

THE SECONDARY IMPACTS OF DEVELOPMENT-INDUCED TRAFFIC BASED ON ZONAL ANALYSIS IN DEVELOPING COUNTRIES

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This study presents a strategic planning tool of Zonal Impact Analysis (ZIA) framework in evaluating the secondary impacts of city growths in order to find the balances of land developments and transportation performances in an urban area. The proposed ZIA framework can fulfill the gap between the traditional analysis levels of land use and transportation planning. Bangkok District of Bangkok is selected as the study area for the application of the framework. The urban development impacts include economic and environmental impact. The environmental impacts consist of noise and air pollutions considerations, while the economic impacts include travel time and vehicle operating costs. This study pointed out that travel cost is not the only major impacts as the previous studies indicated. Pollution impacts are also one of the significant social costs. Planners should not overlook the environmental aspects to appraise the impacts of proposed land use project. The results of secondary impact assessments indicated that the transportation services in the developed areas influence how much impacts of traffics generated by land developments. Planners should take transportation services into account to determine the development potentials of each area. The proposed framework can show explicitly the impacts distribution on how much impacts of the proposed project(s) in developed area(s) may influence to the other part of the city. It is expected that the proposed ZIA framework can be an alternative to find an optimum growth pattern for minimizing unfavorable impacts of land developments in developing countries.

Case analysis of the staged approach for infrastructure planning and operation focusing on the bus transit system in urban areas

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The importance of public transit system has been growing increasingly in order to achieve smooth traffic in urban areas. Particularly, line haul transit systems have been proposed and, in some cases, realized as major public transportation in the medium sized cities in Japan and the cities in developing countries. Previously, the line haul transit systems such as Light Rail Transit (LRT) have been considered mainly in urban transportation master-plan, but bus transit systems have rarely been considered as the alternative to them.

In this paper, the authors aim to follow two points focusing on the role of bus transit system as public transportation: The first point is to review how to treat and to clarify the significance of bus transit system with exclusive bus way in public transportation planning. The second point is to examine the relationship between the staged approach of planning and operation of infrastructure and the transportation service offered through the comparative analysis with other line haul transit systems.

In conclusion, through the comparative analysis of case studies, the authors clarify the significance of bus transit system with exclusive bus way in public transportation planning and examine the advantage of bus transit system in terms of flexibility of staged development. Moreover, the authors suggest that the concept of the staged approach for infrastructure planning and operation focusing on the bus transit system is applicable in Japan or many Asian cities, and it is important to consider the concept as alternatives of a future transportation planning.

Identifying Transportation Mobility Equity in a Developing Country: A Case Study in Vientiane City, Lao P.D.R

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This paper reports on a survey of transportation mobility in Vientiane city, the capital of the Lao PDR. It aims at examining basic mobility equity in urban districts. The basic mobility of individual like walking, bicycle, motorbike, tuk-tuk (three wheeled motor vehicle) and car were focused. In order to calculate individual mobility, questions like how far, for how long, and for how much people should be expected to travel within 30 minutes (average duration of a daily trip) were raised. As most of transportation services are available on the main roads, samples were randomly selected based on village location politically and developmentally assigned by Vientiane governmental administration. Samples were to include personal, transportation and activities aspects. The Gini coefficient and Lorenz curve were used as a tool for measuring mobility equity. The results show that people in the city rely very much in their daily life on personal transportation modes especially motorbikes as they account majority of the maximum mobility of individuals which equal to 15 km. An inequality of mobility of people in Vientiane city is relatively high as the Gini's coefficient shows ratio of 0.611. The mobility calculation and evaluation techniques developed here are useful for transportation planners and policy makers as it can quickly give overall ideas and situation of the community.

A Study on the Model of Travel Behavior for Daily Shopping

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Because a person's daily demand is necessary and mostly constant in a certain period, travel for daily shopping has some periodic regularity for a person. It is reasonable to expect that people would like to maximize the utility by lessening total cost and maximizing their benefit to meet their daily demand when they do daily shopping. Usually, people have a tendency to do daily shopping in some shop repeatedly so the travel distance is mostly constant for a person. It is obviously that if the distance between shop and residence is longer, then the person's travel cost for each time is higher. On the other hand, if the shopping frequency increases, the storage cost will decrease and the travel cost will increase. Considering the influence on total cost of travel distance and shopping frequency, it is assumed that to some extent travel distance should influence shopping frequency. Therefore this paper proposed a model to indicate the relationship between shopping frequency and travel distance for daily shopping. The model was applied to the data got from a questionnaire that was held in September of 2002. The result shows that the model well expresses the trend that daily shopping frequency decreases with distance increases. But still there are some other factors should be concerned to enhance the validity of the model.

Development of an Internet-Based Travel Survey System

- for Multi-Modal Transportation Planning with Relocation of Large scale Facilities -

Sadayasu AONO, Nobuaki OHMORI & Noboru HARATA

This paper presents the development of an Internet-based travel survey system to support multi-modal transportation planning with relocation of large-scale facilities. Because it is likely that travelers to the relocated facilities do not have enough knowledge on service levels of travel alternatives, it is difficult to collect reliable data by traditional travel survey methods. This system can provide respondents with detailed personal information on the travel alternatives in the multi-modal network. Therefore collected data can be more reliable. The system was developed to collect respondent's stated preference data on mode and route choice of commuter trips after the relocation to the new campus of the University of Tokyo, and they were asked to answer the questionnaire through the Internet. Using the information including socio-economic attributes, geographical locations, current trip data of the respondents and transportation network data, the system produced personally customized travel alternatives for the stated preference questionnaire. To reflect geographical locations and transportation network data, Web-GIS software was used. At the end of the survey, the respondents were asked their evaluations of the questionnaire. It was found that there were differences of share in the SP data on egress mode and route choice between faculties and students. Using collected data,

3-level nested logit type route and mode choice model was estimated and it was logical and statistically significant. In conclusion, the Internet-based travel survey system was able to produce personally customized questionnaire, impress respondents on service levels of alternatives and collect data on respondent's preferences with acceptable respondent's burden. This kind of survey system can be very useful for multi-modal transportation planning with relocation of large-scale facilities.

Service Level of the Bus Traffic on the Slope Area

- Viewpoint of Safety of Winter Season -

Yasuhiro MIMURA, Yun-Pyo OH & Yoshiaki HONDA

-No abstract

Carrying Capacity in the Hot Spring Industry-Case Study of Singyi Road,Taipei

Lee, Yung-Jaan

Since the Japanese Colonial Period, Singyi Road, Taipei has been an area of hot-spring industry. However, since most parts of the Singyi Road Area were protected zones, commercial developments were banned. As a result, illegal land use burgeoned evidenced by a tangle of hot spring pipes. Illegal land use brought with it untidy landscapes, inadequate public facilities, and environmental destruction, obstructing sustainable development (SD). Following the Hot-Spring Act in 2003, Taiwan began to value its precious hot-spring resources. The Singyi Road hot-spring area is anticipated to become the first model district of the restructured hot-spring industry in Taiwan. This case study analyzes SD of hot-spring resources with reference to Singyi Road Area. This study also investigates the sustainable use of hot-spring resources from the perspective of carrying capacity. The context of carrying capacity is first analyzed. Based on field surveys, this study examines five sets of carrying capacity: land use loading approximates 39,600 persons/day, land use intensity reaches 60,000 persons/day, hot-spring loading is about 16,000 persons/day, public facility loading reaches 6,000 persons/day, and transportation carrying capacity approximates 8,300 persons/day. Finally, we recommend that the carrying capacity for Singyi Road Area is around 10,000 to 16,000 persons/day and hot-spring supply is controlled at 6,000 tons/day. Conclusions and suggestions appear at the end.