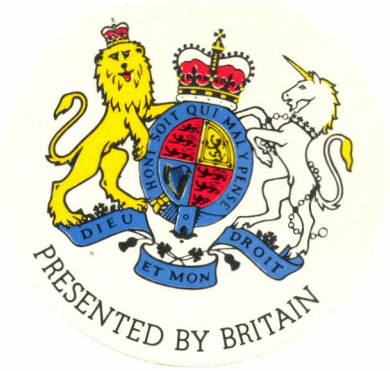

PUBLIC TRANSPORT PLANNING IN MALAYSIA

M.N. ABD. RAHIM

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Abd Rahim, M.N.

M.N. Abd. Rahim is a lecturer in quantitative techniques and transport geography at the Department of Geography, National University of Malaysia. He received his B.A. in Geography and Economics at the National University of Malaysia, Diploma in Education at the University of Malaya and an M.A. in transport geography at Keele University.

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Department of Geography
University of Keele
KEELE
Staffordshire
ST5 5BG

Telephone Newcastle (Staffs) 0782 621111

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ABSTRACT

This study examines policy decisions and investments in urban transportation in Kuala Lumpur over the past twenty years . Methodology and concepts in transportation planning are shown to have been influenced, and, in some cases, dictated by planning philosophy fashioned in advanced Western cities with little modification to accommodate local needs, priorities and constraints. During the 1960s and 1970s an emphasis on expensive highway construction to facilitate traffic flow, and a clear neglect of facilities for public transport resulted in a transportation system favourable to private users at the expense of public passengers. However, an examination of the city's long term transportation plan shows that the trend is now toward a nationalised, state-owned and controlled public transport enterprise. Many policy changes have taken place and a number of schemes have been only partially implemented. Overall, the planning approaches have been inappropriate. Private users who are in the minority are favoured at the expense of public passengers who are in the majority. The paper argues that heavy investment decisions have precluded low-cost solutions, and rigid regulation in the enterprises has wrongly been seen as better than liberalisation and privatisation.

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INTRODUCTION

There are at least two fundamental purposes for formulating and implementing a public passenger transport policy. On the one hand there is the belief that appropriate plans can maximise the use of road networks and public vehicle services, both on the part of the users and the operators. On the other hand, the art of planning is also usually aimed at minimising the disbenefits accruing to the suppliers, the consumers, and the policy makers themselves, including the politicians who hold the key to the financial decisions. These basic goals of planning are not easily met. The users' ultimate aim of low fares, together with comfortable, fast and safe services may conflict with the desire of the operators to maximise net financial benefits. Policy makers, on the other hand, are confronted with more difficulties for they have to satisfy not only the contradicting interests of the users and the operators, but also those of private users who are sharing the road space with the public service operators.

Kuala Lumpur, the capital of Malaysia, is no exception as far as planning and policy formulation is concerned. The city accommodates a mixture of road users with varied socio-economic and cultural backgrounds. Public transport vehicles are the mobility nerve of the poor and it is here that the need for better services and fare structures are most urgent. However, within the existing situation, with modest road

networks but a rapid increase of private automobiles, this aspiration can only be achieved through a set of planning strategies which are favourable to the public riders.

The aim of this paper is to discuss several aspects of public transport planning in Kuala Lumpur. The emphasis is on the approach and philosophy adopted by the city's planners in providing public transport services, in the forms of vehicle fleet and roadspace for the masses, and on the likely impacts, positive or otherwise, of the policies on the poor and non car-owning sections of the population.

The first part of the paper will briefly describe the general characteristics of Kuala Lumpur, focussing on its land use pattern, population density and distribution, road network and public transport system. The second part will trace the evolution of public transport planning and policy of the city from the early 1960s to the mid 1980s. This will be followed by a third section which will give a critical view of the planning approaches. The next two sections will look into the possible impacts of the plans on three groups of urban dwellers, that is the poor who are heavily dependent on public vehicles, the car-owning population and the individual operators who provide the bus service. The last two sections will deal with the organisational and technological aspects of public transport in the city, concentrating on how and to what extent the

policy makers have chosen appropriate types of public transport organisation and technology.

THE STUDY AREA

Kuala Lumpur is a rapidly developing city. Its population has recently increased at a very rapid rate (see Figure 1), and surpassed the one million mark in the mid 1980s (Department of Statistics, 1983). Being a capital city Kuala Lumpur is the centre of almost every social, political and economic activity in the country which in turn accelerates its physical expansion.

The population and activity pressures come from two sources, natural growth and immigration, of which the latter is more pronounced. People from rural areas and other towns especially the young and economically active, perceive the city as a place where they can find a better living. The Klang Valley region (Figure 2) in which Kuala Lumpur is located has an area of only 423.5 km^2 but had a total population of 2.5 million in 1985 (Johari Mat, 1988). Fourteen per cent of the Malaysian population is concentrated here in less than one per cent of the total area of the country.

In 1970, a policy, known as the New Economic Policy encouraged the Malays who were then the poorest section of the multi-racial population to get involved in non-

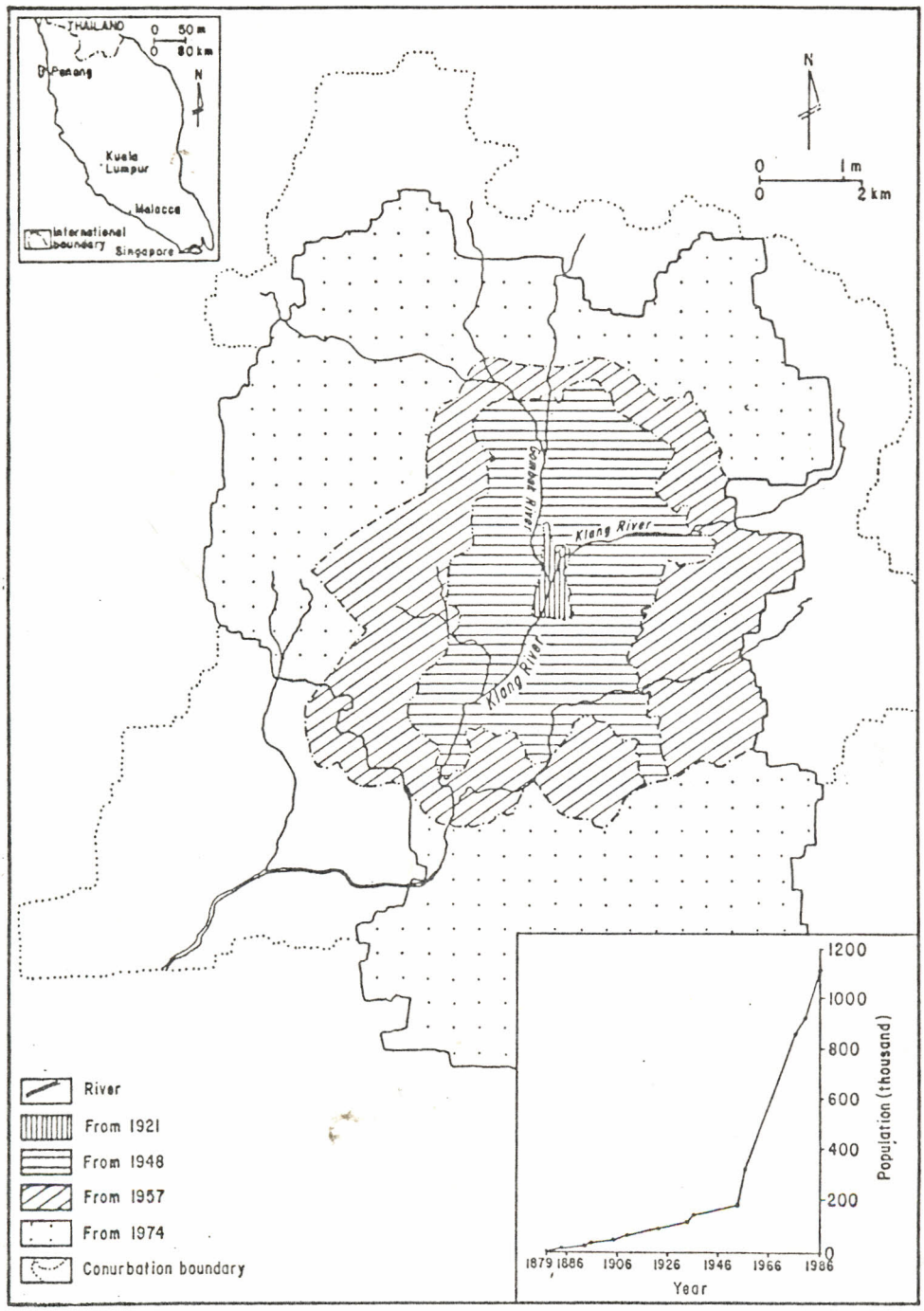

Figure 1 Growth of Kuala Lumpur, 1879-1986

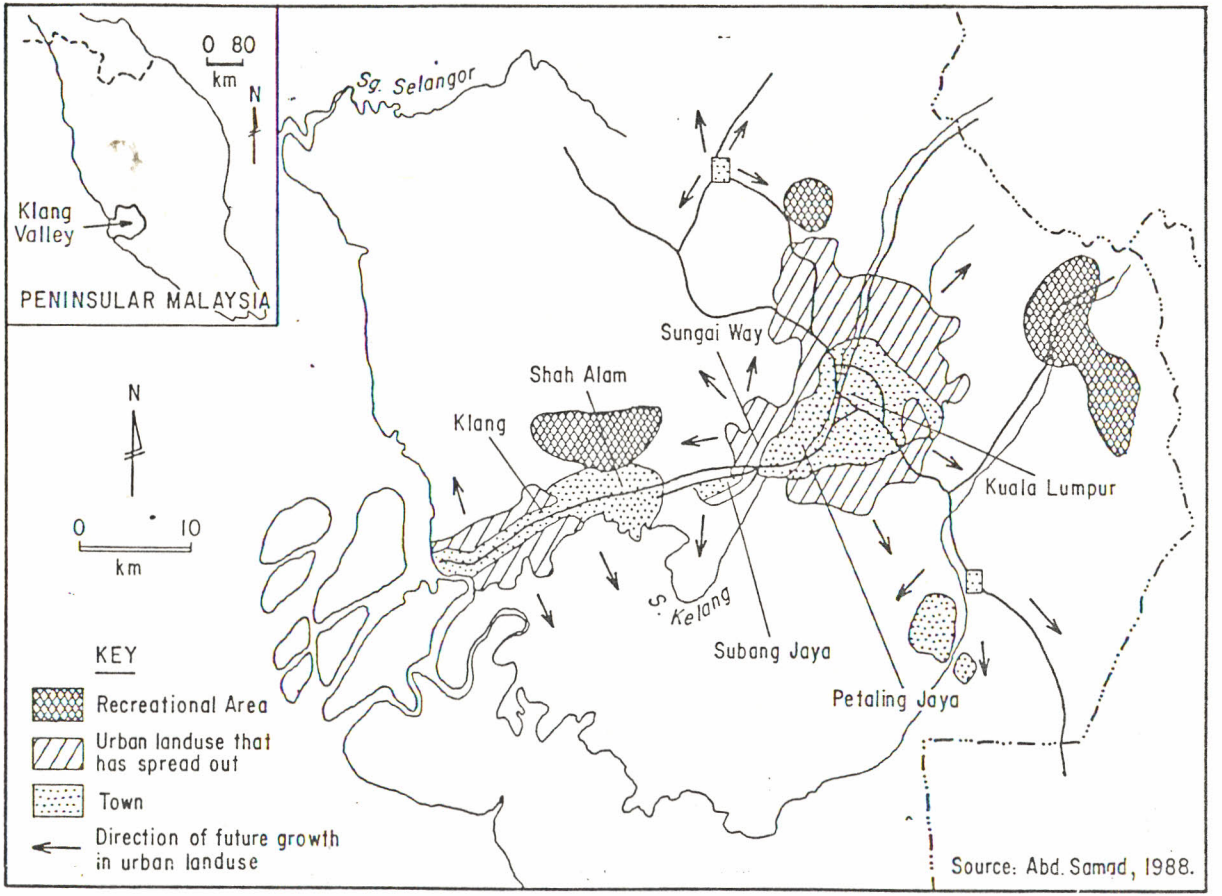

Figure 2 The Klang Valley Conurbation

agricultural activities in urban areas. This policy of deliberate urbanisation has had a tremendous impact on Kuala Lumpur, especially in the form of a significant and rapid transformation of the city's population in terms of ethnic ratio, pattern of economic activities and location of settlements.

Of the 1.24 million people in the city today, 36.6 per cent are Malays, 49.4 per cent are Chinese and 14.0 per cent are Indians and other minorities (Johari Mat, 1988). The traditional roles of the Malays as farmers and government servants, and Indians as labourers and estate workers, have been restructured so that both groups have now penetrated almost every area of employment especially in the commercial sector which hitherto was monopolised by the Chinese.

Landuse patterns have also undergone rapid restructuring during the last few decades in which agriculture lands were indiscriminately developed for non-agricultural purposes in industry and housing sectors, while forestland swamps and unused land are being actively reclaimed for sites of secondary and tertiary activities.

Parallel with these development is the transformation of the city's economic base such that the secondary and tertiary sectors now dominate the city's income.

Table 1. EMPLOYMENT STRUCTURE OF KUALA LUMPUR

Sector	Employment (%)			Growth rate (%)	
	1980	1990	2000	1980-1990	1990-2000
1. Retail trade	18.5	16.4	15.1	3.2	2.6
2. Finance, insurance real estate	6.8	7.3	7.8	5.0	3.9
3. Transport	2.0	1.7	1.5	3.0	2.4
4. Construction	4.7	4.3	4.3	4.0	3.2
5. Community services	0.9	0.8	0.8	3.0	2.4
6. Business services	3.8	4.5	5.4	6.0	4.7
7. Professional services	4.2	5.0	5.7	6.0	4.7
8. Recreation services	0.6	0.5	0.5	3.5	2.8
9. Personal services	4.8	5.1	5.6	4.8	3.9
10. Hotels	2.2	2.4	2.5	5.0	3.9
11. General office, general services	5.7	5.5	5.4	4.0	3.1
12. Repair services	2.1	2.1	2.0	4.0	3.1
13. Informal sector	4.5	4.3	4.2	4.0	3.1
14. Small industries	13.0	12.6	12.2	4.0	3.1
15. Big industries	3.9	2.7	1.9	1.2	1.0
16. Government, Public utilities and communication	22.3	23.9	25.2	5.0	3.9

Source: Adapted from Dewan Bandaraya, 1984, p. 21

Looking at the employment pattern shown in Table 1, there is a sign of change in the relative contribution of the various sectors. Employment in the industrial sector and construction and also in small scale commercial activities, such as retail trade is expected to decline relative to others for 1980-2000. On the other hand, jobs will be created more by tertiary activities, the majority of which will be in the government, business and professional services.

In sum, it is abundantly clear that Kuala Lumpur is a city in the process of major transformation in terms of population, landuse and employment. The structural change in employment is of particular importance as far as transport is concerned. A steady shift from goods-producing industries to service activities in the government and private sectors implies that there will be a rising demand for movement of people since activities in this sector warrant a great deal of movement of people relative to goods.

THE PUBLIC TRANSPORT SYSTEM

Generally, there are three types of public transport operating in Kuala Lumpur at present, that is the stage bus, minibus and taxi cab. Other services such as express coaches, excursion coaches and hire-and-drive cars are also

available; however, most of these vehicles are meant for inter-city journeys. There are also school bus services owned and operated by private entrepreneurs and available for the public.

With the exception of the factory buses, all types of buses have exclusive routes which the operators have to follow strictly. In 1985 there was a total of 2912 buses operating in the city and their numbers are listed in Table 2.

Table 2: NUMBER OF BUSES IN KUALA LUMPUR

Type	Total Number
Stage bus	982
Minibus	490
School Bus	969
Express bus (coach)	221
Excursion bus	178
Factory bus	72
Total	2912

Source: Ministry of Transport, 1984; Prime Minister's Department, 1985

In 1985 a detailed study on transportation was undertaken for the Klang Valley. It was found that on an average weekday, there were about 1.26 million passengers using public buses of which 66 per cent were accounted for by stage buses, 13 per cent by minibuses and the rest were catered for by other types of buses. Since the valley is dominated by Kuala Lumpur in terms of population, roadspace and economic activity, it is reasonable to believe that the figures for the city could not be much different.

Although public transport enterprises are operated by private operators or privately owned firms, the fare rates are fixed and controlled by the government. Unlike the stage buses which have a graduated fare structure, the minibus system has a flat fare rate of 50 sen regardless of the distance travelled.

Stage buses are the traditional means of public transportation in the city and at present the services are supplied by eight bus companies which have routes franchised by the Licensing Board of the Ministry of Public Enterprises.

The idea of introducing minibuses in the mid-1970s was brought in by Alan Walter, a transport consultant commissioned by the World Bank in an apparent attempt to emulate the success in introducing minibuses in Hong Kong in the 1960s. Originally, the idea of incorporating small buses was confined to using the vehicles as suburban feeders and city centre distributors alone, and as such their allocation

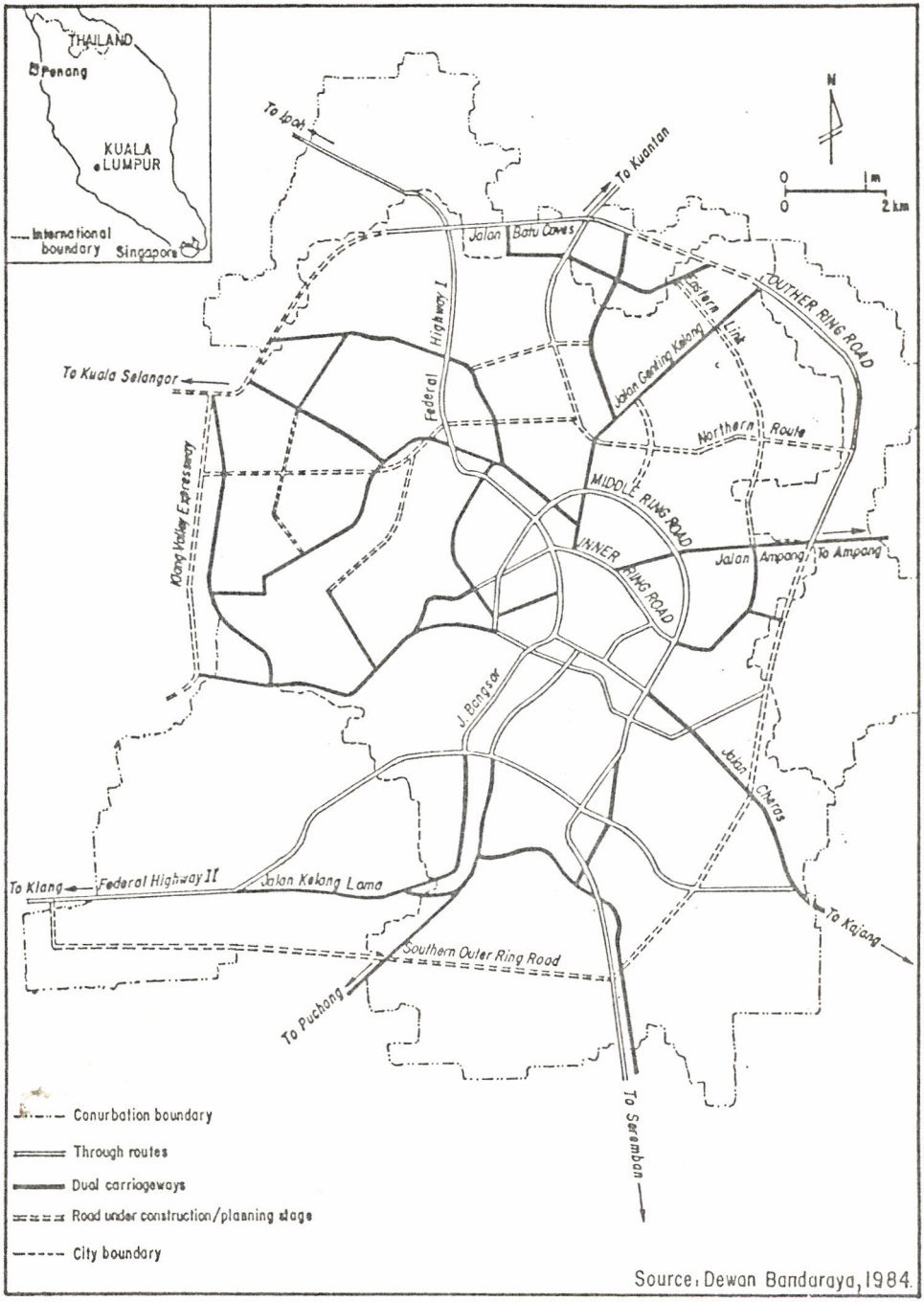

Figure 3 Main roads in Kuala Lumpur

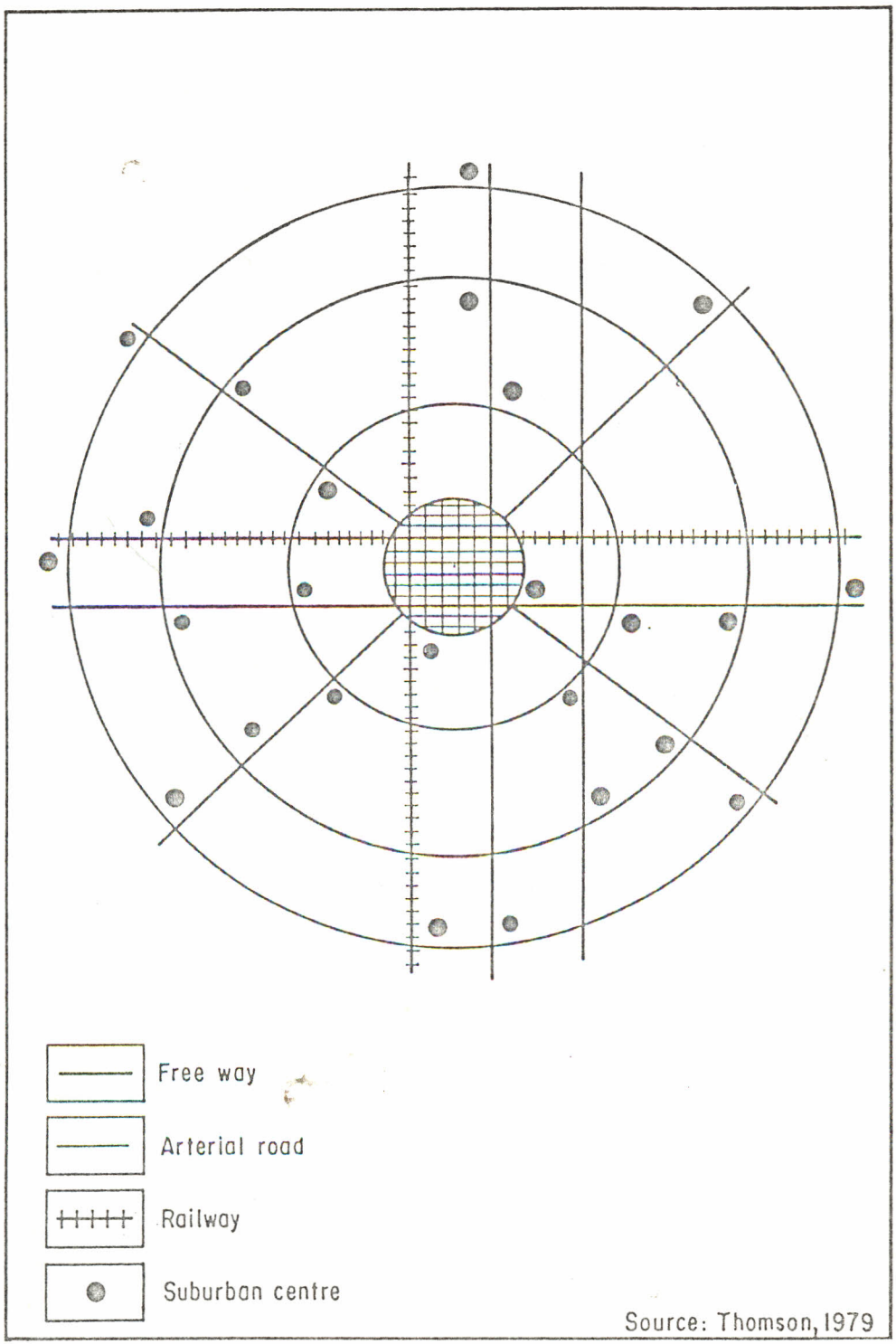

Figure 4 Archetype B - Weak Centre Model

routes would be limited to these purposes. However this plan was dropped at an early stage of the system's implementation and the mini-bus routes were consequently formed as a network of radials, running across the city centre.

A general pattern of the principal road network in Kuala Lumpur is presented in Figure 3. Using an urban road network categorisation developed by Thomson (1979), the structure can be fitted into Archetype B, the 'weak-centre' category (Figure 4). A typical city of this sort has a radial system serving a relatively small city centre to which a high proportion of city-centre oriented workers travel every day. A large majority of residents are located in the suburbs and peripheral places which are reached mainly by means of private cars using the high-capacity ring roads. An employment of 250,000 at the city centre is said (Thomson, 1979, p.131) to be the maximum limit for a transport system to run smoothly. Since a city of this nature possesses a combination of ring and radial freeways, industrial and commercial development outside the city centre will strongly be attracted to the interchange points between the rings and the radials.

Figure 5 illustrates the general condition of traffic flow within the city area as counted by the Traffic Monitoring Division of the City Hall in 1985. It is shown by the map that, generally, vehicle movements occur in all directions following the concentric pattern of the network.

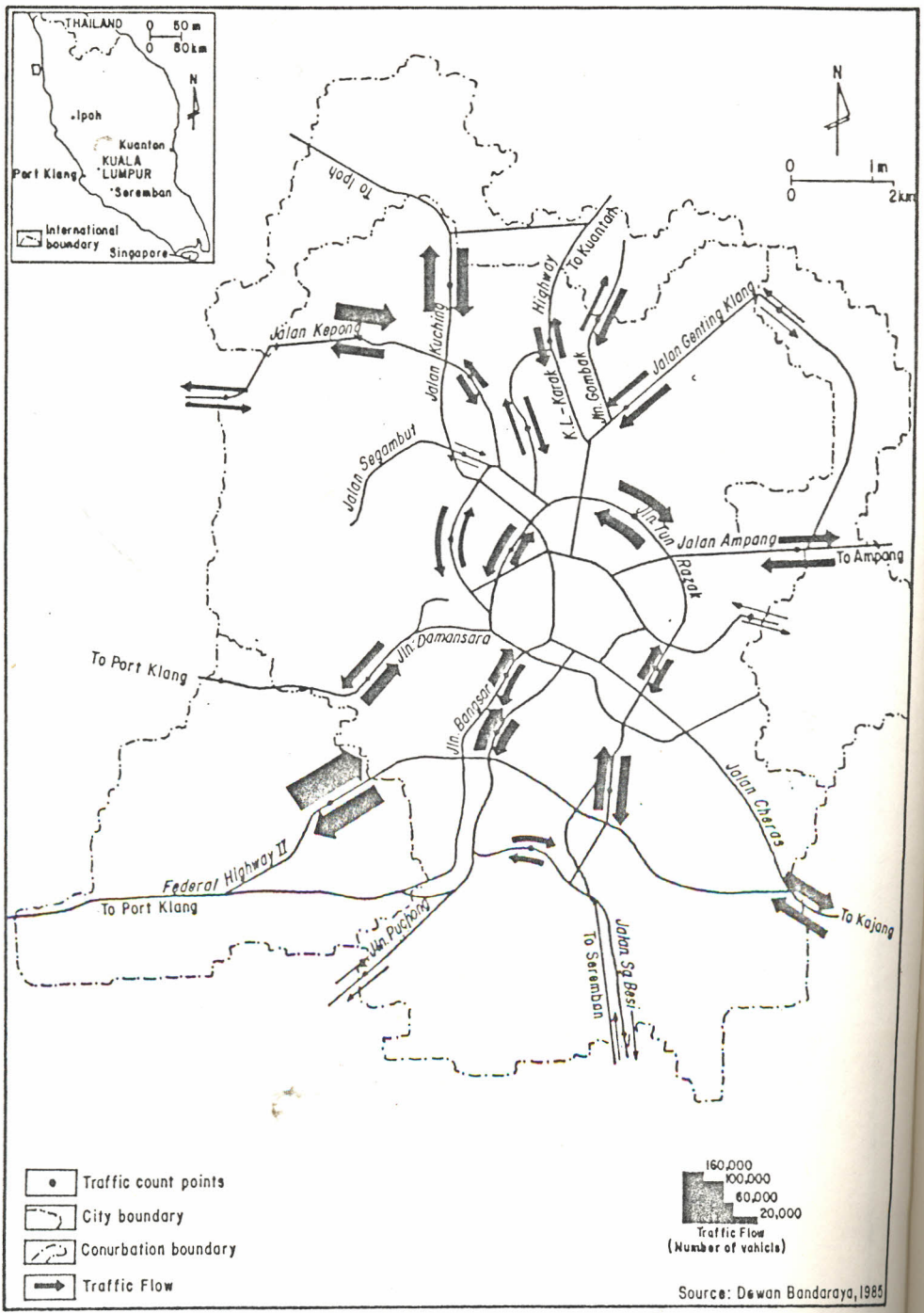

Figure 5 Typical daily traffic flow in Kuala Lumpur

THE EVOLUTION OF PUBLIC TRANSPORT PLANNING

Modern planning was not known in Kuala Lumpur until the early 1960s, and this could be attributed to four main reasons. First, population pressure and the need to travel were not a major concern in the city since prior to this date population growth was modest. Secondly, prior to 1970 the level of private car ownership was generally low, and there was no question of private and public vehicles competing for limited road. Thirdly, the physical size of the city was very much smaller than it is now and the land use pattern was much simpler. Finally, the majority of daily trips such as home-to-workplace journeys involved only short distances.

In 1963 a small committee was commissioned by the City Hall to undertake a preliminary study of transport needs. In financial terms, the study estimated that the sector needed around M$165 million to be spent on various aspects of transport improvement projects. A summary of the intended projects from this, and subsequent plans, is listed in table 3.

It is clear from the cost estimates in table 4 that this major project was in favour of private transport. The public transport sector was given the least attention and less than one per cent of the total budget was allocated for investment in this sub-sector. However, the total cost of the plan later proved to be too expensive and foreign funds were

Table 3. EVOLUTION OF PUBLIC TRANSPORT PLANNING IN KUALA LUMPUR

Year	Authority/agency undertaking the planning study	Principal source of fund	General purpose of the planning study	Major recommendations in the planning study
1963	Kuala Lumpur City Hall	Malaysian Government and Kuala Lumpur City Hall	Improvement and construction of road and transport infrastructures	1. Improvement of existing arterial roads and streets. 2. Construction of new circumferential roads. 3. Development facilities for public transport.
1967	Ministry of Transport and UNDP	Malaysian Government and UNDP	To recommend improvements in the country's transport services and transportation sector (urban and rural)	1. Detailed programmes to improve road infrastructure for urban and rural areas. 2. Training abroad Malaysian nationals in the field of transport planning.
1972	Wilbur Smith and Associates and Kuala Lumpur City Hall	World Bank	Improvement of private and public transport infrastructure	1. Construction of new roads 2. Replacement of old buses. 3. Adding new buses
1975	World Bank and Kuala Lumpur City Hall	World Bank	Improvement of public transport system and operation	1. Introduction of minibus system
1976	Wilbur Smith and Associates and Kuala Lumpur City Hall	World Bank	Improvement of public transport system and operation	1. Improvement of traffic management 2. Introduction of H.O.V. priority; Area Licensing Scheme, Increase parking charges
1984	Kuala Lumpur City Hall	Malaysian Government	Improvement of public and private transport system and operation	1. Construction of new ring roads. 2. Introduction of an LRT system

difficult to acquire. As a result, the implementation of the plan was subsequently postponed to the 1970s.

Table 4: FINANCIAL ALLOCATION FOR THE 1963/64 KUALA LUMPUR TRANSPORT PLAN

Types of project	Estimated cost (M$ million)	Percentage
1. Improvement of existing roads and building new circumferential roads	92.8	56.1
2. Improvement of existing arterial roads	49.5	29.9
3. Engineering and contingency expenses	19.1	11.6
4. Immediate improvement on various aspects of transport	3.5	2.1
5. Developing facilities for public transport	0.3	0.2
Total	165.3	100.0

In 1967, a fund from the United Nations Development Programme was made available for the government to appoint and finance a suitable foreign consultant to conduct the first national transport survey of the country (Adler, 1967,.

p.63). The study was to cover the entire country and all modes of transport that have a significant role in the national economy, but intra-city transport facilities received little attention. Urban areas such as Kuala Lumpur gained little from this survey, apart from guidelines on how city bypasses and transport terminals should be developed in the future.

During the 1970s, transport planning in Kuala Lumpur underwent several changes of emphasis, involving local funds as well as foreign loans and technical assistance. It began in 1972 when for the first time the World Bank extended its support, in the form of low-interest loans, transportation engineers and economists to help the city in alleviating congestion problems. By the arly 1970s population increase and growing administrative and commercial activities had reached such a level that the existing road space and bus services were hardly capable of satisfying demand without severe conjestion, delay and public complaint. This decade also witnessed a period of more serious commitment from the city's planners as reflected by several follow-up studies.

In 1972 the World Bank made available a sum of US$31.6 million to Kuala Lumpur. Almost all of this loan was spent in constructing the Federal Highway II (see Figure 3), a six mile, six- lane expressway stretching from Kuala Lumpur to Petaling Haya in the west.

Using a small part of the 1972 loan, the City Hall appointed Wilbur Smith and Associates, in 1973, to conduct a study on the extent of public and private transport problems in the city and to prescribe appropriate solutions. One of the major findings of the study was that the existing land use pattern and road network were incapable of sustaining the high level of automobile capacity. Unless public transport services were given more attention and preference in future planning, relative to private vehicles, the city's circulation system would be likely to come to a standstill in the near future. Some of the more detailed findings and recommendations put forward by the consultants are summarised as below:

a) It was found that all bus companies in the city were financially and physically deteriorating. Buses were severely overloaded and irregular in their schedules due to chronic traffic jams, frequent breakdowns and serious under investment.

b) Bus fleets were found to be not only inadequate but also to consist of many ancient vehicles. In order to encourage operators to renew their fleets, the government was recommended to phase out some of the traditional bus taxes which have been seen as a burden to the companies.

Some of the recommendations in the 1972 planning study have been successfully implemented; most notable amongst them

were improvements of intersections and completion of the inner and middle ring roads. However, a large majority of the proposals relating to stage bus services have failed to materialise. The recommended improvements to the stage bus operation, that is to replace old vehicles and to make use of routes more efficiently, were found to require very heavy investment by the private operators. They were unable to accomplish this.

In the middle of 1975, a team of transport consultants was once again sent by the World Bank to undertake another feasibility study; this time the focus was on ways of improving public bus services in the city following the continuous deterioration. One of the major recommendations proposed by the team was for Kuala Lumpur to introduce a minibus system. A.A. Walter gives the rationales for the introduction of the minibus services as: first, the need to expand bus transport capacity; second, the belief that minibus services would reduce urban congestion by inducing motorists to forego their private car trips; and third, it was planned (but not yet implemented) to introduce an area licensing scheme rather like that which had been in operation in Singapore since 1974, and it was perceived that additional public transport capacity would be required to assure the success of the scheme (Walter, 1979, p.320).

Apart from these arguments, there was also an increasing pressure from the indigenous Malays for them to become involved in public transport enterprises which hitherto had been monopolised by Chinese entrepreneurs. Out of eight bus companies in operation before the minibus era, only one, was owned by Malay operators in the form of a limited company. The introduction of the minibus system was seen as an opportunity for the Malays to participate in the city's economic mainstream and, at the same time, broaden and strengthen the position of the ruling Malay politicians who have their strongest support from the Malays in the rural areas.

The concerns of the relevant authorities in Kuala Lumpur were not only with adding more bus vehicles and fleets, but also with tackling the increased road congestion, especially within the Middle Ring Road cordon, since with severe congestion additional bus fleets would be meaningless. An apparent cause for this was the rapid increase in the use of private cars and motorcycles without parallel investments in road infrastructure.

In 1976 a feasibility study on the possibility of implementing several traffic restraining schemes was undertaken with technical and financial assistance from the World Bank. Following this, the government was urged to support a priority scheme for High Occupancy Vehicle (HOV) and to provide, inter alia, exclusive road networks viz.

access priorities and separate routes or lanes for vehicles in this group (buses, minibuses, taxis and cars carrying four or more occupants).

To supplement the priority scheme, several programmes for Low Occupancy Vehicles (LOV) were also considered by the 1976 plan. Vehicles in this category consist of private cars, taxis and other private automobiles with less than four occupants, and also motorcycles. The use of these vehicles would be restrained by increased parking charges in central areas and by an Area Road Pricing Scheme. At that time, no final recommendation for this scheme was made.

The road network deficiency in the city which, to a considerable extent, contributed to the severe congestion was also taken into consideration by the consultants. Improvements were to be made on the existing intersections and ring roads. Under this plan, two ring roads were recommended, each utilising some of the existing routes. These were the Inner Ring Road and the Middle Ring Road. Work on intersections were carried out at 12 locations each of them requiring some sort of widening, elevating and building of roundabouts, highways and subways.

The last major package of the 1976 plan emphasised area traffic control systems. It was thought that even if the planned vehicle restraining scheme was eventually successful, traffic circulation in the core area would still

need to be closely monitored and directly controlled so that unnecessary congestion could be avoided.

In August 1984, the City Hall with the cooperation from several government agencies produced, for the first time, a comprehensive 235-page master plan for Kuala Lumpur on which various socio-economic and physical developments of the city from that year right up to the year 2000 were to be based. Under the transportation heading, the master plan derived its policy and programmes from the series of previous transport planning studies dating back to 1972, including the two major studies undertaken by the World Bank in 1972 and 1976.

A preliminary demand analysis conducted by the 1984 study indicated that even if all the previous studies' proposals (including the construction of new roads and expressways) were to be successfully implemented, the future road network would still be unable to cater for public transport vehicles, private car and motorcycles, and also goods vehicles movements. It followed that the inevitable policy for the future lay in the significant shift of road users, voluntarily or forced, from private to public modes. A 40 per cent shift from private to public mode was calculated as the minimum level necessary to bring congestion-free roads by the turn of the century.

It was clear that neither the bus operators, nor the roads, could wholly absorb such a shift. Consequently other forms of mass transport were considered and the 1984 plan

recommended the introduction of a light rapid transit (LRT) system. The essence of the plan is summarised thus:

'... a bus plus light rapid transit system shall be the major future public transport system to handle future traffic demands in Kuala Lumpur and its conurbation (Dewan Bandaraya, 1984, p.62)'.

This is to be regarded as the overriding policy for the next twenty years in Kuala Lumpur. Other proposals pertaining to public transport, traffic management and highway and road development which emerge as a result of planning studies in the future should, as far as possible, complement this overall policy.

Despite its bold use of new technology, the 1984 transport plan seems still to be emphasising stage bus services as the principal means of public transport. The system is to be responsible for carrying most of the passenger loads, and therefore certain physical development measures will be required to achieve this objective.

On the minibus services, the plan argues that the existing system did not operate as originally intended. It maintains that the initial plan of the system was not to compete for passengers on routes traditionally served by stage buses; rather their role was to cater for poorly used routes on which stage buses were unable to operate effectively. It follows that in the future the minibus system will be allowed to operate so long as the stage buses are inadequate to service heavily travelled routes and the

investments on individual minibus operators still renders reasonable profits. The plan suggests that minibuses are to be regarded as a supplementary to stage buses and the LRT system, serving routes where demand entails only small capacity buses and to provide feeder services to the proposed LRT.

The plan is also concerned with the way the bus companies were organised and regulated. At the time the planning study was conducted, there were eight stage bus companies serving the city, each comprising a public limited company. It was suggested by the plan that these eight companies be merged into a single, monopolistic organisation. In the longer term, however, the merger should include the proposed LRT system to form a complete metropolitan public transport monopoly so that a better coordination, with respect to route allocation administration, government control and financial acquisition would eventually be achieved.

PLANNING APPROACHES

The preceding section has clearly shown that the philosophy of planning for urban transport in Kuala Lumpur during the 1960s and early 1970s has been in line with what is called by Thomson (1984) the 'big plan' fashion widely envisaged in many developed and developing cities during those decades. Resources have primarily been invested in

unlimited expansion of road networks, improving existing streets and constructing high capacity freeways, aiming at easing traffic movement.

To ensure the 'big plans' technically achieve their intended purposes and be recognised by the so-called 'international standard', consultants from advanced nations were employed at considerable expense. The planning methods utilised were usually sophisticated with the ability not only to establish mathematically, present traffic conditions and needs, but also to predict future structure and necessary infrastructures.

Although the 'big plan' phase produced some useful results, it also produced defective or inadequate recommendations. The most important of these concerned aspects such as the interactions between transport and land use, road congestion, trip generation, traffic composition, budgets, size of models and other minor problems. This will be discussed in greater detail below.

As we have seen, the planning approaches emphasised the impact of land use on the demand for transport. In doing so, however, most of the plans failed to deal satisfactorily with the impacts on the land use because in conventional forecasts (see, for example, Bruton, 1985; Stopher and Meyburg, 1976) the latter was normally considered as independent of changes in a particular transport system. The reality in the

developing city is that transport and land use are closely interrelated.

Most developing cities, including Kuala Lumpur, are in an early phase of the urbanisation process, expecting rapid growth in both inhabitants and area and with only skeletal road networks and simple transport systems. A great deal of new development and physical expansion is certain to occur rapidly, making it difficult to identify the inter-relationship between land use and transport. Many new roads which were initially intended by the plans to function as efficient traffic arteries failed to achieve this purpose because they rapidly attracted new buildings, houses and stalls to their sides. This unforeseen land use pattern tends to unload various slow-moving traffic onto the roads. Instead of their initial plan to act as freeways, the new roads normally end up with heavy congestion.

In their original countries, especially in the USA, the planning approaches were initially developed for private vehicles. The underlying assumption was to provide free-flow conditions, and roads and intersections were be built to whatever standards were necessary to achieve this result. In such cities of relatively less dense population and high level of car ownership, public vehicles, notably the stage buses, were normally considered as less important and therefore usually included in planning models as a minor component. In order to make them feasible for use in the

developing cities, some alterations and modifications to the models have to be introduced and this includes the introductions of public transport as a principal element.

Finally the question of who benefits needs to be addressed. In many developing cities, it is the poor who most need to be helped by the government in terms of mobility, and yet the modern methods of transport planning have favoured the interest of car-owning population, and Kuala Lumpur is no exception.

The extravagant planning approach widely adopted in Kuala Lumpur in the decades before the 1980s was also technically weak. First, predictions produced by the plans were dubious and not reliable since socio-economic variables tend to fluctuate through time. This problem is greater in a rapidly changing city such as Kuala Lumpur. Errors in the calculation of the growth rates could have devastating effects on the plan.

Secondly, the necessary data, such as vehicle ownership level, income distribution and structure and location of employment and residents are not always readily available or, reliable. Thirdly, in Kuala Lumpur funds to finance transport projects usually come, partly or wholly, from foreign lending countries or international aid agencies which essentially means that they have to be paid back with the associated interest. Failure of the projects to give impetus to economic growth and development, or declines in the

country's economic performances would lead to the economic deficit and serious external debt.

Fourthly, the inflation rate was not accurately considered. An urban transport project which takes several years to complete would, by completion, find its actual cost far higher than the budget estimated at the planning stage.

Finally, traffic composition in cities of the developing countries, including Kuala Lumpur, consists of a more complex mixture than usually found in Western cities. Apart from private cars and public buses, they also have a range of informal public transport of various forms, usually classified as paratransit. The models did not consider this since they originated from different urban settings.

PLANNING IMPACT ON ROAD USERS

In Kuala Lumpur, stage buses and taxis have long been dominant as the principal means of urban mobility for the general public.

Despite this fact, planning in the transportation sector has favoured the private users. This can be traced right from the early 1960s up to the 1970s (Table 3) during which time a great deal of the human and financial resources allocated to the transport sector have (unrealistically) been used to facilitate private automobile use. The underlying argument was that by providing more access for private

vehicles through investments in infrastructural improvements, traffic congestion and road bottleneck could eventually be reduced to a level that permits a reasonable traffic flow. It was on this premise that almost all the planned investment in transport revealed by the 1963/64 study was devoted to highway improvement and construction. The plan, however, has eventually been postponed because the government was unable to meet the proposed cost estimated to be in the area of M$165 million.

Approximately the same amount of money, this time acquired by means of a loan from the World Bank, was used in 1972 to construct a six-lane dual-carriageway, linking the city with Petaling Jaya, a satellite city a few miles to the west. The Second Kuala Lumpur Transport Project implemented in 1976, again with huge financial and technical assistance from the World Bank, was also carried out under the 'big plan' fashion when only 7.1 per cent of the allocated fund was invested for improvement in public transport sector (bus terminal and stops) while the rest went to road construction and traffic management projects.

While there are several ways in which traffic chaos can be alleviated, and building high capacity highways and their complements is one of the many possibilities, there are also other factors that have to be taken into consideration when selecting appropriate measures for relieving transport problems. In Kuala Lumpur the choice of constructing more

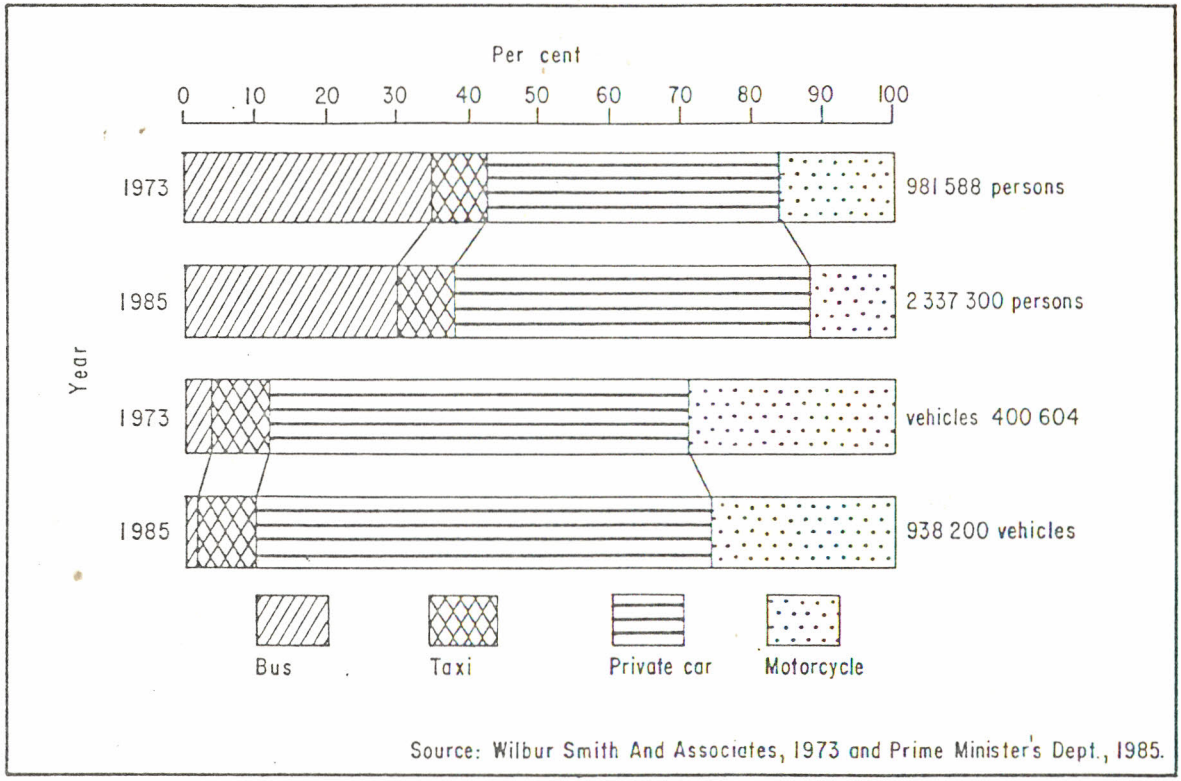

Figure 6 People and vehicles entering and leaving Kuala Lumpur, 1973-1985

roads as a solution has been found to be counter-productive in the sense that, instead of reducing congestion, they encouraged the use of private cars and motorcycles more intensively than ever.

In 1973, there were only around 65,440 private cars and 45,970 motorcycles registered in the city, giving person-car and person-motorcycles ratios of 13.9 and 19.8 respectively. In 1980, the figures were almost doubled for both type of vehicles and the ratios were reduced to 11.7 for cars and 15.4 for motorcycles. That is why, despite the noticeable focus on easing traffic flow by means of infrastructural investment, the city is still experiencing severe congestion and traffic jams notably during the peak hours in the morning and evening. The Kuala Lumpur Structure Plan (1984) has forecast that by the year 2000, there will be a car for every five persons in the city or, given the average family number of near five, almost a car for every family in average terms.

Policies favourable to private automobiles have resulted in a significant shift of patronage from the public to the private mode in Kuala Lumpur as clearly shown by Figure 6. The proportion of persons using private cars has increased from 45.3 per cent in 1973 to 52.2 per cent in 1985, while during the same period, the number of private cars as a proportion of total vehicular traffic entering and leaving the city in a typical day has changed from 60.2 per cent to 66.6 per cent. Parallel with these changes has been the

clear shift of total road users and vehicular traffic from public to private mode. In 1973 public buses formed 3 per cent of total vehicular traffic, carrying 36.1 per cent of the total road users; in 1985, the percentages have been reduced to 2.8 and 32.1 respectively. In addition, the figure also shows that the private car, both in terms of passenger carried and vehicle numbers, was the only vehicle type that has expanded its proportion, while other forms such as motorcycle, taxi and bus have proportionately shrunk.

Another disadvantage of having a transport policy which is unduly favourable to private users is that it is difficult to persuade them back to public transit once they have been accustomed to cars or motorcycles. A reverse policy of encouraging road users to use buses more frequently is sometimes needed, especially when financial resources are no longer available for further construction of highways and roads, or in the case of acute periodic congestion in the morning and evening. Inducements normally include a reduction in public transit fares, increase in road user taxes and parking charges, reservation of lanes for exclusive use of buses, or investment in mass transit projects.

In Western Europe and North America, many studies have been undertaken to examine the likely effects of some private car restraining schemes or other schemes aimed at encouraging greater use of public buses. Using data for federal government employees in Ottawa, Gillen (1977), for example,

estimated that a one per cent increase in parking fee would have led to only a 0.23 per cent reduction in automobile use for the journey-to-work trips.

In Kuala Lumpur, several experimental schemes have been tried. Amongst the traffic restraining schemes included in the 1975/76 plan were the introduction of High Occupancy Vehicle Priorities (HOV) scheme, the enforcement of Area Road Pricing for Low Occupancy Vehicles (LOV) and increase in parking and road tax charges in the central area. Out of these three, however, only the first and the third schemes were eventually successfully executed. Separate bus lanes were implemented in 1977 but they were subsequently abandoned due to strong pressures from private car users.

An even worse fate has befallen the proposed Area Road Pricing scheme. Not only has the plan failed to materialise, but it also has wasted some of the money allocated for the 1976 urban transport project. Gantries were erected over main roads around the city centre, beyond which passing cars and motorcycles would have to display a special daily licence during peak hours. However the plan was abandoned at that stage and the costly gantries remained somewhat incongruous, carrying various official slogans such as road safety messages, or announcements of various national and international events.

A revolutionary plan such as the Area Pricing Scheme which has failed in Kuala Lumpur is naturally difficult to

make effective because of stern opposition from vested interests, notably the private car owners and the motorcyclists. In Singapore however, the city from which the Kuala Lumpur scheme was originally inspired, such a plan has been successful, and the advantages have been not only in reducing the quantity of low occupancy vehicles so that more space would be available for public buses and fully occupied vehicles, but also in encouraging users to form car-sharing pools (Holland and Watson, 1977).

PLANNING ATTITUDES TOWARDS PUBLIC TRANSPORT OPERATORS

The apathy of the government towards the public transport sector in Kuala Lumpur is also evident in the way the enterprise was dealt with. Despite a creeping, through gradual, rate of inflation which meant an increasing rise in capital and operational costs, a bus fare of 4 cents per mile set in 1953 was not allowed to rise until 22 years later, when in April 1975, the government granted a slight increase to 5 cents. Subsequent fare increases were very small and only from the 1970s did fare charges evolve in a reasonably realistic manner, at least corresponding with the rates of inflation.

Not only has the government tightly controlled fare levels but the bus industry was also burdened with heavy taxes and fees. Bus companies had to pay a road licence tax and a seat tax of M$10 per seat per month, apart from fees for driving licences for bus drivers.

There was also a rigid regulation on vehicle life. Before 1976 the operational life of a stage bus was limited to only 12 years, no matter how good and suitable the condition of the bus for operation was at the end of that period. After 10 years, engine taxes had to be paid on a rising scale. After 12 years in service, a bus could continue to operate as a school bus but not as a conventional stage bus for the public.

Only in early 1976 did the government realise that the tax structure was too much for the bus industry. That year seemed to be a particularly bad year for stage bus operators. They incurred heavy losses due to unexpectedly high operation costs, and also due to stiff competition from minibuses which were introduced for the first time into the city in late 1975. Many stage bus companies were forced to reduce fleets and employees in order to avoid further losses. Buses were generally overloaded and irregular in their schedules due to frequent breakdowns and lack of vehicles. The situation was exacerbated by massive traffic congestion which has long been established in the city. In reaction to this, the government announced, in January 1976, several measures to reduce the

financial burden and to encourage bus operators to replace their old fleets and introduce new vehicles.

The failure of the authorities effectively to address themselves to the public transport sector can also be attributed to the policy of not providing a subsidy of any form to either the bus companies or the eligible users.

The only chance to escape from a particular financial problem would be to collectively ask for aid from the government in the form of permission to increase fares through formal channels. It would be up to the government, presently represented by the Lembaga Perlesenan Pengangkutan Jalan (Road Transport Licensing Board) under the Ministry of Public Enterprises, to decide. This stands in stark contrast with treatment to bus operators in the majority of the developed cities where public transport subsidisation has long been established as a norm (see Table 5). In these developed cities subsidies covers some 30 to 40 per cent of the costs of urban bus and local rail services.

Subsidy will always be socially desirable for those belonging to the poorer section of the urban community, the aged, the disabled and school children.. It is the welfare of these groups of urban dwellers and public transport operators that the policy decision makers in Kuala Lumpur have failed, to a considerable degree, to take into consideration in formulating the fare regulations.

Table 5: INTERNATIONAL COMPARISONS OF PUBLIC TRANSPORT SUBSIDIES AS PERCENTAGE OF COSTS

Country	Urban public transport		National rail
	Small city	Large city	
Australia	48	29	n.a.
Canada	37	26	n.a.
France	26	55	45
Netherland	57	67	44
Sweden	25	41	17
United Kingdom	14	21	29
United States	24	26	n.a.
West Germany	n.a.	n.a.	39
Italy	n.a.	n.a.	68

Source: Reid, 1983, p. 20

Of great relevance to the above is the way the government sets fare levels. At present there is a national fare scale applied to all stage bus companies, urban as well as rural, throughout the country. This means that the fare scale in Kuala Lumpur is exactly the same as that in small towns and rural areas throughout Malaysia, despite the vast differences in socio-economic milieu and bus operating costs between small cities and the Capital.

Another aspect of regulation rigidity that seems to be wasteful and unrealistic is the way the government classifies types of bus. At the moment there is a rigid categorisation of vehicles into stage, express, work (or factory), tourist and school buses, with different categories of licence and operational regulations. They are not transferrable from one type of operation to another. This restriction is ill-advised since vehicles other than the stage and express buses tend to be left idle for a long period of the day. It would be more efficient if buses were transferable in their use so that the total available vehicles in the city could be fully utilised. In this way both operators and users would get benefits.

ORGANISATIONAL AND TECHNOLOGICAL CHOICES

For long, the organisation of public transport services in the city existed in the form of privately owned stage buses and taxi cabs, the former were operated by limited companies and the latter by individuals and cooperatives, with tight control by the government.

The introduction of the minibus system in Kuala Lumpur as part of its public transport planning in late 1975 could be considered as revolutionary and therefore deserves special attention here. It was the first time that the traditional stage bus monopoly was dismantled. It was also one of the bravest actions the planners have ever embarked on since they

were actually breaking a long-established Chinese monopoly. From the point of view of its proponents, that is the transport consultants from The World Bank, the minibus system was a highly successful programme (Walter, 1979).

The overall effect of the minibus system has, however, been questioned (see for example, White, 1980a and 1980b). Apart from complaints from the public and stage bus operators that the minibus driving standard was generally poor and more often than not the drivers did not follow the scheduled timetables, the introduction of the system has not caused any marked impact on the total capacity of public buses in the city.

The competition forced stage bus companies to cut back their fleet size from 715 vehicles in 1975 as quoted by Walter (1979, p.321) to 637 (Ministry of Transport Malaysia, 1983) at the end of 1978, that is an absolute reduction of about 80 buses. The 400 new minibuses, each with a seating capacity of only about one-third of that of the conventional buses displaced, have therefore resulted in only a small net increase in total bus passengers. Their main effect appears to be to draw passengers from conventional operators, rather than increase the total volume. In fact, public bus passenger totals in Kuala Lumpur have steadily shrunk in their proportion of all motorised passengers from around 36.1 per cent in 1973, two years before the introduction of the

minibus (Wilbur Smith and Associates, 1973) to 32.1 per cent in 1985 (Prime Minister's Department, 1985).

Another area of policy open to critical scrutiny is the choice of transit services for the city in the future. Given that the planners would tightly uphold the recommendations pursued in the 1984 master plan for the next 20 years in Kuala Lumpur, the future public transport structure of the city appears likely to consist of a single, monopolistic metropolitan bus company comprising the existing independent companies together with the eventual incorporation of the proposed Light Rapid Transit services into the monopoly (Dewan Bandaraya, 1984, p.73). In such a metropolitan public transport monopoly the government would play the roles of financing, managing and administering the coordination of route allocation, fare scales and areas served amongst the stage buses, the minibuses and the proposed LRT.

While theoretically, the above argument may be true, much empirical evidence and experience, both in the developed and developing cities, has shown that the economies of scale argument can be a fallacy, at least in the case of the public transport business. Large, monopolistic public transport undertakings commonly encounter major financial problems. For example, in both Buenos Aires (Gabriel and Wayne, 1982) and Jamaica (Roth, 1986) government bus monopolies resulted in deteriorating services, rising financial deficits and the eventual restoration of private bus companies.

Meanwhile, attempts by governments to redress the deterioration of public transport services by fixing rigid fares and levels of services tend to lead to subsidy. This in turn leads to further inefficiency, greater loss and a need for additional subsidies. Such spiralling subsidies for public transport undertakings can be found in many cities of the developing nations. The annual subsidy for publicly owned bus services in Karachi has reached US$15 million; in Calcutta US$10 million, in Cairo US$26 million, in Bangkok US$30 million (Bly et al., 1980).

In cities of the industrialised countries, subsidy has long been established due to inefficiency in public transport operation. In these cities, evidence has indicated that once introduced, subsidies tend to grow substantially. As a proportion of operating costs, subsidies were particularly high in these countries, reaching over 70 per cent in the Netherlands, Belgium and Italy, 56 per cent in France, 46 per cent in Australia and 45 per cent in Austria and Sweden. (Webster, 1986, p.129).

Since, more often than not, heavily subsidised state public transit monopolies produce low-quality services, many people, are persuaded into using taxis or the more expensive private car. This in turn increases congestion so that public bus services deteriorate further and the poor, in particular, who have no alternative other than public vehicles, are disadvantaged. The relevant question therefore

is, can a developing city such as Kuala Lumpur, with limited financial resources and numerous unfinished development projects, afford massive subsidisation, or are there alternative ways of improving its urban transport system?

One of the alternatives is to let the bus system operate more independently with regard to types of vehicles chosen, fare levels set and routes served, with minimal intervention from the government. Several studies (see for example, Bly and Oldfield, 1985; Glaister, 1985 and 1986) have indicated that for a public bus system to operate with reasonable efficiency and realistic fare levels but without subsidies, certain criteria would have to be met. First, bus operation would have to be operated by privately owned enterprises. A detailed study of the cost effectiveness of various bus organisations and individual operators in Calcutta, Bangkok, Istanbul, New York City and a number of cities and towns in Australia (Feibel and Walter, 1980) suggests that privately-owned bus companies are more likely to cost less per unit of output than the publicly-owned undertakings. In cities such as Calcutta, Bangkok and Istanbul with both private and publicly-owned bus companies sharing the business, the costs of private buses were found to be between 50 and 60 per cent of the costs of publicly-owned concerns.

Secondly, competition, rather than franchise (and subsequently monopoly) would bring a healthy, cost-effective, bus service to a city. Under a competitive

system, operators tend to become more responsive to customers' wants, more aware of the state of their business, and therefore more innovative in finding ways to cut costs. In contrast, government-owned companies tend to be inefficient and evidence in many cities (see Table 6) indicates that these organisations incurred losses.

Table 6: DEFICITS OF OPERATORS OF PUBLICLY-OWNED BUSES IN DEVELOPING CITIES

City (company)		Year	Deficit (US $ million)	Deficit per bus on the road (US $ thousand)	Revenue cost ratio
Abidjan	(SOTRA)	1985	27.00	28.5	0.71
Accra	(OSA)	1984	0.25	23.8	0.51
Ankara	(EGO)	1984	10.50	18.0	0.67
Bangkok	(BMTA)	1985	43.50	12.0	0.74
Cairo	(TA)	1985	94.00	52.0	0.74
Calcutta	(CSTC)	1985	11.60	16.7	0.46
Casablanca	(RATC)	1982	4.60	10.2	0.82
Delhi	(DTC)	1984	92.00	21.3	0.39
Istanbul	(IETT)	1984	4.50	5.0	0.88
Jakarta	(PPD)	1985	33.00	28.7	0.50
Karachi	(KTC)	1983	6.90	8.3	0.49
Khartoum	(KPPTC)	1985	0.40	8.3	0.80
Madras	(PTC)	1986	1.80	1.0	0.96
Mexico City	(RIOO)	1985	164.80	23.0	0.12

Source: Walter, 1987

There are many examples of developing cities which support a less regulated public transport operation. In a comparative report based on separate case studies in five Asian cities, Ocampo (1982, p.51) concludes that many low cost transport enterprises (sometimes classified as paratransit) performed well despite the fact that they were operating, sometimes illegally, alongside with state buses. Prominent amongst them were the 'dolmus' in Istanbul, the minibus in Chieng Mai in Thailand, and 'jeepneys' in Manila.

In Hong Kong, a more developed city, there are 3,500 stage buses, 4,350 minibuses, 15,000 taxis, tramways and a mass transit railway system, competing freely for passengers, with little government intervention (Meaking, 1984, p.9). The adaptability of the city's public transport policy is such that it can boast the very latest and most sophisticated urban mass transport system (urban railway), but operating alongside these are systems that date back to the beginning of this century and some even into the 19th century.

It is, however, not in any way suggested that a wide range of paratransit vehicles, such as commonly operate in most Southeast Asian cities (see, for example, Rimmer, 1980; Silcock, 1981) should be advocated indiscriminately merely for the sake of slackening the tight regulations. The philosophy of deregulation and privatisation proposed here is such that they can provide a platform for market forces which are essentially determined by users and suppliers to dictate

levels of fare and quality of services without jeopardising the overall performance standard of public transport operation.

To further complicate the issue, Kuala Lumpur is now considering the construction of a Light Rapid Transit System, comprising cable-suspended aerobuses and light rail transit, designated to be completed in the late 1980s. Preliminary works including line survey and soil investigations on both projects have been completed. The latest development of the M$500 million project reveals that the construction and management of the mass transit system will be privatised and given to Metrolink Pte. Ltd. with close supervision by the Privatisation Unit of the Economic Planning Unit (EPU) in the Prime Minister's Department (New Straits Times, April 4, 1988). The installation of the 75 km tracks will be conducted in four phases and completed in six to seven years, and work on the first phase comprising a 13.5 km stretch was expected to begin by November 1988.

Although the project is in line with the aspiration of providing mobility for users through public transit investment, evidence and experiences both in the developed and developing cities suggest that there is little justification for a city like Kuala Lumpur to have it on the grounds of financial capability, locational suitability and experience. At the least the city is still not sufficiently prepared for such a massive investment.

Light Rapid Transit systems have the advantages of very high passenger capacity and are best suited to large cities with relatively dense populations and generally long trip generation. Only at very high loads, essentially in very congested areas, could they be cost effective in terms of user and non-user costs. In the light of the current planning directions which emphasise a population dispersal policy through the creation of self-contained sub-centres (see Dewan Bandaraya, 1984), such a requirement would not prevail in Kuala Lumpur at least for the foreseeable future. The system would only be sufficiently fed with passengers during short peak hours in the morning and evening while beyond these periods it would have to operate under capacity. Only if passengers are willing to pay a relatively higher fare than that charged by the bus services would the system escape financial difficulty.

SUMMARY AND CONCLUSION

Undoubtedly, attitudes towards public transport in Kuala Lumpur have changed during the last ten years or so as implied in several planned programmes aimed at providing more access to public bus services in particular. Many of these proposals, however, have been forced to remain on paper following difficulties encountered at the implementation stage. Foremost amongst them was the proposed Area Pricing

Scheme, inspired by its success in Singapore, but its implementation in Kuala Lumpur was incomplete. Other measures for restraining private cars, such as imposing higher parking charges and the bus priority schemes, although substantiated by foreign consultants have either been implemented for a short period of time and then abandoned or completely withdrawn from the outset.

Although there is little reported evidence available to explain the failure of these measures, there is every possibility that political pressure and lobbies from vested interests, the private car users in particular, have influenced the final decisions. In Kuala Lumpur, this could have been possible since the most influential car users are civil servants, planners and the politicians who themselves are the policy makers. It is highly likely, for example, that the majority of senior officials in the City Hall's transport section arrive at their offices in expensive imported cars, each with his/her personal driver.

Admittedly, some of the proposals that have been implemented such as the introduction of a minibus system, despite its acknowledged weaknesses, have demonstrated a certain degree of success, at least in terms of providing faster and cheaper transport for certain groups of users; other user facilities either remain unaltered or worsen. In addition, the minibus scheme seemed to have been introduced for considerations other than purely transport. Ostensibly

the scheme emerged from a proposal by the World Bank following the deterioration of the stage bus system resulting from acute financial crisis. In the background, however, political and foreign interests have also played an enormous role in guaranteeing the implementation of the programme. On the part of the government, the proposal was seen as a potentially useful platform on which small scale indigenous enterprises would be nurtured.

This, in turn, would, to a certain extent, safeguard the success of the long-standing New Economic Policy, a politically sensitive long term plan in which indigenous Malays are given special treatment in business and commercial activities. On the other hand, international transport consultants saw the opportunity of making Kuala Lumpur an ideal laboratory to pioneer a minibus operation experiment which, if successful, could be taken as a precedent for other developing cities to imitate. In fact the number of minibuses has increased very little since their introduction in 1975 and it is now clear that they cannot be a long term solution for the city's public transport malaise.

In short, public transport planning and policy in Kuala Lumpur has, to a considerable extent, been running along a somewhat misleading track: private users who are in the minority are favoured at the expense of public passengers who are in the majority, heavy investment decisions preclude low-cost solutions, and rigid regulation of public services is

erroneously seen as better than liberalisation and privatisation.

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Department of Geography,
University of Keele
Keele, Staffordshire ST5 5BG

Telephone Newcastle (Staffs) (0782) 621111 Telex 36133 UNKLIBG