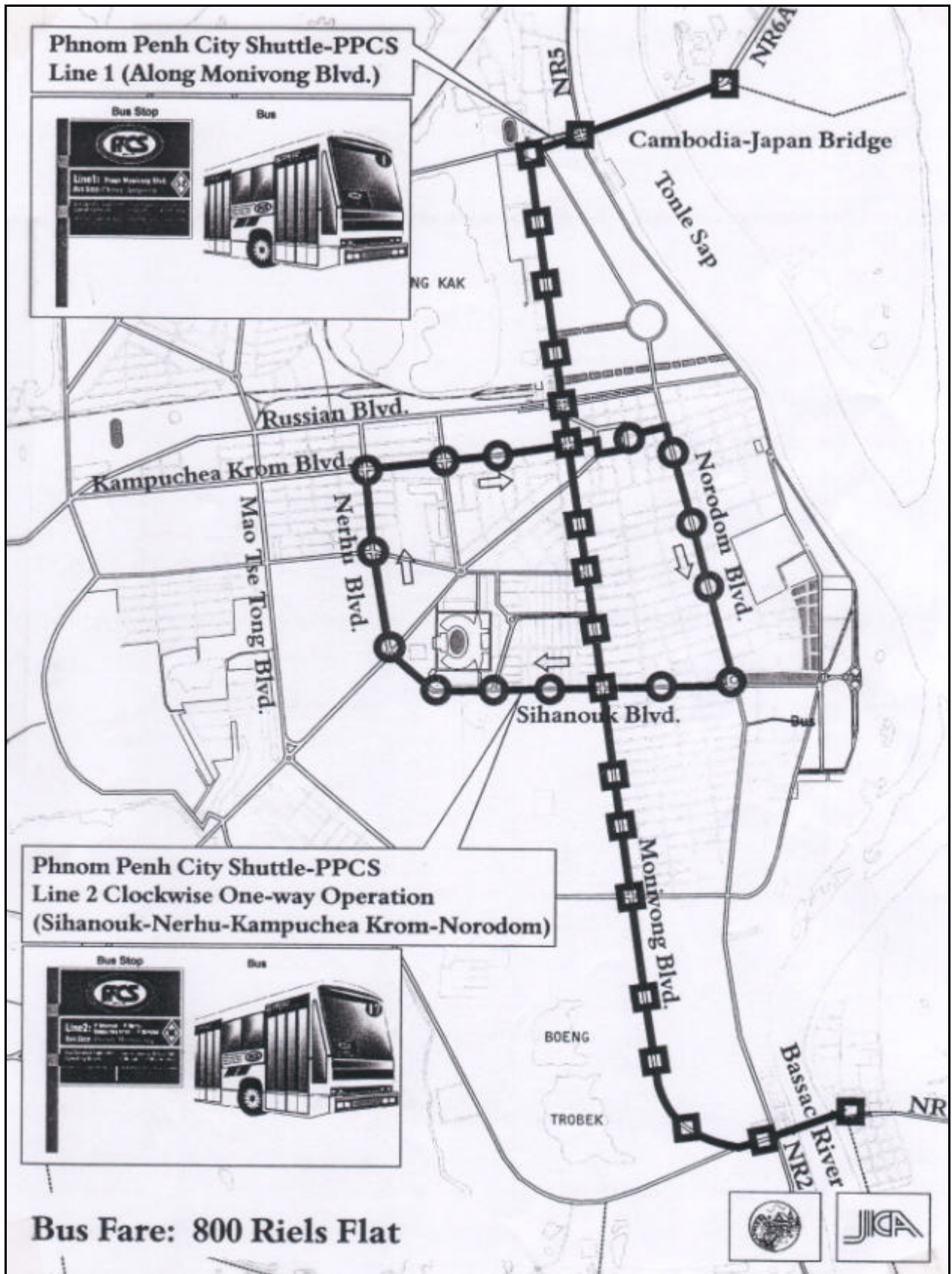


Figure 20.2-2 Bus Route for Public Experiment

(3) Activities

The overall schedule of the Bus Operation Experiment is shown in Figure 20.2-3. The preparatory work (Appendix 20-2-1) for the Bus Operation Experiment started in the second phase of the Study (November 2000). The major preparatory work activities were as follows:

- Plan of bus routes,
- Creation of bus 'catch name' and logo,
- Design and installation of bus stops and bus shelters, and
- Design and conduct publicity work (Appendix 20-2-2), etc.

A two-day dry run of city bus operation for the drivers, conductors and stationmasters was conducted prior to the Bus Operation Experiment. The Governor of Phnom Penh, the Ambassador of Japan, the Representative of JICA, MPP/DPWT officers, students and some members of the media were invited to the opening ceremony, which was held a day before the Bus Operation Experiment.

The actual experiment started from 1 June 2001, with a mobilized fleet of 23 buses and a staff of 88 persons. There were some anxious moments concerning the acceptance of the Bus Operation Experiment by the citizens of Phnom Penh, given this was the most important issue before the Experiment commenced. However, the maximum daily bus passengers reached 5,487 at the beginning of the Experiment, which started with a flat fare of 500 riels. This favorable number of passenger was attained owing to the good impact of advertisement by TV, radio, newspapers and banners. Following this the number of passengers decreased by approximately 2,300, due to the increase of the fare to 800 riels. The Bus Operation Experiment finished on schedule with more than 100,000 total participants (bus passengers), without any serious accidents. Total fare revenue was more than US\$15,000. Newspaper articles concerning the Bus Operation Experiment are presented in Appendix 20-20-3.

During the last eight (8) days of the Experiment, the fare was lowered to 500 riels again in appreciation of passengers' participation and cooperation in the Bus Operation Experiment. To develop additional passenger demand in the latter half of the Experiment, selected drawings of the Traffic Safety Campaign were exhibited in what was called the PPCS Gallery. (See Section 20.1.1 Paragraph (8) for details of the drawing contest)

One of the potential major obstructions to the smooth operation of buses was the installation of water supply pipes which was on-going along Monivong Blvd. The Study Team requested the Phnom Penh Water Supply Authority (PPWSA) that obstruction of the carriageway on Monivong Blvd. be kept to a minimum. PPWSA, in recognition of the Experiment, agreed to do their best to minimize the obstruction. Consequently, the bus was able to smoothly operate along Monivong Blvd. due to the efforts of PPWSA.

There were two cases, however, that resulted in the detour of bus route and the stoppage of bus operation, respectively.

- There was the detour of the bus route along Norodom Blvd. near Independent Monument on International Children's Day (1 June), and
- Bus operation was stopped for one hour due to the congestion along Monivong Blvd. caused by a political party meeting along Norodom Blvd. on 28 June. (Congestion on Norodom Blvd. was avoided by detouring the bus route.)

The following traffic surveys related to bus operation were conducted together with the Experiment to understand and identify the characteristics of bus operation, bus passengers, shop owners, motodop drivers, etc. (The results and analysis are summarized in subsection (4) below.)

- Bus passenger counts
- Bus passenger OD interview
- Bus passenger opinion interview
- Residents/shop owners opinion interview
- Motodop drivers/passengers opinion interview
- Bus travel speed survey by GPS

The problems encountered during the Experiment and the results/effectiveness of the Experiment are summarized below.

a. Encountered problems

- Conflict between owners of shops in front of bus turning point
The shop owners complained about the bus operation because the waiting buses at the bus turning points during off-peak periods were interrupting their activities. The transfer of the bus turning points settled this problem.
- Traffic accident
A bus scraped against the traffic signal along Norodom Blvd on 20 June; fortunately, no one was hurt and the signal was only slightly damaged.
- Rumor of a motodop drivers' strike against the bus operation experiment
There was a rumor of a motodop drivers' strike against the bus operation experiment because some motodop passengers shifted to the bus service. However, no actual strike took place.
- Illegal parking in the bus stop zone
Bus operation was sometimes disturbed by illegal parking, such as private cars, motodops and cyclos, in the bus stop zone at some locations despite the publicity work beforehand and control by traffic police.
- Blocking of bus stop by the water supply construction
Passengers could not use some bus stops because they were blocked by the water supply construction works. The installation of movable bus stops near the fixed bus stops solved the problem.

b. Results/effectiveness

- **Preparatory work and implementation of the Bus Operation Experiment by the collaboration between public and private sectors**
Preparatory work and implementation of Bus Operation Experiment were smoothly carried out with cooperation among MPP/DPWT staff, police officers and district officers, the advertisement agency, broadcasting company, newspaper company, bus company and travel agency, the residents living along bus routes and the Study Team.
- **Widespread acceptance of the city bus system among the citizens of Phnom Penh**
Acceptance of a bus system as the new public transport means, providing safety and comfort, is beginning to spread among Phnom Penh citizens through the Bus Operation Experiment, in which more than 100,000 citizens participated.
- **Bus operation database**
The bus operation database, such as characteristics of bus passengers obtained from the related traffic survey, was stored for use in implementing the actual city bus operation in the future.
- **Continuation of bus operation**
The bus operation was continued by the Department of Public Works and Transport (DPWT) on a smaller scale (17-bus fleet reduced from 23 buses) from 1 July because of the large support of the citizens and the decision of the Governor. The fare was 500 riels flat and 17 buses with drivers were leased from the private bus companies. The total number of passengers from 1 to 31 July was 92,977 (Line 1 : 55,295 and Line 2: 37,772). Prior to the continuation of bus operation, the Study Team gave advice about how to make the bus operation better based on the results of the Experiment, such as the required number of bus fleet, peak period, location of bus stops, necessity of periodic analysis of bus data and meetings not only among DPWT staff but also with the private sector, such as advertisement agency and bus company. To DPWT's regret, the bus operation had to be discontinued after only one (1) month because of substantial budget deficit.

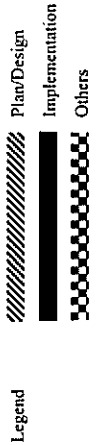
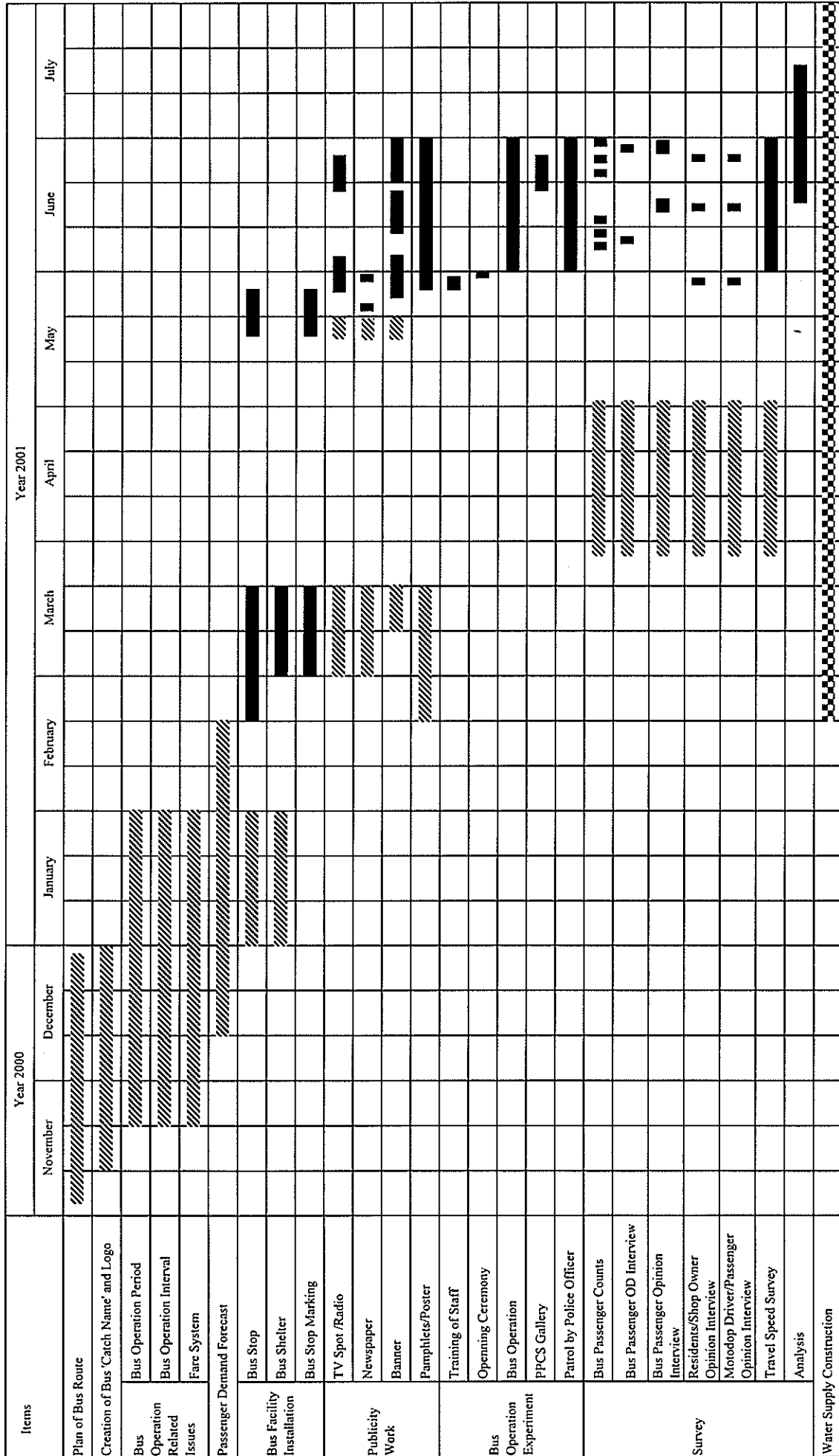


Figure 20.2-2 Overall Schedule of Bus Operation Experiment



Opening Ceremony at Hun Sen Park



Bus Stop and Bus Shelter



Banners and PPCS Bus



Conductor in the Bus



Students waiting for PPCS Bus



First Day of PPCS Gallery

Figure 20.2-3 Activities of Bus Operation Experiment