

CHAPTER VI

RESULTS



Results for Individual Sites

The performance of different traffic flow models was analyzed with respect to the 17 data sets. The results obtained from the selected traffic flow models are shown in Table 6. The individual data points for the street studied are plotted on Figure D-1 to D-51 as well as the speed-density, flow-density, and speed-flow curves which represent the selected street studied traffic flow models.

Results for Various Categories of Streets

Table 7 summaries results obtained from analysis of characteristics of selected traffic flow models for the street studied by comparing average free flow speed and maximum flow per effective running lane. Average free-flow speed for main road, distribution road, shopping street, and residential streets and streets used for parking are 66.2, 61.3, 56.1, and 34.7 kph, respectively. Average maximum flow per lane for main road, distribution road, shopping street, and residential streets and streets used for parking are 1554, 1309, 1053, and 670 vph, respectively. Some results for the main roads (category No.2) and the distribution roads (category No.3) were found to be about the same value, i.e. nearly the same models for main roads and distribution road.

Figure 23 shows the relationship between average space mean speed and traffic flow per effective running lane for the various categories of street studied. The speed-flow models for each category are as follow:

$$\text{Category No.2 (main road)} \quad q = u(57.97 - 3.08u^{0.7})^{1.23}$$

$$\text{Category No.3 (distribution road)} \quad q = u(59.45 - 5.03u^{0.6})^{1.23}$$

$$\text{Category No.4 (shopping street)} \quad q = u(63.63 - 2.54u^{0.8})^{1.1}$$

$$\text{Category No.5 (residential streets and streets used for parking)} \quad q = u(372.73 - 90.91u^{0.4})^{0.82}$$

Table 6 Characteristics of selected traffic flow models for the streets studied

Streets	Data points	k range	m	l	s	u_f	k_j	u_o	k_o	q_m
1. Rama I Road	59	8-521	0.4	1.6	8.4*	61.4	518	19.3	163.4	3123
2. RamaIV Road	40	13-300	0.1	1.8	4.8	64.1	415	27.8	187.6	5190
3. Yaowaraj Road	68	18-536	0.0	1.3	3.4*	55.3	593	12.8	247.7	3160
4. Ratchadamnoen Khang Road	35	24-260	0.4	1.8	5.1	60.1	507	23.1	180.0	4110
5. Phaholyothin Road	41	11-351	0.2	1.4	4.3*	76.8	378	19.5	137.4	2673
6. Sukhumvit Road	33	8-143	0.1	1.7	3.0	61.3	272	24.4	119.8	2923
7. New Petchburi Road	37	18-295	0.4	1.8	11.4*	71.5	375	28.1	130.1	3613
8. Raj Prarop Road	48	18-306	0.1	1.4	3.6	51.4	376	13.9	150.3	2079
9. Charoen Krung Road	24	31-227	0.3	1.7	2.0	47.2	368	17.5	137.0	2406
10. Raj Vithee Road	31	10-214	0.5	1.7	4.2	70.1	321	23.8	92.2	2197
11. Lat Phrao Road	25	9- 26	0.4	1.8	3.2	66.3	362	26.1	125.7	3234
12. Phrachao Taksin Road	26	27-173	0.5	2.1	3.1	57.5	305	27.2	106.1	2882
13. Phran Nok Road	26	9-203	0.4	1.7	2.8	56.2	329	20.0	109.1	2159
14. Ramkhamhaeng Road	26	12-215	0.4	1.8	7.4*	70.5	308	27.8	107.0	2930
15. Soi Sena Nikhom 1	28	2- 96	0.1	1.7	3.6	53.7	154	21.4	67.7	1447
16. Soi Aree	20	2- 72	0.5	1.9	3.6	31.7	133	13.1	42.4	555
17. Chula Soi 12	26	2- 78	0.7	2.4	3.2	37.7	137	19.7	40.0	785

* The curve is not fitted statistically, mean deviation greater than 10 percent of minimum mean deviation.

Table 7 Summary of results for each category of streets.

Streets	Free-flow speed, u_f	Maximum flow per lane, q_m/lane
<u>Main road (Category No.2)</u>		
1. RamaIV Road	64.1	1730
2. Phaholyothin Road	76.8	1336
3. Sukhumvit Road	61.3	1461
4. New Petchburi Road	71.5	1806
5. Phrachao Taksin Road	57.5	1441
Avg.	66.2	1554
<u>Distribution road (Category No.3)</u>		
1. Ratchadamnoen Road	60.0	1027
2. Charoen Krung Road	47.2	1203
3. Raj Vithee Road	70.1	1098
4. Lat Phrao Road	66.3	1617
5. Ramkhamhaeng Road	70.5	1465
6. Soi Sena Nikhom 1	53.7	1447
Avg.	61.3	1309
<u>Shopping street (Category No.4)</u>		
1. Rama I Road	61.4	1041
2. Yaowaraj Road	55.3	1053
3. Raj Prarop Road	51.4	1039
4. Phran Nok Road	56.2	1079
Avg.	56.1	1053
<u>Residential streets and streets used for parking (Category No.5)</u>		
1. Soi Aree	31.7	555
2. Chula Soi 12	37.7	785
Avg.	34.7	670

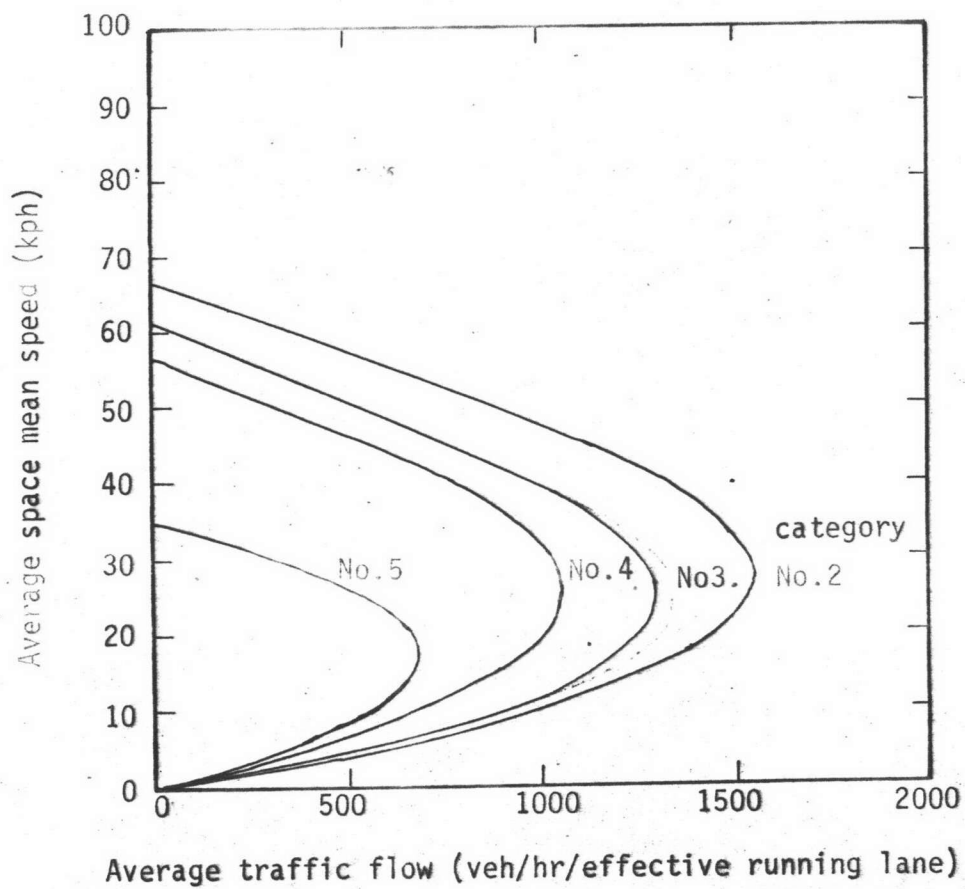


Fig. 23 Relationship between average space mean speed and traffic flow per effective running lane for the various categories of streets studied.