

9 SHORT-TERM ACTION PLAN

1) Plan Formulation

(a) Approach: The Short-term Action Plan (STAP) encompasses proposed solutions to current urban transport problems and issues, and lays the foundation for the long-term development plan. It sets out things that could and should be done over the next five years that are also consistent with the long-term strategies described in the preliminary Master Plan. The criteria to select the activities for inclusion in the Short-term Action Plan are as follows:

- (a) Those which address immediate and urgent problems concerning road-based public transport;
- (a) Those which do not require substantial funding other than those already mobilized or committed;
- (b) Those which can be done by existing agencies and institutions of the city or national government; and
- (c) Those which clear away obstacles to the realization of the medium- and long-term plans, and pave the way for the latter's smooth implementation.

With the present as a starting point, the Short-term Action Plan follows up on the ongoing Bus Modernization Project. It identifies the critical tasks necessary to ensure effective deployment of 1,318 new buses and the complementary traffic demand management (of motorcycles and other road users) to shift demand away from private to public transport. Suggestions on improving road safety are also reiterated in the form of actionable steps.

(b) Overall Structure of the Plan: The selected Short-term Action Plan components are not stand-alone actions. Bus transport development is the core of the plan. Bus corridor management and traffic safety improvement support bus transport operations and redress current undesirable road and traffic conditions. More importantly, the Short-term Action Plan is part of the comprehensive Master Plan and responds to the latter's objectives and actions. The relationship of the action components and their connection to the Master Plan are summarized in Table 9.1.

2) Bus Modernization Program

The only way for HCMC to avoid horrible traffic congestion in the future is for a large portion of the total daily trips to be carried on buses rather than on motorcycles and cars. By a combination of "carrot and stick" measures, bus services have to be made attractive and private modes of transport discouraged through physical and fiscal means.

This program intends to raise the modal share of public transport from less than 2% to about 30% in the medium-term period as part of the overall plan to transform HCMC into a thriving public-transport-oriented metropolis. The program is divided into two phases.

Phase 1 involves the replacement of old fleet with 1,318 new, higher-capacity, and more comfortable vehicles; the distribution of these buses to operators under a lease-purchase scheme; the restructuring of 30 small bus entities into three to five large efficiently managed operators; and the redesign of the bus route network.

Table 9.1 Structure of Short-term Action Plan

Short-Term Action Plan Component	Bus Modernization	Bus Corridor Management	Traffic Safety Improvement
M/P Strategy	<ul style="list-style-type: none"> • Development of bus transport system (C2) • Promotion of public transport use and expansion of services (C5) 	<ul style="list-style-type: none"> • Management of transport corridors (E1) 	<ul style="list-style-type: none"> • Enhancement of traffic safety (F)
M/P Action	<ul style="list-style-type: none"> • Establishment of bus operating business system (C21) • Strengthening of bus operation and management capacity (C23) • Formulation of subsidiary policy for public transport users (C51) 	<ul style="list-style-type: none"> • Development of bus corridors (C22) • Establishment of corridor management system (E13) 	<ul style="list-style-type: none"> • Establishment of accident database (F21) • Improvement of black spots (F22) • Improvement of enforcement (F41)
Short-term Measure	<ul style="list-style-type: none"> • Reform of bus industry • Bus route restructuring • Bus-related facility improvement 	<ul style="list-style-type: none"> • Better utilization of existing road infrastructure through traffic engineering • Implementation of bus priority measures • Enforcement of traffic regulations 	<ul style="list-style-type: none"> • Accident analysis • Infrastructure improvement • Enforcement • Increase of people's safety awareness
Monitoring Indicator	<p><u>Objective Indicators</u></p> <ul style="list-style-type: none"> • No. of passengers • Productivity of bus operation • Subsidy amount <p><u>Subjective Indicator</u></p> <ul style="list-style-type: none"> • Assessment of users 	<p><u>Objective Indicators</u></p> <ul style="list-style-type: none"> • Travel time/speed • No. of illegal parking/activities • No. of signalized intersections <p><u>Subjective Indicator</u></p> <ul style="list-style-type: none"> • Assessment of users 	<p><u>Objective Indicators</u></p> <ul style="list-style-type: none"> • Traffic accident rate • % of drivers license holders • Increase in safety awareness of the people <p><u>Subjective indicator</u></p> <ul style="list-style-type: none"> • Assessment of users

Source: Study Team

Phase 2 entails reforms in the public sector that will give operators opportunities to become efficient and to expand their fleet to meet growing demand; assistance to operators in modernizing their management and operating practices; implementation of bus priority and bus-only schemes on key corridors; and, encouragement of major private investments into the bus sector.

(a) Fleet upgrading: Acquisition and deployment of 1,318 new buses, ranging from medium to large, to replace vehicles more than 20 years old. This will increase passenger capacity, although more vehicles alone will not be sufficient. For a target demand of 15% of daily trips by year 2010, the required bus population is about 12,353 of various sizes. This implies an incremental expansion of 9,300 buses during Phase 1.

Implementing Agency: Saigon PTC is the designated administrator of the bus-leasing program, involving the 1,318 buses in Phase 1. For Phase 2, the implementation is proposed to be under the MOCPT, and the Department of Planning and Investment (DPI) if investment is from the private sector.

Cost: approximately US\$ 40 million for the 1,318 buses, and US\$ 209 million for the Phase 2 fleet. Operators are expected to amortize the capital costs for Phase 1 and to fund the

Phase 2 investment.

(b) Technical assistance to bus operators and government regulators: The fleet upgrading scheme alone will not be sufficient unless higher vehicle availability and productivity can be provided and secured in a sustainable way. A technical assistance component will be necessary to provide the fleet expansion (or hardware solution) with the corresponding software to make phases 1 and 2 succeed. These “soft” solutions cover two fronts: restructuring in the private sector and reforms in the public sector. The first is intended to assist Saigon PTC and the private operators, especially the transport unions, become professional managers of large fleets in the areas of finance, maintenance and operations. The second is directed at helping the MOCPT become an effective regulator that is able to balance public interest with profit objectives of operators and create a more commercial regime that is fair to all service providers.

Implementing Agency: MOCPT and Saigon PTC; supported by an international team of advisers with expertise in urban transit, bus maintenance, service planning, crew and fleet scheduling, ticketing/fare collection system, finance, transit regulation, and human resource development.

Cost: Approximately US\$ 2 million over two years, to be sourced from ODA as grant.

(c) Bus priority measures: These encompass traffic engineering and management measures to be designed and implemented on primary bus routes to minimize time delays, or speed up, if not maintain the travel speed, of buses on key roads. Similar to what were demonstrated in the Policy Test Project of the HOUTRANS, these measures include bus priority on some road sections, or dedicated bus-only lanes in road sections with wider carriageways, bus priority at intersections, parking restrictions for cars and motorcycles, modifications of traffic flow directions, signals, pavement markings, geometric improvements, and the like.

Implementing Agency: Urban Traffic Management Unit of the TUPWS in coordination with the Public Lighting Company, Traffic Police, and the major (or Tier 1) bus operators.

Cost: Incorporated under the Corridor Management Project in Phase 2 with priority to two radial corridors comprising the UMRT alignments.

(d) Government support: Lumped under this component are such items as land for the depot requirements of the Tier 1 bus fleet operators (estimated at 536,000m²), a central bus maintenance facility for Phase 1 vehicles, redevelopment of the Ben Thanh Terminal into a major transit plaza, the construction of standard bus stops-shelters along the major corridors, and the allocation of operating and interest subsidies to bus operators.

Implementing Agency: In the case of land, the city government of HCMC; Transinco or bus manufacturer for the maintenance facility; TUPWS for the bus terminal and bus stops; MOCPT for administration of the subsidies.

Cost: US\$ 50 million for land; US\$ 0.6 million for bus stops; US\$ 4 million for transit plaza; US\$ 6.3 million for interest subsidy on Phase 1 buses; US\$ 5.8 million subsidy to bridge gap between fares and operating costs. Cost estimate for the central bus maintenance facility is not available, but a notional cost of US\$ 5 million is used for capital budgeting. The latter cost is proposed to be funded by the bus manufacturer during Phase 1. During Phase 2, bus operators shall provide their own maintenance shops.

Total cost for this program is estimated at about US\$ 222 million.

(e) Critical Success Factors: The bus leasing program in Phase 1 may fail if the recipients of the vehicles do not maintain them and are unable to repay the monthly amortization charges. The ability to repay the leasing charges, in turn, will depend on the approved fares as well as the amount of subsidy to be given in case the fare level is below production costs.

Bus operators need to learn new techniques and systems for managing and operating a large fleet, which are quite different from their practices as transport cooperatives. The various personnel of the bus operators, especially the drivers and mechanics, have to be trained. Otherwise, the productivity of the vehicles will be poor. Bus operators will not have the incentives to become efficient nor be able to attract new capital for expansion during Phase 2, unless the ability of the government in regulating them is also improved. Noncommercial policies, which may have worked in the past, would have to be changed drastically. Rules of engaging in the transit business would have to be simplified.

As the rate of motorization exceeds the ability of the government to expand the road network, the competition for scarce road space will become more severe. Buses will suffer in competing with other road users, unless the government implements bus-priority and bus-only measures. To get more commuters to shift to buses, they should be able to experience shorter traveling times on buses than on cars or motorcycles.

3) Bus Corridor Management Program

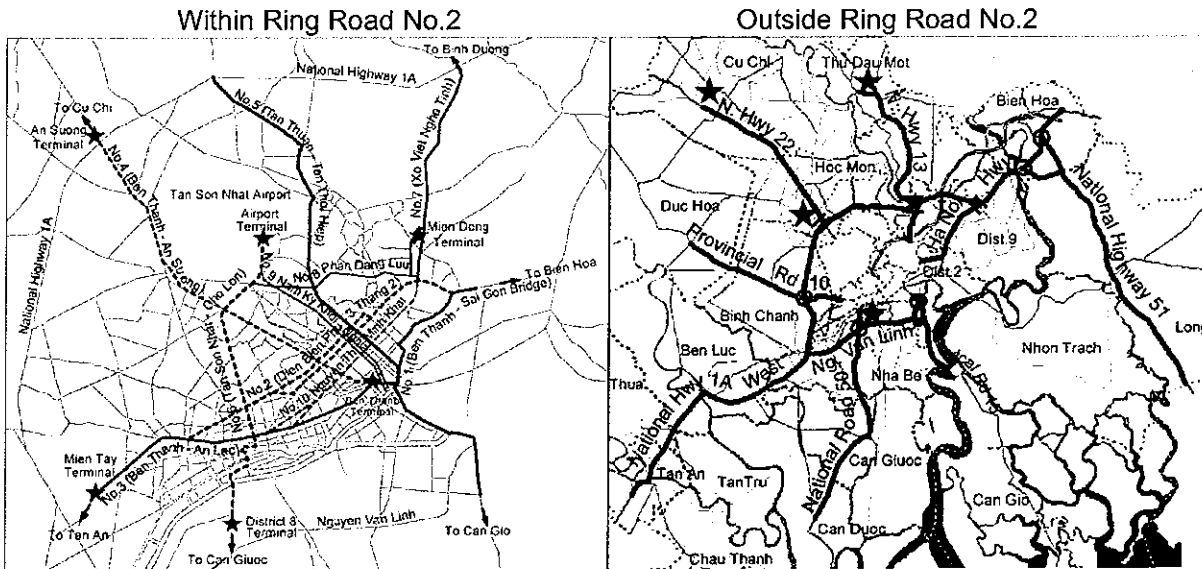
(a) Approach to Short-term Plan: Traffic management can utilize existing infrastructure effectively and improve the transport situation without incurring large investments for road construction. They are essential in improving operating conditions for buses, with some restrictions on motorcycles and other road users, as well as in promoting traffic safety. The focus of traffic management in the short-term plan is placed on improving traffic conditions at major corridors in the study area.

Priority for traffic improvement should be given to the corridors where bus services operate. As the current government policy is directed toward the expansion of bus services by fielding more and larger buses, the overall traffic management should be closely linked with public transport development. The Policy Test Project was planned with this concept.

(b) Traffic Engineering Measures: There exist a number of bottleneck points and accident-prone locations in HCMC. Congestion can be mitigated and accidents can be reduced by implementing small-scale traffic improvement measures such as intersection geometry improvement and installation of traffic control devices. Mid-block sections of roads also play an important role in creating safe and pedestrian-friendly environment.

(c) Existing Condition of Major Bus Corridors: Bus corridors exert strong, if not controlling, influence on the structure of the route network. They reflect heavy travel demands with pronounced orientations. Based on the results of traffic surveys and the analysis of the existing road network, major transport corridors were identified in areas outside and within NH1. Around the city center, 10 radial and circumferential corridors were identified. On a broader scale, in the area within NH1, a core network comprising 10 main alignments was identified (refer to Figure 9.1).

Figure 9.1 Proposed Bus Corridors



Source: Study Team

(d) Plan for Bus Corridors and Cost Estimates: Specific improvement plans on traffic management on major routes were worked out based on the results of various surveys and observations. Required improvement items and costs for each intersection and road section are summarized in Tables 9.2 and 9.3.

Table 9.2 Required Improvements on Bus Corridors (Within Ring Road No.2)

Corridor	Infrastructure			Traffic Management					Bus & Street Amenities		Cost Est. (US\$ 000)
	Widening	Pave-ment	Signal-ization	Traffic Reorganiztn	Bus* Priority	Mid-block	Inter-section	Curb-side Control	Bus Stop Facility	Bike Lane/Sidewalk	
No.1. Ben Thanh - Saigon Bridge Corridor											\$1,158
Section1	Quach Thi Trang - Ton Duc Thang				E		x			x	
Section2	Ton Duc Thang			x	P	x	x	x		x	
Section3	Ton Duc Thang - Thi Nghe Br			x	P	x	x		x	x	
Section4	Thi Nghe Br - Saigon Br			x	E		x		x	x	
No.2. Dien Bien Phu – 3 Thang 2 Corridor											\$1,830
Section1	Nguyen Huu Canh- Rach Thi Nghe				E		x		x	x	
Section2	Rach Thi Nghe - Dinh Tien Hoang			x	E		x	x	x	x	
Section3	Dinh Tien Hoang - Cong Truong Dan Chu (CTDC)			x	E	x	x	x	x	x	
Section4	CTDC - Nguyen Tri Phuong			x	E	x	x	x	x	x	
Section5	Dinh Tien Hoang – CMTT			x	E	x	x	x	x	x	
Section6	CMTT - Nguyen Tri Phuong			x	E	x	x	x	x	x	
Section7	Nguyen Tri Phuong - Cay Go			x	P	x	x	x	x	x	
No.3. Ben Thanh - An Lac Corridor											\$3,003
Section1	Quach Thi Trang - Tran Hung Dao			x	E		x	x		x	
Section2	x	x	x	x	P	x	x	x	x	x	
Section3	Nguyen Van Cu - Nguyen Tri Phuong (NTP)			x	P	x	x	x	x	x	
Section4	NTP - Chau Van Liem			x	P	x	x	x	x	x	
Section5	Chau Van Liem - 3 Thang 2			x	E	x	x	x	x	x	
Section6	3 Thang 2 - An Lac Bus Terminal				E		x		x	x	

(Continuation of Table 9.2)

No.4. Ben Thanh - An Suong Corridor											\$4,642
Section1	Quach Thi Trang - 3 Thang 2				x	P	x	x	x	x	x
Section2	3 Thang 2 - Nga Tu Bay Hien	x	x	x	x	P	x	x	x	x	x
Section3	Nga Tu BayHien- Nga Ba Queo			x	x	P	x	x	x	x	x
Section4	Nga Ba Queo - NH1A	x	x	x	x	P	x	x	x	x	x
No.5. Tan Thuan - Tan Thoi Hiep Corridor											\$5,528
Section1	Cau Tan Thuan - Cau Khanh Hoi					P	x	x	x	x	
Section2	Ton Duc Thang - Vo Thi Sau		x		x	P	x	x	x		x
Section3	Vo Thi Sau - Nga Tu Phu Nhuan	x	x	x	x	P	x	x	x	x	x
Section4	NgaTuPhuNhuan - NgaSauGoVap	x	x	x	x	P	x	x	x	x	x
Section5	Nga Sau Go Vap - Le Duc Tho	x	x	x	x	P	x	x	x	x	x
Section6	Le Duc Tho - NH1A	x	x	x	x	P	x	x	x	x	x
No.6. Tan Son Nhat - Cho Lon Corridor											\$2,415
Section1	CauNhiThienDuong - Hung Vuong	x	x		x	P			x	x	x
Section2	Hung Vuong - 3 Thang 2	x	x	x	x	P		x	x	x	x
Section3	3 Thang 2 - Nga Tu Bay Hien			x		P			x	x	
Section4	Nga Tu Bay Hien - Lang Cha Ca			x		P			x	x	
Section5	Lang Cha Ca - Nga Tu Phu Nhuan			x		P			x	x	
No.7. Xo Viet Nghe Tinh Corridor											\$3,004
Section1	Dien Bien Phu - Back Dang		x	x	x	E	x		x	x	x
Section2	Back Dang - Xo Viet Nghe Tinh	x	x	x	x	E	x		x	x	x
Section3	XoViet Nghe Tinh - Xau Binh Trieu				x	E	x		x	x	x
Section4	Xo Viet Nghe Tinh - Back Dang			x	x	P	x		x	x	x
Section5	Back Dang - Dinh Bo Linh			x		E			x	x	
Section6	Dinh Bo Linh - Nga Tu Binh Trieu			x		P			x	x	
No.8. Phan Dang Luu Corridor											\$900
Section1	Lang Cha Ca - Nguyen Van Troi			x	x	E		x		x	x
Section2	Nguyen Van Troi - Phan Dinh Phung			x	x	E & P		x	x	x	x
Section3	Phan Dinh Phung - Le Quang Dinh			x	x	E & P	x	x	x	x	x
Section4	Le Quang Dinh - Xo Viet Tinh			x	x	E & P	x	x	x	x	x
No.9. Nam Ky Khoi Nghia - Airport Corridor											\$1,150
Section1	Pasteur (Ham Nghi - Ly Tu Trong)				x	P				x	x
Section2	Pasteur (Ly Tu Trong-Vo Thi Sau)					P				x	x
Section3	NKKN (Ham Nghi - Vo Thi Sau)					P				x	x
Section4	Vo Thi Sau - Cong Ly Bridge			x		P	x	x	x	x	x
Section5	Cong Ly Bridge - Hoang Van Thu				x	E & P	x	x	x	x	x
Section6	Hoang Van Thu - Airport					E	x			x	x
No.10. Nguyen Thi Minh Khai Corridor											\$1,600
Section1	Bach Dang - Thi Nghe Bridge			x		P	x	x	x	x	x
Section2	Thi Nghe Bridge - Phung Khac Khoan			x		P	x	x	x	x	x
Section3	Phung Khac Khoan - Ba Huyen Thanh Quan				x	E & P	x	x	x	x	x
Section4	Ba Huyen Thanh Quan - Ly Thai To			x		P	x	x	x	x	x
Section5	Hung Vuong (LTT - Hong Bang)				x	E		x		x	x
Section6	An Duong Vuong&Tran Phu (Hong Bang - Ly Thai To				x	E		x	x	x	x

Source: Study Team

Note: E: Bus exclusive lane; P: Bus priority lane (mainly mixed with M/C)

E&P: Inbound exclusive bus lane (towards city center), outbound bus priority lane (away from city center).

Table 9.3 Required Improvements on Bus Corridors (Outside Ring Road No.2)

Corridor		Infrastructure			Traffic Management			Bus Facilities			Amenities			Cost Est. (US\$ 000)
		Widening	Pave- ment	Signal- ization	Lane Designation	Add'l Signal Phase	Marking /Sign / Median Barrier	Geom. Modification	Stop Sign & Pad	Shelter/ Busbay at Key Stop	Transfer Node/ Terminal	Side- walk	Street Light	
No.1. Ha Noi Highway													\$3,200	
Section 1	Saigon Br. - An Binh				X				X	X		X	X	
Section 2	An Binh - Dong Nai Br.	X		X	X	X	X	X	X	X	X	X	X	X
Section 3	Dong Nai Br. - Bien Hoa Ctr			X	X		X	X	X	X		X		X
No. 2. Nguyen Van Linh													\$700	
Section 1	Natl Hwy 1A-Ong Lon River			X	X	X	X	X	X	X		X		
Section 2	Ong Lon River-Prov Rd.15				X		X		X	X		X		
No.3. Provincial Road 10													\$2,100	
Section 1	Hung Vuong - An Duong Vuong						X	X	X	X		X		
Section 2	An Duong Vuong - City boundary	X	X			X	X	X	X	X		X	X	X
Section 3	City boundary- Duc Hoa Ctr	X					X	X	X	X				
No.4. Provincial Road 15													\$300	
Section 1	TanThuan Br. - PhuXuan Br.						X			X		X		
Section 2	PhuXuanBr.- Ferry Terminal						X	X	X	X				
No.5. National Highway 1A_City													\$1,100	
Section 1	Ha Noi Hwy - Hwy 22				X	X	X	X	X	X		X		X
Section 2	Hwy 22 - An Lac			Under construction	X	X	X		X			X		X
No.6. National Highway 1A_West													\$3,000	
Section 1	An Lac - City Boundary	X	X		X	X	X	X	X	X		X		X
Section 2	City boundary - Tan An Ctr			X	X	X	X	X	X	X		X	X	X
Section 3	Tan An Ctr			X	X	X	X	X	X	X		X	X	X
No.7. National Highway 13													\$800	
Section 1	Binh Trieu Br.- Hwy 1A	X			X		X		X			X		X
Section 2	Hwy 1A - Thu Dau Mot Boundary			X	X		X		X	X		X	X	X
Section 3	Boundary - TDM Bus Terminal				X		X		X	X				
No.8. National Highway 22													\$1,900	
Section 1	Natl Hwy 1A - Dist Rd No.6			X	X	X	X	X	X	X		X		X
Section 2	Dist Rd 6 - Cu Chi Bus Terminal	X		X	X		X		X	X		X		
No.9. National Highway 50													\$1,100	
Section 1	Nhi Thien Duong Br. - City boundary	X	X		X		X		X	X	X	X		X
Section 2	City Boundary - Can Duoc Ctr				X		X	X	X	X		X		X
No.10. National Highway 51													\$1,300	
Section 1	Ha Noi Hwy - Bien Hoa Boundary				X		X		X	X		X		X
Section 2	Bien Hoa boundary- An Phuoc			X	X		X		X	X		X		X
Section 3	An Phuoc - Phuoc Thai				X		X		X	X		X		X

Source: Study Team

4) Traffic Safety Improvement Program

In parallel to the implementation of bus corridor management, traffic safety improvement will also be conducted. Measures and activities are summarized in Table 9.4.

Table 9.4 Proposed Traffic Safety Improvement Measures

Category	Specific Measures
1. Road Safety Planning	<ul style="list-style-type: none"> • Revival of computerized accident database • Formulation of Multi-year Traffic Accident Reduction Plan
2. Enforcement	<ul style="list-style-type: none"> • Strict enforcement of traffic rules • Training program for the Traffic Police
3. Traffic Education and Campaign	<ul style="list-style-type: none"> • Improvement of licensing system • Expansion of safety education in primary schools • Conduct of frequent safety campaigns
4. Institutional Arrangement for Traffic Safety	<ul style="list-style-type: none"> • Rationalization of Road Traffic Law • Strengthening of related organizations
5. Infrastructure Improvement	<ul style="list-style-type: none"> • Improvement of safety facilities at black spots <ul style="list-style-type: none"> - Improvement measures for 19 identified black spots in HCMC from the aspect of (i) reduction of conflict area, (ii) introduction of left-turn phase, (iii) control by police and (iv) removal of vendors and other obstacles. • Traffic safety audit

Source: Study Team

10 FEASIBILITY STUDIES

A. Ring Road No.2

1) Project Outline

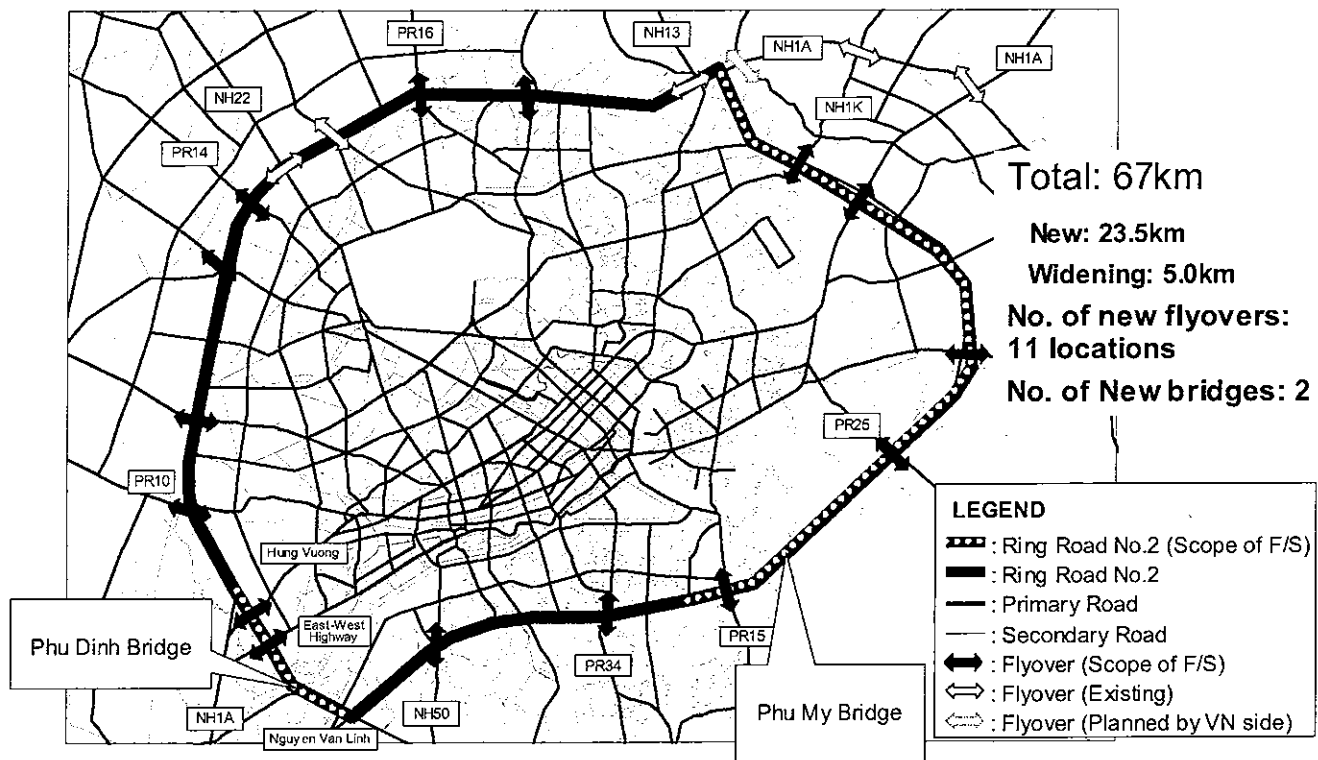
Ring Road No.2 is a priority project of the city authority. It will form the first high-standard ring road by completing missing links in order to connect the existing National Road No.1 and the road network in southern HCMC. RR2 when completed is expected to function as the backbone in the future expanded urban area. This road is extremely important both from the transport and urban development viewpoints.

From the transport viewpoint, it will divert industrial traffic to/from factories and ports from using the roads in the city center. From the urban development viewpoint, it will provide ample opportunities for new development along the road, especially new urban centers in the areas where the ring road intersects with major radial corridors. The ring road will give a great opportunity to encourage development of a polycentric urban structure.

The project is composed of the following components:

- (a) New construction of eastern section (23.5km including Phu My Bridge)
- (b) Widening of southwestern section (5.0km including Phu Dinh Bridge)
- (c) Construction of flyovers (a total of 11 locations)

Figure 10.1 Components of Ring Road No.2 Project



Source: Study Team

2) Demand Forecast

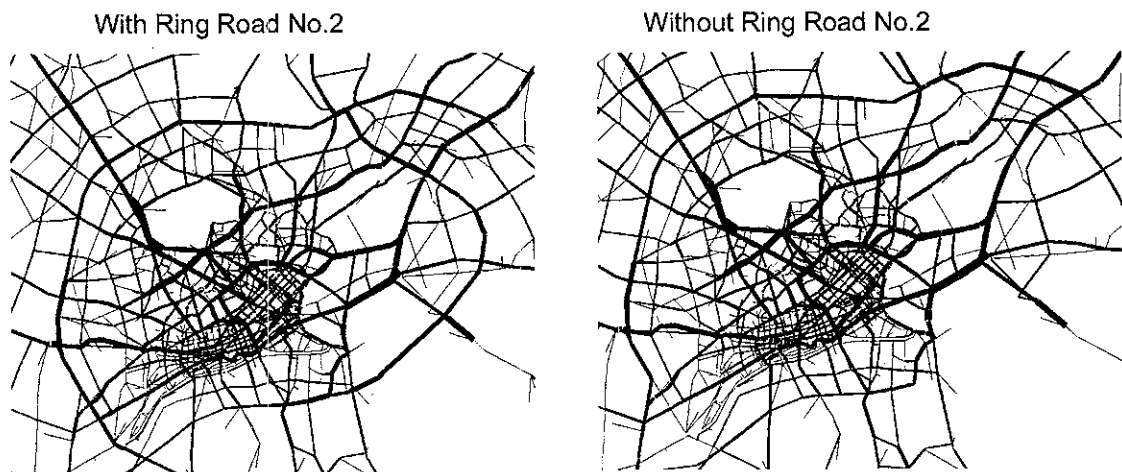
At present, the average daily traffic (ADT) on the existing NR No.1 is 25 to 28 thousand PCUs/day on Thu Duc – Au Suong section, 30 to 36 thousand PCU/day on Au Suong – Au Lac section and 2 to 3 thousand on Nguyen Van Linh section. On these sections, future traffic demand is estimated to be 50 to 60 thousand, 50 to 70 thousand, and 40 thousand PCUs/day, respectively. The eastern section will be utilized by 70 to 100 thousand PCUs/day. The project road can contribute greatly to decongest roads in the city center.

3) Preliminary Engineering

The northern section along NR No.1 has been widened through an ADB project. The western section is also being widened through a local BOT project. Thus, in the HOUTRANS, the preliminary engineering study was made for the missing part of the eastern section including Phu My Bridge (23.5km) and the widening of the western section including the construction of Phu Dinh Bridge. Considering that the ring road must accommodate a busway and serve the expected urban development along the section, it is proposed to have six lanes with service roads (see Figure 10.3).

For Phu My Bridge and Phu Dinh Bridge, three alternative plans were studied to assess economic costs and implementability. It is thus proposed to adopt a cable-stayed, PC girder bridge for Phu My Bridge (260m span, 1,920m approach and 2,440m total bridge length and PC rahmen bridge for Phu Dinh Bridge (90m span, 320m approach and 530m total length bridge). Flyovers and interchanges are also proposed for junctions with major radial roads.

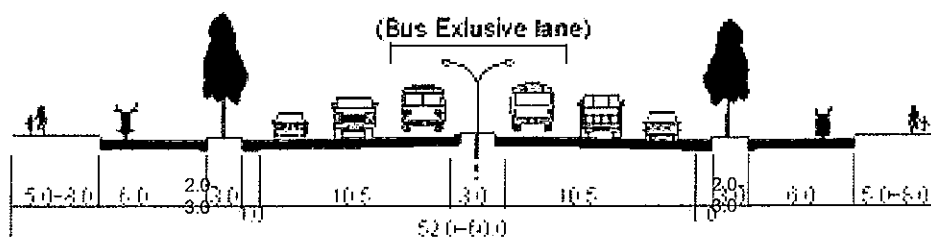
Figure 10.2 Estimated Traffic Volume



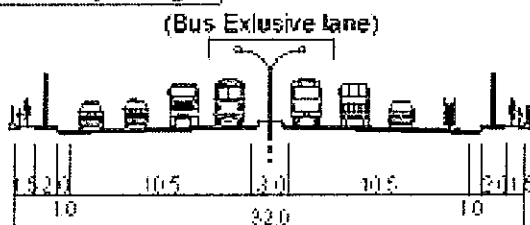
Source: Study Team

Figure 10.3 Typical Cross-section of Ring Road No.2

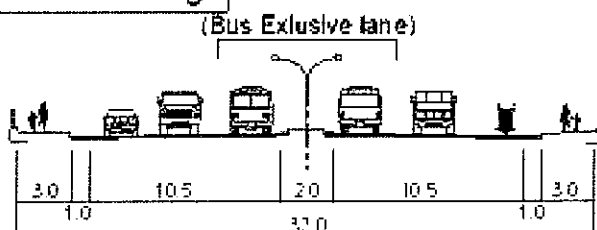
Embankment of 6 Lanes with Frontage Road



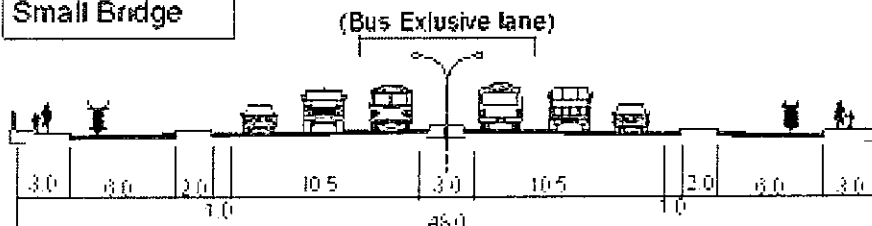
Phu My Bridge



Phu Dinh Bridge



Small Bridge



Source: Study Team

4) Estimated Costs

On the basis of the preliminary design and survey on resettlement, the project cost was estimated. While total cost amounted to **US\$ 848 million**, priority sections (missing links in the east and southwest sections) would require **US\$ 786 million**.

Table 10.1 Construction Cost of Ring Road No.2

Section	Length (km)	No. of Lane	Cost (US\$ million)			
			Total	Construction	ROW ¹⁾	
East	Road	21.1	6	472	400	72
	Phu My Bridge	2.4	6	154	154	-
Southwest	Road	4.5	6	140	88	52
	Phu Dinh Bridge	0.5	6	20	20	-
Flyovers	11 sites	-	-	62	28	34
Total	-	-	-	848	690	158

Source: Study Team

¹⁾ ROW cost was estimated based on surveys on the number of people who would be affected and on current land value and compensation. A total of 10,340 persons are affected.

5) Implementation Plan

Although the construction of Phu My Bridge is planned under a BOT scheme, securing the necessary equity IRR from the private sector is unlikely if the construction cost is to be covered by toll collection alone. Therefore, the adoption of an appropriate PPP scheme is proposed, wherein the private sector will invest in busway structure, maintenance of the ring road and toll collection for Phu My Bridge¹, while the public sector will be responsible for land acquisition and construction of all infrastructures.

6) Economic and Financial Evaluation

The project is economically viable, generating an EIRR of 29% which was estimated based on direct benefits comprising reduction in VOC and time savings. Financial viability of the project as a whole is negligible because the toll revenue from the bridge is minimal.

7) Related Development

With the completion of the ring road, there will be great opportunities for urban development. Current practice indicates that land values with and without good infrastructure support in many parts of the study area differ significantly. This means that large gains can be obtained by the project implementing body. Or, the beneficiaries can shoulder the infrastructure cost if proper institutional arrangements are provided. Various urban development schemes must be implemented as part of Ring Road No.2 Project or in close coordination with it.

¹ It is assumed that toll for a passenger car will be VND 9,000 in the beginning and eventually increased to VND 15,000.

B. UMRT Line Project

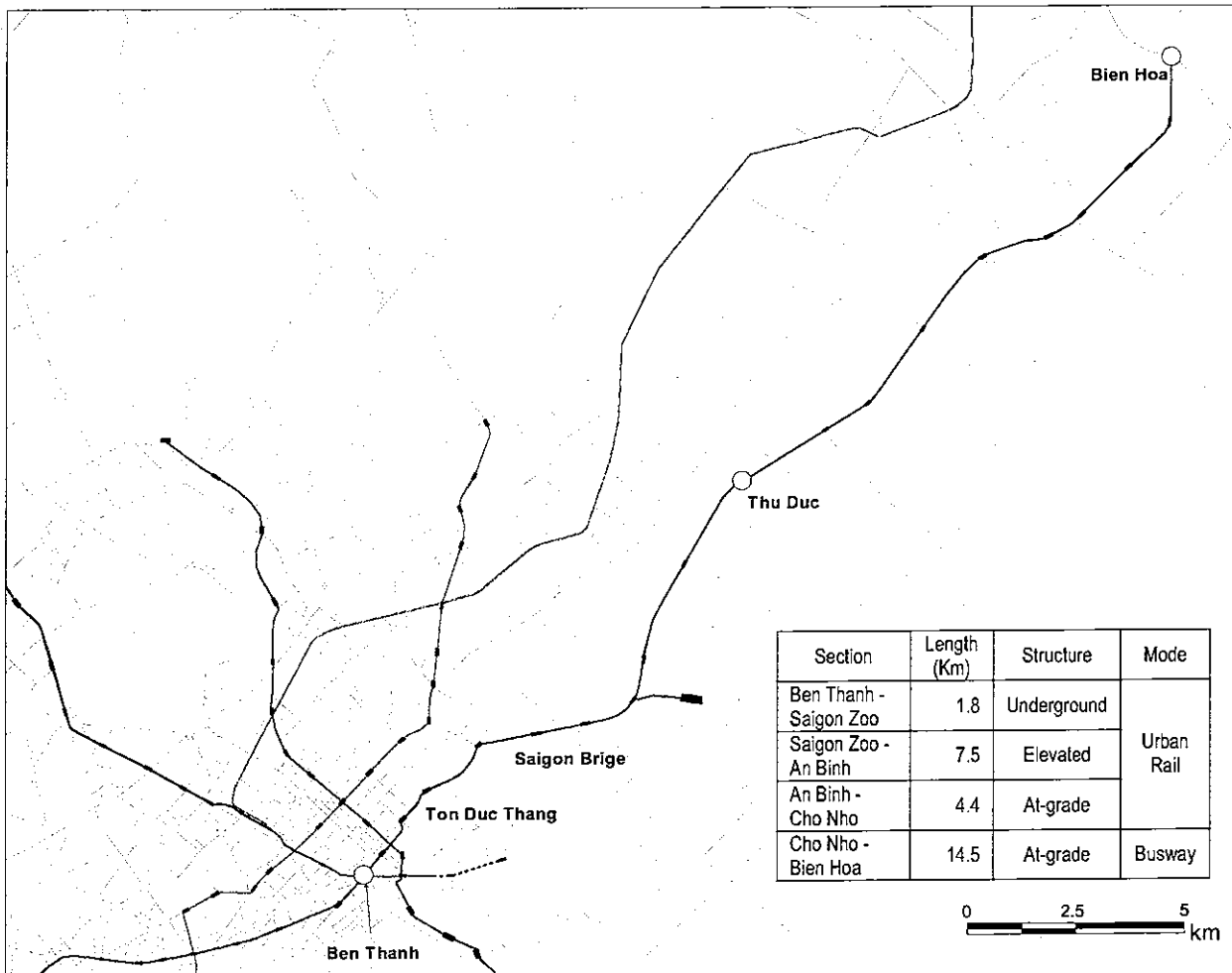
1) Project Outline

While the ring road will create a new corridor, the UMRT Line 1 is meant to expand passenger capacity along an existing and well-established corridor that links HCMC and Bien Hoa, the capital of Dong Nai province where industrial activities are concentrated. The corridor is expected to function as a vital link between two major urban centers and other economic and population sub-centers in-between.

UMRT Line 1 will provide a high-quality and high-capacity public transport system serving as the backbone of a public transit network. The project is composed of the following (see Figure 10.4):

- (a) Urban rail segment between Ben Thanh and Cho Nho (13.7km) which will initially be developed as a busway before being upgraded into rail services.
- (b) Busway segment between Cho Nho and Bien Hoa (14.5km), operating harmoniously with the rail component.

Figure 10.4 Location of UMRT Line 1



Source: Study Team

2) Traffic Demand

Without this project, the projected road-based traffic along Hanoi Highway and NR No.1 would reach more than 100,000 PCUs, inclusive of 6 to 10 thousand buses, per day. This volume represents a very high level of transport demand (and severe congestion without the UMRT). It is anticipated that such a system could accommodate ridership of 380,000 passengers a day in both directions at the inner sections, and 140,000 at the outer sections, of the railway line. On the other hand, the busway section along Cho Nho and Bien Hoa would carry between 100,000 to 160,000 passengers a day by 2020.

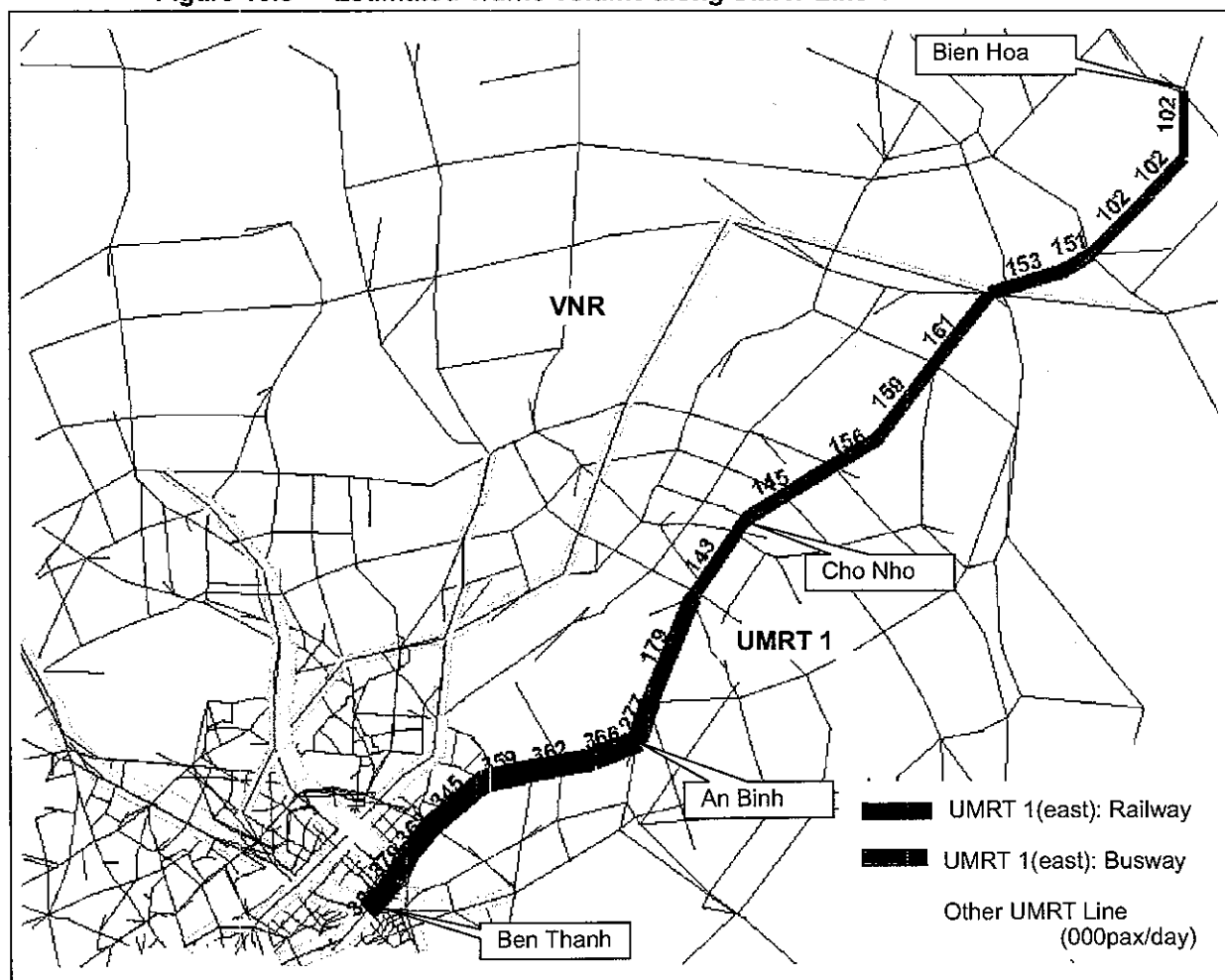
Table 10.2 Ridership of UMRT Line 1

Section	Length (km)	No. of Pax (000/day)	Average Trip Length (km)	Revenue ¹⁾ (US\$ 000/day)
Urban Rail: Ben Thanh – Cho Nho	13.7	526	8.3	322.0
Busway: Cho Nho – Bien Hoa	14.5	240	9.2	194.4
Total	28.2	766	8.6	471.2

Source: Study Team

¹⁾ Assumed fare is VND 5,000+500/km.

Figure 10.5 Estimated Traffic Volume along UMRT Line 1



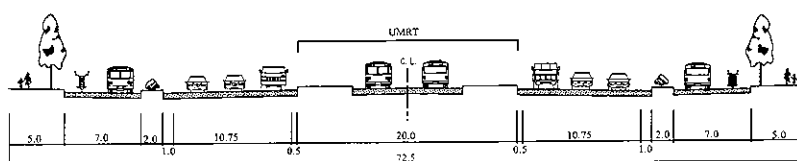
Source: Study Team

3) Preliminary Engineering

Major planning, environmental, route alignment and engineering issues along the transport corridor have been examined and do not present major impediments in the construction of a high-capacity Metro rail transit system along the UMRT Line 1 (East) transport corridor.

On the basis of the estimated traffic demand and internationally-accepted design standards, the vertical and horizontal alignment of the 28-km route has been determined – from Ben Thanh to Cho Nho and Bien Hoa. A typical at-grade cross-section is indicated on Figure 10.6. Government should, at an early stage, reserve the future rights-of-way, especially for key elements such as the depot area, stations, tunnel portal structure, tunnel vent shafts, electrical substations and the multimodal interchange terminals. This is of particular importance for the section of the line from Peoples Station 2 to Saigon Bridge Station 5.

Figure 10.6 Typical At-grade Cross-section of UMRT Line 1



Source: Study Team

4) Operation Plan

For the design year 2020, the passenger demand would require 6-car trains to be operated at 2.5 to 4.5-minute interval during peak hours for the 13.7km railway section between Ben Thanh and Cho Nho. With one way trip time of 23 minutes, a total of 126 cars is required. The selected location of the depot is an area near An Binh Station taking into consideration the availability of land and the proposed operation. The railway will be connected to Bien Hoa with busway at Cho Nho.

5) Terminal Development Plan

Preliminary plans have been prepared for the following terminal and stations:

- Ben Thanh Central Station: the primary consideration is easy connection between UMRT Line 1, UMRT Line 2, and bus services as well as with major facilities located in the area via underground paths and skywalks.
- Cho Nho Station: the configuration is intended to facilitate smooths transfer between rail and bus as well as the feeder services in the area.
- Bien Hoa Station: This is an end station of Line 1 and was planned to provide convenient transfer with bus services as well as access in the area.
- Other intermediate stations: The planning consideration is accessibility of passengers to/from stations and circulation of vehicles.

6) Required Investment

The project is estimated to cost US\$710 million – of which the railway component is \$578 million and the busway component is \$58 million. Another \$74 million is required to cover rights of way and resettlement for both components.

Table 10.3 Construction Cost of UMRT Line 1

System	Length (km)	Cost (US\$ mil)		
		Total ¹⁾	Capital ²⁾	ROW ³⁾
Urban Rail (Ben Thanh – Cho Nho)	13.7	597	578	19
Busway (Cho Nho – Bien Hoa)	14.5	113	58	55
Total	28.2	710	636	74

Source: Study Team

¹⁾ Including civil works, bridge, building, track, depot, E&M, and rolling stock.

²⁾ Including terminal, transfer facilities and excluding buses.

³⁾ 1,300 persons will be affected.

7) Economic and Financial Evaluation

The project's is deemed economically feasible with EIRR equal to 20.0%. Not unlike similar mass transit system in other countries, the UMRT Line 1 is not financial viable, with FIRR equal to 3.9% - which is below opportunity cost of equity capital. For this reason, it is not suitable for BOT arrangement. However, a PPP structure is possible where the civil works and rights-of-way are paid for by the government and the electromechanical components are lodged with the private sector on a build-lease-transfer basis. In the absence of established demand and the low fares that can be imposed in HCMC, the private sector will avoid assuming market risk.

8) Implementation Plan

To minimize risk as well as cost, the UMRT Line 1 should be implemented in stages. Stage 1 can immediately be activated; it entails the introduction of a busway system on bus-priority lanes along the delineated route. Stage 2 will make the lanes dedicated, i.e., to the exclusion of other road traffic within the inner sections of the city. The construction of the railway section from Ben Thanh to Cho Nho will comprise Stage 3 followed by bus-only lanes from Cho Nho to Bien Hoa section.

With rigorous planning and preparation, the railway service should be in commercial service by 2011.

9) Ancillary Development

With a high-capacity transit system, the corridor should be planned and developed for high-intensity land use – particularly near and around the stations. It is also anticipated that Bien Hoa will grow into a large urban area with a million population. The proposed Saigon Mass Transit Authority can either enter into joint ventures, or encourage the independent development, of commercial/business activities in and around transit terminals and stations. The city should also plan large-scale estate development (e.g., as industrial, educational, residential, and mixed developments) to be connected to Line 1 through efficient feeder services. Efforts should be exerted so that the benefits from such developments will somehow generate funds to subsidize and sustain the operations of UMRT.

11 CONCLUSION AND RECOMMENDATIONS

1) Challenge to Sustainable Urban Transport Development

The urban transport situation in the study area has not yet reached the level that many other large urban areas in Southeast Asia suffer from. People can still move relatively freely in HCMC but the time will soon come when, if the current trend continues, the urban transport problem will grow to a level which the society can only manage with great difficulty. However, in guaranteeing a sustainable urban transport envisioned by city authorities and the people, the transport sector must not be dealt with independently of other sectors. Rather, urban transport planning must be part of an integrated approach, intertwined with urban planning and economic development. For this reason, it is vital to enhance the people's understanding of the importance of the urban transport sector in guiding the future direction of the city's development. The city's competitiveness and livability in the future depend on actions taken – or not taken – today.

2) Shared Vision, Common Agenda

With so many governmental bodies, organizations, and individuals involved in the transport planning process, implementation is facilitated when there is unanimity and consistency of actions – especially between national, provincial, and city governments. This can only occur when all, or most, of them share a common vision about HCMC. A Master Plan articulates that vision in various ways.

A Master Plan involves several trade-offs and choices which are essentially political processes. There will be competition from other sectors for the funds and resources required to implement the plan. Resolving these competing requirements will be a major task, which can only be handled at the political level, guided by technical information. The implementation of schemes and proposals will also require an assessment to be made of the political implications and priorities. The aim of the political processes is to produce a consensus on the plan and its components.

3) Sector Management

Effective urban transport sector management will require improved management systems focused on core functions, with the systems executed by well-trained personnel. This will involve: the withdrawal of the public sector from commercial activities, the development of human resources towards those activities that remain within the public sector, and the adoption of modern management systems

Possible Areas where Divestment can Start

The city can start shedding off less controversial functions first, such as:

- Motor vehicle inspections which can be done by private companies, rather than directly by the city government;
- Subcontracting of road and bridge maintenance and repairs;
- Conversion of existing maintenance SOEs into independent contractors competing for government business.

Training in Key Aspects of the Sector

Ultimately, it is the human resources that will drive implementation. There is a general lack of trained staff, compounded by lack of a systematic human resource development program. Since the city government has limited resources to attract skilled manpower for the foreseeable future, it should attempt to out-source. Construction, infrastructure maintenance, local planning/engineering consultancies, and a variety of other services can be contracted out.

Management Systems

It is said that with a good system, below-average workers can perform better; but a bad system can turn even good employees into errant workers. Management system involves the following:

- Organizational changes to ensure that each organization has the appropriate authority and manpower to fulfill its mandates;
- Standardization of tasks and procedures to carry out organizational processes, from policymaking, to planning, programming, budgeting, execution and control, as well as identification of tools required at each stage; and
- Implementation of these systems using guidance documents, monitoring and feedback mechanisms, and information technologies.

New Channels for Consensus-building

To strengthen the TUPWS' hand in promoting a broad constituency for transport plans and programs, it is recommended that the following channels be pursued:

- Establishment of liaison groups with representatives from transport users (from the private and state sectors of industry, voluntary associations or representatives of large and small transport operators in all modes, provincial and national government departments) to engage in dialogue on the key issues;
- Conduct of periodic workshops, similar to what the HOUTRANS did, with liaison group members and other interested organizations, to work out potential bugs in a solution and to monitor views about obstacles to be encountered;
- Establishment of consultation procedures for coordinating organizations such as the National Traffic Safety Committee, to support their activities in urban areas;

Timing is Important

A clear distinction is needed between short-term missions, such as for the Short-term Action Plan (STAP), and those for which the timing is some way in the future (LTDP or Transport Master Plan). In this manner, institutional support and strengthening can be prioritized. For example, the execution of ports relocation may be hampered, unless the problem of coordinating 25 ports managed by 15 companies and 10 government agencies is resolved in advance. In terms of road transport, the TUPWS' ability to assess road-user needs is to be improved further because it lacks rudimentary information, such as the characteristics of the vehicle fleet, due to a lack of an effective computer database. Hence, future effectiveness will depend on early development of data systems.

4) Financing Strategy

Ensure Funding First before Implementation

Implementation can only proceed if the required resources had been earmarked or secured before hand. A capital budget, distinct from annual operating budget, should be considered because project construction usually extends beyond a year and actual disbursements stretch over several years. Implementation could suffer if funding for subsequent years dries up, or is stopped.

Expand the Budget Envelope

The capital budget envelope for the Transport Master Plan can be enlarged in a variety of ways. The most promising tack is to identify new sources of revenues – such as charges for renewal of vehicle registration and also driving licenses – and earmarking the amounts collected into a transport development fund.

While borrowings and PSP schemes are politically expedient and acceptable, they cannot always substitute for sound fiscal management involving a broad range of revenue instruments, unless a proper institutional framework is provided.

An exercise was made to estimate possible funding capability of the city in the transport sector based on a number of probable assumptions. The results are positive although they are largely dependent on the feasibility of introducing such measures¹ (see Table 11.1).

Table 11.1 Fund Requirement

Item		US\$ billion
Estimated Fund Requirement 2004-2020	1) HOUTRANS Master Plan	14.0
	2) Other work (30% of 1)	4.2
	Total	18.2
Possible Fund Source 2004-2020	1) Existing Funding Mechanism ¹⁾	1.9-4.7
	2) Private Sector Participation	
	• Urban expressway (40%)	0.7
	• UMRTs (40%)	1.2
	Secondary roads (20%)	0.5
	3) Economic Measures on TDM	
	• Increase in vehicle registration fee	
	US\$ 300 for motorcycles	1.0
	US\$ 3000 for cars	7.9
	• Increase in parking fee ²⁾	
VND 3,500 for motorcycle	3.9	
VND 6,000 for cars	1.9	
• Area licensing ³⁾		
VND 7,500/entry for motorcycles	0.3	
VND 15,000/entry for cars	0.8	
• Increase in fuel price (1.5 times) ⁴⁾	2.1	
	Total	21.3-24.1

Source: Study Team

¹⁾ 1.25% of HCMC's GDP (2004-2020).

²⁾ ½ of motorcycles and cars.

³⁾ The area includes 11 districts in the city center (districts 1,3,5,10,11, and a part of 6).

⁴⁾ From US\$ 0.37/liter to US\$ 0.56/liter.

¹ All of them are practiced in many countries and cities in the world.

Improve Project Design and Priority-setting

Effective implementation is also the by-product of good project design and good selection. Dividing a project into stages can lower initial budget hurdle, and be easier to implement. Good selection among a portfolio of the "right" projects also set the stage for higher economic growth, and with it, more robust revenues in the future. On the other hand, poor resource allocation creates a vicious spiral of wasted funds and anaemic revenues.

5) Improving Private Sector Participation

One way to expand the budget envelope for transport infrastructure is through private sector participation. It is a non-traditional way that Vietnam has already opened; a number of projects were reported to have been implemented under BOT arrangement, such as the following:

- Interprovincial Road No. 15, Phase 2, by Petrol Construction Company, at a cost of VND186 billion (~US\$ 12m);
- Passage Bridge of Binh Trieu, Phase 2, by Traffic Construction Corporation No. 5, at a cost of VND 340 billion (~US\$ 21.9M).

While the legal foundation (Decree 62/1998/ND-CP) for PSP/BOT exists, it is not sufficient to entice private sector investors who are equally concerned about the stability of the contracts as well as the impartiality of the country's judicial system in enforcing them.

There are several lessons from other countries that HCMC can adopt to improve PSP, and these are:

- Project development can not be left alone to the private sector; the government has to prepare the project studies before handing out the concession or contract.
- In the selection of concessionaire, an open and impartial tender provides greater assurance to lenders, as well as lend long-term stability to the contract.
- Government support is necessary, especially in the provision of ROWs in advance of project construction.
- A regulatory framework should be established to take advantage of the "market" to provide the associated benefits and to ensure that the concessionaire is delivering what is required and getting compensated in a fair manner.
- A long-term strategic plan should be pursued, mainly because urban transport projects (like toll roads and railways) function as part of a network, and therefore demand could be disrupted or altered in the future as the network evolves.
- While toll roads and bridges are relatively straightforward types of projects suitable for BOT, mass transit systems are much more complex and governments often have to accept the bottom line financial responsibility

6) Land Acquisition, Resettlement and Environment

In the implementation of development initiatives, resettlement can not always be avoided. As such, measures and guidelines on resettlement are necessary to mitigate adverse impacts. Resettlement becomes an obstacle to effective implementation of transport projects when it is considered only as an afterthought and at the tail-end of the development cycle. This means the preparation of an effective resettlement action plan

(RAP), as an intrinsic part of the project including its financing. Similarly, the requirements of environmental impact assessment could slow down project implementation, if not properly addressed at the outset.

While the sole objective to construct transport infrastructure is not only to develop transport infrastructure but to increase mobility, accessibility to services, improve the people's lives, and enhance the city's livability, equally importantly is to promote the development of organized urban areas. Toward these ends, a new approach to develop infrastructure integrated with urban and environmental development wherein an alternative mechanism for land acquisition and resettlement must be established.

Appendix 1 STUDY ORGANIZATION, WORKSHOPS AND SEMINARS CONDUCTED

Table 1.1 Members of the Vietnamese Side

Steering Committee

	<u>Name</u>		<u>Agency / Position</u>
1.	Mr. Nguyen Viet Tien	Chairman	Vice Minister, MOT
2.	Mr. Nguyen Van Dua	Vice Chairman	Vice Chairman, HCMC-PC
3.	Mr. Truong Tan Vien	Standing Member	Acting Director, Department of Planning and Investment, MOT
4.	Dr. Nguyen Quang Bau	Standing Member	Director, TDSI
5.	Prof. Dr. La Ngoc Khue	Member	Consultant
6.	Mr. Nguyen Trong Tin	Member	Director, Department of Infrastructure, MPI
7.	Mr. Vu Xuan Hieu	Member	Deputy Director, International Finance, MOF
8.	Mr. Pham Thanh Tung	Member	Deputy Director, International Relation Dept., MOT
9.	Mr. Chu Manh Hung	Member	Deputy Director, Science & Technology Dept., MOT
10.	Mr. Nguyen Ngoc Hung	Member	Deputy Director of Science & Technology Dept, VR
11.	Mr. Ho Trung Hieu	Member	Deputy Director, DPI, HCMC-PC
12.	Mr. Tran Quang Phuong	Member	Vice Director, DTUPW, HCMC-PC
13.	Mr. Tran The Ngoc	Member	Director, DNRE, HCMC-PC
14.	Mr. An Dung	Member	Director, APD, HCMC-PC

Technical Working Group

	<u>Name</u>		<u>Agency / Position</u>
1.	Mr. Tran Doan Phi Anh	Chairman	Director, TDSI South
2.	Mr. Tran Quang Phuong	Vice Chairman	Vice Director, TUPWS, HCMC-PC
3.	Mr. Nguyen Viet Dung	Member	Vice Director, PMU, MOT
4.	Mr. Nguyen Tran Thuat	Member	Vice Director, PMU, VR
5.	Mr. Nguyen Kim Lang	Member	Vice Director, TEDI-South
6.	Mr. Trang Trung Son	Member	Vice Manage, ODA Project Management Division, HCMC-PC
7.	Mr. Ho Phuong	Member	Planning Chamber, DNRE, HCMC-PC
8.	Mr. Truong Loi Hue	Member	UPI, DA&P, HCMC-PC
9.	Mr. Pham Van Thinh	Member	Director, Traffic Police Department, HCMC-PC
10.	Mr. Le Trung Tinh	Member	Director, MOCPT, TUPWS HCMC-PC
11.	Dr. Ho Thanh Phong	Member	Management Division, HCMC National University

Counterpart Team

	<u>Assignment</u>	<u>Agency</u>	<u>Name</u>
1.	Leader/Transport Planning	TDSI-South	Mr. Nguyen Nhu Trien
2.	Transport Survey /Analysis	TDSI-South	Mr. Nguyen Duy Hung
3.	Demand Forecast	TDSI-South	Mr. Vuong Tan Duc / Mr. Dao Trung Nghia
4.	Road Planning/ Facility Design	TUPWS	Mr. Do Diep Gia Hop
5.	Public Transport Planning	MOCPT (TUPWS)	Mr. Nguyen Hoang Tri
6.	Land-Use/ Urban Planning	UPI (DA&P)	Mr. Nguyen Quoc Vinh
7.	Traffic Management /Traffic Safety	Traffic Police Dept.	Mr. Chu Duc Thang

Task Force Members

	<u>Name</u>	<u>Agency</u>	<u>Assignment</u>
1.	Mr. Phan Thai Binh	TUPWS, Transport and Industrial Management Division	Team Leader
2.	Mr. Tran Quoc Khanh	TUPWS, Urban Transport Management Unit	Sub-leader
3.	Mr. Do Diep Gia Hop	TUPWS, Urban Transport Management Unit	Member (CP)
4.	Mr. Nguyen Hoang Tri	MOCPT (TUPWS)	Member (CP)
5.	Mr. Dang An Phuc	TUPWS, Transport Management Division	Member
6.	Mr. Ngo Dung Qua Hai	TUPWS, Transport and Industrial Management Division	Member
7.	Mr. Nguyen Huy Pho	Traffic Police	Member
8.	Mr. Phan Vo Thu Phong	Polytechnic University	Member
9.	Mr. Nguyen Duy Hung	TDSI-South	Member (CP)

Table 1.2 Members of the Japanese Side

JICA Advisory Committee

	<u>Name</u>	<u>Position</u>
1.	Dr. Shigeru MORICHI	Chairman
2.	Dr. Tetsuro HYODO	Vice Chairman
3.	Mr. Eiji EBASHI	Urban Transport Planning
4.	Mr. Masahiro YOSHIMI	Rail-based Public Transport Planning
5.	Mr. Atsushi IWABUCHI	Road-based Public Transport Planning

JICA

	<u>Name</u>	<u>Position</u>	<u>Division/Office</u>
1.	Mr. Akira NAKAMURA	Director	First Social Development Study Div.
2.	Mr. Yodo KAKUZEN	Deputy Director	First Social Development Study Div.
3.	Mr. Kenichi KONYA		First Social Development Study Div.
4.	Mr. Fumio KIKUCHI	Representative	Vietnam Office
5.	Mr. Hiroshi SHIRAKAWA	Deputy Representative	Vietnam Office
6.	Mr. Katsutoshi KOMORI	Assistant Representative	Vietnam Office


JICA Study Team

	<u>Name</u>	<u>Assignment</u>
1.	Dr. Shizuo IWATA	Team Leader / Urban Transport Policy
2.	Mr. David SHELLEY	Institutions
3.	Mr. Shigehisa MATSUMURA	Urban / Regional Planning
4.	Mr. Takashi SHOYAMA	Transport Funding, Economic / Financial Analysis
5.	Dr. Tetsuji MASUJIMA	Road-based Public Transport Planning
6.	Mr. Kosei TANIWAKI	Rail-based Public Transport Planning
7.	Mr. Tomoaki TAKEUCHI	Road Planning
8.	Mr. Yasunori NAGASE	Transport Facility Design
9.	Mr. Clive HOLMAN	Traffic Management Planning (1)
10.	Mr. Seiya MATSUOKA	Traffic Management Planning (2)
11.	Mr. Rene SANTIAGO	Operation and Management
12.	Mr. Hans ORN	Bus Operation Planning
13.	Dr. Akira HOSOMI	Transport Survey (1) and Demand Forecast
14.	Dr. Ian ESPADA	Transport Survey (2)
15.	Mr. Masayuki ISHIYA	Data Analysis and Database
16.	Mr. Joji TERAHARA	Social Environment
17.	Dr. Phung Chi SY	Natural Conditions and Environment
18.	Ms. Beulah PALLANA	Resettlement
19.	Dr. Ricardo SIGUA	Traffic Safety
20.	Mr. Masato KOTO	Local Traffic Management Planning and Policy Test
21.	Mr. Masayoshi IWASAKI	PPP Technique
22.	Mr. Kazuya URANO	Bridge Planning
23.	Ms. Motoko KAWAKUBO	Project Coordination

Table 1.3 Workshops and Seminars Conducted in the Study

	Date	Venue	Participants
Seminars			
1st HOUTRANS Seminar	27 Aug. 2002	Caravelle Hotel	28
2nd HOUTRANS Seminar	22 May 2003	Caravelle Hotel	156
3 rd HOUTRANS Seminar	17 Sept. 2003	Continental Hotel	133
4 th HOUTRANS Seminar	Mar. 2004	-	
Technical Workshops			
No.1 "Impact of Motorbikes on Traffic Flow"	15 Jan. 2003	New World Hotel	70
No.2 "Bus Operation and Management"	6 Jun. 2003	Metropolitan	48
No.3 "Urban Growth Scenario"	8 Jul. 2003	New World Hotel	48
No.4 Urban and Regional Development Vision and Strategy for HCM Metropolitan Area	25 Jul. 2003	New World Hotel	52
No.5 "Urban Transport Development"	30 Jul. 2003	Metropolitan	38
No.6 "Assessment of Policy Test Project and Corridor Management Plan"	11 Nov. 2003	Duxton Hotel	37
No.7 "Social Considerations in M/P & F/S"	9 Feb. 2004	Metropolitan	28
No.8 "Implementation in PPP"	10 Feb. 2004	TDS-South	10
Learning Sessions			
No.1 "Bus Operation, Traffic Safety, and Resettlement"	12 Feb. 2003	Metropolitan	32
No.2 "Traffic Accident Database"	10 Jun. 2003	TDSI-South	12
No.3 "Traffic Demand Analysis"	21 Jul. 2003	TDSI-South	10
No.4 "Analysis of Transport Policy using Modal Split Model"	30 Dec. 2003	TDSI-South	13

Source: Study Team



HOUTRANS

Newsletter of "The Study on the Urban Transport Master Plan and Feasibility Study in HCM Metropolitan Area" by TDSI & JICA

December 2003 (No.3)

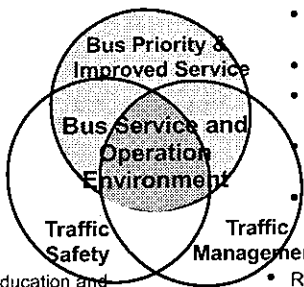
- What is Policy Test Project..... 1
- Project Corridor 1
- Measures Implemented..... 3
- Assessment of PTP..... 3
- What can we learn from PTP 4

The Policy Test Project (PTP) is a part of the Urban Transport Master Plan Study for the Ho Chi Minh Metropolitan Area (HOUTRANS). The study is conducted under technical assistance from the Japan International Cooperation Agency (JICA). The Policy Test Project was carried out as a joint effort by the HOUTRANS study team and the HCMC government agencies from August 2003 to October 2003.

WHAT IS POLICY TEST PROJECT?

The Policy Test Project is to (i) test a set of integrated measures on the improvements of bus service and operation environment; and (ii) learn lessons for the formulation of HOUTRANS bus transport development strategy.

Key Components for Bus Service and Operation Environment Improvement



- Increase of bus capacity and frequency
- Bus priority on key sections
- Improvement of accessibility to bus service
- Improvement of bus passenger facilities
- Feeder service
- Regulation of motorcycle traffic
- Allocation of road space by types of transport modes
- Improvement of traffic police enforcement skills
- Safety education and campaign
- Improved enforcement
- Safety measures for vehicles and pedestrians

PROJECT CORRIDOR

Tran Hung Dao Street is the project corridor. It connects Ben Thanh and Cho Lon Bus Terminals. Existing bus Route 1 is the test route. The following criteria were considered in selecting project corridor:

- Potentially high demand for bus transport and the future urban mass rail transit;
- Well-developed road infrastructure to explore traffic management and safety measures beneficial for bus operations.
- Existing service provision by a major bus operator to develop model on bus operation and management.

MEASURES IMPLEMENTED

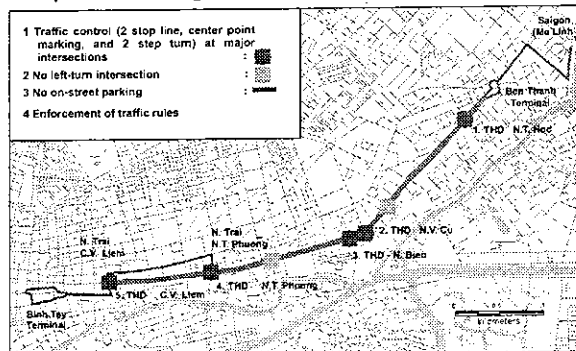
Stage 1: August 1 – September 14

Bus Service: Increase of frequency; expansion of operating hours; and fixed departure time.

Traffic Management & Enforcement: Improvement of traffic management at major intersections; prohibition of on-street parking; and enforcement of traffic rules and driving behaviors.

Traffic Safety: On-site traffic safety campaign to bus and road users.

Public Information of the Project: Informing the public through a variety of channels.

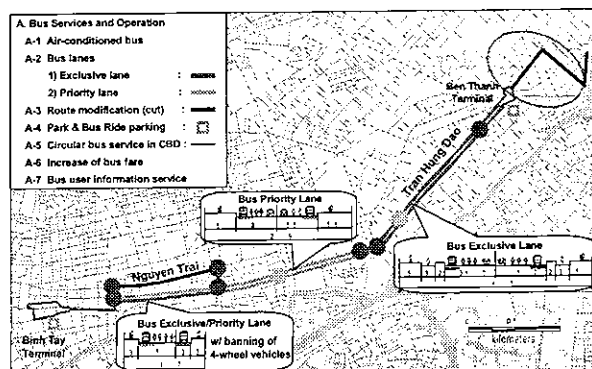


Stage 2: September 15 – October 31

Bus Operation: Introduction of air-conditioned buses, bus exclusive/priority lanes, park & bus ride at terminals and circular bus service in the city center; modification of routing; and promotion of bus rides.

Traffic Management & Enforcement: Continuation of regulations introduced in Stage 1; and prohibition of 4-wheel vehicles on specific road sections.

Traffic Safety & Public Information of the Project: Continuation of measures from Stage 1.



ASSESSMENT OF PTP

Findings

Assessment of the Policy Test Project provides a comprehensive examination of the project impact on bus operation, user experience, and corridor traffic condition. Major findings are highlighted as the following:

- The project has been accepted and valued by the public, including bus operators, passengers, road users and roadside residents;
- Buslane priority has shown promise and applicability for bus transport development;
- Bus service enhancements are successful in attracting passengers;
- Marketing and enforcement are effective in promoting public transport and road safety.
- Park-and-Busride facilities provide convenience for people riding bus to work;
- Various minor intersection traffic measures have functioned with moderate impact;
- Prohibition of on-street parking effectively supports bus priority.

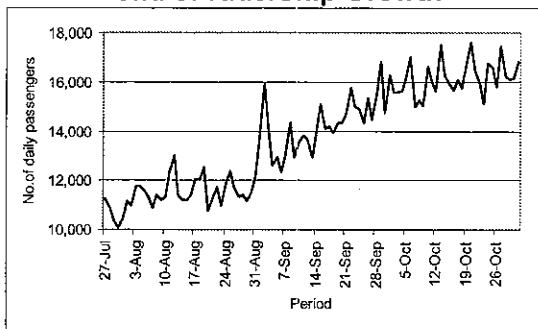
BUS OPERATION

Ridership

(1). Bus Route 1 in the Tran Hung Dao corridor

Route 1 ridership has had remarkable growth. Daily ridership increased over 80% from the July average of 8,300 to the level of 15,700 during Stage 2 implementation (Sept 15 - Oct 31, 2003).

Trend of Ridership Growth



The newly added evening service appeals to the people in the corridor. By the end of October, average passengers per trip between 8pm and 9pm went up to 19 passengers.

Such fast ridership growth is encouraging and implies that HCMC has huge potential in public transport, should a well defined system improvement is made.

(2). CBD Circular Route

The circular route was introduced on Sept 15, 2003. Ridership on this new route had an initial

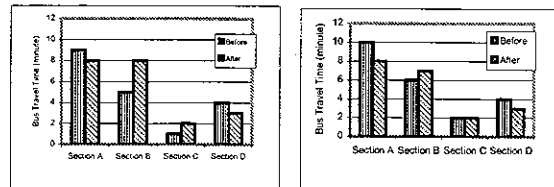
quick startup and then maintained at the level of 170 passengers daily. The low level of ridership was due to a number of overlapping routes.

Bus Travel Time

Because Route 1 within the Tran Hung Dao corridor is a short 8km bus route, travel time change is marginal. Generally, travel time on trips into CBD becomes shorter but that of outbound trips slightly longer.

Buslane priority treatment and design scheme have immediate impact on bus operation.

AM Peak Bus Travel Time Change



CBD - Binh Tay

Binh Tay - CBD

Bus contra-flow exclusive lane (Section D) has the most advantage to speed up bus service.

Bus priority lane on wide road (Section A) also improves bus operation performance. Morning peak travel time in both directions decreases. Midday travel time, though unchanged, shows less variation in daily operations.

Bus priority treatment on narrow road (Sections B and C), on the other hand, appears difficult to be effective.

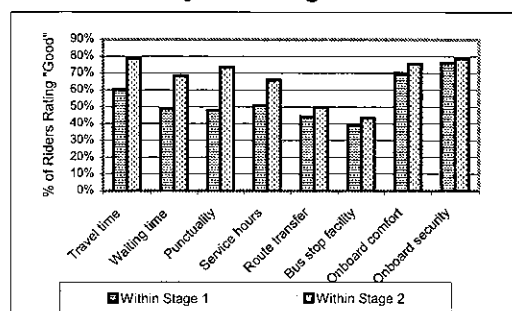
PASSENGER EXPERIENCE

User Assessment

The project has turned out to be a good learning experience for public transport passengers and also received strong support from them.

More passengers became satisfied with bus service after the completion of project. Bus riders have had better experiences with all aspects of bus service. In particular, over 70% passengers highly value experiences with travel time, punctuality, onboard comfort and security after Stage 2 implementation.

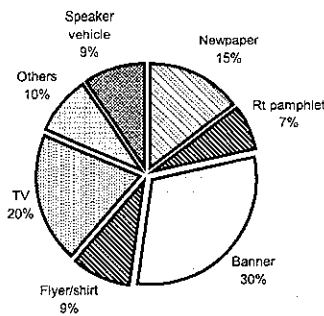
Service Condition Assessment by Passengers



Improvements on frequency, operation hours and enforcement are considered the most successful within Stage 1 implementation. Punctuality was added to the top in October, likely a result of buslane implementation.

Marketing efforts are effective in reaching out to the public and promoting bus service. Bus riders quickly became familiar with the project, from majority not knowing the project in Stage 1 to knowing the project in Stage 2. Of the various channels of outreach, newspaper, banner and pamphlet were the most effective channels of information in the initial stage. In the October campaign, broadcasting over TV helped deliver the project to many riders.

Channels of Information for Passengers
(Oct 2003 Survey)



Park-and-Busride

Usage at Ben Thanh reached over 55 people a day lately and usage at Binh Tay had less than 10 people. Proximity to bus terminal is a deciding factor for P&BR. Majority users appear to be bus riders with 70% users parking beyond 4 hours per entry.

CORRIDOR TRAFFIC

Buslane Condition

The contra-flow exclusive lane has the best bus operating condition. Condition of bus priority lane is heavily subject to available space of road, volume of motorcycle traffic and enforcement. Generally, priority lanes on wide road segments have less interference from motorcycles and bicycles than those on narrow roads.

Bus Exclusive Lane



While motorists understand clearly not to access bus exclusive lane, it would take time and education for them to learn and observe rules of priority lane.

Safety Improvements

Safety condition has improved along mid-blocks of the corridor where priority lane and exclusive lane are in operation. Motorists appear to have a stronger sense of vehicle mode separation, as a result of lane designation and parking ban in buslane.

Intersection traffic condition is far more difficult than that of mid-block. Minor intersection measures, while improving behaviors of some motorists, have limited impact.

Effect of Parking Ban

There has been a substantial decline of vehicles parking in buslane, since parking ban became effective. Buslane on wide road has the least parking violation. On the other hand, motorcyclists have the most violations among road users and evening peak period is challenging as motorists tend to park in buslane for other activities.

Enforcement is important for limiting illegal parking. On the days of strict enforcement, parking violations of all categories dropped significantly.

Road User Assessment

From the time of Stage 1 implementation to the completion of Stage 2, road users offered favorable assessment on peak hour traffic condition, road facility condition, and traffic safety.

User Assessment of Corridor Conditions

(% of road users rating as "good" & "very good")

	All road users		Motorcyclists/bicyclists	
	August	October	August	October
Peak hr traffic condition	22%	26%	22%	30%
Off-peak traffic condition	44%	44%	44%	48%
Road facility condition	39%	45%	37%	48%
Traffic safety	23%	28%	19%	30%
No. of Respondents	604	582	356	384

Motorcyclists and bicyclists, who made up 60% of the survey group, have had even better experience with road conditions. They assessed all major aspects of traffic and road conditions far better off after the completion of project. In view of these 2-wheel drivers, safety improvement is the most outstanding outcome.

Roadside Resident Assessment

Residents consider most traffic management measures successful. Of these, on-street parking ban, 2-step bicycle left-turn, center point marking and bus priority lane have shown higher level of public acceptance and success.

As for bus service measures, punctuality, frequency and long service hours are consistently thought the best outcome of the project. Roadside residents have noticed bus stop improvements during the project, yet still regard this aspect inadequate.

WHAT CAN WE LEARN FROM PTP?

Bus transport can be attractive and can work in HCMC within the immediate timeframe. The HCM metropolitan area has huge potentials in the long-term public transport development, should a favorable bus service and operation environment be established.

The various experiments on PTP have yielded valuable insights for the future bus transport improvements. Outcomes of service enhancement and traffic condition improvement are appreciated by bus riders, road users and residents alike. Most measures tested are feasible for application on major corridors as well as local streets. Therefore, improving bus operation environment on local and feeder bus services over secondary roads would be highly desired by the public.

IMPLICATIONS FOR THE FUTURE

The project proves that integrated bus improvements on bus operation and traffic management generate positive impacts on bus service provision, users and overall traffic conditions along the test corridor.

Concepts and schemes experimented are feasible and can be applied in HCMC. The project approaches and outcomes are promising for the short-term improvement and development of bus transport in HCMC. The following identifies applicability of key project elements.

Buslane

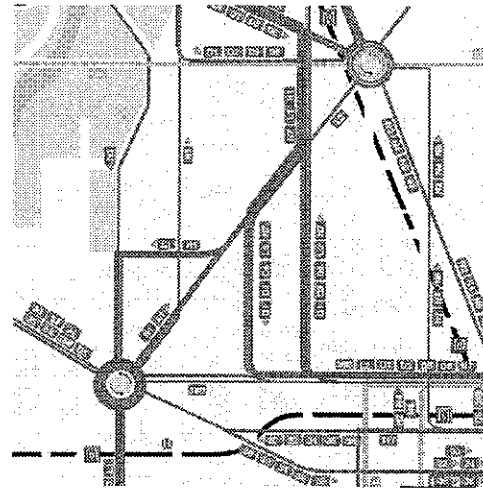
Buslane, in the forms of priority lane and exclusive lane, is workable for short-term bus transit development and offers advantage to bus operation. Nonetheless buslane cannot act along, it needs support from traffic management and service operation in order to establish a desirable bus operation environment.

Bus Service Enhancement

Service enhancement is a key element of this integrated scheme. Frequency and long

operation hours are priorities for primary bus services that are under the consideration by HOUTRANS and the City. An immediate action for the city is to develop a user-friendly bus route system map, which would effectively bring information to the public and facilitate bus rides.

Public Transport System Map



Traffic Management

Minor intersection measures, while improving behaviors of motorists, appear to have limited impact. Understanding major causes of traffic conflicts in HCMC and devising locally fit major traffic measures would be crucial for the fundamental improvements in bus operations and corridor traffic conditions.

Enforcement and Education

These have been proved effective in changing driving behaviors for a short period. Dual efforts on strict enforcement and continual education would be central to form good driving behaviors and ensure the designed outcome of bus priority scheme.

Education on public transport and driving behavior to schoolchildren is a useful means. Certainly, they are the future patronage of public transport and road users. In addition, messages from children will be brought to their parents, who would likely raise their attention on traffic safety and public transport.

CONTACT US

This Newsletter reports the progress of "The Study on the Urban Transport Master Plan and Feasibility Study in HCM Metropolitan Area" (HOUTRANS) being conducted by TDSI-South and JICA, as well as other issues about urban transport in HCM area. For comments or questions about this Newsletter or the Study, please contact us.

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