

1. INTRODUCTION

Jabodetabek, a large-scale metropolitan area with a population of 21 million, consists of DKI Jakarta, the capital city of Indonesia, and 7 local governments (Kabupaten and Kota Bogor, Kabupaten and Kota Tangerang, Kota Depok and Kabupaten and Kota Bekasi). Its gross regional domestic product is estimated at Rp. 351,000 billion in 2002, or 22% of the national gross domestic product, showing that Jabodetabek is strategically the most important region of the nation.

Since right after the economic and financial crisis in the late 1990's, a safety net program and other countermeasures have been undertaken and associated urgent programs have been almost completed. Now, the focus should be placed on sustainable economic development towards creation of better life in the region as well as for Indonesia's national growth.

To attract or recall more domestic and foreign investment is one of the vital issues to be addressed towards region's further economic growth and development. However, inefficiency of the region's transportation system such as poor accessibility to the Tanjung Priok port among other things have made the region less attractive for investors. It is urgently needed to develop an efficient and reliable trunk transportation system to invite investments to the region.

Traffic congestion in the urbanized area is another severe problem faced in the region and the situation is anticipated to worsen should there be no improvement. At present, the annual economic loss caused by traffic congestion in the region could be as much as Rp. 3,000 billion for vehicle operating costs and Rp. 2,500 billion for travel time. Furthermore, should there be no improvement undertaken in the period up to the year 2020, compared to the case in that the proposed Master Plan transportation system development is implemented, accumulated economic loss would amount to Rp. 65,000 billion which consists of Rp. 28,100 billion for additional vehicle operating costs and Rp. 36,900 for longer travel times at present value discounted by 12 %.

Although rapid growth of car and motorcycle registration has been hampered by the economic crisis, the number of cars and motorcycles has again been increasing in recent years. It can be attributable to deterioration of the service level of public transportation. After the region's economy has recovered, real household income would increase again in the coming few years; it is anticipated that motorization will be further accelerated. If many residents use private modes of transportation, then traffic woes would be worsened and environmental pollution would be more serious than at present.

It seems difficult to foresee investments in large-scale transportation infrastructure development projects by the public sector considering their present difficult financial situation—a situation expected to continue in the near future. Besides securing the necessary costs for operation and maintenance for the existing transportation facilities, the way to develop the transportation system should be carefully examined to make utmost use of the remaining funds for development.

SITRAMP addresses the question of how to deal with those aforementioned problems and examines the desirable future transportation system by identifying the present and anticipated future transportation problems. SITRAMP outlines transportation development goals to be achieved in the next 20 years and associated transport policy measures and projects for regional development and improvement of the urban transport problems for the betterment of people's life in the region. Most of the projects require strong commitment of all stakeholders in transport industries as well as the rest of the citizenry.

2. TRANSPORTATION ISSUES

2.1 Problems in the Regional Development Context

2.1.1 Concentration to Jakarta

The development of urban centers in Bodetabek has been emphasized for a long time.

Although the populations in Kotas and Kabupatens have been increasing rapidly, the functions of urban centers are still limited to merely serving the neighborhood population.

The centers provide neither sufficient job opportunities nor urban services for the residents. On any given day, around 700,000 people are on the road from Bodetabek to Jakarta.

If this trend of relying on Jakarta continues, coupled with an increase in private car use, road development will not be able to catch up with the increasing traffic demand.

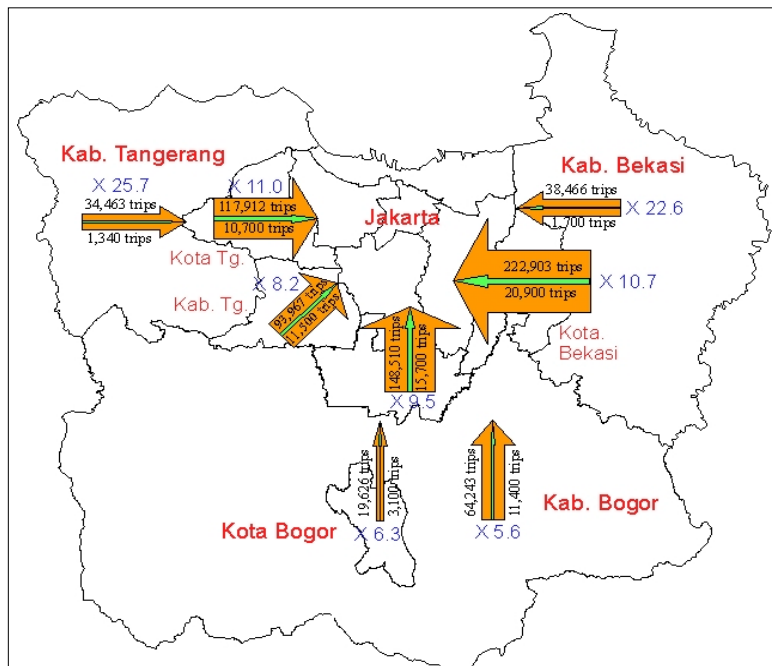


Figure 2.1 Increasing of Commuting Trips to Jakarta from Surrounding Areas: 1985-2002

2.1.2 Poor Access to the Tanjung Priok Port

The Tanjung Priok Port is an international gateway for importing and exporting the region's commodity needs. At present access to the port takes such a long time due to vehicular traffic congestion. The delays have resulted in reducing product competitiveness in the international market and lead to the deterioration of economic growth of the region.

2.1.3 Lack of Alternate Route to the Soekarno-Hatta International Airport

The Soekarno-Hatta International Airport is a gateway of business passengers and tourists to the region as well as the nation. In the past the toll road access to the airport was often cut by flood and the approach to the airport was made difficult because of the absence of an alternative route.

2.2 Problems in Urban Transportation Context

The expansion of social and economic activities and subsequent growth of travel demand in Jabodetabek have inevitably brought about various urban transport problems.

2.2.1 Traffic Congestion and Urban Structure

Concentration of travel demand in the Central Business District (CBD) causes severe traffic congestion as well as overcrowding of buses and trains because most of the trip attraction of "to work" purpose is concentrated in the central area enclosed by the railway semi-loop line, the newly developed "Sudirman-Kuningan Golden triangle" area and areas along the Cawang – Grogol – Pluit toll road.

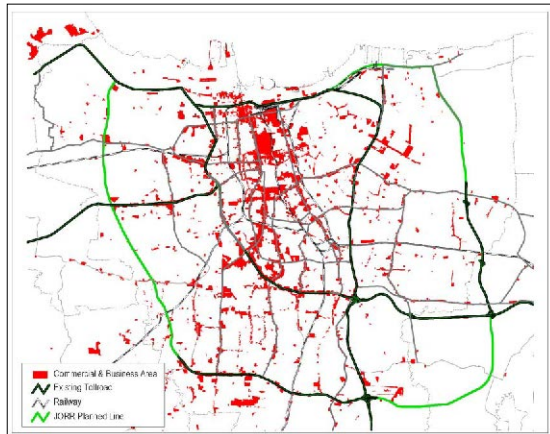


Figure 2.2 Location of Commercial and Business Facilities

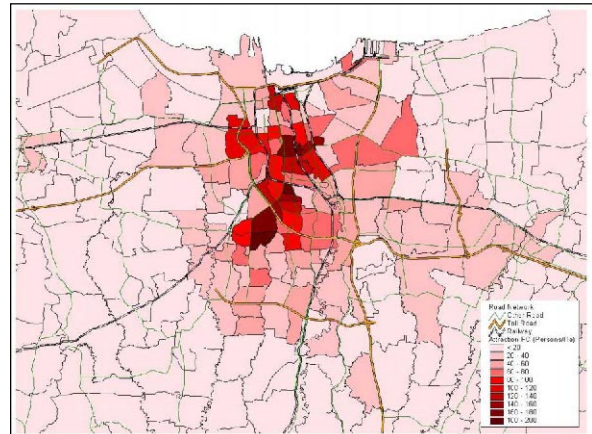


Figure 2.3 Car Trip Density

2.2.2 Local Traffic Congestion

There are numerous locations in Jabodetabek where traffic congestion is a daily occurrence. Various root causes include:

- (a) Inconsistent carriageway width
- (b) Intersections: long cycle length, badly designed channelization, etc.
- (c) Illegal occupants on the road and inadequate use of the road
- (d) Other factors: U-turns, at-grade rail crossings, weaving sections, broken pavement, etc.



Photo 2.1 Causes of Local Traffic Congestion

2.2.3 Slow Road Development against Increasing Traffic Demand

The remarkable feature of the road network in Jakarta is that several wide arterial streets exist but the network is short of collector streets, which connect arterial streets and local streets, thus a road network hierarchy has not been well developed. The road network in Bodetabek area, on the other hand, is not well established compared to DKI Jakarta's.

Although Jabodetabek's urban structure is changing rapidly and dynamically, the road network serving Jakarta and the surrounding areas has not been extended in a way that keeps pace with urban development growth.

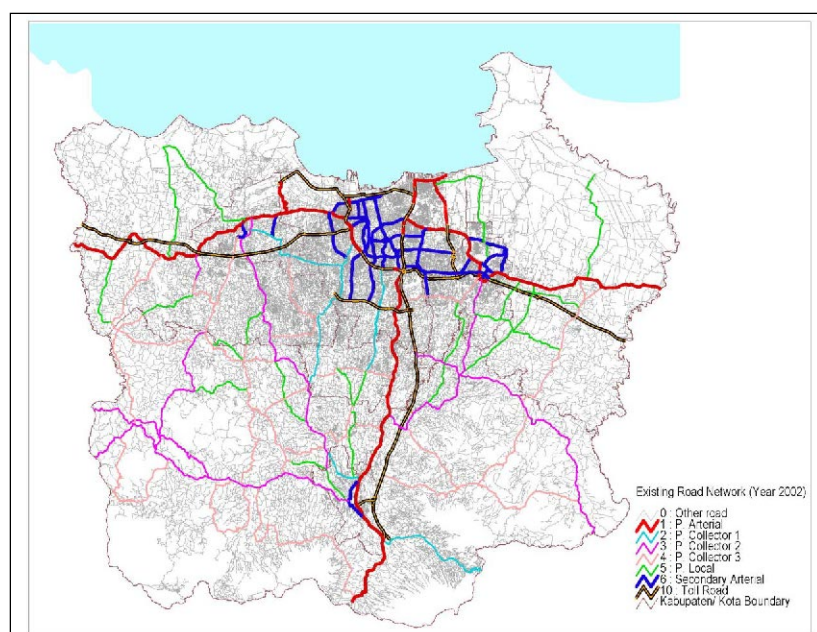


Figure 2.4 Present Road Network (2002)

2.2.4 Ineffective Transportation Demand Management

The current 3-in-1 scheme seems generally effective in reducing the number of vehicles entering the restricted zone, resulting in a smooth traffic flow during the restricted time, while the scheme has the following drawbacks:

- 1) Traffic demand on the parallel streets increases during the restricted hours,
- 2) Picking up temporary passengers called jockeys reduces the effectiveness of the scheme, and
- 3) No revenue is collected, while costs are incurred by the traffic police for enforcement.



Photo 2.2 3 in 1 Signboard

The current 3-in-1 scheme can be reformed to a road pricing scheme with an aim to generating part of funds to develop transportation infrastructures.

2.2.5 Deteriorating Public Transportation

The Jabotabek railway carries only 400 thousand passengers per day with its about 160 kilometer railway network. Railway transportation provides low level of service, such as low passenger transportation capacity, low frequency, delayed schedules, damaged and uncomfortable train cars, poor station facilities, and insufficient station plazas and access roads.

Buses play a dominant role in the region's public transportation; however, the level of bus service at present is also low in many aspects. Not on time, unexpected stoppage of operation, long waiting time, sense of insecurity on board by passengers, unsanitary condition inside buses—these are just some of its many deficiencies.



Photo 2.3 Railway Passengers

Another critical problem in the public transportation sector is its less effective inter- and intra-modality. There are very few stations having station squares and park & ride facilities, and bus terminals are always congested by excessive buses against their handling capacity.

These problems can be attributed to lack of effective public transport planning and insufficient monitoring on operation.

2.2.6 Environmental Deterioration

Jabodetabek has suffered the disgrace of being in the category of cities with the worst air quality worldwide and it has become a new chronic issue as a threat to the health of the people. High concentrations of PM10 at roadsides, monitored by SITRAMP survey, indicate that automobiles should be the major source in the bottom layer of areas adjacent to heavily congested roads. The health impacts from PM10 in Jabodetabek could be valued at Rp. 2,815 billion in 2002, according to estimates by the Study Team.

The seriousness of the noise pollution problem is explained by the fact that all noise levels monitored in daytime were far above the preferred levels. Especially heavy-duty buses and

trucks in Jabodetabek are mostly dilapidated, roaring past with horns blowing.

2.2.7 Road and Railway Accidents

The number of road traffic accident victims decreased significantly to one-third in recent years; however, the number of lives lost in traffic accidents has not decreased. Similarly, the rate of traffic accidents on toll roads has been gradually decreasing but the fatality rate is still high compared to developed countries.

Railway is widely considered as a safe mode of transport compared with road transport but this is not true in the case of the Jabotabek railway. During the period of 2000-2002, 174 accidents were reported including serious train collisions and crash accidents.

2.2.8 Lack of Traffic Signals

Traffic signals are often useful for pedestrians to safely cross the street. In DKI Jakarta, however, the ratio of signalized intersections to all the intersections in the major road network is about 42%, which is quite low for an urban area. The situation is even worse in Bodetabek: the ratio is as low as 21%.

2.2.9 Low Accessibility of Poor Households

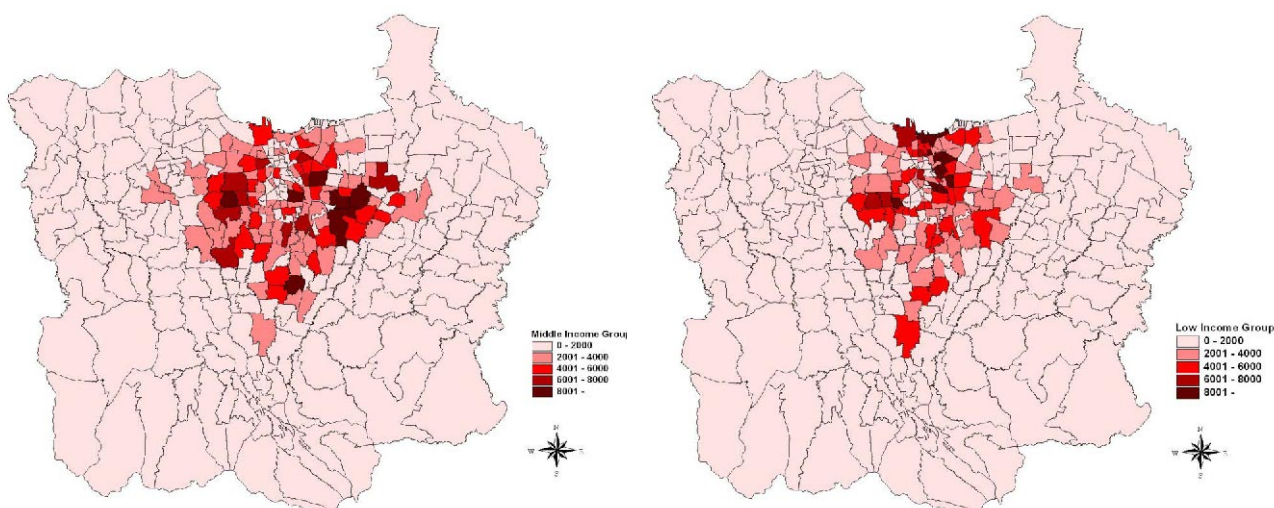
For the poor, the lack of affordable modes deprives them of the ability to take advantage of economic opportunities as well as basic social services. The access problem of the poor in urban areas arises mainly due to shortage of household income for paying transportation fare. Isolation is a key characteristic of poverty, which leads to people being cut off from facilities, services, supplies, networking and participation in a wider socio-political life.

Table 2.1 Transportation Cost in Household Expenditure

Expense Group	Public transport cost		Motor vehicle cost		All transport cost	
	Rp (a)	% of total expense	Rp (b)	% of total expense	Rp (c) = (a) + (b)	% of total expense
Low	91,078	14.2%	19,995	3.1%	111,073	17.3%
Middle	189,265	13.7%	89,582	6.5%	278,847	20.1%
High	367,368	10.9%	271,750	8.1%	639,118	19.0%

Source: SITRAMP, Social Survey, 2002

With nearly 20% of the total household expenditure spent for transportation, low-income office workers are obliged to live relatively close to their workplace, that is, near CBD in most cases; therefore, only in the densely –populated areas in DKI can they afford a residence which is as small as around 35 m² as an average.



Middle-Income Group

Low-Income Group

Figure 2.5 Current Residential Distribution of Workers Commuting to CBD

2.2.10 Rejection of Students' Boarding on Buses

Students are sometimes rejected for boarding on buses by bus crews because their fare is half of that for ordinary people. This unfair treatment is partly caused by bus rental system since bus drivers should get sufficient fare revenue to cover the rental fee, fuel cost, and other operational expense.

2.2.11 Lack of Transportation Facilities for the Physically Challenged

Little attention has been paid on transportation facilities for the physically challenged such as the elderly and the disabled. Elevators or escalators are not available at almost all railway stations, and sidewalks to bus stops are often damaged, thus those people find it difficult to use public transportation.



Photo 2.4 Damaged Sidewalk

2.2.12 Problems in Coordination in Planning and Project Implementation

Special attention should be paid to problems in the context of project planning and implementation:

- Less coordination in planning process and development fund raising between respective organizations,
- Lack of effective coordination in planning between different transportation sub-sectors,
- Lack of effective coordination in planning between the central and local governments, and
- Almost no coordination in planning between transportation sector and other development sectors such as housing development and railway system development

These facts suggest it is very necessary to institute an organization with a strong power for authorization of region-wide plans that covers multiple local governments, supported by sufficient technical staff and funds.

3. REGION'S FUTURE PERSPECTIVE AND TRAVEL DEMAND

3.1 Future Perspective of Jabodetabek Region

“Jabodetabekpunjur 2018” is a consolidated regional spatial development plan. It provides guidelines for the region’s development including transportation system.

The plan suggests:

- 1) guiding population dispersion in the Bodetabek area,
- 2) restricting development in southern water catchment areas particularly in Bogor,
- 3) promoting linear development along the East-West axis (Bekasi – Tangerang), and
- 4) prioritizing development such as in finance, trade and tourism within Jakarta.

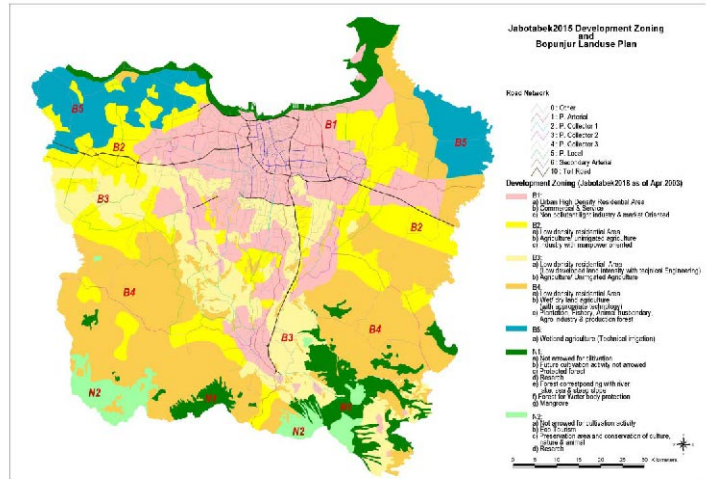


Figure 3.1 Development Zoning in Jabodetabekpunjur 2018

3.2 Growth of Transportation Demand in Jabodetabek

In accordance with the anticipated growth in population and vehicle ownership in the next 20 years, total number of trips is expected to grow even more rapidly. The total number of trips made in Jabodetabek in 2020 will increase at about 40% compared to 2002.

At present, the modal share of public transport is about 60% (excluding non-motorized transport). If no action is taken, modal share of public transport, especially the share of the bus, will fall to less than half of the total motorized share because of the low level of service, and the modal share of the private car, which is more convenient in mobility, will rapidly increase.

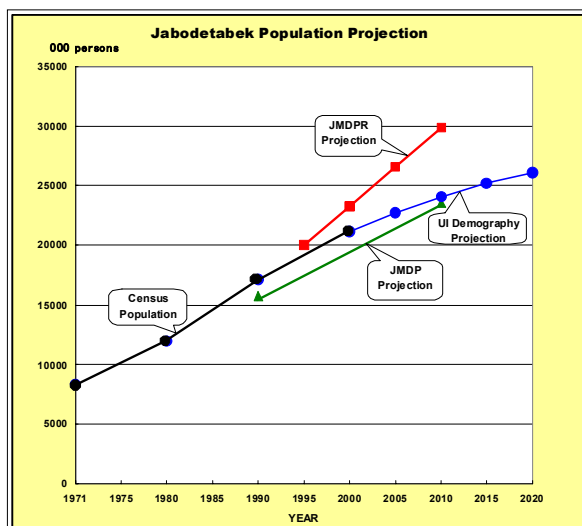


Figure 3.2 Population Projection

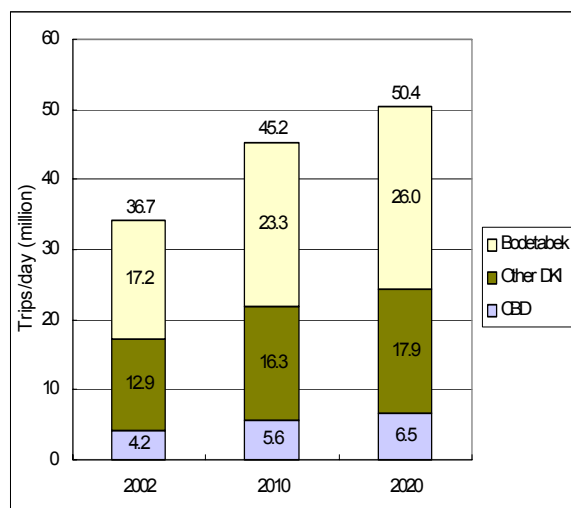


Figure 3.3 Trip Production Growth

3.3 Anticipated Deterioration of Transportation System Performance

“Do Nothing” case indicates anticipated chaos in the future if no investment is made in the next 20 years. Average travel speed in the whole Jabodetabek region will decrease from 34.8 km per hour in 2002 to 24.6 km per hour in the year 2020. The length of congested arterial roads of which Volume/Capacity (V/C) ratio exceeds 1.0 will increase to 1,006 km, which is about 57% of the total length of arterial roads in the urbanized area roads. Severe traffic congestions are anticipated on the major radial roads plugging into the central part of the region, i.e., DKI Jakarta, which indicate additional radial transport systems are necessary to accommodate the region’s travel demand. At the same time, the anticipated traffic congestion in the central business district suggests necessity of introducing traffic restraint measures to persuade the private mode users to use public modes of transport.

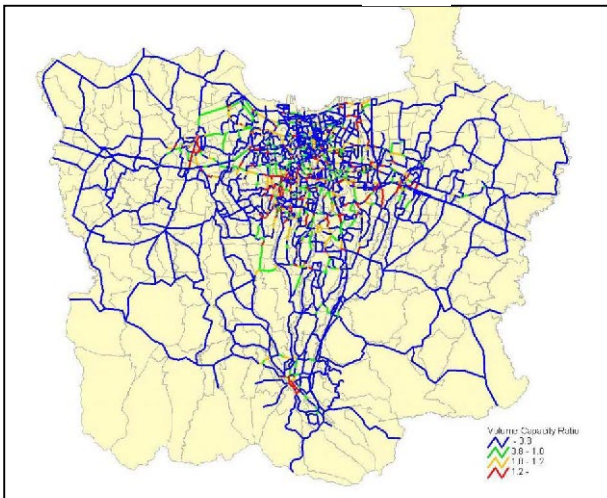


Figure 3.4
Volume / Capacity Ratio in 2002

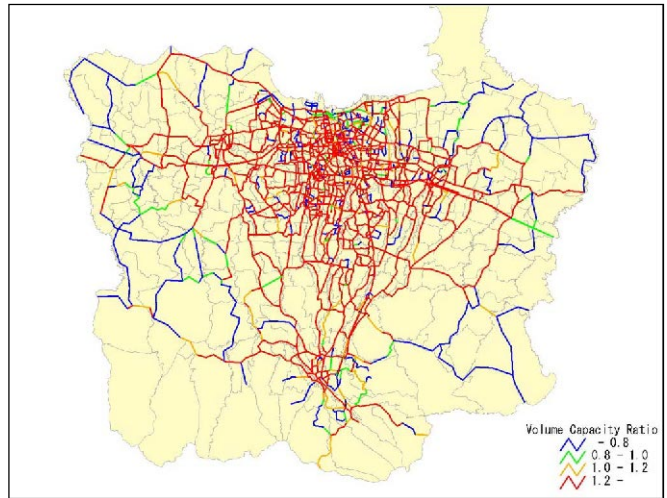


Figure 3.5
Volume / Capacity Ratio in 2020 : Do Nothing Case