A "STEP" TOWARDS SUSTAINABLE TRANSPORT: A CASE STUDY OF PENANG, MALAYSIA

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Ownership of cars and motorcycles in the state of Penang, Malaysia, is increasing at average rates of 9.5 per cent and 7.2 per cent a year, respectively. The total number of private vehicles registered in the state doubled between 1985 and 1995. This has resulted in urban traffic congestion, with increased delays and travel times, higher rates of injury and death from traffic accidents, as well as environmental degradation.

While the rapid increase in vehicular traffic is usually attributed to economic growth and urbanization, in this case it is because current transportation policy and investment in transportation projects are disproportionately skewed towards meeting unabated demand for road space. The needs and concerns of pedestrians, cyclists and bus users are seldom, if at all, taken into consideration in national and state transportation policies and plans.

The transportation requirements of mobility-impaired and vulnerable groups such as people with disabilities and the elderly, as well as vulnerable groups such as children and the poor, are almost always neglected when transportation planning is undertaken and investments are made.

Sustainable Transport Environment in Penang (STEP) was established in 1998 by a group of concerned citizens and voluntary groups in Penang, with the primary aim of addressing the concerns and advocating the interests of pedestrians, cyclists, public transport users and mobility-impaired groups.

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This paper provides a brief discussion of the transportation issues in Penang and highlights concerns such as the environmental impact of road traffic, with emphasis on vehicular traffic-generated noise and air pollution.

The paper then proceeds to describe the formation and the various initiatives of STEP, following its participation in the Sustainable Penang Initiative (SPI). Successful lobbying initiatives, such as improvements to a major bus terminal in Georgetown, Penang, and the efforts of the group known as Sustainability, Independence, Livelihood, Access (SILA) are also mentioned.

The paper also discusses the advocacy experience of STEP and the issues for the future.

INTRODUCTION

The planning and provision of transportation infrastructure for urban travel in the state of Penang has been largely oriented towards the needs of private car users. National transportation policies and state development priorities have consistently been geared towards meeting the ever-increasing demand for road and parking space by private vehicles, while public transportation and non-motorized land transport modes have been largely neglected.

Also the government has targeted the motor vehicle industry as a key economic growth sector and has actively promoted private car ownership and use by making a range of Malaysian-assembled cars affordable and readily available. Coinciding with the period of rapid economic growth and increasing affluence over the past 10 years, private vehicle ownership and use has almost doubled in the state.

This trend has resulted in a situation where, due to the limited availability, capacity and quality of public transport facilities in Penang and the current pattern of land use and town planning, people have little choice but to own and use their own motor vehicles. At the same time, facilities and services for bus- and taxi-users, pedestrians and cyclists are mostly inadequate, while traditional modes of transport in Penang such as the trishaw and the ferry are rapidly declining in significance.

It is therefore hardly surprising that traffic congestion has worsened in the major urban centres such as Georgetown, Bayan Baru, Butterworth and Bukit Mertajam and has become a major social and political issue in the state. However, the problem is usually perceived in terms of the delays and inconvenience faced by motorists, rather than as a problem of accessibility and mobility for the entire population. The needs and concerns of pedestrians, cyclists, the mobility-impaired and captive users of public transport are seldom acknowledged, let alone addressed by policy makers and planners.

Sustainable Transport Environment in Penang (STEP) was the result of the coming-together of concerned individuals and voluntary groups to address this vacuum. This paper will briefly describe the urban transport issues and concerns in Penang and the background to the formation of STEP. This will be followed by a discussion of the initiatives taken by STEP and an indication of the future directions of the group.

I. BACKGROUND

The state of Penang in the northern part of peninsular Malaysia is the second smallest state in Malaysia and consists of Penang Island and Seberang Perai on the mainland. Penang Island consists of about 293 sq km, with an estimated population of around 610 thousand, while Seberang Perai occupies an area of about 738 sq km, with a population of 670 thousand. The major urban centres on the island are Georgetown, which is the administrative centre, and Butterworth and Bukit Mertajam on the mainland. Penang Island has an international airport and is linked by a ferry service and a bridge to the mainland. The major port facilities are on the mainland, while passengers and minor cargo vessels are handled at Swettenham Pier on the island.

Penang is a highly urbanized state, with a vibrant economy driven primarily by manufacturing industry and tourism. Known as the "Silicon Valley of Asia", it is home to most of the major electronics and semiconductor giants in the world and is a major centre for international industrial investment. With its beaches, multicultural and heritage attractions, Penang is also a leading tourist destination for both domestic and international visitors. Until the current financial crisis, the state was experiencing a rapid rate of economic growth with an average of 12 per cent growth in gross domestic product between 1992 and 1997.

II. CURRENT URBAN TRANSPORT ISSUES IN PENANG

A. Rapid growth in private vehicle ownership and use

The total number of motor vehicles registered in the state in 1995 was 752,438 (of which 64 per cent were motorcycles and 31 per cent cars) while the total length of paved roads in the state is estimated presently at about 3,000 km. Car and motorcycle ownership in the state is increasing at an average of 9.5 per cent and 7.2 per cent per year respectively and the total number of private vehicles registered in the state doubled between 1985 and 1995.

While the growth rate of motorcycle ownership between 1970 and 1990 has been consistently higher than that of cars, since 1990 the latter has overtaken the former. This could be explained as a consequence of rapid economic growth and rising income levels, as well as car-friendly policies such as the ready availability of the made-in-Malaysia Proton cars.

Previous projections for per capita vehicle ownership (or persons per vehicle) in Penang were 6.1 persons per car and 5.7 persons per motorcycle by the year 2000 (JICA 1981). However, these levels were reached even before 1990. At around 5 persons per car, ownership levels in Penang are reaching those of developed countries.

Data from the 1991 census indicated that 40 per cent of households in the state owned at least one car, while 58 per cent owned at least one motorcycle. This distribution indicates that there is still a huge latent demand for car ownership, as, with increasing income levels, motorcycle users will eventually shift to cars. While 44 per cent of households own a bicycle, this high ownership is not reflected in the pattern of trips by mode of transport. It is therefore likely that these bicycles are used by children and young persons for short leisure or school trips.

B. High private vehicle dependency

It has been estimated that in 1986 more than 80 per cent of all personal trips in the state were private vehicle trips, with 44 per cent car trips and 38 per cent motorcycle trips (JICA 1986). The current situation is not expected to be much different, although the share of motorcycle trips may have increased slightly. Recent traffic surveys in the state

show that between 80 per cent and 90 per cent of the total hourly traffic volume on major urban roads consists of cars and motorcycles. It is also estimated (based on data from a recent transport study) that more than 70 per cent of private vehicles entering Georgetown during the morning peak hour are single occupancy vehicles.

C. Low levels of use of public transport

The limited capacity, poor reliability and quality of public transport facilities in the state is a major determinant of mode of transport choice. Presently, over 60 per cent of those travelling by bus (schoolchildren, factory workers, migrant workers, the poor and elderly) are captive passengers who do not own a private vehicle *(*Penang State Government 1995). Despite significant improvements having been made to the bus system in the last few years, such as the introduction of air-conditioned buses and minibuses and the expansion of routes, the proportion of bus passengers on the busiest routes is estimated to remain below 30 per cent. While bus users complain about delays and missed schedules, bus operators are frustrated by buses being unable to follow fixed schedules due to traffic congestion during peak hours.

D. Increasing traffic congestion

Traffic congestion in Penang has reached fairly serious levels due to the rapid increase in traffic volumes on the major urban roads. Traffic volumes between 1975 and 1995 more than doubled on most roads, with increases of up to 5 times on certain road sections in Seberang Perai. In terms of vehicle concentration, there has been an increase of almost 40 per cent since 1980, with an estimated doubling in travel delays. Traffic is growing at an average of 7 per cent annually on most of the major roads in the state (Highway Planning Unit 1995) in close correlation with the average 8 per cent annual growth rate in the total number of cars and motorcycles. While congestion reduces travel speed, which causes much inconvenience and economic loss, it also results in higher vehicle emissions due to engine idling and the frequent acceleration and deceleration associated with stop-and-go conditions, as most vehicle emissions (except nitrogen oxides) typically decrease with speed.

E. High rate of traffic accidents

The number of road accidents in the state more than doubled between 1991 and 1995, while the number of casualties and deaths increased by 235 per cent and 175 per cent respectively. Casualties per 1,000 vehicles also increased from 3.5 in 1991 to 9.4 in 1995. The rate of fatalities in 1995 (34 per 100,000) was more than twice that in 1991 (13 per 100,000) and significantly higher than the level considered acceptable (5-10 per 100,000). More than 50 per cent of fatalities and 60 per cent of casualties are motorcyclists. It is also significant to note that between 1992 and 1996, 12 to 15 per cent of total fatalities and 10 to 13 per cent of total casualties were pedestrians, and 5 to 7 per cent of total fatalities and 5 to 6 per cent of total casualties were cyclists.

F. Inadequate facilities for pedestrians, cyclists and the mobility-impaired

Existing pedestrian footways are of inadequate quality and do not provide sufficient levels of safety and comfort to encourage walking. Facilities for cyclists, such as bicycle lanes, are non-existent. The transportation needs of the mobility-impaired such as the elderly and the disabled, as well as those of young children have also been seriously neglected.

G. Environmental impacts

A study carried out in 1990 on the levels of traffic noise at five locations on Penang island found that traffic noise levels were consistently and significantly higher than the World Health Organization recommended level of 55 dB (A) at all the locations surveyed. Average noise levels for Georgetown and Butterworth are 73.2 dB (A) and 72.8 dB (A) respectively, with the most significant contribution being from road traffic (DOE 1992).

It is estimated that 75 to 80 per cent of the total air pollution emission load is due to mobile sources, that is, primarily road traffic (DOE 1994). Data on levels of gaseous pollutants in the air is extremely sketchy and it is therefore not possible to determine precisely the correlation with road traffic. Average annual concentrations of TSP (Total Suspended Particulate) in Georgetown, which has 24-hour monitoring already exceed the Malaysian recommended guideline

standard of 90 $\mu g/m^3$ by over 40 per cent (DOE 1996). Air pollution from traffic is therefore an increasingly serious problem.

III. THE RESPONSE FROM THE STATE

While the state authorities of Penang grapple with the plethora of urban transportation issues highlighted in the previous section, their limited policy, regulatory and financial capacity prevents them from adopting a holistic and integrated approach. In the absence of any innovative national policy on integrated urban transport, Penang, like most state and municipal authorities, has adopted conventional road-based transport solutions.

The major transportation proposals in the state are a coastal expressway to be constructed on reclaimed land (Jelutong Expressway), a Penang outer ring road, a Butterworth outer ring road and a second fixed link (a combination of bridge and tunnel) between the island and the mainland. The state authorities depend on the private sector to build these roads, in exchange for either the right to collect tolls or for parcels of land for development.

The rationale behind these proposals seems to be that building new and wider roads and providing more parking spaces in urban centres (within multi-storey car parks) will reduce traffic congestion. The authorities no doubt have intentions to upgrade public transport and improve facilities for pedestrians, but these are often measures that only tinker with the existing system and are insignificant when compared to the amount of investment and priority accorded to building roads.

The state government recently commissioned an international consultant to carry out an urban transport study of Penang in an attempt to formulate state-level measures and projects to deal with the problems of traffic congestion. This plan has not yet been formally adopted by the state, but it is expected to incorporate the major road projects mentioned in the previous paragraph.

In summary, while the state says that it is committed to sustainable development in principle, concerns have been expressed as to whether the transportation policies and projects being proposed would contribute towards a sustainable transportation system for Penang.

IV. SUSTAINABLE TRANSPORT ENVIRONMENT IN PENANG

A. The sustainable Penang initiative (SPI)

Sustainable Transport Environment in Penang (STEP) was initiated by a small number of concerned individuals in Penang who came together to discuss the issues and concerns highlighted in the previous sections. The momentum for this first meeting came from the launching of the Sustainable Penang Initiative (SPI), which was officially launched in November 1997 as a community-level project in Penang.

The SPI was carried out by the Socio-Economic and Environmental Research Institute (SERI), a government-backed think tank for the state of Penang. The project was supported by the Canada-Association of Southeast Asian Nations (ASEAN) Governance Innovations Network Program, which is funded by the Canadian International Development Agency and managed by the Institute on Governance, a private non-profit organization based in Canada.

B. The STEP initiative

The SPI had selected five themes for a round-table consultation process, and in three of these round-table discussions (ecological sustainability, economic productivity and social justice) the issues and problems of transport were highlighted. Individuals who were keen to pursue follow-up action after the Ecological Sustainability round-table meeting were invited to a transport study group meeting initiated by the SPI project coordinator.

At the first meeting it was decided that STEP had to reach out to individuals and groups interested in and concerned about sustainable transport issues and provide a mechanism for them to come together as a coalition to exchange ideas and formulate a plan of action. A pro tem committee was formed and a mission statement for STEP was drawn up.

The STEP mission statement expresses:

(a) Concern that existing government transportation policies cater primarily to the needs of private motor vehicles;

(b) The belief that all urban development policies should ensure efficient, affordable and equitable access for all residents;

(c) Concern over the negative consequences of the transportation policies in Penang, such as increased travel times, deteriorating environmental quality and dangerous road conditions;

(d) Opposition to the policy of allocating more resources to support unrestricted access to private motor vehicles because it is environmentally unsustainable and socially inequitable;

(e) The belief that change is urgent in view of the national economic crisis.

The group decided that the best way to launch the STEP initiative was to organize a public meeting under the auspices of the SPI project and invite members of the public, representatives from the state government and municipal council, public interest groups and non-governmental organizations (NGOs), academics, transport industry representatives and the media.

The group also decided that it was necessary to initiate a first activity of some kind to convince the people attending the meeting of the credibility and seriousness of purpose of the STEP group. It was decided that a cycling action plan for Penang would be initiated by the group and assistance from the Embassy of the Netherlands in Kuala Lumpur was sought for the services of a Dutch consultant to help facilitate the plan. The Embassy provided a grant to cover the expenses of a Dutch expert and those of a small pilot study for a few areas in Penang Island, with a matching grant to be requested from the municipal council.

The inaugural public meeting of STEP, called the Sustainable Transport Options for Penang (STOP) conference, was held on 23 August 1998 and was attended by over 80 people, including the state cabinet member responsible for transportation and the regional coordinator for the United Nations Development Programme for Asia and the Pacific. Panel members included the coordinator of Sustainable Transport Action Network for Asia and the Pacific (SUSTRAN), a regional sustainable

transport advocacy network based in Kuala Lumpur, as well as a Dutch expert from the Interface for Cycling Expertise (I-ce) of the Netherlands.

The meeting was a success, producing a lively discussion on many urban transport issues, and the programme ended with the coordinator of STEP inviting interested participants to a follow-up meeting to decide a plan of action for STEP. As a parallel event, a public meeting was arranged between cycling enthusiasts and the I-ce expert who gave a talk and video presentation on cycling in the Netherlands. The I-ce expert was also taken on a cycling tour of Georgetown to explore the possibilities of establishing a cycling route in the heritage area of the city as a prelude to the cycling action plan study.

C. First STEP

The first follow-up meeting to the STOP conference was attended by a wider range of individuals and groups. After some discussion, STEP decided to form three working groups, as follows: a cyclists' group, a bus users' group and a pedestrians' group which were to work closely with the group called Sustainability, Independence, Livelihood and Access (SILA). STEP also decided to become a focal point of SUSTRAN and join the regional network of individuals and groups advocating sustainable transportation issues.

A number of activities were suggested for the purpose of generating public awareness on sustainable transport issues, and five activities were chosen, to be undertaken over a twelve-month period.

The five activities were:

(a) The issuing of statements to the media on public transport issues;

(b) The making of campaign materials on sustainable transport;

(c) The conducting of a survey of the central bus terminal (known as the Complex Tunku Abdul Rahman (KOMTAR) bus terminal) in Penang;

(d) The holding of fun cycling event in a residential neighbourhood;

(e) The drawing-up of a Cycling Action Plan for pilot areas in Penang.

1. Media campaign on the bus transport system

After the success of the STOP conference, which received good media coverage, STEP decided to publicize the inadequacies of the bus transport system in Penang, with the intention of sensitizing bureaucrats at the state and federal levels to the needs of bus users. The issue that was chosen to highlight the overall weaknesses of the public transport system in the country was the rejection of the application by the Penang municipal council to provide a free shuttle-bus service in the city area to alleviate traffic congestion.

All bus routes and service conditions are determined by the Commercial Vehicles Licensing Board, which is under the authority of the Federal Ministry of Transport. The Board rejected the application by the Penang Municipal Council on the grounds that there were objections from existing bus and taxi service operators. STEP succeeded in generating some debate and discussion in the media on the need for decentralization in public transport planning and policy-making, and even managed to elicit a public response from the Board on the subject. The need for the comprehensive planning of bus services involving local participation was also highlighted.

The STEP media campaign has assisted the Penang municipal council in appealing against the decision of the Board and a final decision on the free shuttle-bus service is still pending.

2. Campaign materials on sustainable transport

STEP prepared three different leaflets for mass distribution, to promote the merits of walking, cycling and public transport. The leaflet on walking, entitled “Feet First, highlighted the benefits of walking as a mode of transport and described the rights of pedestrians to clean air, safe streets, respect from motorists and motorcyclists and adequate facilities. Similarly, “Pedal Power” described the merits of cycling and the rights and needs of cyclists, while “Bus is Better” did the same for bus users. These leaflets were well received, due to the simplicity of their ideas and the fact that people from diverse social backgrounds could identify easily with the issues being discussed.

3. KOMTAR bus terminal survey

STEP carried out a photographic survey of the conditions at the KOMTAR bus terminal early in 1999 and released the findings of the survey to the local media. The wide press coverage given to the poor state of the terminal and the fact that this terminal was situated in KOMTAR, at the heart of the administrative centre of the state government, made it quite difficult for policy makers and administrators to claim ignorance. Within a remarkably short period of time the confusion over which authority was responsible for the maintenance of the facility was resolved (something which several polite requests from STEP had been hitherto unable to achieve) and the terminal was given a facelift, with a new paint job and lighting.

4. Fun cycling event in a residential neighbourhood

STEP is in the process of planning this event, to be held in a place called Pulau Tikus, a middle-class neighbourhood which has become severely congested after the development of a number of shopping complexes in the area. There is a serious shortage of parking spaces which has resulted in vehicles being parked along residential roads. A one day "Fun Cycling Event" is being planned to get people to cycle to an open space in the area, where there will be a carnival and other events organized around the theme of sustainable transport. Efforts will be made to secure sponsorship and support from the business community for this event, such as special discount vouchers for cyclists and secure parking facilities for bicycles. The objective of this event is to promote cycling as a means of transport in the area and generate community support and enthusiasm for better facilities for non-motorized modes of transport.

5. Cycling action plan

A technical and financial proposal for a cycling action plan in two pilot areas on Penang Island was submitted to the municipal council for the purpose of securing support and a matching grant to supplement the grant from the Embassy of the Netherlands. Although the proposal has not been formally turned down, it has been understood that the municipal council is unable to support this initiative. It was then decided to conduct a smaller study using the available funds and expertise available from SUSTRAN in Kuala Lumpur, without paying for the

services of the Dutch expert. This study is ongoing and is expected to be ready by the end of 1999.

D. STEP and SILA

The disabled persons community in Penang was well represented in the SPI round tables and accessibility problems faced by the mobility-impaired segments of the population were a major issue that came up in these discussions. A loose coalition of groups and individuals with disabilities emerged from the SPI process and became known as SILA. Recognizing the overlap of interests between STEP and SILA, the common goals and objectives, STEP is represented in SILA and vice versa.

The first activity SILA undertook involved highlighting the need for improved access for the disabled to the Penang Botanic Gardens, KOMTAR (a 65-storey building in Georgetown which houses the state administrative centre and other government agencies, as well as shopping complexes) and in the vicinity of the St. Nicholas Home for the Blind.

This initiative was successful as drain covers in the Botanic Gardens were retrofitted to facilitate wheelchair access within the grounds, and the President of the municipal council made a public commitment to improve access for the disabled to priority public areas.

SILA and the Socio-Economic & Environmental Research Institute (SERI) were also selected by ESCAP to conduct a training workshop for the promotion of non-handicapping environments (held in Malaysia from 8 to 15 November 1998). Activities in the eight-day programme were designed to encourage teamwork and coordinate efforts across disability groups. A follow-up workshop was held in April 1999 to train an additional 20 disabled persons, this time to include instruction on the production and use of videotapes to document the practical situations encountered by disabled persons in their daily life.

SILA also organized the International Day of Disabled People Walk from the St. Nicholas Home for the Blind to the One-Stop Centre shopping mall. This event provided an opportunity for SILA to publicly acknowledge the efforts of Penang Municipal Council in improving access for the disabled as well as highlighting outstanding issues.

E. Next STEP?

STEP has enjoyed a fair degree of success in its first year of existence, both in terms of highlighting sustainable transport issues in Penang, and in achieving modest changes such as the upgrading of the KOMTAR bus terminal. While STEP is not a formal organization and, technically speaking, is not a legal entity, nevertheless it has been able to operate in the public domain under the umbrella of the SPI project, which enjoys the support and patronage of leaders of the state government. This political space enjoyed by STEP is not necessarily a given and may be largely due to the political connections of the current STEP coordinator.

However the political space for STEP to function effectively may be jeopardized if STEP decides to adopt a more critical or confrontational stance. STEP has steered clear of public criticism of the state government over controversial transportation projects and proposals. For example, STEP did not endorse a joint press statement of NGOs and concerned individuals critical of a government proposal to build a massive bridge/tunnel to link Penang island to the mainland. Nor did STEP make any media statements on the controversial "autopont" flyover project of the municipal council, which is facing widespread public criticism, or join in the public debate over metered fares for taxis.

While STEP did make private submissions to the state government on the above issues, not taking an open public position poses some credibility problems in the eyes of members of the public and other public interest groups.

With the completion of the SPI project, STEP no longer has any legal status and has to decide which way to proceed. One option is to apply for registration with the Registrar of Societies as an NGO and take a more independent stance. Another is to establish itself as a company limited by guarantee and apply for non-profit status. Yet another option is to function under the umbrella of SERI. These options and the future direction of STEP are currently being discussed.

An advocacy group similar to STEP has now been established in the Klang Valley; FEET has recently started to become active and there are exciting possibilities for coordination between STEP and FEET on a national campaign on sustainable transport.

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