

2.8 INTEGRATED BUSWAY SYSTEM DEVELOPMENT WITH CENTER DEVELOPMENT

2.8.1 Review of Existing Land Use Plan and Floor Area Ratio

DKI Jakarta has a land use plan (refer to Figures 2.8.1) and a corresponding floor-area ratio (refer to Figure 2.8.2) and building-to-land ratio plan. The commercial and business districts with high floor-area ratio are given to the district along Jl. Sudirman and Jl. Thamrin including so-called Golden-triangle. Exceptions are Kemayoran, Manggarai, and several districts at major intersections. The others are basically along the major arterial streets in the form of ribbon development. To promote use of public transportation, center development at public transportation nodes is suitable compared to ribbon development.

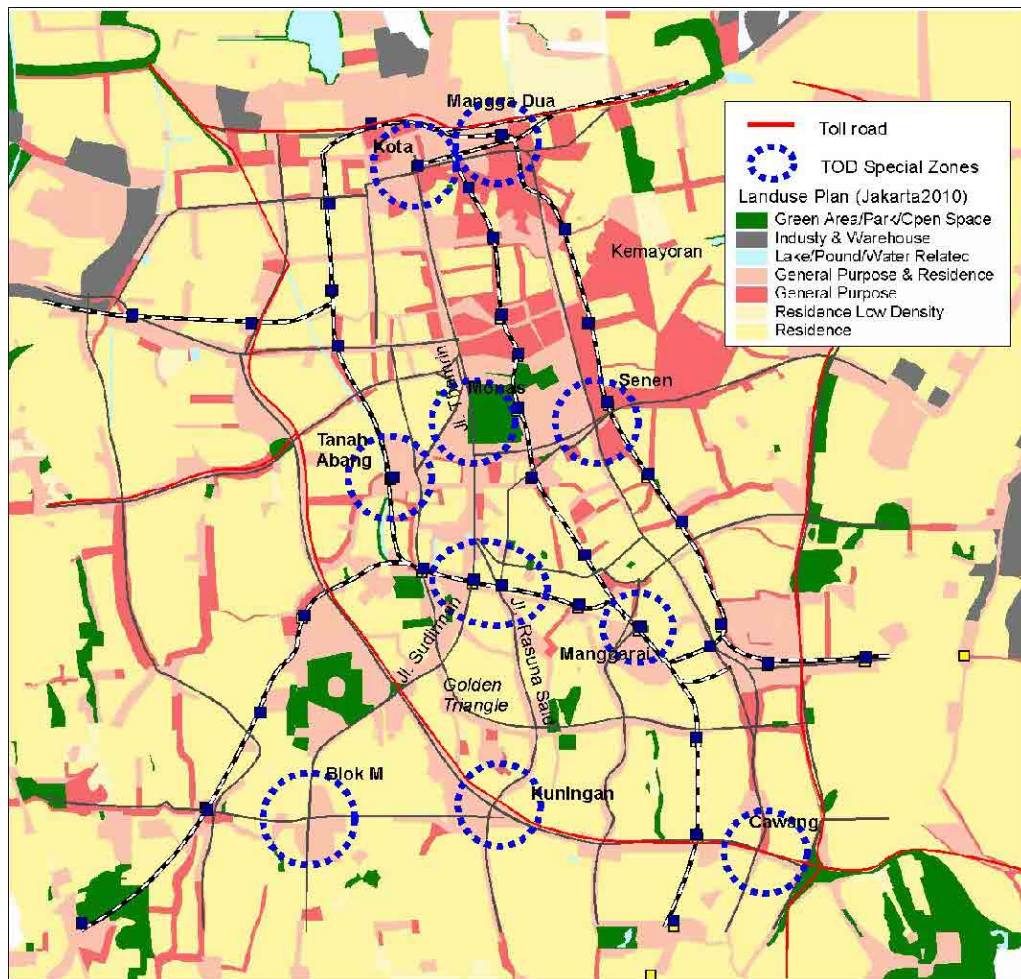


Figure 2.8.1 DKI Jakarta Land Use Plan

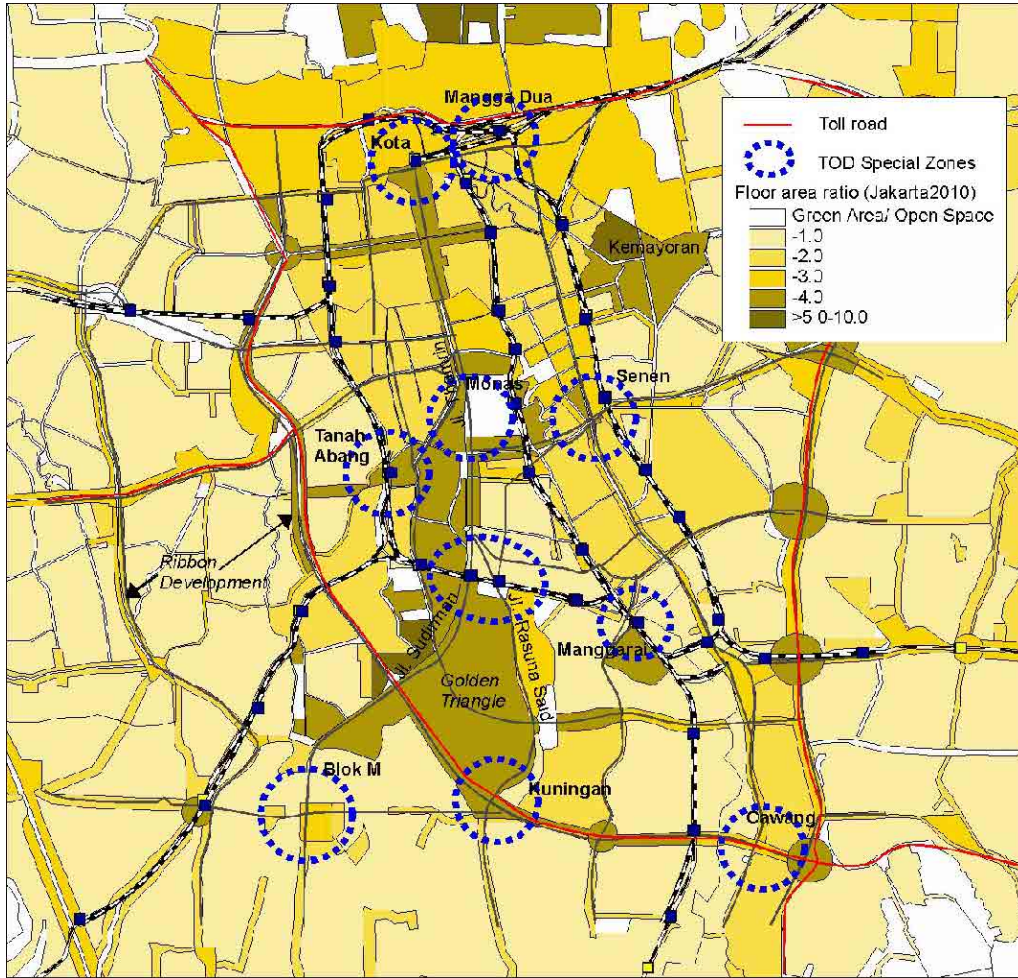


Figure 2.8.2 Floor Area of DKI Jakarta Floor Area Ratio

As public transportation system develops in accordance with the master plan implementation schedule, the number of passengers using railway, MRT and busway will increase as shown in Figure 2.8.3. The interchange facilities as well as terminals would serve a considerable number of passengers and these locations could be potential location for center developments as indicated in Figure 2.8.4. Thus it is recommended to give a higher floor-area ratio for these locations to attract business and commercial activities and to induce high intensity land use.

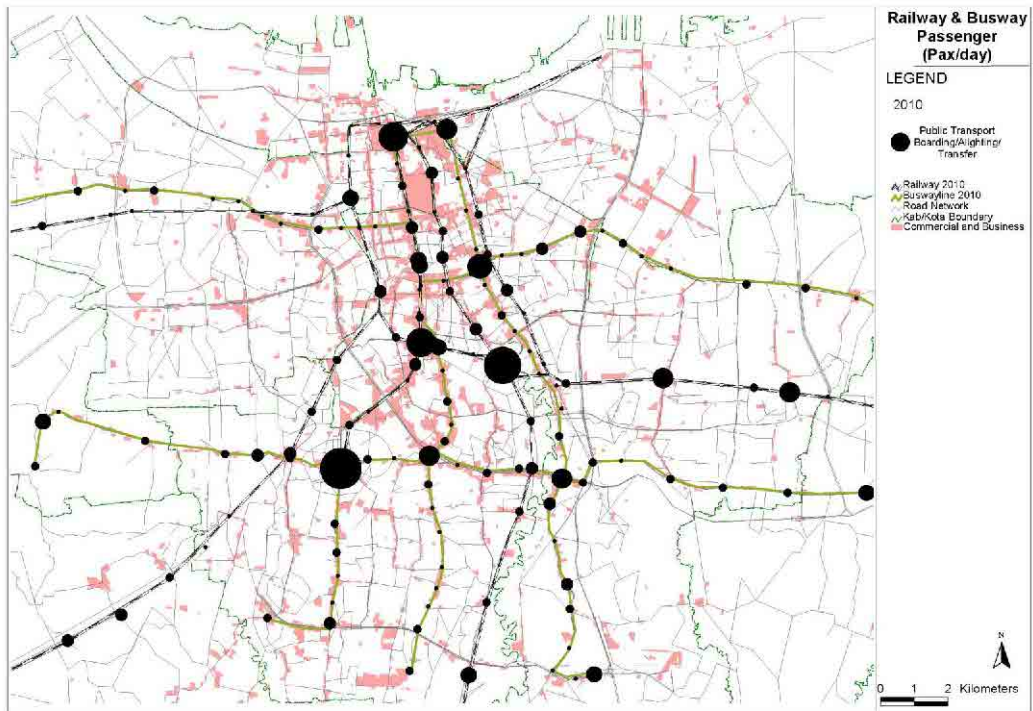


Figure 2.8.3 Number of Boarding and Alighting and Transferring Passengers on the Public Transportation Network in 2010

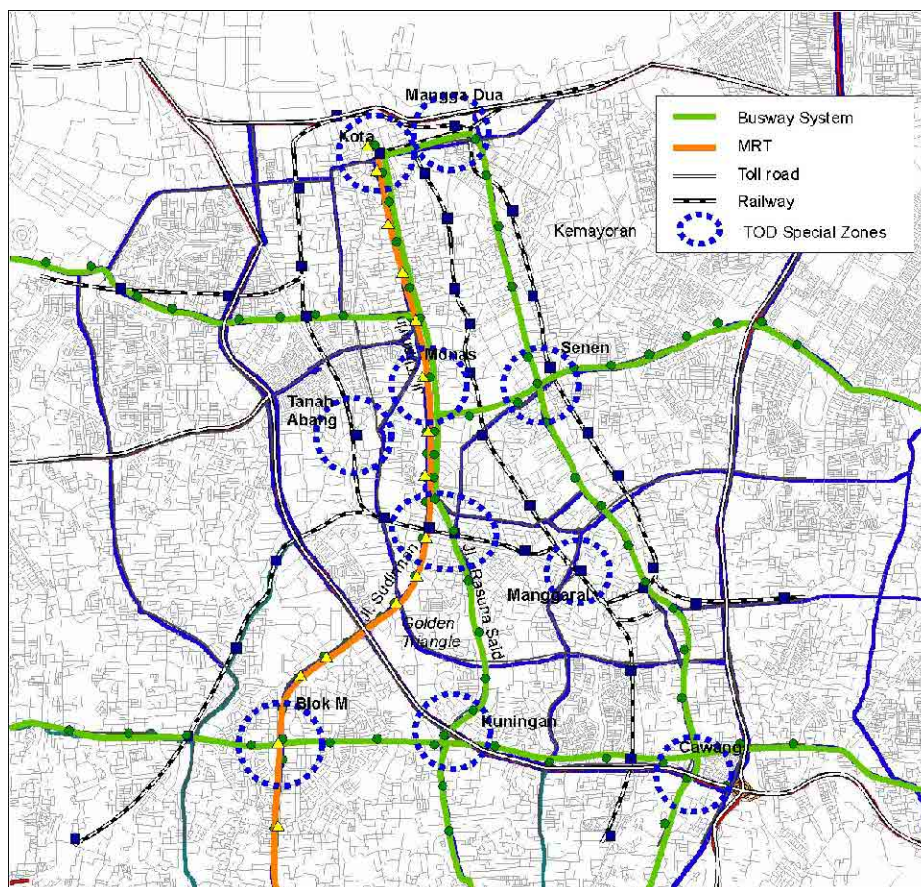


Figure 2.8.4 Potential Locations for Center Developments

2.9 ISSUES FOR FURTHER DEVELOPMENT OF BUSWAY SYSTEM

(1) Operation Body

The implementation body of the current bus operation between Blok M and Kota is DKI Jakarta, which purchased special bus coaches and obtained personnel from the bus company managed by DKI Jakarta and several private companies. However, it is more efficient that concession for bus operation would be given to private bus companies through bidding when busway routes are added.

In the intermediate and long term, it was recommended to extend busway to the outside of DKI Jakarta in the SITRAMP master plan. In such a circumstance, the bus operation is better managed under an organization which can deal with region-wide transportation administration such as Jabodetabek Transportation Authority.

(2) Monitoring and Improvement of Busway Extension Plan

Since busway operation has been initiated between Blok M and Kota, monitoring on the current operation is of great importance for the following extension of the busway project. Review of the system performance, passenger demand and opinions from the users should be taken into consideration for planning of the busway extension projects.

(3) Upgrading the Busway System

If busway is proven to be an effective public transportation system and passenger demand is sufficient, bus operation frequency should be increased and articulated bus coaches might be introduced at early stage. If bus operation is disturbed at roundabouts, intersections or U-turn points, grade separation should be taken into consideration. Priority for grade separation should be given to the intersections where busway needs turn movement and roundabouts.

3. TRANSPORTATION DEMAND MANAGEMENT (TDM) SCHEME IN CBD

3.1 OUTLINE OF THE STUDY

This chapter studies the issues of Transportation Demand Management (TDM) of urban transportation in the CBD of Jabodetabek, one of the important components of the SITRAMP. Various methods of TDM technique are first discussed in a broad sense. Then the Study focuses on the traffic restraint scheme by pricing. That is, in addition to the 3-in-1 scheme which is currently in effect along the Sudirman-Thamrin corridor, other transportation demand management measures effective in reducing congestion and acceptable to people such as road pricing, area pricing, and cordon pricing are studied. Expansion of the restricted area or introduction of a new system is also considered.

3.2 METHODOLOGY OF TDM TECHNIQUE

3.2.1 Policy Direction: Target Group Approach

Figure 3.2.1 illustrates a conceptual framework in order to understand the society of Jabodetabek. There are two types of transportation mode users: Public and Private, and their income level is divided into three categories: Low, Middle, and High. Furthermore, this diagram suggests general policy directions to be considered in formulating an urban transportation strategy by the "Target Group" approach; also a function/role of TDM as a part of integrated urban transportation policy set is illustrated.

In line with the growth of economy, most of the people in the Jabodetabek region have been following Shifts 1 and 2. If such a tendency continues, Jabodetabek will soon be characterized as a "Car driven society." In this society, mobility of cars is given priority rather than that of people.

If a society geared toward public transportation is to be promoted in Jabodetabek, "Shift 1" and "Shift 2" should be avoided as much as possible. On the contrary, "Shift 3" to "Shift 7" should be promoted to divert the society into a more people friendly environment.

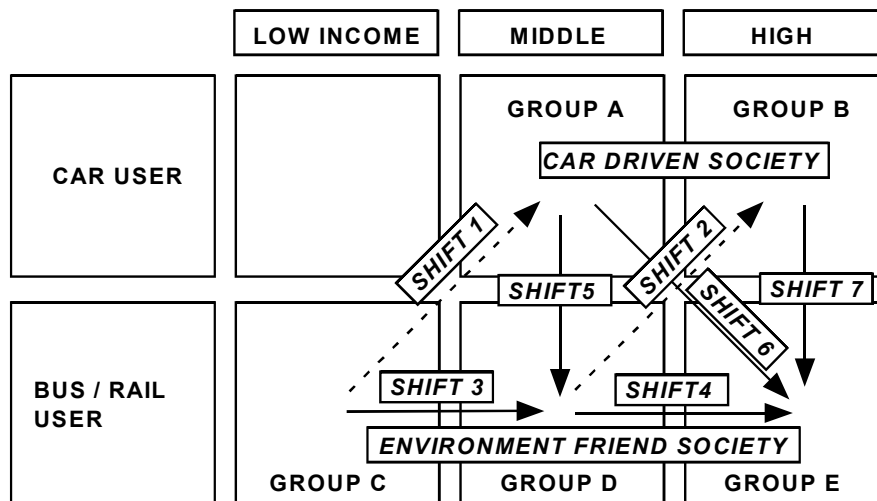


Figure 3.2.1 Types of Urban Transportation Strategy by Target Group

(1) Policies for Target Groups C, D and E

There has been a strong trend toward either Shift 1 or Shift 2 in the last decade, resulting in a tremendous decrease of public transportation mode users. It would be very difficult to change this movement by just upgrading the public transportation system itself because people tend to use cars for commuting purposes once they can afford one for their own use. Therefore, other types of measure should be identified. One solution may be found in the field of city planning. For example, allocation of housing developments near railway stations would be effective in providing the best access for them. In addition, it is very important to improve the current public transportation system including feeder services.

(2) Policies for Groups A and B

Policies for Shifts 5, 6, and 7 are the most difficult/ambitious ones. Mere time savings achieved by using public transportation modes is not effective in diverting people to become public transportation mode users. Types of pricing policies were found to be very effective, but their effect is limited in proportion to increase of personal income. If this type of policy is adopted, part of Group A will shift to Group D, although, Group B will still remain. Besides, a pricing policy may have a negative impact on the society in terms of equity. For example, if a person in Group A has no alternative modes of transportation, adoption of the pricing policy on car or car usage simply leads to a severe loss in his income. Therefore, when this type of policy is implemented, effective and reasonable alternative modes of transportation should be provided at the same time. Other solutions to avoid such an unfair situation include “Cordon pricing for low occupancy vehicle” and “High occupancy vehicle lane,” which are effective policies among different income groups. These measures are regarded as being part of physical constraint techniques.

As such, restraint type techniques for TDM are for realizing Shifts 5, 6, and 7 in near future.

3.2.2 TDM in Major Cities in the World

Many transportation demand management techniques have been considered / implemented in major cities of the world. This section summarizes the characteristics of major TDM techniques that may be considered for Jabodetabek as well.

(1) Road Pricing System

Road pricing system imposes charges on passenger car users passing through designated roads, in order to minimize unnecessary utilization of passenger cars and divert users to public transportation. This measure is often combined with a high occupancy vehicle lane technique.

(2) High Occupancy Vehicle (HOV)

Priority lanes for high occupancy vehicles are provided and only HOV can pass the designated route without obstruction. Sometimes this system is used as a car-pooling system.

(3) Car Pooling System

People practice car pooling and usually cars with high occupancy get to pass through priority lanes without obstacles and thus arrive at their destinations easily.

(4) Area/Cordon Pricing System

This system has been adopted in Singapore and recently in London. A charge is imposed on cars to enter (i.e., “cordon pricing”) or drive in (i.e., “area pricing”) a designated area.

(5) Parking Policy

1) Park and Ride System

Parking facilities are provided at near the stations of rail-based systems, and users go from home to the stations, park their cars, and then transfer onto the rail-based systems.

2) Parking Restraint Policy

Any special method can be implemented but there are two typical methods from the viewpoint of the passenger car restraint. One is to control the construction of parking facilities to fit the policy to be introduced, and the other is to impose a surcharge fee to curb car parking in order to divert people from passenger cars to public transportation.

A variety of TDM schemes are summarized in Table 3.2.1.

Table 3.2.1 Transportation Demand Management Techniques

Technique	Descriptions	Cities/Countries where Implemented
Traffic Restrictions for Residential Areas	On-street parking controls, street closures, road humps, elimination of curbs, etc. are used to improve the residential environment	Copenhagen, Netherlands (Harlem, Delft, Enschede), Sweden (Vasteras)
License-Plate Numbering System	Vehicles with odd-numbered plates are not permitted to enter controlled areas on odd-numbered working days and Vehicles with even-numbered plates are not permitted to enter on even-numbered days.	Nigeria (Lagos), Seoul, Greece (Athens)
Planned Congestion	Capacity restrictions and time delays using traffic signals are applied to achieve planned congestion.	Nagoya, Nottingham, Ottawa - Carleton
Traffic Cell System	Division of an urban area into zones which are only mutually accessible by public transportation or by a circuitous route. Pedestrian streets are used to prevent vehicular traffic from passing through an area.	Gothenburg, Besancon, Dijon, Nottingham, Gronigen, Delft, Geneva, Nagoya, Bremen, Ottawa
Auto-Restricted Zone in CBD	Zones where automobiles are totally eliminated; a new circulation system for buses, pedestrians, taxis and delivery trucks with priority given to buses.	Boston
Area-Licensing/ Congestion Charging	Vehicles are charged for entering a congested area during peak periods, excluding public and emergency vehicles.	Singapore, London
Vehicles Ownership Restraints	Vehicle ownership is inhibited by high import taxes, purchase taxes, vehicle registration fees and annual licensing fees.	Hong Kong, Singapore, Seoul
User Taxes	Vehicle use is restrained through user taxes imposed on fuel, tires, spare parts, etc., thus adding to the operating cost in relation to the distance traveled.	Seoul
Cordon Toll Gates	Toll gates installed at cordons around a controlled area.	Bristol, Bergen, Oslo, Trondheim ¹
Tolls placed at particular facilities to control movement	Toll gates are placed at particular facilities, like tunnels and bridges, to control movement	New York, Southampton, Seoul, Hong Kong
Pedestrian Streets	Selected streets are closed to vehicles to promote pedestrian use and safety and a pleasant environment	UK (London, Nottingham, Glasgow, Norwich, Liverpool, Leeds, Durham Coventry), Germany (Mainz, Munich, Stoved, Essen, Stuttgart, Cologne Dusseldorf, Hanover, Frankfurt), France (Paris, Besancon), USA (Boston, Minneapolis, Madison, Minnesota, California), Netherlands (Hague, Gronigen), Copenhagen, Brussels, Ottawa, Tokyo, Rome, Geneva, Vienna, Gothenburge.
Pedestrian/Bus Street	Pedestrians and buses share road space to reduce traffic congestion and to promote a pleasant environment.	Germany (Trier), UK (Derby, London, Leeds)

Source: H.C. Park, 'Traffic Demand Management: Some Possible Techniques for Bangkok,' Master's Thesis, Asian Institute of Technology (AIT), 1989, adapted.

¹ In Norway's three largest cities (Oslo, Bergen, and Trondheim), tolling was introduced to raise funds for road construction rather than as a demand management technique.