

CHAPTER 22  
Short Term Action Plan in 2010

## 22. SHORT TERM ACTION PLAN IN 2010

### 22.1. IDENTIFICATION OF SHORT TERM ACTION PLAN IN 2010

#### 22.1.1. GENERAL

In Chapter 19, Preparation of the Implementation Program, the projects proposed in the Master Plan were classified into 3 categories: short, medium and long-term projects. The short-term projects are implemented during a 6-year period from 2005 to 2010, the medium-term projects are implemented during a 5-year period from 2011 to 2020, and the long-term projects during a 5-year period from 2021 to 2025.

In this section, at first, the effectiveness and evaluation for the short-term action plan in 2010, selected from among the Master Plan in 2025, is carried out. Secondly, high priority projects for a further Study are selected from among the short-term plan based on the evaluation of short-term projects. For advancing the Master Plan, further studies of the high priority projects are required in the next stage. Figure 22.1-1 shows the analytical procedure in this section.

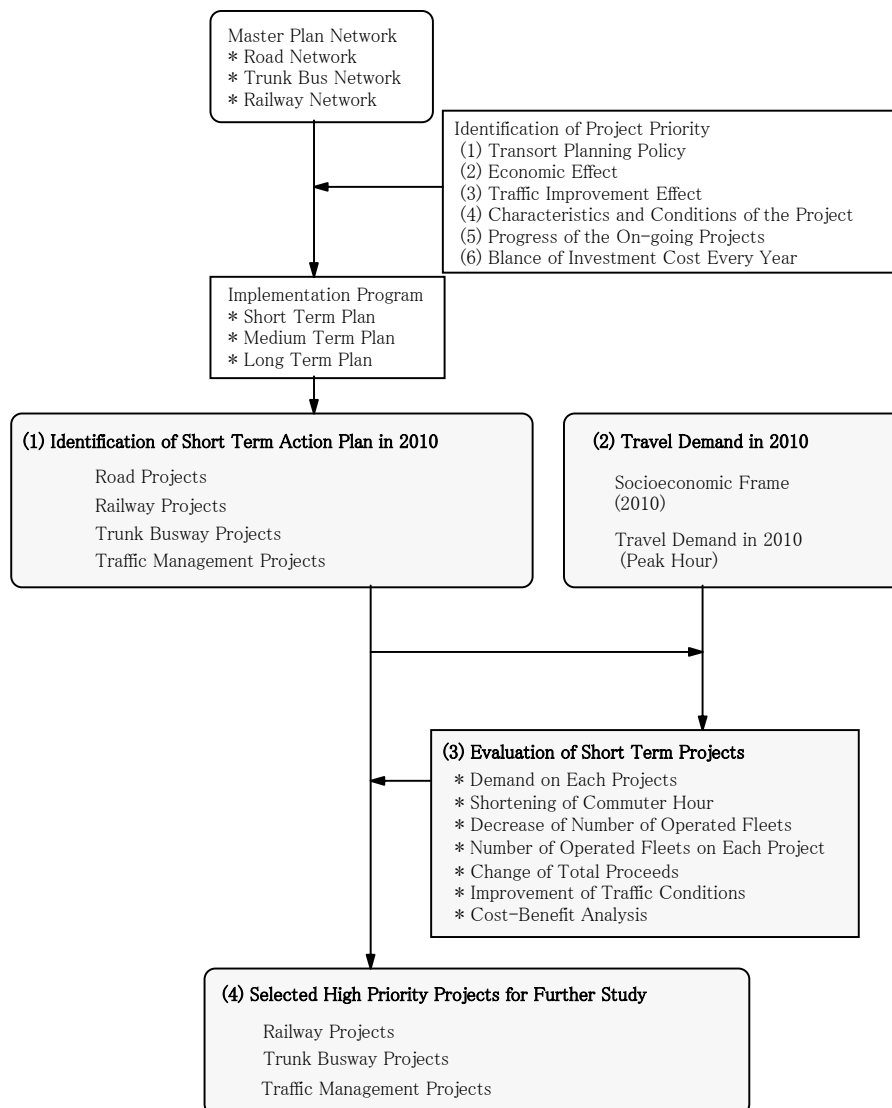


Figure 22.1-1 Analytical Procedure for Evaluation of the Short-Term Plan in 2010

## **22.1.2. SHORT-TERM ACTION PLAN**

### **(1) General Procedure**

In Chapter 19, the priority of the master plan projects was identified based on the following six (6) viewpoints.

- 1) Transport planning policy (priority of public transport development policy)
- 2) Economic effect of the project
- 3) Traffic improvement effect of the project
- 4) Characteristics and conditions of the project
- 5) Progress of the on-going project
- 6) Balance of annual investment cost

At first, the transport planning policy gives basic project priority, besides the economic effect of the project is examined in terms of cost-benefit analysis. Under this screening, projects are selected.

The second step gives 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> project priority in consideration of other viewpoints mentioned in No. 3, and 4. Finally, the short, middle and long-term projects are classified from the viewpoint of progress of the existing projects and balance of yearly investment costs.

### **(2) Selection of Project Priority**

Considering the project conditions mentioned above, the following short-term Projects in 2010 are identified as shown in Figure 22.1-2.

- 1) Road Projects
  - a) RP-13: República Sur
  - b) RP-15: Elmer Faucett
  - c) RP-18: Av. Universitaria
  - d) RP-19: Av. Independencia
  - e) RP-25: Intersection Package-1
  - f) RP-28, 30,31,32,33; Existing Road Improvement
- 2) Railway Projects
  - a) TP-02 Line-1 (2)
  - b) TP-03 Line -1 (3)
- 3) Trunk Busway Projects
  - a) BP-01 Av. Grau
  - b) BP-02 COSAC Project
  - c) BP-03 Carretera Central
  - d) BP-04 Av. Venezuela
  - e) BP-05 Av. Brasil
  - f) BP-08 Universitaria Sur
  - g) BP-09 Av. Callao-Canta
  - h) BP-11 Av. Javier Prado
  - i) BP-12 Av. Panamericana Norte
  - j) BP-13 Av. Panamericana Sur
  - k) BP-18 Terminal -A
  - l) BP-19 Terminal -B
  - m) BP-20 Terminal -C

4) Traffic Management Projects

- a) MP-01 Traffic Signal Control
- b) MP-02 Intersection Improvement
- c) MP-03 TDM Introduction
- d) MP-04 Traffic Safety
- e) MP-05 Parking Control
- f) MP-06 Safety Education
- g) MP-07 Accident Monitoring
- h) MP-08 Vehicle Inspection

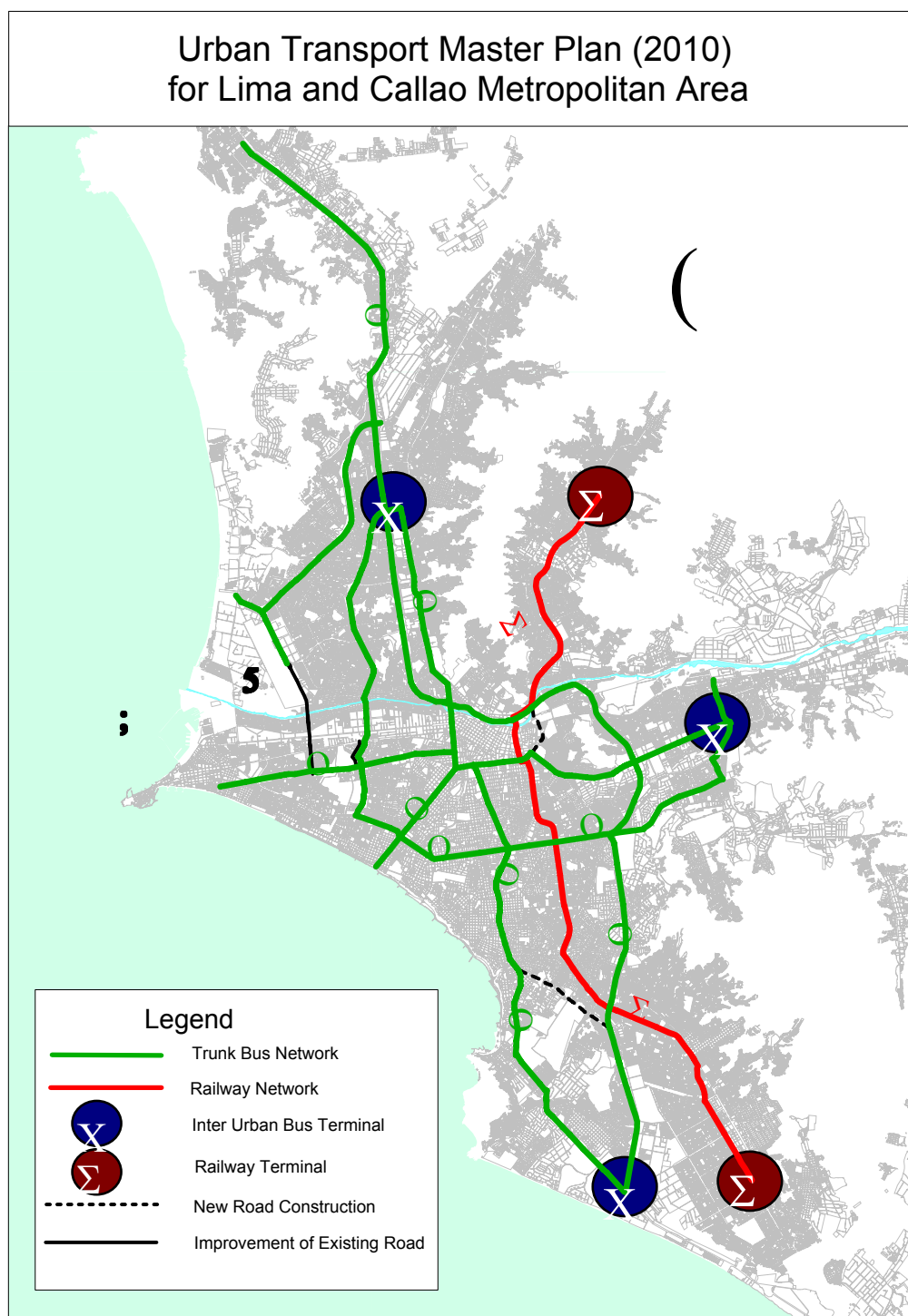


Figure 22.1-2 Short-Term Action Plan Network in 2010

## 22.2. TRAVEL DEMAND IN 2010

### 22.2.1. GENERAL

The travel demand in 2010 was forecasted through the application of the socioeconomic frame to the travel demand model. The forecasting method is the same as that in 2025. The travel demand on the road and public transport network in the short-term projects is forecasted and the necessity of the projects is evaluated.

### 22.2.2. SOCIOECONOMIC FRAMEWORK

The socioeconomic framework in 2010 is prepared in accordance with the land use pattern. Population, employment, and school enrollment by zone, and regional economic growth ratio are forecasted. Since the travel demand model is structured by households classified by Stratum, the number of households by Stratum in 2010 is estimated under the assumption that the economic growth ratio of GRDP/capita is 1.13 times of that in 2004 (see Table 22.2-1 and Figure 22.2-1). As can be seen, the composition ratio of the population by Stratum rank in 2010 is similar to that in 2004.

Table 22.2-1 Number of Population (6 years or above) by Stratum

Items	Years	Stratum Rank				
		AB	C	D	E	Total
Population (Persons)	2004	1,539,017	1,730,615	3,038,230	1,063,523	7,371,385
	2010	1,731,763	1,898,364	3,372,798	1,143,467	8,146,392
	2025	3,499,419	3,432,055	2,223,444	923,354	10,078,272
Composition	2004	0.21	0.23	0.41	0.14	1.00
	2010	0.21	0.23	0.41	0.14	1.00
	2025	0.35	0.34	0.22	0.09	1.00
Growth Ratio /2004	2010	1.13	1.10	1.11	1.08	1.11
	2025	2.27	1.98	0.73	0.87	1.37
Different between 2004	2010	192,746	167,749	334,568	79,944	775,007
	2025	1,960,402	1,701,440	-814,786	-140,169	2,706,887

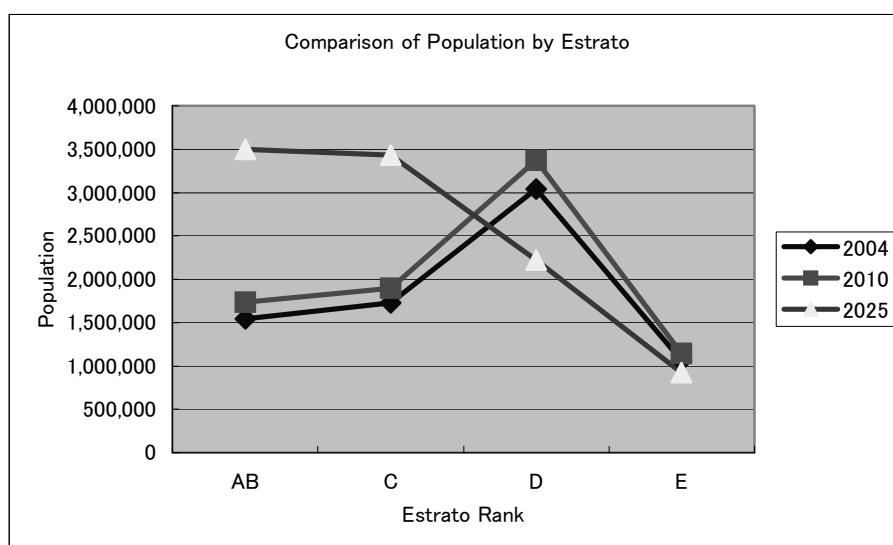


Figure 22.2-1 Comparison of Population by Stratum

## 22.2.3. PROJECTION OF TRAVEL DEMAND

### (1) Total Number of Trips

Table 22.2-2 summarizes the socioeconomic indices and travel demand in 2004, 2010 and 2025. The total number of trips per day in the Study Area in 2010 is approximately 13.42 million. The trip increase ratio from the year 2004 to 2010 is approximately 1.11, in contrast to 1.11 of the population growth ratio. The trip production rate in terms of number of trips per person aging 6 years or above rises from 1.64 to 1.65. This indicates that in 2010, the share of the higher Stratum household ratio to the total contributes to the increase of the production rate (see Table 22.2-3).

Table 22.2-2 Summary of Socioeconomic Indices and Travel Demand (6 years or more)

Items	2004	2010	2025	2010/2004	2025/2004
Population (Persons)	7,371,385	8,146,392	10,078,272	1.11	1.37
GRDP/capita	7,563	8,575	13,467	1.13	1.78
Number of Trips by Motorized modes (trip/day)	12,118,571	13,417,548	17,950,737	1.11	1.48
Trip Production Rate /pop (6 years or more) (Car, Taxi and Public Transport)	1.64	1.65	1.78	1.00	1.08

Table 22.2-3 Travel Demand by Estrato

Year	Unit	AB	C	D	E	Total
2004	Persons	3,313,545	3,032,537	4,467,270	1,305,219	12,118,571
2010	Persons	3,728,532	3,326,482	4,959,203	1,403,331	13,417,548
2010/2004	-	1.13	1.10	1.11	1.08	1.11

### (2) Trip Generation and Attraction

Estimated trip generation and attraction in 2010 according to the integrated zone are shown in Table 22.3-4 and Figure 22.2-2 in which those projections are for all purposes and all Strata in which "to home" trips are excluded to clearly show the characteristics of generation and attraction. As can be seen, trip generation and attraction in zone No. 1 (Lima) has a large volume of trips, especially trip attraction is the largest. The second largest generation and attraction zone is No. 4 (Miraflores). In 2010, traffic and transport demands concentrate in those zones. This is because work-place/school-place based population (employment) is substantially concentrated in the central area in comparison to the distribution of the nighttime population.

Table 22.2-4 Trip Generation and Attraction by Integrated Zones in 2004 and 2010 (Exclusive of “to home” purpose)

(Unit: Trips/day)

zone	Name of District	2010	
		Gen	Att
1	Lima	1,139,363	2,130,335
2	Callao	461,211	491,961
3	Los Olivos	979,498	717,598
4	Miraflores	1,021,654	1,292,378
5	La Molina	185,567	127,603
6	Chorrillos	235,504	183,728
7	Villa Salvador	794,963	509,448
8	Ancon	351,918	256,408
9	Carabayllo	524,251	305,970
10	San Juan de Lurigancho	610,162	386,705
11	Lurigancho	709,366	639,418
12	Cieneguilla	17,433	4,488
13	Lurin	67,245	60,109
14	San Bartolo	24,352	8,107
15	Outside of Study Area	333	8,564
Total		7,122,820	7,122,820

Gen: Generation, Att: Attraction

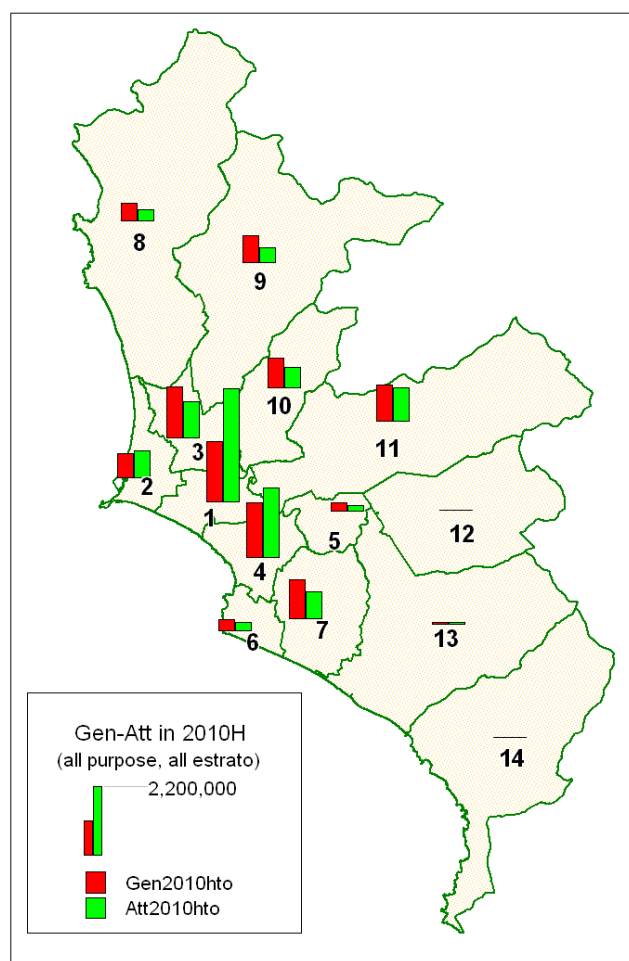


Figure 22.2-2 Trip Generation and Attraction in 2010 (All Purposes exclusive of To home)

### (3) Modal Split

The number of trips by three modes in 2010, car, taxi and public transport, is shown in Table 22.2-5. The table shows the number of persons calculated from the PT data. In 2010, the modal shares of car, taxi and public transport are 18%, 7% and 75%, respectively. The increase ratios of each mode between 2004 and 2010 are 1.25 for car, 1.02 for taxi and 1.07 times for public transport. In 2010, car trips per person increase approximately 1.3 times, while public transport trips are somewhat low in increase ratio, compared to car trips.

The desire lines by the private (car and taxi) and public mode (conventional bus, trunk bus and railway) are shown in Figure 22.2-3 and Figure 22.2-4, which also compares the desire lines in 2004 and 2010. In 2010, the desire lines by the public mode strongly cover the entire Study Area, while in 2004 they mainly cover the central business/ commercial areas (zones No. 1, 2, 3, 4 and 5) and suburban areas. On the other hand, the private mode in 2010 links the central and surrounding areas with strong desire lines.

Table 22.2-5 Modal Share of Person Trips (persons/day) in 2010

Trips by Modes		Car	Taxi	Public	Total
Trips (Trips/day)	2004	1,853,295	900,138	9,365,138	12,118,571
	2010	2,358,750	934,139	10,124,659	13,417,548
	2025	4,041,689	1,261,286	12,647,761	17,950,737
	2010/2004	1.27	1.04	1.08	1.11
	2025/2004	2.18	1.40	1.35	1.48
Composition	2004	15.3%	7.4%	77.3%	100.0%
	2010	17.6%	7.0%	75.5%	100.0%
	2025	22.5%	7.0%	70.5%	100.0%



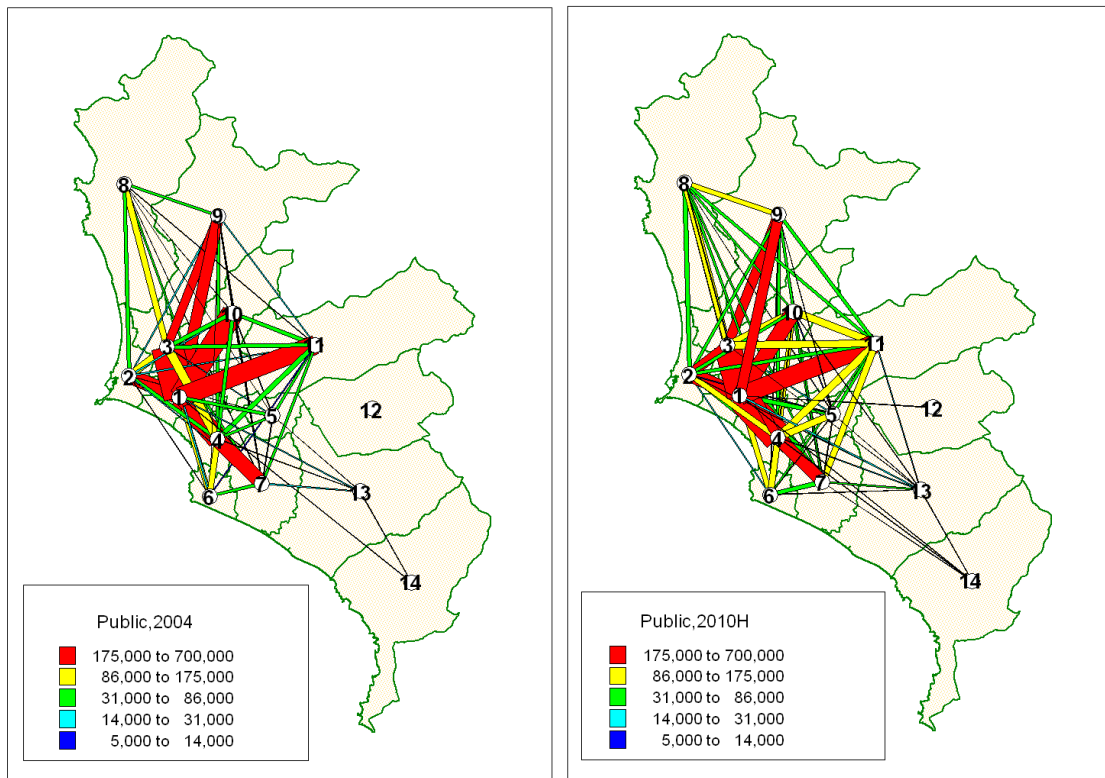


Figure 22.2-3 Daily Trip Desire Line by Public Modes in 2004 and 2010

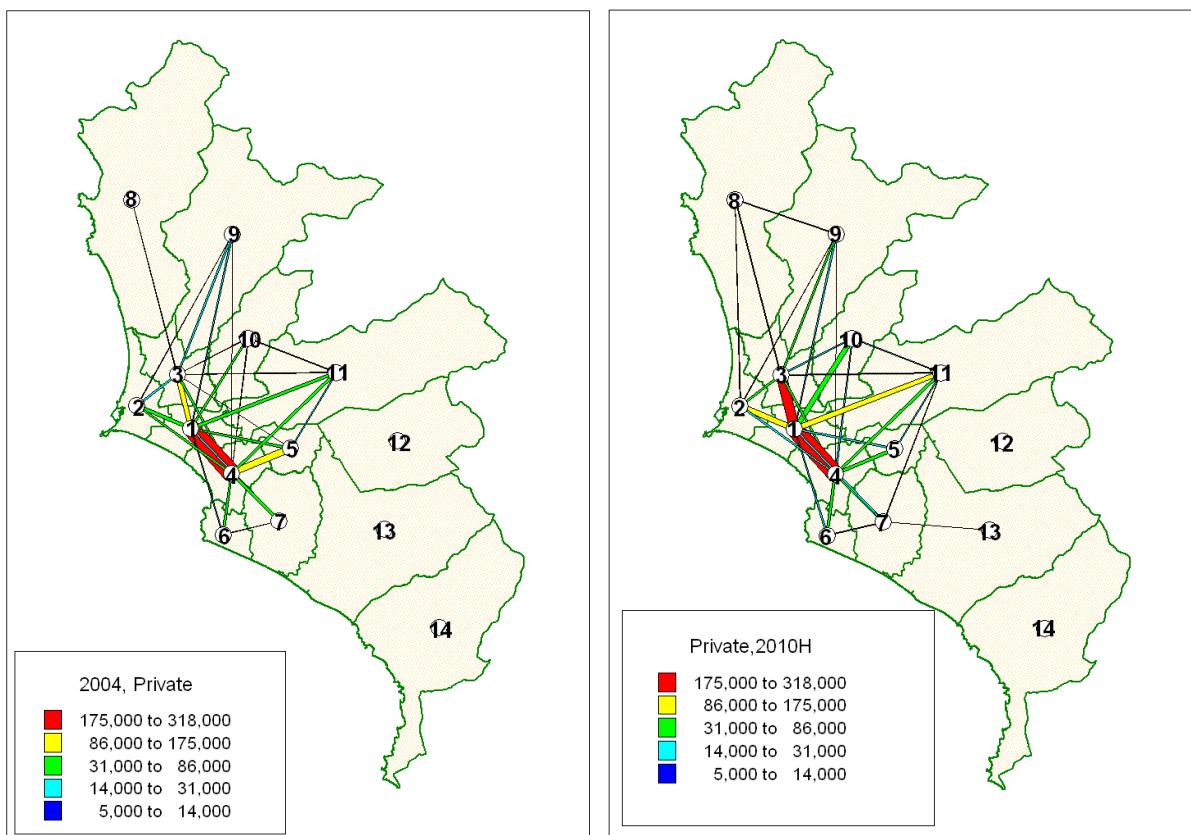


Figure 22.2-4 Daily Trip Desire Line by Private (Car and Taxi) Modes in 2004 and 2010

#### (4) Daily Traffic and Transport Demand on Road and Transport Network

The traffic assignment was made under conditions in which the OD trips in 2010 load onto the present network to disclose traffic demand on major corridors. The daily traffic demands in 2004 and 2010 are shown in Figure 22.2-5 and Figure 22.2-6. In those figures, the traffic volume on each road transport facility is drawn by a narrow band whose width is proportional to the assigned traffic volume. When comparing traffic volumes in both figures, in 2010, the traffic volume-capacity ratio exceeds 1.0 on some of the major roads. The future traffic conditions will be severe if no improvements are made in the transport network.

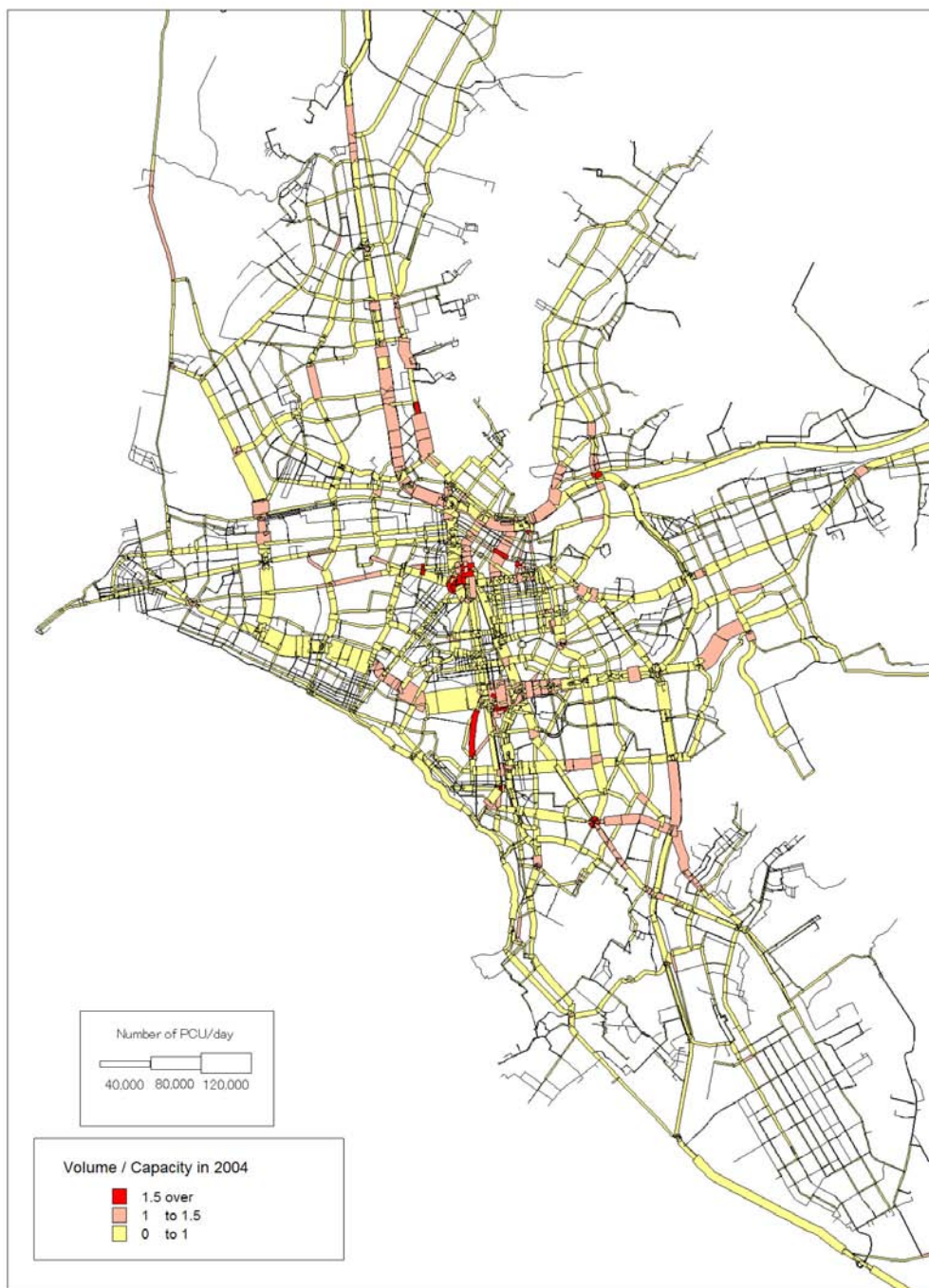


Figure 22.2-5 Daily Traffic Demand on Present Road and Transport Networks in 2004

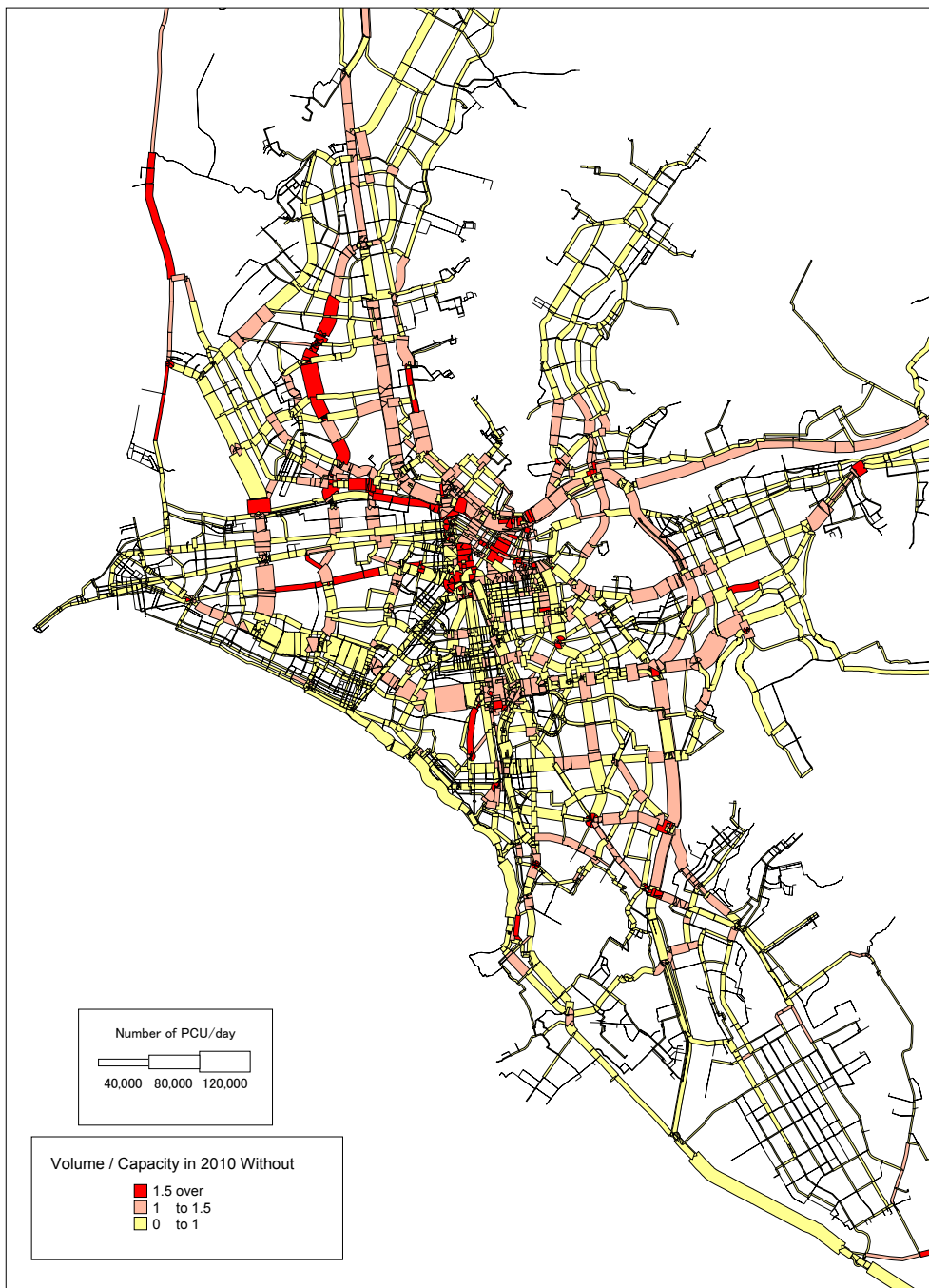


Figure 22.2-6 Daily Traffic Demand on Present Road and Transport Networks in 2010 (Without Case)