CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

From the foregoing discussions and economic evaluations of the Bang Pa In-Nakhonsawan Highway, and old roads, it can be concluded and summarized in the following paragraphs:

1. The average annual daily traffic on the Bang Pa In-Nakhonsawan Highway rose sharply since the official opening of the highway in the middly of 1972. The average growth rate both at Bang Pa In and Ang Thong toll stations were about 15 percent per annum. The average annual daily traffic on the old existing roads as route Nos.1 and 309 slightly increased. However, it was found that the growth rates at some sections on those existing roads decreased, revealing that traffic on the old existing roads has been diverted to the Bang Pa In-Nakhonsawan Highway.

2. There were significant difference in the daily traffic in a week. The average daily traffic on weekends was higher than that on the weekdays. This was the same as the general theoretical characteristic of the main rural highway in Thailand. Sunday had the highest daily traffic in a week, being about 18 percent more than the average daily traffic in that week.

3. The patterns of the variation in traffic by months couldn't be definitely justified because of the fluctuation from year to year.

In the summer months such as March, April and May, the average daily traffic were higher than the rests of the year, April being the highest since this highway was officially opened. This could also be explained by the fact that April is the holiday season and some important holidays such as Songkhran Day is in this month.

4. There was a significant increase in traffic, especially with trucks when the toll rate was reduced on 1st April 1973. This revealed the willingness of the motorists to pay in order to use the toll road to save travel time.

5. On the Bang Pa In-Nakhonsawan Highway, it comprises half of the traffic stream of passenger cars, 30 % for heavy buses and trucks, 17 % for light buses and trucks and 3-4 % for motorcycles. But for other routes, the traffic stream consisted of 60-70 % for commercial vehicle on route No.1, 50-60 percent on route No.309.

6. The number of vehicles registrations in the seven changwats traversed by the highway increased rapidly from 1972-1975. These changes were input to the presence of the Bang Pa In-Nakhonsawan Highway which provided the faster communication to and from the capital city of Bangkok, this was reflected in the increased in ownership and usage of cars, buses and trucks.

7. From O-D surveys, the trips made on the Bang Pa In-Nakhonsawan Highway were mostly intercity trips, revealing that the Bang Pa In-Nakhonsawan Highway has served its purpose in providing fast and effective route to and from the north while the traffic on

route Nos.1 and 309 were mainly local serving adjacent lands.

8. According to the trip purposes for passenger cars in the traffic stream on the Bang Pa In-Nakhonsawan Highway, they could be divided into two categories. One was business purpose which constituted of 70 percent of the total passenger cars and the remaining 30 percent was leisure purpose.

9. The main reason for motorists to choose the Bang Pa In-Nakhonsawan Highway was"comfortable to ride"which was 48 percent of the total volume. The second reason was quicker which was 28 percent of the total volume. The reasons for: safer, more economic, and geography constraint were 15, 4, 2 percent, respectively.

10. It was clear that increasing speed does not automatically reduce all the vehicle cost. It does reduce depreciation, interest and time cost. On the other hand increasing speed increased tyres wear and, at average speed or above it, also inreased fuel consumption and maintenance costs. The study of vehicle user costs at national level was concerned primarily with the cost of intercity traffic. It should therefore be critically used for road investments in different regions of the country. Fuel prices, vehicle milages, car size, occupancy rate and incomes, to mention a few variations, all vary, sometimes significantly in different parts of Thailand. The greatest variation occurs between rural and urban conditions.

11. The running speed on the Bang Pa In-Nakhonsawan Highway

is generally higher than on the route Nos.1 and 309 because of high level of geometric design standard together with the pavement design. Generally, the average running speed in present traffic condition was 85 kph for passenger car and 67 kph for heavy truck while as the primary route No.1 especially for the section beyond Saraburi to the north was only 75-80 kph for passenger car and 60-65 kph for heavy truck. The significant difference of the travel speed on those roads were effected by the level of design standard and marginal friction.

12. The driving time on the Bang Pa In-Nakhonsawan Highway to and from the northern region of the country is less than that of the route No.1, resulting in reduction in milage and increase in travel speed. Before 1972, the driving time from the capital city of Bangkok to Nakhonsawan on the primary route No.1 took 4 to 4½ hours for cars and 5½ for heavy trucks. Now it takes only 3-3½ hours for passenger cars and 3½-4 hours for heavy trucks on the new Bang Pa In-Nakhonsawan Highway.

13. The main purpose of the development of the Bang Pa In-Nakhonsawan Highway is to reduce the road user dost. The final results of this study show that the Bang Pa In-Nakhonsawan has served this purpose, even that motorists have to pay the toll to travel on this road. Therefore, it can be concluded that there is a net benefit to the vehicle users as a whole.

Recommendations for Further Work

Based on the experience gained from the study reported herein, the following recommendations for further studies are made.

1. Study should be made of the non-user or indirect benefit of the Bang Pa In-Nakhonsawan Highway.

2. The Thonburi-Pak Tho Highway is the same situation as the Bang Pa In-Nakhonsawan Highway, therefore there should be study of the present road user benefit like this study. The further study of the Thonburi-Pak Tho should be considered whether the toll concept like the Bang Pa In-Nakhonsawan could be applied.