

7. The Analysis of Traffic and Transport Projects

The processes and the analysis for implementing traffic and transport master plan of Phitsanulok Province are shown in Figure 7 – 1;

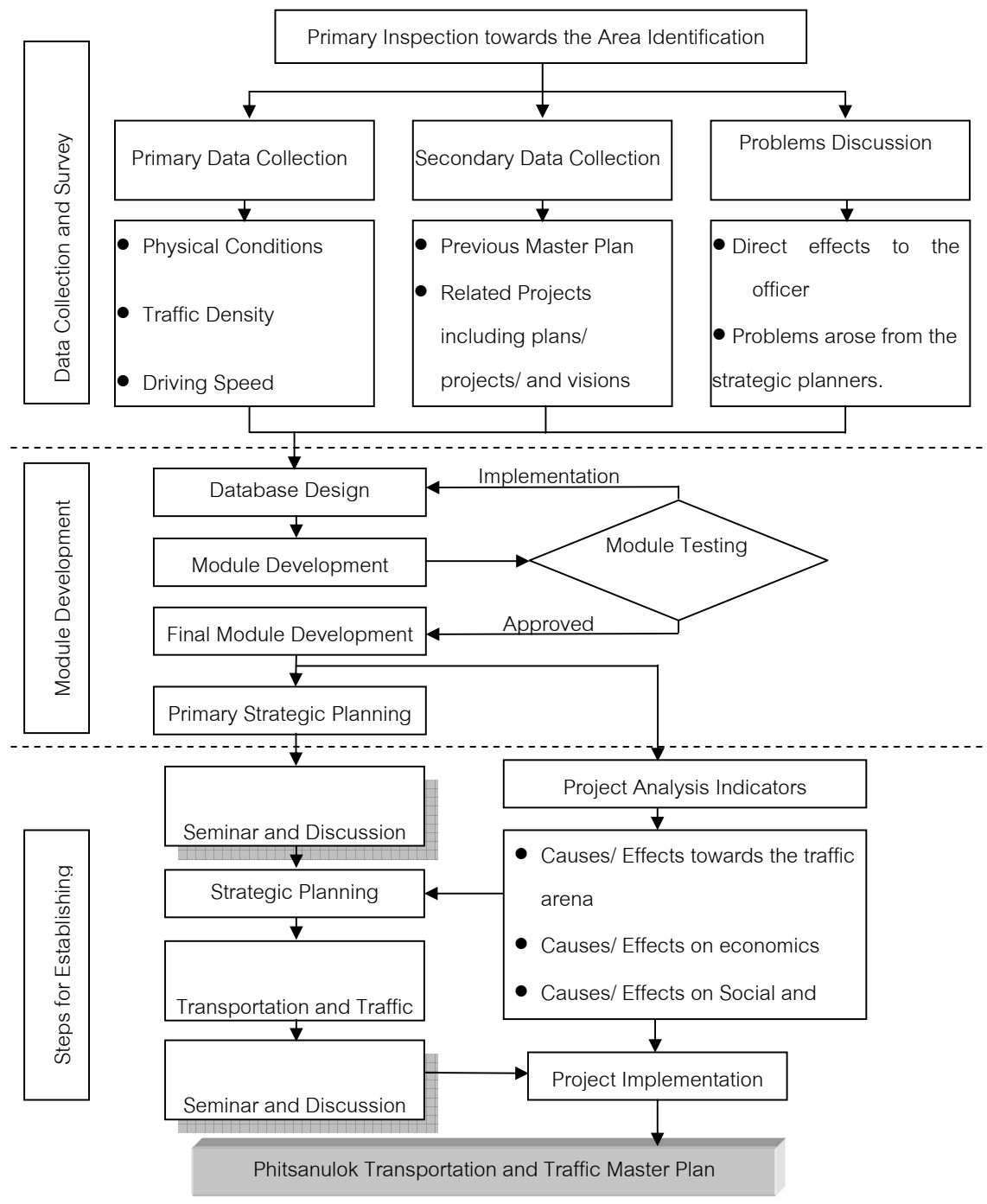


Figure 7.1: Steps for the Studies

7.1 Characteristics and Commuting Behavior in Phitsanulok Master Plan

According to home interview of 2,435 households from total households of 60,677 within Phitsanulok Master Plan areas, characteristics and commuting behavior including information related to social, economic, characteristics, and behavior aspects can be summarized as follows;

7.1.1 Socio-Economic Information in Phitsanulok Master Plan

Most households (57.6%) in study area are medium-size households with family members of 3 – 4 persons whereas the average household size in study area is 2.78 persons/household. 34.46% of total households have average income between 4,000 – 15,000 baht/month.

The proportion of females and males are not much different in number. From the survey, it indicated that from the population of 6,755 persons, 3,280 persons are males accumulated as 48.41% while 3,495 persons (51.59%) are females. More than half of the total population (63.89%) is working-age population whereas 1993% is school-age population (6-20 years old).

Approximately, 13.02% of residences in Phitsanulok Master Plan areas have per capital income below 4,000 baht/month, and the average per capital income of residences in Phitsanulok Master Plan areas is about 6,579 baht/month.

7.1.2 Travel Information in Phitsanulok Master Plan Areas

According to home interview of 6,775 persons in 2,435 households in 2007, the total trips within a day are 10,634 or 1.57 trips per person per day or 4.37 trips per household per day. Most persons (80.3%) travel for 2 trips/day.

According to home interview differentiated by the purposes for traveling, HBW was ranked as the major trip with its commuters of 29.59%, NHB ranged the second with its commuters of 25.79%, HBO ranked the third with its commuters of 25.09%, and the last was HBE with its commuters of 19.53%, respectively.

7.1.3 Behavior of travel in Phitsanulok Master Plan Areas

According to home interview differentiated by the purposes for traveling, it was found that 4.27% were the pedestrians, 12.25% used the public buses, and the rest of 83.03% used personal cars.

The peak of travel demand occurs during morning rush hour (7.00 – 7.59 am.), and evening rush hour (16.00 – 16.59 pm.) with 28.51% and 19.19%, respectively.

7.2 Development of Traffic and Transport Model

- OD Time Table

(1) Survey Results: The results were gathered from the commuters living in

Phitsanulok Master Plan areas with the methods of conducting home interviews, and the information related to the arrival and departure vehicles from the interview which gained by the Highway passerby in 78 zones within Phitsanulok Master Plan areas and 8 zones from the outbound.

(2) The Implementation of OD Time Table: Since the data collection was conducted as random sampling (the average sampling size of home interviews for Phitsanulok was equal to 4.01%) and limitation towards the expenses; therefore, when adapted to the present situations, the checkups with the capacities towards the actual screen lines should be performed.

- Present Travel Demands in Phitsanulok Master Plan Areas

From the interview which gained by the Highway passerby and with the demographic traveling records, various discoveries were being revealed as stated as follows;

(a) The total trips (arrivals and departures) are approximately 368,081 trips/day which can be divided as the trips made by the commuters within Phitsanulok Master Plan Areas of 262,155 trips (persons), and the existing areas apart from Phitsanulok Master Plan Areas of 105,926 trips (persons).

(b) During the morning rush hour (7.00 – 8.00 am.) within Phitsanulok Master Plan Areas are 91,351 trips (persons) which can be divided as the trips made by the commuters within Phitsanulok Master Plan Areas of 74,477 trips (persons), and the existing areas apart from Phitsanulok Master Plan Areas of 16,874 trips (persons).

(c) In the side of the number of vehicles, the total numbers of all vehicles counted during the morning rush hour (7.00 – 8.00 am.) are 58,185 vehicles or equal to 36,075 passenger car units.

- Travel Conditions of the Important Sites within Phitsanulok Master Plan Area

If divided Phitsanulok Master Plan Areas into districts, the important sites are presented in Figure 7.2. The district No.1 is of the city areas, the districts No.2 – 6 are the outskirts, the district No.7 is Naresuan University, and the districts No.8 – 11 are the existing areas of Phitsanulok Master Plan. It was found that during the morning rush hour (7.00 – 8.00 am.), the number of vehicles from the arrivals, departures, and within town are 8778, 4885, and 11705 vehicles PCU, respectively. The numbers of vehicles of the outskirt areas from the arrivals, departures, and within the areas are 8,125, 3,427, and 5,614 vehicles PCU, respectively.

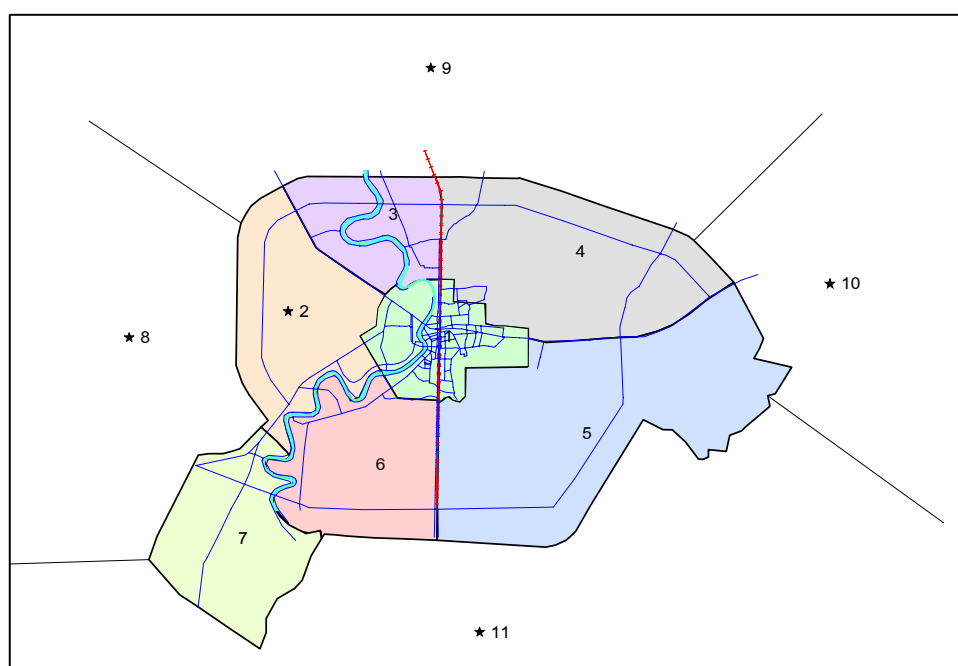


Figure 7.2: 11 districts division of Phitsanulok Master Plan Areas

The travel capacity of vehicle unit PCU of 11 districts is presented in Table 8.17, and the Desire Line Graph between districts is presented in Figure 7.3

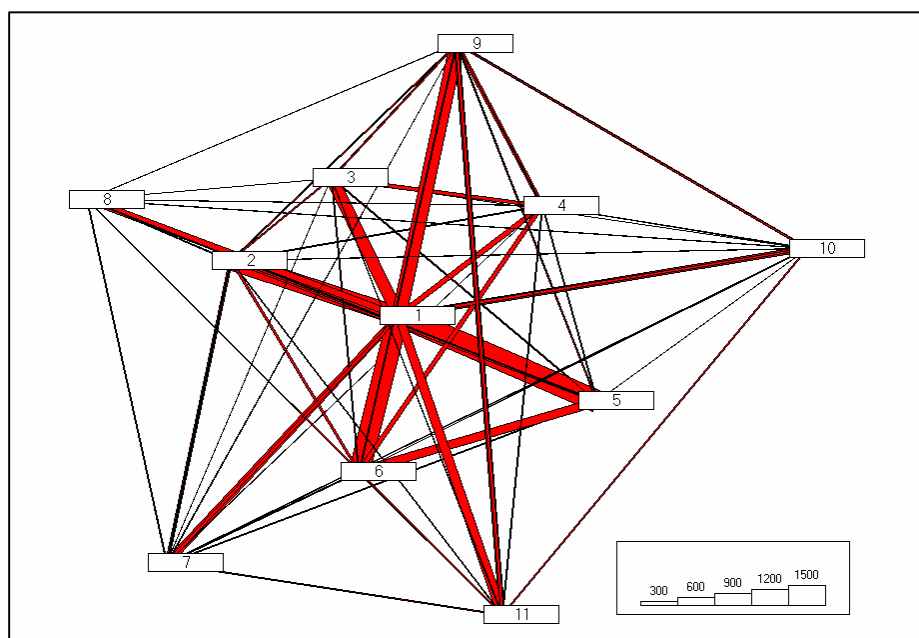


Figure 7.3: The Desire Line Graph indicating commuting quantities of the district during morning rush hour (7.00 – 8.00 am.) (Vehicle PCU).

7.3 Present (2005) and Future Traffic Conditions

The major transportation routes of Phitsanulok Master Plan Areas are comprised of the total lengths of the highways equal to 434 kilometers. The traffic densities are high within the city areas which include Highway No.12, Highway No.117, Baromtrai Lokkanart Rd., the West and the North sides of the city with its traffic densities approximately of 4,000 3,000 1,700 1,000, and 600 pcu/hr respectively within the city areas, and at Pichai Songkram Rd. (4,000 pcu/hr), Ekatotsarot Rd. (1,600 pcu/hr), Baromtrai Lokkanart Rd. (2,000 pcu/hr). Figure 7.6 illustrates the Flow May of the present traffic conditions.

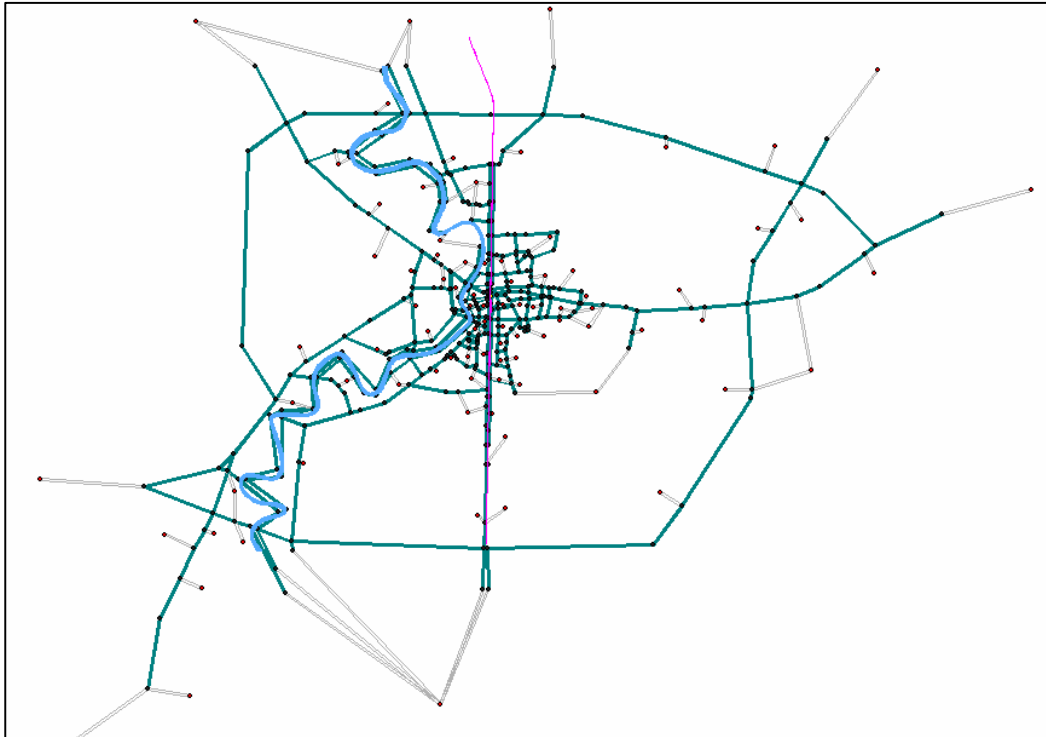


Figure 7.4: Present Traffic Module

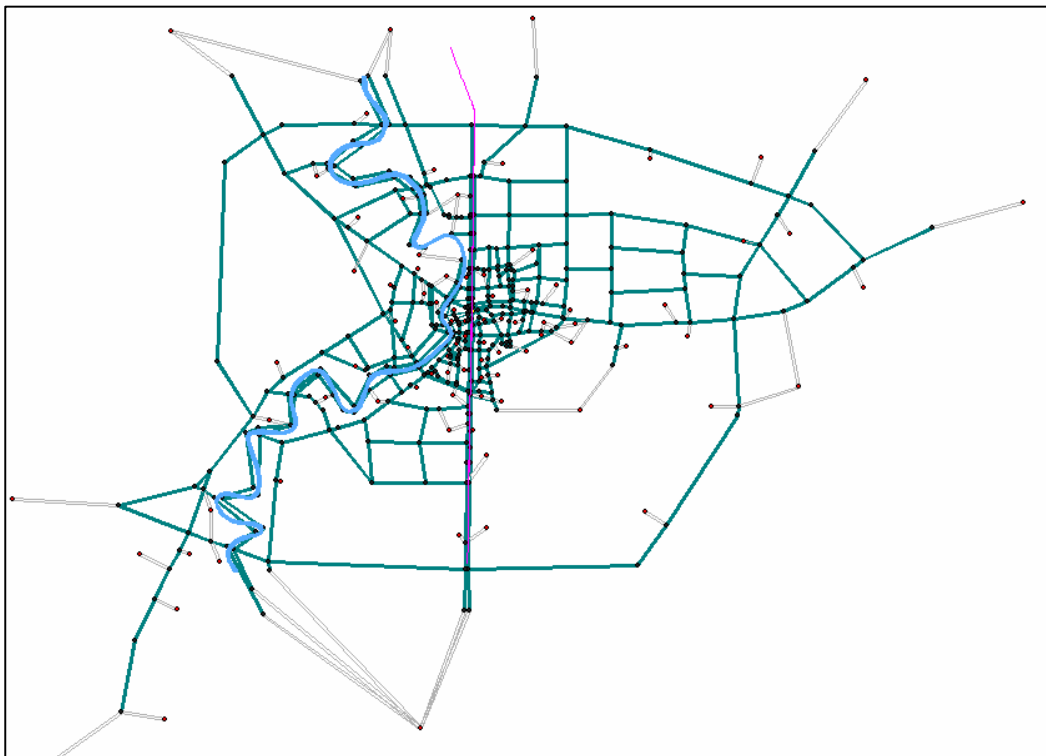


Figure 7.5: Future Traffic Module

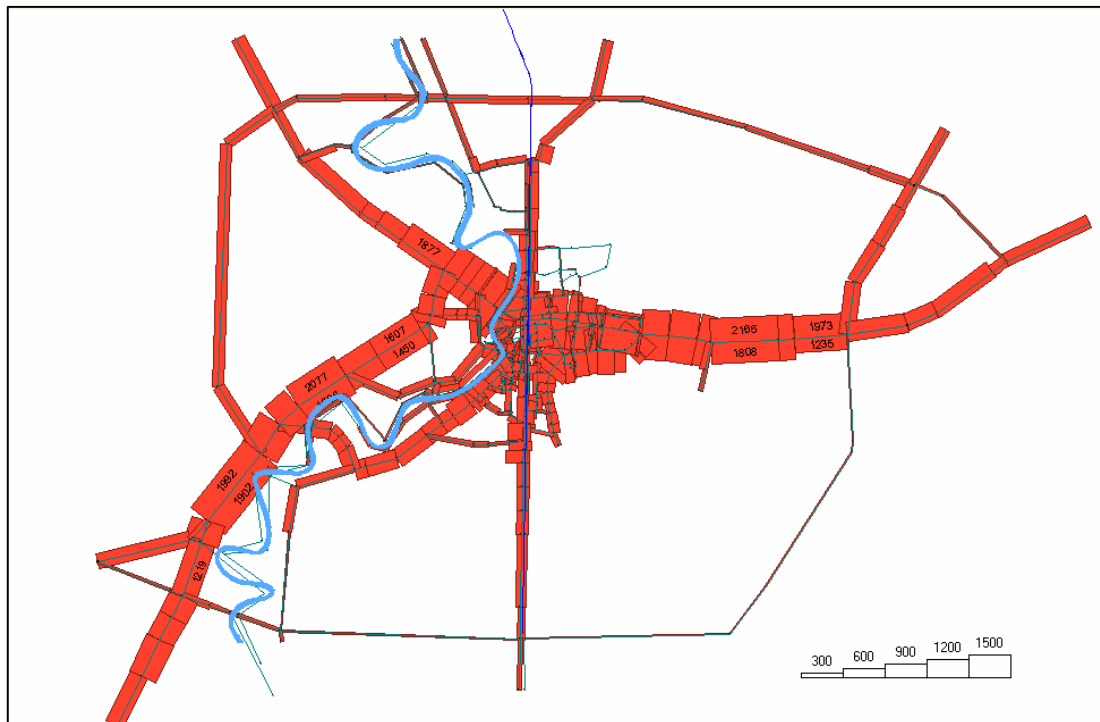


Figure 7.6: Flow Map illustrated present traffic densities (2007) within Phitsanulok Master Plan Areas.