

Chapter 1: Introduction

1.1 Rationale

While everyone is using the resource land and the infrastructure of CMU campus, costs to maintain and expand the existing transportation environment have been and are provided by the university administration and the central government. As of yet, no special user-fees for the provided infrastructure have been introduced. This system of outside financing might become a pressing problem in the future as the drive to privatize state-institutions in Thailand is currently very strong and the year 2003 has been set as the dead-line for the possible release of Thailand's universities into managerial and administrative freedom. This new type of free and privatized university brings on new responsibilities for management and consumers, one of them being the independent generation of funds to maintain the university. But, when financial pressure on the university administration is increased, how then can additional funds be raised to repair, maintain and improve the environment at campus? The answer to this question could be the Polluter Pays Principle¹.

The possible future challenge of independent financing to the university is simultaneously a unique opportunity to extend the dictum of ecological efficiency in PPP to the management of transportation and reward the user with an improved environment and more human space at campus, because Chiang Mai University is facing a crisis of a special kind: the campus is losing its atmosphere of quiet and learning rapidly.

Everyday experience shows the campus area overcrowded with vehicles of all types. This is not just a problem concerning the ecology; a degraded environment adversely affects concentration, intellectual output and fun during activities². Noise and air-pollution at campus have reached a level where the atmosphere is most of the time compromised. In the past, some faculties have taken measures to solve this problem. Through the means of demonstrations on campus they have successfully stopped through-traffic on their premises³. On weekends one can experience the campus differently; with little traffic about, its recreational potential becomes visible. This potential is never realized during the "learning-week", when it would benefit the university most. Instead, construction of new buildings, drawing scores of ever more commuters and their vehicles, continues on many parts of the campus, while traffic is flowing through areas reserved for studying without any restriction. Vehicles are parked almost everywhere without restraint or consideration to the environment and the people in it. Motorized transport rules commuter movement at university campus. Throughout, the traffic infrastructure and architecture do not encourage walking or cycling as a means of transportation. However, alternatives in non-motorized transportation and commuting depend on an infrastructure of their own in order to be feasible and accepted by the public. Alternatives may include walkways, bicycle lanes, benches and salas (ศาลา), or may be even specific areas with traffic restrictions. To maintain such structures in accordance with their function and keeping them at a certain standard, a management concept and budget have to be provided. The economic internalization of traffic through the implementation of PPP standards can achieve both:

PPP⁴ re-defines ownership as identical with consumption, e.g. making people responsible for what they consume ("responsibility through ownership"). "The Commons"^{5,6}, resources and

¹ The Polluter Pays Principle in this study will be referred to as PPP.

² "...Some tasks can be easily disrupted by almost any noise. Tasks that require focused attention, memorization, simultaneous attention to several different things, or maintaining vigilance are the most easily affected." McAndrew, Francis T., *Environmental Psychology*, Wadsworth, 1993, pages 67-68

³ At the premises of the science faculty.

⁴ Further on the study will include this new definition by referring to PPP as PPP/UPP

commodities that are generally considered free, are brought back into the economic sphere, by internalizing so-called external costs. It is an instrument to introduce ecological sustainability to resource management practices through pollution prevention⁷. In 1992, in Thailand the Pollution Control Department⁸ of the Royal Thai Government was invested. In accordance with study relevant principles of this department⁹ and based on definitions introduced by its administrative guidelines, PPP is also a suitable tool for traffic management. Responsibility for consumption (—ownership—) is assigned to the entity most directly responsible for generating it, so that any increase in consumption leads to higher costs and any decrease in consumption to lower costs for that entity. PPP's final aim is to maintain the environment through achieving the integration of environment and economics.

In a study¹⁰ the Japanese government has assessed solutions concerning environmental problems based on PPP and its impact on the economy. It recommends the implementation of PPP and comes to the following conclusion regarding its effects on human societies:

“The environment and the economy are fundamentally inseparable elements. The environment supports human life. Human activity involves creating and providing the resources necessary for economic activities in order to support human life and at the same time deals with the waste produced through human activities. However, there are limits to the capacity and capabilities of such an environment. Economic activity beyond these limits is not sustainable. Conserving the environment, indeed, sustains economic activities that improve the life of people. In order for mankind to maintain a sustainable economic society, it is necessary to incorporate consideration for environmental conservation into the current socioeconomic system, in other words, seek measures to integrate the environment and economy. [...] In order to solve this problem, we must reconsider the view that the environment is a “free good” that can be used indefinitely. Rather we must see the environment as finite, precious and common goods extending beyond generations, which must be returned to future generations for their enjoyment, as previous generations have done for us. In order to enjoy the blessings of a sustainable environment, we must embrace the concept of reasonably paying for the burden to conserve the environment, in other words the necessary price to use the earth. It is also necessary to formulate [...] policies that will enable people to see the obscured impact on the earth from economic activities conducted within a finite environment, and also enable people to reflect on economic [and consumption] activities. [...] Through endeavors to integrate the environment and economy, it is necessary in the long term to transform the socio-economic system into a sustainable one. To attain this goal, the constituents of the economic society must also carry the burden. However, this burden should be shared fairly, and economic instruments should be used to realize more efficient transformation of the entire society. It is also necessary to take into consideration that no geographical area, social strata, or public sector should be made to take on extra burden in the process of implementing this change. It is also important to ensure that there will be no major impact or confusion in the short term. As society learns to understand and cooperate along these lines, in the long term it will be possible to realize a sustainable society with economic activities of high quality through integrating consideration for the environment into [human] activities.”

⁵ Also: Common Property Resource. Resource that people are normally free to use due to lack of ownership of resource. For example: clean air, fish in international zone of the oceans etc.

⁶ See also: Hardin Garret: “The Tragedy of The Commons”, Science, vol. 162, 1243-48

⁷ G. Tyler Miller, “Environmental Science”, 6th edition, 1997, Wadsworth Publishing Com., chapter 7.

⁸ Established on June the 4th, 1992 under the Royal Decree on the Organizational Division of Pollution Control Department, Ministry of Science, Technology and Environment.

⁹ Relevant are here: Polluter Pays Principle, Strict Liability Principle, Pollution Control Area Principle.

¹⁰ Environment agency, Government of Japan: ‘Regarding the utilization of economic instruments such as taxation and charges in environmental politics.’ June 1996, Research Panel on Economic Instruments.

1.2 Objectives

1. Show possibilities and restrictions of the Polluter Pays Principle (PPP) applied in the transportation management at Chiang Mai University Campus.
2. Suggest a scheme for a pilot project to mitigate the traffic problem at Chiang Mai University Campus considering geographic, social and economic/administrative factors.
3. Study opinions of concerned groups at the target area regarding the concept and possible implementation of the proposed pilot project.

1.3 Expected Results

1. An assessment of the current traffic infrastructure.
2. A PPP implementation concept in regard to traffic management.
3. A pilot project with a step-by-step implementation framework.

1.4 Study-Related Assumptions

Regarding the Polluter Pays Principle

- The introduction of the Polluter Pays Principle can generate funds to implement a policy change regarding transportation management at the campus.
- The introduction of the Polluter Pays Principle can generate awareness and behavioral change in the use of the resource land.
- The introduction of the Polluter Pays Principle can mitigate the traffic problem at university campus.
- This study is likely to encounter some critical reactions toward the Polluter Pays Principle and it is assumed that it can benefit from such criticism by strategically incorporating these voices into the study implementation.

Regarding Environmental Perception and Behavior

- The provision of convenient alternatives to motorized transport motivates users to switch their mode of transportation.
- The traffic problem at Chiang Mai University decreases concentration, intellectual output and fun during activities of all users of the campus.
- The environmental degradation at the University campus has reached a degree where
 - It is perceived equally disturbing and distracting by a large majority of campus users;
 - There is willingness in different groups of interest to find a solution for the traffic problem at campus; and
 - People will approve of and realize changes in university transportation as an attempt to improve traffic.
- The study assumes that environmental awareness in consumers favors a shift away from excessive motorization towards environmentally friendly alternatives.

Regarding Traffic

- This study assumes that parking is a form of traffic. This is often not realized, as the vehicles used are not moving. But parking is merely the last stage of a person's travel activity and as such must be considered part of the commuting activity, as much as the approaching of a vehicle to leave the house or entering the streets to drive away. Traffic characteristics are based on the mode and chosen vehicle of transportation; and, like every

physical object, an increase in vehicle number directly affects the environment in which it occurs. The following picture sequence shows how the zone of vehicle influence is spreading and as volume and speed of traffic increases, "human" territory is progressively eroded. As parking is a form of traffic, it has effects similar to moving traffic in an environment that has to accommodate more and more space for vehicles. One can therefore apply the same mechanisms used for traffic infrastructure planning and traffic management for parking and follow the guidelines for site development and environmental perception in their general management approach. The major difference being expressed in the fact that parking is a stationary form of traffic.

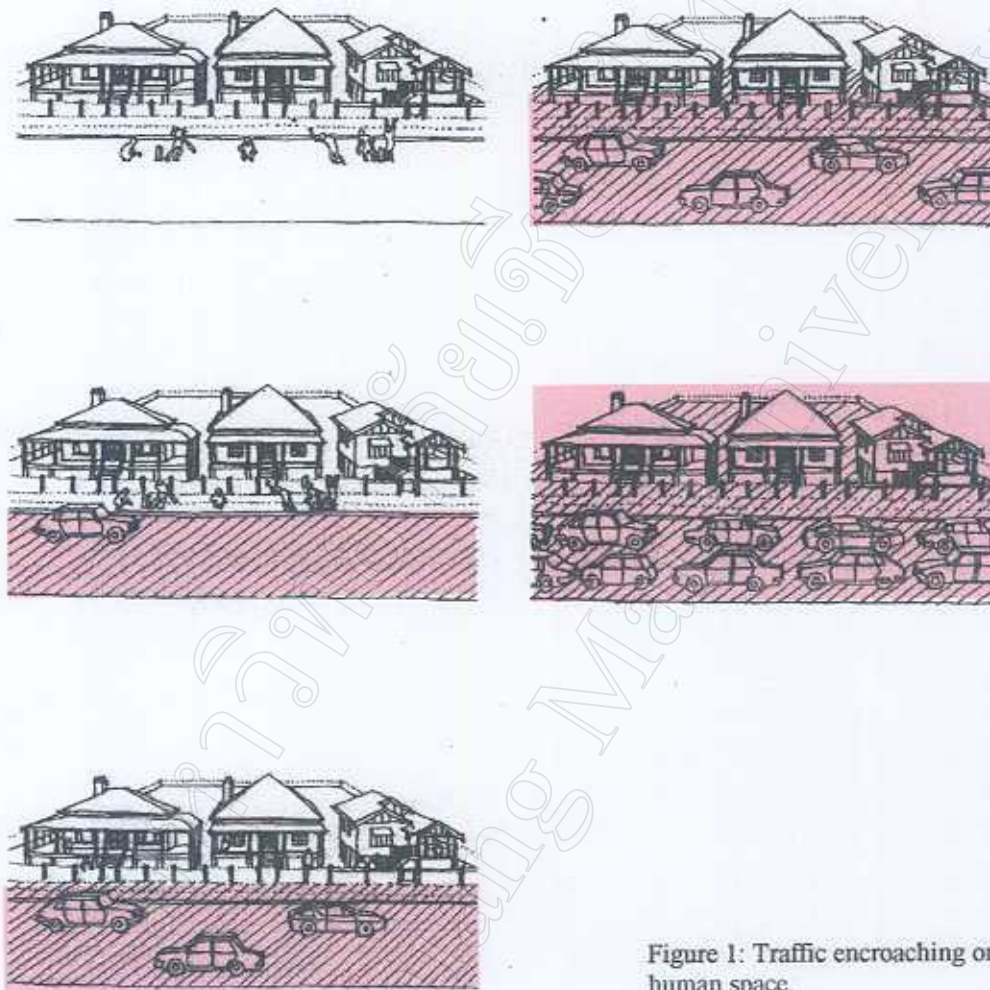


Figure 1: Traffic encroaching on human space.

- A change in management of and policies toward transportation at the campus can largely eliminate the traffic problems of the university.
- An appropriate land-use and zoning concept can mitigate traffic problems by way of allowing attractive and environmentally friendly means of transportation.
- Alterations to the transition area can reduce traffic by eliminating unnecessary vehicle movement.
- The traffic problem at university is basically home made and due to problems in planning, budgeting and management of transportation.
- The current land-use, zoning and architecture of parts of the university campus do not consider transition in its lay out and thus create unnecessary traffic.
- In the past, policies in transportation management at campus have largely favored the motorized vehicle.