

**SUSTAINABLE ACCESSIBILITY:
LEARNING FROM THE LONDON CASE TO IMPROVE
WALKABILITY IN BEKASI MUNICIPALITY (INDONESIA)**

THESIS

A thesis submitted in partial fulfillment of the requirements for the Master Degree from Institut Teknologi Bandung and the Master Degree from University of Groningen

By:

**DESSY ANGA AFRIANTI
RUG: S2312913
ITB: 24211010**

Supervisor:

**DR. FEMKE NIEKERK
DR. Ir. HERU PURBOYO HIDAYAT, DEA**



**DOUBLE MASTER DEGREE PROGRAMME
TRANSPORTATION PROGRAMME
SCHOOL OF ARCHITECTURE, PLANNING AND
POLICY DEVELOPMENT
INSTITUT TEKNOLOGI BANDUNG
AND
ENVIRONMENTAL AND INFRASTRUCTURE PLANNING
FACULTY OF SPATIAL SCIENCE
UNIVERSITY OF GRONINGEN
2013**



**SUSTAINABLE ACCESSIBILITY:
LEARNING FROM THE LONDON CASE TO IMPROVE
WALKABILITY IN BEKASI MUNICIPALITY (INDONESIA)**

By

**DESSY ANGGA AFRIANTI
RUG: S2312913
ITB: 24211010**

**Double Master Degree Programme
Transportation Programme
School Of Architecture, Planning And Policy Development
Institut Teknologi Bandung
And
Environmental and Infrastructure Planning
Faculty of Spatial Science
University Of Groningen**

Approved
Supervisors
Date: August, 2013

Supervisor I

Supervisor II

(DR. Femke Niekerk)

(DR. Ir. Heru Purboyo H, DEA)

ABSTRACT

Sustainable transportation is an important issue for many countries in the world. The negative impact of transportation has forced all of countries to develop sustainable mobility strategies. Sustainable accessibility is such an effort toward sustainable transport strategies. This research explores the important aspects to develop sustainable accessibility to improve walkability in one region. This thesis aim is to give recommendation in reaching the sustainable accessibility by improving pedestrian accessibility to public transport facilities in Bekasi through making a comparison with another city from different country. This research examines the pedestrian accessibility of public transport by taking examples from two cities: London (United Kingdom) and Bekasi (Indonesia). Based on London experience, there are two aspects that are important for improving walkability. These are physical aspects and institutional aspects. The physical aspect consists of distance, density, diversity, and design. While, the institutional aspect consists of stakeholder involvement and regulation. London strategic policy of improving walkability has its own characteristic that could provide adaptable approach for strategic policy in Bekasi. After doing the comparison between London and Bekasi in those criteria, this research identifies the barrier of possible strategies in the Bekasi case. The result is expected to gain better insight by getting lesson learned for the improvement pedestrian accessibility of public transport in Bekasi. The result showed some lessons learned that might become base of considerations to enhance the current strategic policy in Bekasi. Through London experience, there are some good aspects that could be relevant to be transferred to Bekasi context such as adopting the collaborative approach and making the local planning guidance to improve walkability. Hence, by adopting the experience from London case, it is expected that it would help Bekasi Municipality to anticipate the problem in implementation of strategic policy. However, it is need more adjustment to implement in Bekasi Municipality.

Keywords: Sustainable Accessibility, Walkability, Pedestrian Accessibility, Physical Factor, Institutional Factor, Lesson learning

GUIDELINE FOR USING THESIS

This unpublished master thesis is registered and available in the library of the University of Groningen and Institut Teknologi Bandung, and open for public with the regulation that the copyright regulation prevailing at the University of Groningen and Institut Teknologi Bandung. References are allowed to be recorded but the quotations or summarizations can only be made with the permission from the author and with the academic research regulation for the process of writing to mention the source. Reproducing and Publishing some part or whole of this thesis can be done with the permission from the Director of the Master program at the University of Groningen and Institut Teknologi Bandung.

ACKNOWLEDGEMENT

This master thesis is completed as a part of the requirements for the Double Master Degree of Transportation Program (School of Architecture, Planning and Policy Development, Institut Teknologi Bandung) and Environmental and Infrastructure Planning (Faculty of Spatial Science, University of Groningen). The topic of my research is “Sustainable Accessibility: Learning from The London Case to Improve Walkability in Bekasi Municipality (Indonesia)”. I am interested with pedestrian accessibility issues since walkability issue becomes big problem for developing countries such as Indonesia. This condition triggers the peoples do not interest to walk. Moreover, the people in Indonesia especially in Bekasi municipality did not interest to use public transport and prefer to use private transport than public transport. Therefore, the congestion and other impact are influencing the quality of urban life. Hence, this research provides the condition in Bekasi Municipality and also finds the possible and adaptable strategy policy from London to be transferred to Bekasi Municipality.

First of all I would like to thank to Allah, for blessing me to finish this thesis and for giving me an opportunity to study in RUG and ITB. Then, I would like to address special thanks to my supervisors, DR. Femke Niekerk and DR. Heru Purboyo for the advise, comment and direction to me in writing this thesis. I also would like to express my grateful to the Ministry of Transportation for financial support and give me the opportunity to study in RUG and ITB.

Finally, the great thanks for my lovely family, especially for my parents, my sisters and brothers, both of my nephew, and also for my love for their support and patience during my study and always be my motivation to finish my study. Thank you so much for all.

August, 2013

Dessy Angga Afrianti

Groningen, The Netherlands

TABLE OF CONTENT

ABSTRACT	i
GUIDELINE FOR USING THESIS	ii
ACKNOWLEDGEMENT	iii
TABLE OF CONTENT	iv
LIST OF TABLE	vii
LIST OF FIGURE	viii
CHAPTER I. INTRODUCTION	1
I.1. Introduction	1
I.2. Background	4
I.3. Research Objectives	9
I.4. Research Questions	9
I.5. Theoretical Framework and Research Design	9
I.6. Research Structure	11
CHAPTER II. THEORETICAL REVIEW	13
II.1. Introduction	13
II.2. The Concept of Walkability	13
II.3. The Concept of Accessibility for Pedestrian	17
II.3.1. Definitions of accessibility	17
II.3.2. The Concept of Integrated Land use and Walkability	20
II.4. Identification policy strategies	22
II.4.1. Physical Factor	22
II.4.2. Institutional Factor	29
II.5. Conceptual Framework	33

CHAPTER III. RESEARCH METHODOLOGY	37
III.1. Introduction	37
III.2. Methodology of Research	37
III.3. Data Collection	40
III.3.1. Type of Data Required	40
III.3.2. Operationalization of Data Collection Methods	40
III.4. Steps of research	42
CHAPTER IV. POLICY STRATEGIES FOR IMPROVING WALKABILITY	44
IV.1. Introduction	44
IV.2. London Case	44
IV.2.1. Current Condition	44
IV.2.2. London Position in International Perspective	45
IV.3. The Policy Strategies	48
IV.3.1. Physical Factor	49
IV.3.2. Institutional Factor	58
IV.4. Impact of Policy Strategies	65
CHAPTER V. PEDESTRIAN ACCESSIBILITY OF PUBLIC TRANSPORT IN BEKASI	67
V.1. Introduction	67
V.2. The Current Condition	67
V.3. The Policy Strategies	69
V.3.1. Physical Factor	69
V.3.2. Institutional Factor	78
V.4. Impact of Policy Strategies	85

CHAPTER VI. ANALYSIS OF POTENTIAL POLICY STRATEGY	87
VI.1. Introduction	87
VI.2. Comparison of Pedestrian Accessibility of Public Transport in London and Bekasi	87
VI.2.1. Physical Factor	88
VI.2.2. Institutional Factor	91
VI.3. Overview the Similarities and Differences	92
VI.4. Identifying Barriers	94
VI.5. The Potential Policy Strategies to Improve Walkability in Bekasi	97
CHAPTER VII. CONCLUSIONS AND RECOMMENDATIONS	100
VII.1. Introduction	100
VII.2. Conclusion	100
VII.2.1. Introduction	100
VII.2.2. Physical and Institutional Factors	101
VII.2.3. Policy Making	102
VII.3. Recommendation	102
VII.4. Reflection	103
REFERENCES	106

LIST OF TABLES

Table II.1. Definition of Both Categories Principle in the Research.....	33
Table III.1.Data Required and Operationalization of Data Collection Methods.....	41
Table IV.1.The Comparison Between London and Other Cities.....	46
Table IV.2.Data's of London.....	52
Table IV.3.Legislation of Pedestrian.....	59
Table V.1.Regulation of Pedestrian in Bekasi.....	81
Table VI.1.The Comparison Between London and Bekasi In Distance Criteria.....	88
Table VI.2.The Comparison Between London and Bekasi In Density Criteria.....	89
Table VI.3.The Comparison Between London and Bekasi In Diversity Criteria.....	90
Table VI.4.The Comparison Between London and Bekasi In Design Criteria.....	90
Table VI.5.The Comparison Between London and Bekasi In Regulation Criteria.....	91
Table VI.6.The Comparison Between London and Bekasi In Stakeholder Involvement Criteria.....	92
Table VI.7.The Similarities and Differences Between London and Bekasi.....	93

LIST OF FIGURES

Figure I.1. Map of Bekasi Location in Indonesia	4
Figure I.2. The Changing of Shelter Function	5
Figure I.3. Pedestrian Facilities in Bekasi	6
Figure I.4. The Changing of Pavement in Bekasi	6
Figure I.5. The Bicycle Line in Bandung	7
Figure I.6. Map of Bekasi Municipality	8
Figure I.7. Research Design	10
Figure II.1. Basic Links Between Transportation and Land Use	26
Figure II.2. Typology of Policy Change by Levels of Cooperation and Discourse	31
Figure II.3. Conceptual Framework of the Research	36
Figure IV.1. Maps of London City	44
Figure IV.2. The Pedestrian Areas in London	47
Figure IV.3. Neighbourhood Unit Based on 400 m Radius	49
Figure IV.4. Bus Stop Facilities in London Which is Near to Residential Area	50
Figure IV.5. Bus Stop Facilities in Major Centre of London	50
Figure IV.6. Density Pattern	51
Figure IV.7. Bus Stop Density in London (in stops/road-km)	52
Figure IV.8. Bus Headway Distribution in London (in stops/road-km)	53
Figure IV.9. Mixed Use Around Bus Stop Facilities in London	53
Figure IV.10. Mixed Use in London Areas to Encourage Walkability	54
Figure IV.11. Bus Stop in London with Mixed-Use Area	55
Figure IV.12. Old Trends in Neighborhood Design	57

Figure IV.13.New Vision of Transit Supportive Neighborhood Design.....	58
Figure IV.14.User Hierarchy in London.....	60
Figure IV.15.Illustration of Collaborative Planning.....	62
Figure IV.16.Step of Improve Walking Condition.....	63
Figure V.1. Map of Bekasi Timur District.....	68
Figure V.2. Shelter or Bus Stops did not Integrate with Residential Area.....	70
Figure V.3. People in Bekasi City do not Use Shelter.....	70
Figure V.4. Density Pattern in Bekasi.....	71
Figure V.5. Mixed Use Development in Bekasi Timur District.....	73
Figure V.6. The Map of Mixed-Use in Bekasi Municipality.....	75
Figure V.7. The Bad Condition of Pavement in Bekasi.....	76
Figure V.8. The Changing Function of Pavement in Bekasi.....	77
Figure V.9. The Changing Function of Shelter.....	77
Figure V.10. The Hierarchy of Road Users in Bekasi.....	82

CHAPTER I

INTRODUCTION

I.1. Introduction

History shows that urbanization is a phenomenon which is in line with industrialization in the cities. The decline of jobs availability in rural areas increases urbanization to metropolitan cities. Globally, as predicted by the United Nations, the urban population in 2025 will be approximately 60% of the world population. In contrast to earlier trends, where the explosion of urban growth occurred only in developed countries, now the urban development of the 21st century has been more prevalent in developing countries. In the next 2 (two) decades, the number of urban residents in developing countries will grow at 50-60% of the total population (Undip, 2012).

The impact of this phenomenon will influence the demand of transportation. Then it will push the increase in the number of vehicles or demand in transportation in urban area (Paulley et al, 2006). The negative impact of this is not only problem of congestion in the city, but also many other problems such as air pollution, traffic accident, high consumption of energy, and etc. However, the mobility can trigger the economics of the city. Hence, sustainable transport strategies are important to be implemented. One of the efforts toward sustainable transport strategies is by creating sustainable accessibility (Litman, 2010).

According to Department for Transport (2004a), a recent change in British transport policy requires British local transport authorities to build 'accessibility strategies'. The concept of developing the strategies is known as Accessibility Planning. It includes setting of targets and implementing measures to improve access of basic services for socially excluded groups (DFT, 2004). The socially excluded groups are people who don't have a car or non-car owners and they always depend on public transportation.

According to Black (1981), accessibility is the easiness or the difficultness of a location to be reached through transport, Adding to that, Deichman (1997) gives insight that accessibility also shows how the land uses can interact with each other. Furthermore, he argues that the interaction of land uses is related to economic and social opportunity. Other expert such as Alba (2003) contributed to this discussion by defining accessibility as the ability to connect activities. While Burns & Golob (1976) mention that accessibility measures reflect the level of service provided by transportation systems in various locations.

Planning for local accessibility is not something new. Accessibility planning methodologies were tested in the United Kingdom (UK) during the 60's and 70's (Schaffer, 1972). Hence, London as part of the UK is a city which was successful in the implementation of accessibility plan. The 1998 Transport White Paper (DETR, 1998a) provides a strategy of increasing opportunities to reach destinations by means of walking, cycling and public transport.

Planning for accessibility is an approach that gives greater emphasis to accessibility; in the sense of access to jobs, leisure and services by public transport, walking and cycling, in the land use planning process (p. 123). Pedestrians as part of accessibility are essential activity in the enjoyment of places or regions. It gives tremendous opportunity to interact with the environment. However, the rising of number of vehicles has changed the design of the city and ignored the interest of walkers (DETR, 1998a).

Improving pedestrian accessibility is a popular policy in the developed countries. One of the examples is a United Kingdom (UK). UK tries to enhance the non-motorized transport such as pedestrian. London is of considered successful in implementing accessibility planning such as walking plan. The walking plan in London highlights the importance of securing high quality improvements to the walking environment, including all streets and spaces that are used by the public. Hence, this city gives a good example for improving pedestrian access. Furthermore, London gives

us good practical guidance for improving accessibility in the terms of 'walkability' on the streets.

In contrary with developed countries, developing countries such as Indonesia considers walking as unpopular habit of people in urban areas. It is evidenced in Bekasi City as one of the cities in Indonesia. Besides the demand factors such as: laziness, personal time, and the culture; the external factors are also contribute to the problem. Those external factors are climate, weather, pollution, and unsupportive pedestrian facilities. The poor condition of pedestrian accessibility contributes to the lack of interest of the people of Bekasi in using public transport. Hence, many people in Bekasi prefer to use private than public transport.

Pedestrian access is part of the road that serves circulation space for pedestrians (Spreiregen, 1965). It's separated from vehicle circulation. The separation is necessary for the safety of pedestrians, because of the increasing number of high speed vehicles (Spreiregen, 1965). Developing a sustainable city means providing significant transportation shift that supportive to pedestrians (Spreiregen, 1965).

Indeed, walking will always be an important mode of transportation development when it does not allow capital plays in it (Spreiregen, 1965). It means that improving walkability does not require a large capital investment as much as improving the other transport mode. The most important aspect to improve pedestrian accessibility is the underlining of integration of policy. It is because almost all activities of human life aim to move people from one place to another place by walking.

In this research, I propose to analyze the lack of accessibility of public transit as a source of transportation problem in Bekasi. Related to that, I focus more on the analysis of the people walkability in Bekasi by improving the pedestrian accessibility of public transport. In this research, I will use London's success story of creating good accessibility. My reason to choose

London is considered as a successful city in encouraging its people to do a walking activity and also in making the walking activity in the city become more comfortable due to its high quality improvements in the walking environment (TFL, 2005).

I.2. Background

Geographically, Bekasi Municipality lies between 106⁰55' East longitude and 6⁰15' South latitude, and it's 19 m above sea level. The easiness and availability of transportation infrastructure in Bekasi have made Bekasi Municipality as one of favorite cities for people to live in near the capital city of Jakarta. Bekasi is a city of industry, a regional development center, and also one of the busiest city in Indonesia. There are more than 500 companies both local and foreign companies operate in Bekasi (Pemda Bekasi, 2010). The uniqueness of its character makes Bekasi have diverse pattern of land use.

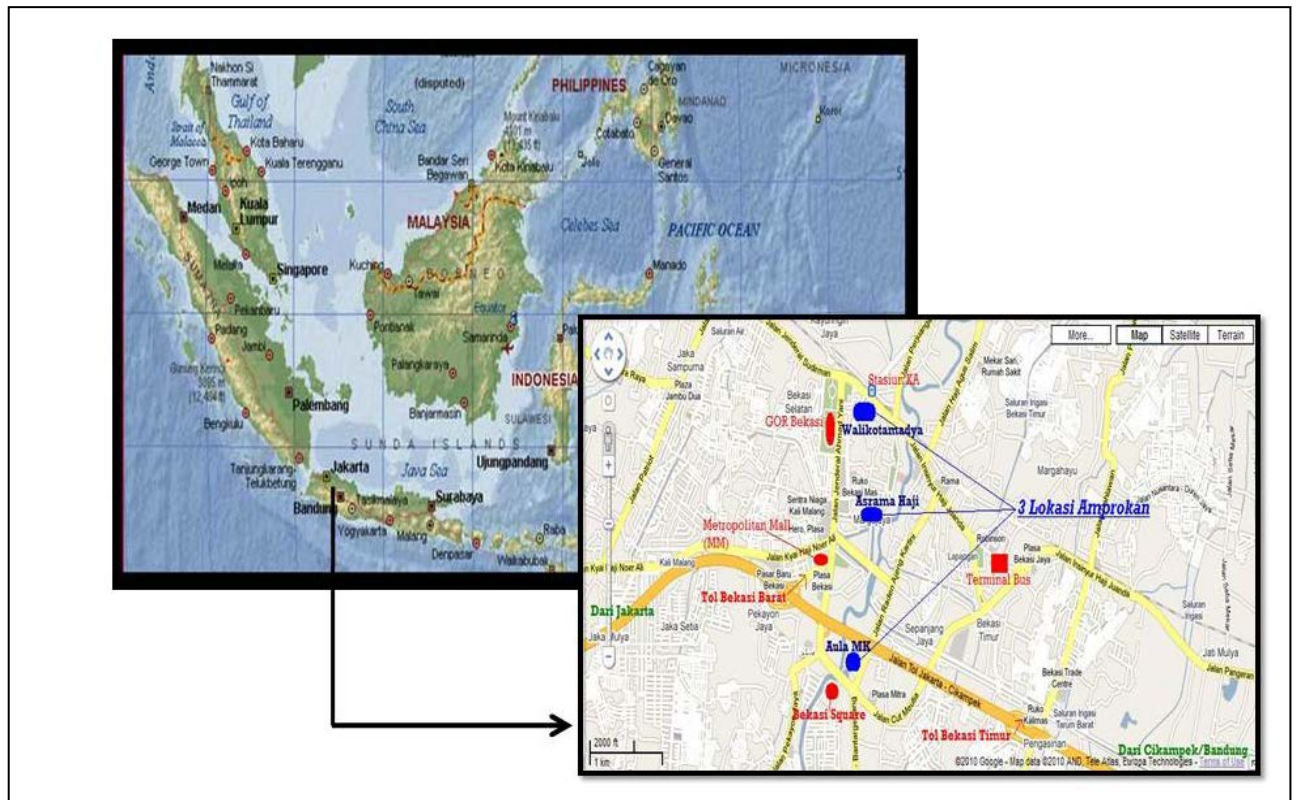


Figure I.1. Map of Bekasi Location in Indonesia
Source: Google Maps

The main problem of transportation in Bekasi comes from the lack of pedestrian accessibility of public transport, thus people rather use private than public transport. Currently, in Bekasi the pavement as transportation facilities for pedestrian has been changed into an economic function for local community.

A lot of pavements in Bekasi are used for trade activity and it does not function as pedestrian facilities for people. Many people in Bekasi are walking in an uncomfortable situation. As the consequences, the public transport is not being an option for society. The picture below describes the condition of bus stop facilities which has been changed into place for retailers. Surely, this condition leads to the discomfort of the people to use public transport.

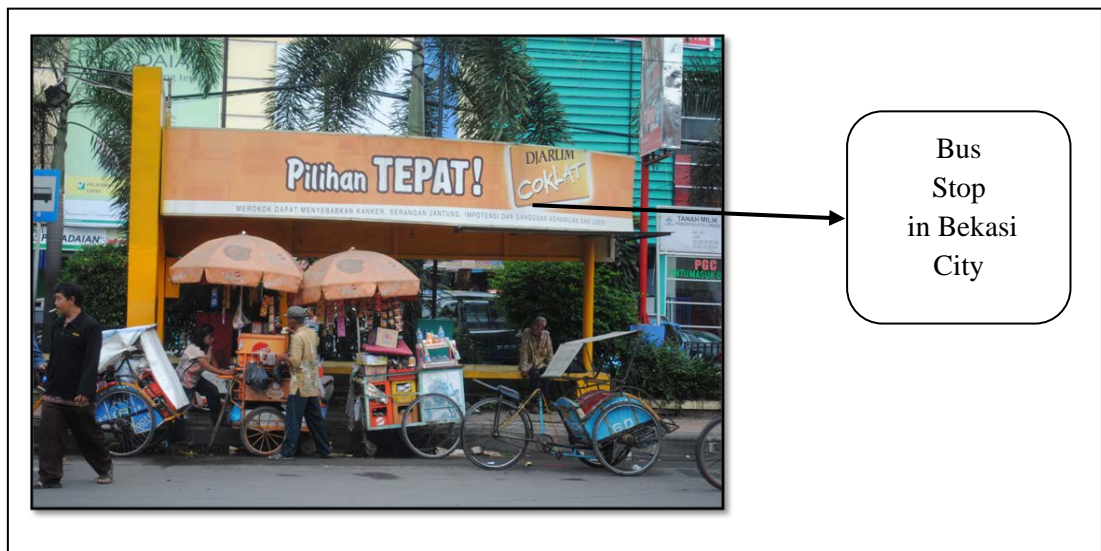


Figure I.2. The Changing of Shelter Function
Source: Transportation Agencies, 2013

In Bekasi, there is lack of pedestrian facilities to reach the public transport services. Consequently, many of the people in Bekasi do not stop at a shelter or bus stops, thus public transports in Bekasi stop in any places and this leads to new problems. The picture below depicts the lack of pedestrian facilities, which then makes public transports to stop in any places and not at the bus stops.



Figure I.3. Pedestrian Facilities in Bekasi
Source: Transportation Agencies, 2013

The lack of pedestrian accessibility of public transport is also influenced by the lack of integration between land use and pedestrian facilities. Local government does not give special attention to pedestrian society in Bekasi. Therefore, the society is not interested in doing the walking activity. The picture below is showing the change of pavement function in Bekasi into parking area of “Ojek”. Ojek is a motorcycle that is used as kind of public transport illegally. However, this mode of transportation is popular among the people of Indonesia, and especially in Bekasi City.



Figure I.4. The Changing of Pavement in Bekasi
Source: Transportation Agencies, 2013

Recently, the local government tries to change the image of Bekasi as a sustainable city. One of the efforts of local government is improving walkability. Local government believes that the pollution and congestion can be decreased by improving the non-motorized transport such as walking and cycling. Local government emphasizes more on walking than cycling, because the government has learned from the failures of bicycle lane in other cities in Indonesia. For example, Bandung, one of the large cities in Indonesia, has failed in implementing bicycle lane. Moreover, the bicycle lane in Bandung is used by motorcycle and the other vehicles (b2wchapterbandung, 2011). The picture below illustrates the ineffectiveness of bicycle lane in Bandung.



Figure I.5. The Bicycle Lane in Bandung

Source: b2wchapterbandung, 2011

Hence, Local Government of Bekasi emphasizes more on walking, and tries to improve walkability. It is because the big problem of public transportation in Bekasi comes from the lack of accessibility especially in the lack of pedestrian access for people to go to public transport services. Consequently, this research is focusing on how to improve walkability of people in Bekasi, especially to reach the public transport services.

Bekasi city consists of several sub districts, as shown in the map below:

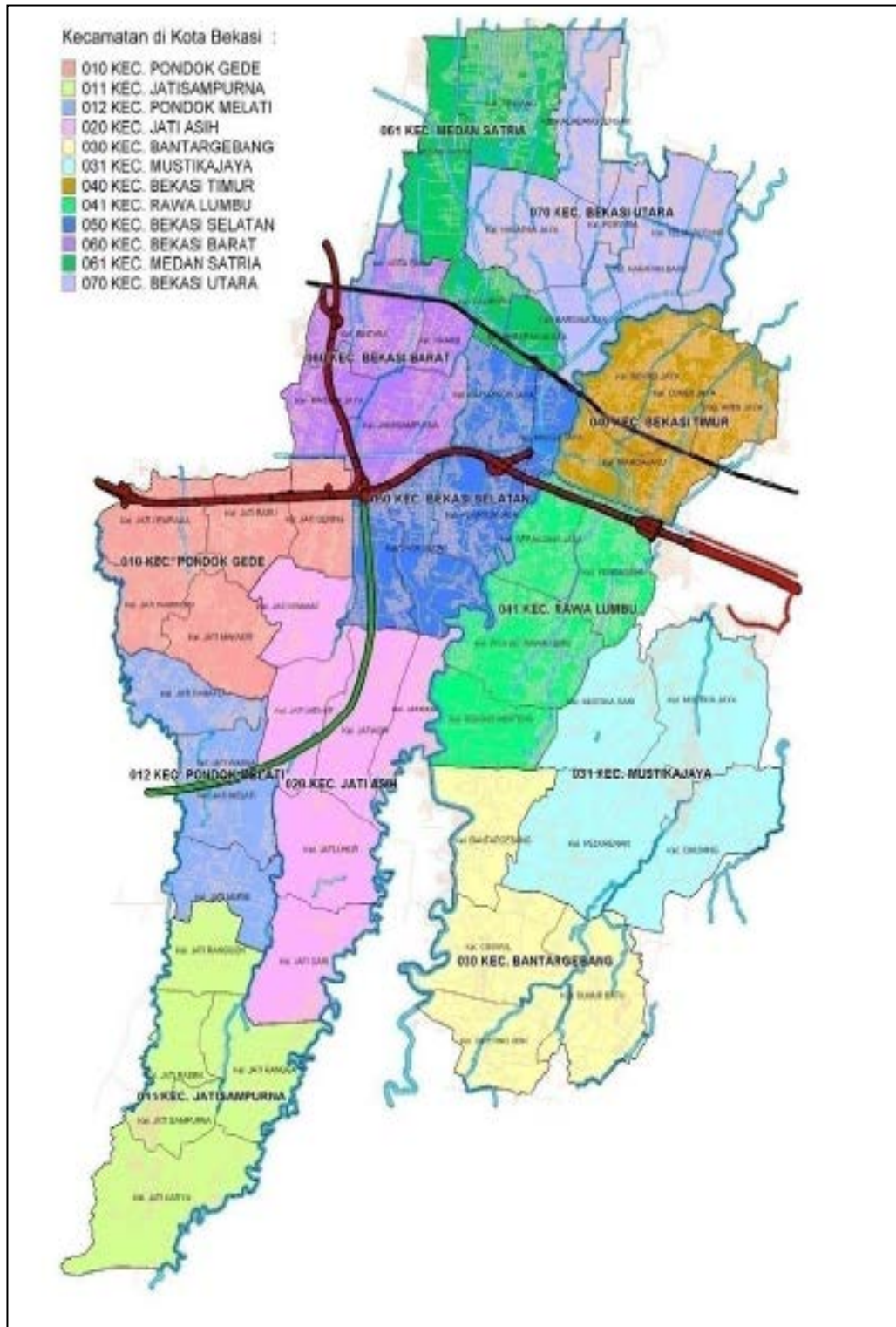


Figure I.6. Map of Bekasi Municipality

Source: Bekasi Dalam Angka, 2011

I.3. Research Objectives

The main objective of this research is to identify the possible approaches to improve the pedestrian accessibility of public transport in Bekasi City, in the context of sustainable accessibility improvement. The specific objectives are described as follows:

1. To explore the definition of walkability.
2. To gain a new insight on improving walkability from the successful implementation in London City.
3. To describe the current condition of pedestrian accessibility of public transport in Bekasi.
4. To provide recommendation and solutions to Bekasi.

I.4. Research Questions

To fulfill the research objectives, this research will explore questions as follows:

1. What is the definition of walkability and accessibility for pedestrians?
2. How to stimulate walkability by land use planning?
3. What lessons could be learned from the experience of London in improving walkability?
4. How is the current condition of pedestrian accessibility of public transport in Bekasi City?
5. What is a possible and adaptable approach to improve pedestrian accessibility of public transport in Bekasi?

I.5. Theoretical Framework and Research Design

The theoretical framework aims to give a notion about how to improve walkability to get to the public transportation facilities in Bekasi city. This framework is developed by doing a theoretical review on improving walkability. A framework of theories is becoming important, since it is the base for creating the key factors related to improving walkability. Furthermore, there are two categories of factors employed in this research. The first factor is physical factors, which are influenced by three theories: Pedestrian Oriented Development, New Urbanism, and Compact City

Theories. And the second factor is an institutional factor, which relates to policy and decision makers. Furthermore, those two factors are used to analyze empirically the case studies of improving walkability in London to get lessons learned as key points that then will be adopted to Bekasi case. The framework of research design can be seen below:

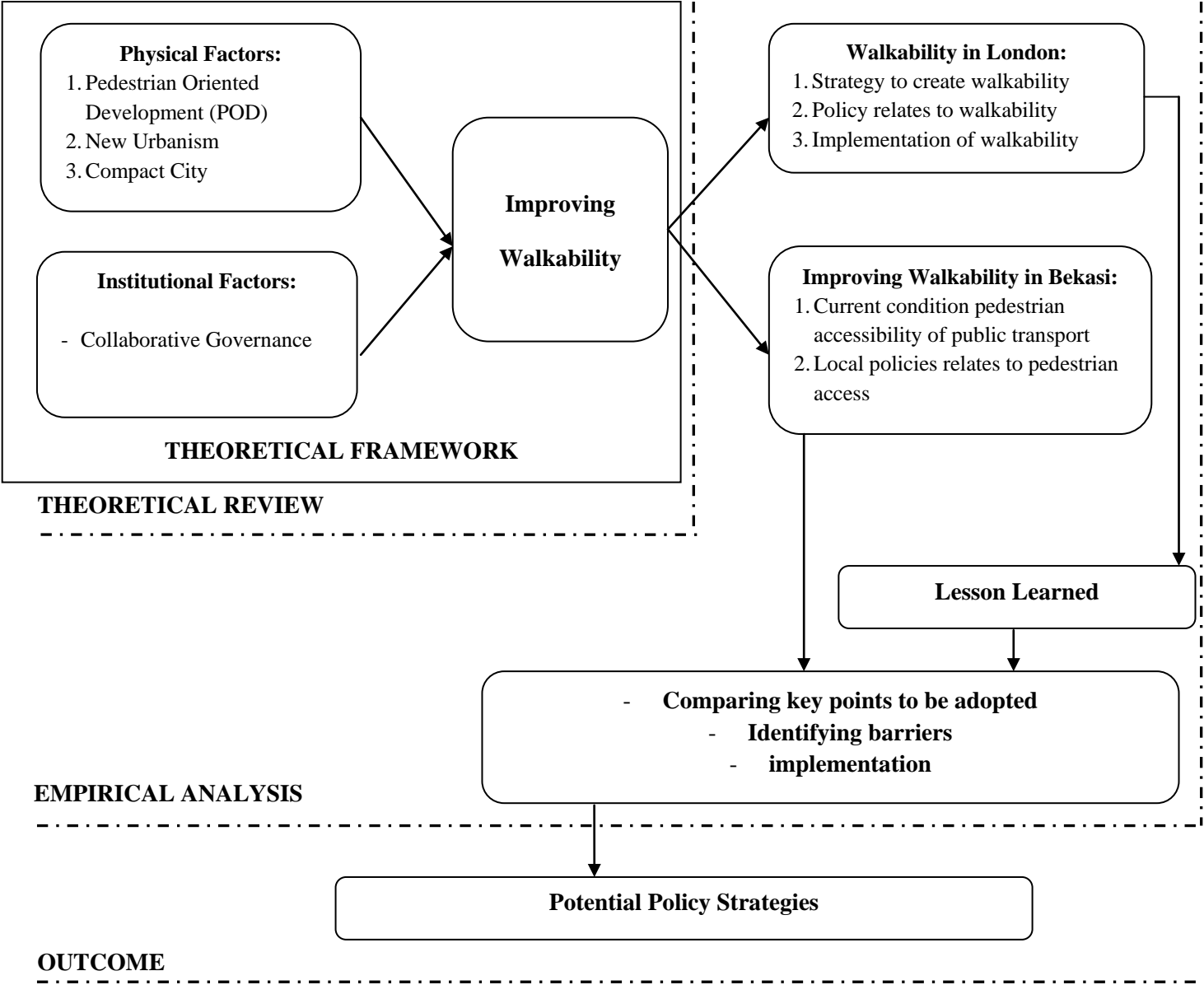


Figure I.7. Research Design

I.6. Research Structure

This research consists of seven chapters. The content of this research can be described as follows:

Chapter I : Introduction

This chapter consists of introduction, background, research objectives, research questions, research structure and research framework

Chapter II : Theoretical Review

This chapter defines briefly about theoretical framework that covers the definition of walkability, definition of accessibility for pedestrians, the integration between land use and walkability. This chapter also explores both factors which are physical factor and institutional factor and some relevant theories that influence them. This chapter provides a conceptual framework as analysis guidance of the research

Chapter III : Research Methodology

This chapter will be used to answer the key research questions and build data requirement. This chapter consists of the methodology of research, and data collection.

Chapter IV : Policies Strategies for Improving Walkability

This chapter contains the lesson learned of policy strategies in London related to its strategy, its policy, and the successful implementation of pedestrian accessibility of public transport in London.

Chapter V : Pedestrian Accessibilities of Public Transport in Bekasi

This chapter explains the current condition in Bekasi related to pedestrian accessibility of public transport, the regulation, and type of governance.

Chapter VI : Analysis of Potential Policy Strategies

This chapter contains the analysis of potential policy strategies on pedestrian accessibility of public transport, which is possible to be transferred and adapted from London context to Bekasi, and also identifying the barriers.

Chapter VII : Conclusion and Recommendation

This chapter proposes some research findings or conclusions and recommendations and also the reflection of this thesis.

CHAPTER II

THEORETICAL REVIEW

II.1.Introduction

This chapter aims to provide a critical review of theoretical background relevant to the research. This research is developed with main categories of influencing factors: physical factors and institutional factors. Furthermore, the chapter provides some theories that are relevant for the research. In physical factors, three theories are used: Pedestrian Oriented Development (POD), New Urbanism, and Compact City. While, the collaborative approach (institutional factor) is used to understand the collaboration among all stakeholders in decision making. Furthermore, this chapter provides overview of all theories related to the effort of improving walkability. Finally, this chapter provides the key aspects presented in the conceptual framework as the criteria base to analyze the case studies.

II.2.The Concept of Walkability

Walking is the most basic form of transportation. Everyone always use it as some part of every trip. Everyone uses a pedestrian network to go to their destinations. Everyone walks or uses a pedestrian network to go to work, to shop, to get to school, or to reach the bus stop. Hence, understanding the meaning of walkability and the desire of pedestrians are key to know the right approach that encourage walking. The term “walkability” is growing in popularity, but there is still a great deal of confusion in defining it (Southworth, 2005).

According to the Oxford Advanced Learner’s Dictionary (2000) walkability is “to move or go somewhere by putting one foot in front of the other on the ground, but without running”, Walkability reflects overall walking conditions in an area; walkability takes into account the quality of pedestrian facilities, roadway conditions, land use pattern, community support, security

and comfort for walking (VTPI, 2012). Walkability can be evaluated at various levels, such as in community level, environment level, technical and etc. For instance, walkability in community level is affected by land use accessibility such as the relative location of common destinations and the quality of connections between them (VTPI, 2012).

From the other reference, the Department of Environment Transport and the Regions (2000) defines walkability is a “measure of the urban form and the quality and availability of pedestrian infrastructure contained within a defined area”.

From all of the definitions above can be summarized that walkability is the ability and willingness of people to move or to go to somewhere by foot, the ability and the willingness of people are influenced by the quality of connections between one place to other places.

There are many specific ways to improve walkability. According to ITE, (2010) and UTTIPEC (2009), the major categories of those include:

1. Improve quantity, quality, and connectivity of sidewalks, crosswalks and paths.
2. Improve Non-Motorized facility management and maintenance, including reducing conflicts between users and maintaining cleanliness.
3. Universal design (transportation systems that accommodate special needs, including people using wheelchairs, walkers, strollers and hand carts).
4. Provide pedestrian countdown signals, which indicate how many seconds are left in the walk phase (Markowitz et al, 2006).
5. Create pathways which are enclosed urban walk away networks that connect buildings and transportation terminals, provide covered walkways, loading and waiting areas, with shade from hot sun and protect from rain.

6. Develop transportation access guides, which provide concise information for accessing a destination by walking, cycling and public transit, and facilities and services for people with special mobility needs.
7. Concentrate more activities into walkable commercial centers.
8. Street furniture and pedestrian facilities (example: benches, pedestrian-oriented street lights, public washrooms, etc.).
9. Design on a pedestrian scale, with shorter blocks, narrower streets, pedestrian-oriented buildings and street furniture.
10. Create more livable communities and more pedestrian-oriented streetscapes.
11. Traffic calming, speed reductions, streetscape improvements and vehicle restrictions.
12. Road space reallocation to increase the portion of public rights of way devoted to sidewalks.
13. Active transportation encouragement programs.
14. Address pedestrian security concern.
15. Use multimodal level of service indicators as instrument to evaluate walkability problems and negative impacts on pedestrian travel can result from wider roads and increased motor vehicle traffic volumes and speeds.

After describing the major specific ways of improving walkability from experts, TFL (Transport for London, 2005) also proposed the condition to improve walkability. The principles to improve walkability are well known as “5Cs” and the items that must be prepared to improve walkability are (Transport for London, 2005):

1. Connected

Walking routes should connect each area with other areas and with key “attractors”, such as public transport stops. Routes should connect at the local and district level, forming a comprehensive networks.

2. Convivial

Walking routes and public spaces should be pleasant to use, allowing social interaction between people, including other road users. They should be safe and inviting with diversity of activity and continuous interest at ground floor level.

3. Conspicuous

Routes should be clear and legible, if necessary with the help of signposting and way marking. Street names and property numbers should be comprehensively provided.

4. Comfortable

Walking should be enjoyed through high quality pavement surfaces, attractive landscape design and architecture, and as much freedom as possible from the noise and fumes and harassment arising from proximity to motor traffic. Opportunities for rest and shelter should be provided.

5. Convenient

Routes should be directed, and designed for the convenience of those on foot, not those in vehicles. This should apply to all users, including those whose mobility is impaired. Road crossing opportunities should be provided as of right. Locations have to be in relation to desire lines.

Walking is giving many benefits for people. Not only for the health of people itself, but for increasing the social capital which is the connection between and within social networks and also for many other economic benefits (VTPI, 2012). However, improving walkability which relates to the topic of this research is expected to increase pedestrian accessibility of public transport, thus can overcome transportation problem such as congestion. High congestion can happen because of the high number of private cars on the road and low awareness of people to use the public

transport. The low of people's awareness to use public transport is caused by the lack of accessibility to reach the bus stops. Hence, many people are more interested in using private transportation than public transportation, thus it increases the level of congestion.

The importance of walking has become a more acceptable way of transport. Planners and designers are now looking new ways to incorporate proper walkways to encourage walking (VTPI, 2012). Consequently, the concept of walkability is one of the concerns to be developed by developing countries. The example of developing countries which is giving more attention to walkability is Indonesia. Hence, Bekasi as city in Indonesia tries to improve the lack of pedestrian accessibility of public transport which in the end is aiming toward encouraging the walkability of people.

Walkability improvements can directly substitute automobile trips, because walking improvements support public transit and ridesharing (VTPI, 2012). Furthermore, according to VTPI (2012), walkability improvements are critical to New Urbanism and Pedestrian Oriented Development which can result in significant reductions in per capita motor vehicle trips. Therefore, physical factor that is related to this research will be developed by using three theories which are New Urbanism, Compact City and Pedestrian Oriented Development. The detail explanation on that is elaborated in the next section.

II. 3.The Concept of Accessibility for Pedestrian

II.3.1. Definitions of Accessibility

According to Geurs and Van Wee (2004), Accessibility is a concept that is used in many scientific fields such as urban planning, transport planning, and others. It also plays an important role in policy making. However, accessibility is often misunderstood, and poorly defined (Geurs and Van Wee, 2004). Moreover, they argue accessibility is quite difficult and complex concept. Nevertheless, many experts and other resources have tried to give an interpretation about accessibility.

The Cambridge Advanced Learner's Dictionary (2003) defines 'accessible' as "able to be reached or easily obtained". In a similar meaning, The Oxford Advanced Learner's Dictionary (2000) defines 'accessible' as "that can be reached, entered, used, seen, etc." Thus, accessibility means it is useful for current generations, but sustainability requires that it do so without destroying the possibilities for future generations or not ignoring the demand or needs of future generations (Litman, 2012).

According to Daly's (2002), sustainable development "might more fruitfully be defined as more utility per unit of throughput". Hence, he argues that we can think about sustainable transportation in exactly the same way: providing more utility, as measured by accessibility, per unit of throughput, as measured by mobility. Adding to that Sen's (2002) suggests that sustainable development as "enhancing human freedoms of sustainable basis, transportation and have the combination between other factors, enables accessibility".

The accessibility is much related to travel distance because the distance between one to another place influences the accessibility. Hence, a good accessibility is "the shortest" distance between one places to the other. On the contrary, if both of the places are far, then the accessibility between both of places are low.

This is in line with the definition from Akbar (2001) that expresses accessibility as a concept closest a plot of land to a major road in that district. Litman (2012) mentions:

.... Access is the goal of most transport activity, except the small portion of travel for which mobility is end in itself...

Similarly, Hansen (1959) and Ecotec (1993) argue, "accessibility refers to the ease of reaching goods, services, activities and

destinations”. According to them, accessibility can be defined in terms of potential “(opportunities that could be reached)” or in terms of activity “(opportunities that are reached)”. In line with that, Breheny (1974) argues accessibility as ‘spatial opportunity’.

The other definition relates to accessibility also given from IHT (1997). IHT (1997) argues accessibility is the ease of reaching services. IHT (1997) emphasizes that accessibility is “what movement has actually achieved”. Similarly, May (2001) suggests that accessibility is the “ease of reaching” and continues that it is different types of facilities that are understood to be reached, not places in general.

Slightly different from IHT (1997) and May (2001), SEU (2003) argues that accessibility is defined as “people’s ability to get to key services at reasonable cost, in reasonable time and with reasonable ease”. Hence, to summarize, the key difference of accessibility in transport planning such as those presented by IHT (1997), May (2001) and SEU (2003) are accessibility as an attribute of people and of places (accessibility to and accessibility from) (Envall, 2007).

From all of the definitions above it can be summarized that accessibility is generally used to refer to the effort, means, connections, or modes with which a destination can be reached. Accessibility not only relates to travel time, but also can relate to the distance (Cervero, 1996). Hence, understanding accessibility for pedestrian is important to know the accessibility as a planning concept. In transportation planning, measuring accessibility aims to evaluate both of land use and transport changes.

Planning methodologies use accessibility indicators to investigate the integration performance of land use and transport networks (Wytconsult, 1977a). Hence, Cervero (1996) expanded the definition

of “accessibility planning” as an approach that competed with the complemented the traditional focus on transportation planning. In another paper, Cervero (2001) also argues that the key rationale for ‘accessibility planning’ is “not only in negative environmental impacts of too much traffic, but also that people would like to spend more time at their destinations and shorter time moving around”.

Supporting the opinion from experts explained before, Burns (1975) argues, accessibility measures reflect the level of service provided by transportation systems to various locations. It is because accessibility is the ease of land use activity to be reached from a location by using a particular transportation system. Meanwhile, according to Geurs and Van Wee (2004) accessibility measures are seen as indicators of the impact of land use and transport developments and policy plans on the functioning of the society in general. It means that accessibility should relate to the role of the land use and transport systems in society. Hence, related to this research, the aim to improve the pedestrian accessibility of public transport becomes important in understanding the integration between land use and walkability.

II.3.2. The Concept of Integration Land use and Walkability

Handy (2002) argues that policies to improve mobility, the ability to move in general increase or improve accessibility by creating ease to reach destination. She also argues that to make one place easier to reach, there is a need to integrate the transport networks and land use development. Hence, to make walking as part of mode transportation, then surely there has to be integration between land use and walkability.

Planning for non-motorized transportation has been increasing over the past several years. Planners and engineers have been looking ways to develop walkways for society (Neuman, 2005). Recently, walking is viewed as legitimate modes of transportation. Thus, state and local

government agencies always regard the needs of pedestrians when providing proper accommodations to support walking. Hence, Shay et al (2003) argues “the increasing walkability is promoted as the key element that reclaims impersonal modern urban environments for residents and visitors”.

There are many studies and literature that discuss about integration between land use and walkability. Such as the studies from Cervero & Duncan (2003) which used data from the San Francisco Bay Area to consider factors such as density, block size, and other design characteristics. The study supports earlier work about the employment density and diversity of land, and finds a greater effect on the walk mode than urban form measures (Hill, 2007).

The other study from Frank et al (2005) that analyzed data from the metropolitan Atlanta region, founds the significant correlation between the numbers of minutes of daily moderate physical activity with land use mix (Hill, 2007). While Frank and Pipo (1994) found that walking trips to work significantly correlated with employment density, population density and land use mix (Hill, 2007).

Furthermore, according to analysis from Cervero & Gorham (1995), pedestrian modal shares were higher in all seven transit neighborhoods, which in their studies try to compare transit neighborhoods (grid pattern, higher density, and mixed uses) to match automobile oriented neighborhoods (low density, many cul-de-sacs) for generation of walking trips to work.

Cervero (1996) examined mixed land use, housing type, and residential density for effects on walking to work by using data from the 1985 American Housing Survey. Variables found to be more correlated with such walking were density, nearby commercial, and

other non-residential land uses, and jobs within ¼ mile of residences (Hill, 2007).

From the review of all studies explained above, it can be inferred that integration between land use and walkability is very important. This integration will decrease the number of vehicle uses. As an impact there will be a change in performance of transportation such as no more congestion and the increase of non-motorized transport such as walking and cycling. Hence, the concept of integration of land use and walkability will encourage the people in urban area to use more non-motorized transportation such as walking.

II.4. Identification Policy Strategies

To improve pedestrian accessibility of public transport in case study research, two factors will be considered, those are physical factors and institutional factor. The explanation about theories that are used as basic ideas in understanding both factors will be explained as follows:

II.4.1. Physical Factors

To understand the problem in case study research especially in physical factors this part explains about three theories: Pedestrian Oriented Development, New Urbanism, and Compact City.

a. Pedestrian Oriented Development (POD) Concept

The handbook for sustainable development explains pedestrian oriented development (POD) concept as “a pedestrian friendly policy providing clear, comfortable pedestrian access to commercial and residential areas and transit stops” (p. 321).

POD is a combination of land design practices including compact development, mixed use, traffic calming, pedestrian and public transit orientation and a mix of housing types (p. 321). Consistent with the aim of this research, this concept provides insight related to implementation of combination between pedestrian accessibility

and public transport facilities. Hence, this concept becomes a basic idea to analyze how to improve the pedestrian accessibility of public transport with the aim to encourage walkability of people.

The potential benefits of POD design at the community scale include the following (p. 322):

1. Environmental health

The increase in auto-dependency has created adverse environmental impacts such as air and water pollution, which in turn affect the environment and human health. Land use practices that increase opportunities for pedestrian and transit oriented transportation will help to reduce these adverse effects.

2. Economic health

Communities who implement POD practices that result in less traffic noise, traffic speeds and vehicle generated air pollution, are likely to generate higher property values.

3. Human Health

Human scale pedestrian oriented development provides safe, accessible opportunities for integrating physical activity into our daily routines. For example, sidewalks can create safe environments for children to walk to school while bike lanes may encourage more people to bike to work.

4. Social health

Alternative modes of transportation such as walking and public transit provide opportunities for social interaction that are less prevalent when traveling in a personal automobile.

In order to improve walkability, POD design comprises the following components (p. 323):

1. Mixed-Use Development

Mixed-Use development combines housing, commercial, retail, civic and office uses placing these key community and destinations within close proximity to one another, example transit stop. Benefits of mixed-use developments include increased pedestrian activity and social interaction by bringing key destinations close together.

2. Compact development

Compact development supports efficient use of land use and reduces loss of open space by allowing for increased density in areas of existing developments such as town centers and downtowns.

3. Interconnected

Safe, efficient pedestrian, and vehicle circulation are provided through block form or pattern streets that have frequent linkages to destination and neighborhoods. Design should ensure that opportunities for accessing destinations are provided for people of all ages and abilities.

4. Public spaces pedestrian scale design

Pedestrian scale design is developed that balances pedestrian and auto transit needs while providing comfortable environments and places for people to assemble, plan and associate with others.

5. Pedestrian orientation

Encouraging people to walk, rather than drive to local destinations requires the integration of safe, human scale pedestrian access throughout the sites. In subdivisions, pedestrian opportunities may be provided in the form of

sidewalks throughout a development or walkways linking the new development with increasing destinations.

From all explanation related to POD theories, it can be summarized that the principle of Pedestrian Oriented Development (POD) is related to density, diversity, design, and distance, which represent the POD components such as mixed use development, compact development, interconnected, public space pedestrian scale design, and pedestrian orientation.

b. New Urbanism Concept

The New Urbanism concept has a similar meaning with Smart Growth, but there are significant differences. Knaap and Talen (2005) argue that Smart Growth was launched by a community of environmentalism and policy planners, while New Urbanism is more influenced by architects and physical planners and also focus on physical form. Hence, related to physical factors to identification of policy strategies in order to improve pedestrian accessibility of public transport, New Urbanism concept becomes more important.

According to Bohl (2000), New Urbanism is an umbrella term, where the principle of New Urbanism is used to organize the development such in cities, towns, or villages are compact, walkable, mixed use, transit friendly and also contains a diverse range of housing.

According to Handy (2005), the New Urbanism have an aim to achieve the reduced automobile use by putting the activities of daily living within walking distance and providing an interconnected network of street, sidewalks, and also paths, further, as an impact walking will increase and driving will decrease. Hence, in this concept, there is idea to integrate transportation and

land use in order to increase walkability. The basic links between transportation and land use will be described below:

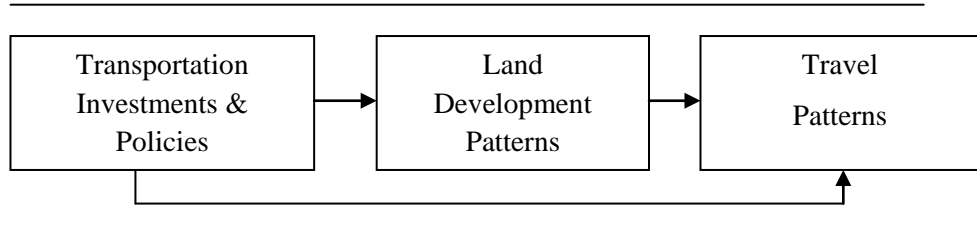


Figure II.1. Basic Links between Transportation and Land Use

Source: Handy, 2005

Furthermore, according to the American Planning Association (2002), the application of the principles of New Urbanism concepts is epitomized by compact, transit accessible, pedestrian oriented, mixed use developments patterns and land use. Hence, after reviewing the literature related to the New Urbanism concept, it can be concluded that the principles of this concept consist of density-transit use, diversity, regional accessibility, and also distance. This concept becomes important to this research for understanding problem in improving pedestrian accessibility of public transport especially in relation to physical factors.

The similarities of New Urbanism and Pedestrian Oriented Development related to this research are the emphasize on density, diversity, and distance. The combination of both theories will be used to analyze on how to build the conceptual framework on improving pedestrian accessibility of public transport.

c. Compact City Concept

When most people try to define Compact City Theories, the first characteristics that come to mind is population density. Others include mixed land use and public transportation to that. Despite the

extensive literature on compact cities, surprisingly, a definition of the concept does not exist. Researches tend to use density alone as independent variable (Burton 2000, Hall 2001). “Planners and designers tend to use physical characteristics such as density, street widths, setbacks, lot size, sidewalks, and porches and so on” (Duany et al, 2001). Researchers and practitioners have only recently begun to rigorously define the Compact City apart from density (Galster et al 2001, Song and Knaap 2004, Neuman, 2005).

The term Compact City conveys the opposite of urban sprawl. The compact city is “more energy efficient and less polluting because compact city dwellers can live closer to shops and work and can walk or take transit” (Neuman, 2005). Song and Knaap (2004), in an expert analysis propose a sophisticated method to measure urban form. Their case study of Portland, Oregon, revealed mixed result: “compact form within a context of metropolitan growth management improved some measures of livability, while other measures such as external transportation connectivity, declined, and still others experienced marginal or limited improvements, such as mixing land use” (Neuman, 2005). Their hypothesis is that compact form and mixed uses enable people to walk more.

Furthermore, Neuman (2005) provides the compact city characteristics to understand more about the Compact City concepts:

1. High residential and employment densities
2. Mixture of land uses
3. Fine grain of land uses (proximity of varied uses and small relative size of land parcels)
4. Increased social and economic interactions
5. Contiguous development (some parcels or structures may be vacant or abandoned or surface parking)
6. Contained urban development, demarcated by legible limits

7. Urban infrastructure, especially sewerage and water mains
8. Multimodal transportation
9. High degrees of accessibility/local or regional
10. High degrees of street connectivity (internal/external) including sidewalks and bicycle lanes
11. High degree of impervious surface coverage
12. Low open space ratio
13. Unitary control of planning of land development or closely coordinated control
14. Sufficient government fiscal capacity to finance urban facilities and infrastructure

In the United States (US), compact cities are also called transit oriented development (TOD) and neo traditional towns and are promoted through the smart growth movement (Neuman, 2005). Hence, the principles of TOD are suitable with this research which is related to improving pedestrian accessibility of public transport.

Based on characteristics of compact city (Neuman, 2005), it can be simplified in term of principles of TOD. Where is in the US, the compact city is also called as TOD (Neuman, 2005). The principles of TOD are identified and formulated by the American Planning communities. The principles of TOD which are suitable with the characteristics of compact city are density, distance, diversity, and design and destination accessibility. Hence, the similarities between this concept with POD and new urbanism are emphasized on density, diversity, distance, and also design.

Remark

For the physical factor, this research uses three theories which are Pedestrian Oriented Development (POD), New Urbanism, and Compact City. Each of these theories has been explained earlier, and they have

similarities to one another. POD, New Urbanism and Compact City are specifically defined as theories which consist of high density, mixed used development which aims to improve accessibility by promoting the pedestrian and public transit orientation. They have specific principles related to effort on how to improve pedestrian accessibility of public transport facilities as explained above. To summarize, the similarities of those three theories are the emphasize on the principles of density, diversity, distance, and also design. All of principles from three theories (density, diversity, distance and design) are important to deal with the principles of improving walkability (connected, convivial, conspicuous, comfortable, and convenient).

II.4.2. Institutional Factors

Improving pedestrian accessibility of public transport is not only related to the physical factor, but it is also important to give attention on institutional factors. For supporting the policy relates to improvement on pedestrian accessibility of public transport, it is important to understand the best approach to support it. In this research, using Collaborative Governance approach to describe the institutional condition is in line with the case study research.

Collaborative outcomes can pose a threat to traditional agencies and institutions by legitimating new, radical ideas outside the cognitive boundaries of the existing policy sphere (Sranko, 2011). In his paper, Sranko (2011) argues that “successful agents of change can leverage their impact by understanding how change is institutionalized and by designing policy solutions in collaboration with one-time adversaries”. There is relation between policy change and collaborative governance in the context of seemingly intractable conflicts and successfully renegotiated resource regimes.

Sranko (2011) argues, based on theories from Culpepper (2002), “collaborative governance is the availability of institutions that promote

interaction among governmental and non-governmental actors, without state actors monopolizing problem definition, goal setting or methods of implementation”. While, Sranko (2011) argues based on statement from Daniels and Walker (2001), “collaboration is fundamentally about two or more parties working together to affect the future of an issue of shared interest, the distinctions between “self-interest” and “mutual/shared interest” and the notion of a “mutually beneficial outcome” provide keys to understand the motivations of competitive actors in a conflict situation”.

Booher and Innes (2001) argue collaborative approaches in policy domains are not driven by altruistic tendencies or simple “good will” but by people’s awareness that their interests are interdependent (Sranko, 2011). Otherwise, they would pursue their interests outside the collaborative process, they hope to achieve something together that they cannot achieve alone (Booher and Innes, 2001). It is really appropriate with case study research, where in the case study of Bekasi the failure of policy implementation is caused by the unavailability of approach that covers all of interests from actors or stakeholders.

In a collaborative style of governance, negotiation based on mutual interest complements and potentially supersedes competitive decision making based on self interest alone (Sranko, 2011). The picture below illustrates four contrasting patterns of policy change depicted in the context of collaborative governance.

The framework diagram shows the understanding related to collaborative governance approach, and develops the main idea relates to this research:

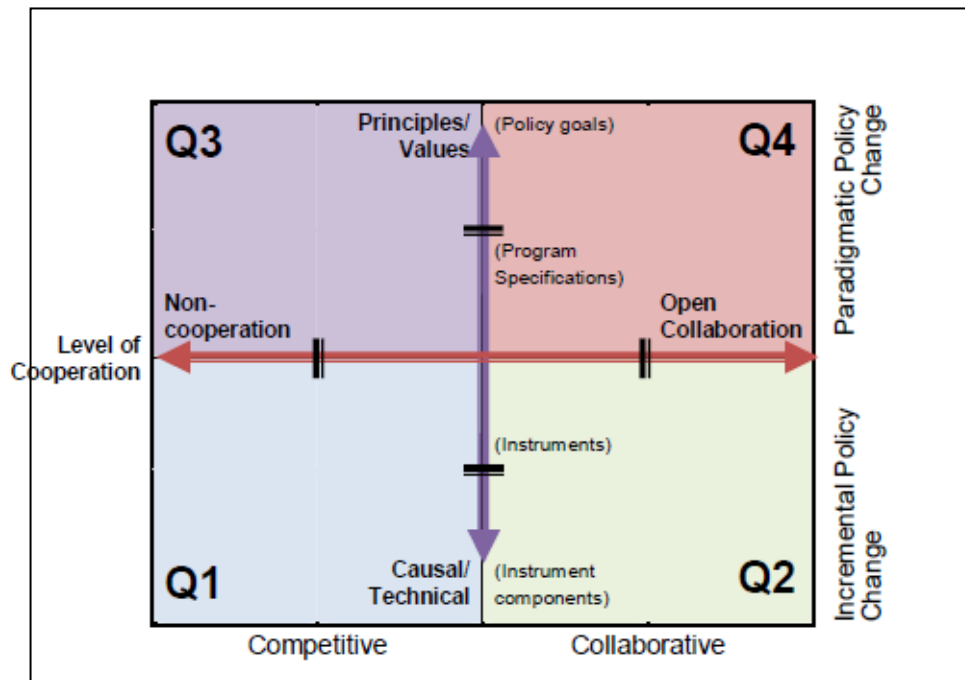


Figure II.2. Typology of policy change by levels of cooperation and Discourse

Source: Sranko, 2011

From picture above a brief explanation can be taken especially related to collaborative approach in Q2 and Q4. In Q2, the collaborative incremental could be characterized as the ‘multi-stakeholder’ emergent shared agreement approach (Sranko, 2011). “Process in this quadrant are suitable for resolving complex conflicts in contested policy situations within established institutional frameworks by facilitating negotiated settlements at the level of technical discourse over policy instruments. Often involves multi stakeholder negotiation and decision making characterized as consensus seeking (Sranko, 2011)”. Collaborative institutional arrangements (Q2 and Q4) can shift a degree of responsibility from government to multiple stakeholders (Sranko, 2011).

According to Howlett (2001), in Q4, the collaborative paradigmatic involves collaborative approaches in pursuit of mutual interest; community based management, multi-stakeholder processes involving consensus principles; and policy discourse at the level of values/principles/goals. “In Q4 legitimacy shifts to become more citizen

centered, power sharing becomes the norm, and the government recognizes the need to adopt a facilitative network management role (Sranko, 2011)”. Webler (1995) argues the principle role for government is network management, encouraging a shared belief system about cooperation (intersubjective knowledge), facilitating collaboration and helping to establish a means to reach discourse closure (Sranko, 2011).

Hence, based on the diagram, this thesis only emphasizes on a collaborative approach as basic theory to analyze the institutional factors, and only using stakeholder involvement and regulation criteria to assess the institutional factors of each case study. It is appropriate to the argument by Sranko (2011), the collaborative could be characterized as the “multi stakeholder”. Meanwhile, the multi stakeholder relates to stakeholder involvement. A regulation criterion is needed to describe the policy of pedestrian in each case study and relates to the power of policy which proposes by Sranko (2011). Another reason why only proposes stakeholder involvement and regulation to assess the institutional factor because in adapted with the availability of data in each study case.

Remark

Collaborative governance becomes important to the analysis in this research, since with this approach we will know the actors who will be involved in improving pedestrian accessibility of public transport and can increase walkability of people in case study research. Furthermore, institutional factors will be combined with physical factor to analyze how to improve walkability with the aim of improving pedestrian accessibility of public transport. Institutional factor is a basic idea to understand the best way of supporting policies related to improving walkability.

II.5. Conceptual Framework

According to theoretical review, there are two factors which influence walkability. From the first factor namely a physical factor which provides three theories: Pedestrian Oriented Development, New Urbanism, and Compact City. The principles of three theories emphasize on density, diversity, distance, and also design are suitable to improve walkability with aims improving pedestrian accessibility of public transport.

These principles are expected to fulfill the requirement of walkability principle (connected, convivial, conspicuous, comfortable, and convenient) (TFL, 2005). On the other hand, the second factor namely an institutional factor provides collaborative governance approach to develop idea how to manage all actors involved in improving walkability.

The institutional factor is expected to support the implementation of policies of walkability. In creating the planning to improve pedestrian accessibility of public transport to encourage walkability both factors have to work together.

Hence, the combination between physical factor and institutional factor becomes important thing to develop a conceptual model in this research. Furthermore, the relation between two factors with the principles of walkability is explained in following table:

Table II.1. Definition of Both of Categories Principles in the Research

No	Categories	Principle	Definition
1	Physical Factors	1. Distance	This principle represents the ideal planning guidance of walking distance from residential areas to public transport services (Bus Stop)
		2. Density	This principle presented in dwelling units per acre, which indicates the high residential in which the residents occupy proximate areas of public transport services (Bus Stop)
		3. Diversity	This principle represents the mixed use development in surrounding public transport

			services (Bus Stop) such as residential, retailers, and etc.
		4. Design	This principle illustrates the development of pedestrian facilities to encourage more pedestrian activities and aims to make people feel comfortable, safe and convenient
2	Institutional Factors	1. Stakeholder involvement	This principle represents the actors that involve in the decision making process
		2. Regulations	This principle represents the regulations relates to the effort of improving walkability

The criteria of physical and institutional factor chosen based on the theory which was explained in the previous section. These criteria also chosen because in adapted with the availability of data's in each case study. Hence, the criteria of institutional factors only consist of stakeholder involvement and regulation criteria. As explained in the previous section, both of the criteria from institutional factor in line with theory from Sranko (2011).

Furthermore, related to this research, improving walking conditions in order to encourage walkability will be managed through principles from both of physical and institutional factors and these principles will be explained in the following sub-sections.

1. Proportion of travel made on foot

The proportion of travel made on foot is a fundamental factor that influencing the walking conditions in order to encourage the walkability in urban areas. In order to adjust this factor, the principles such as design, distance, density and regulations are suitable concepts, because these principles are needed to increase the proportion of travel made on foot. These principles are basically intended to increase the proportion of travel made on foot.

2. The use of public transport

The use of public transport is also a fundamental factor that influences the walking conditions in order to enhance the greater use of public transport, and decrease the dependency of private transportation. This factor can

influence the walking condition because integrates the public transport system with land development will encourage pedestrian activities. In order to adjust this factor, the principles such as density, diversity, distance, design, and policy from stakeholder involvement and regulation are becoming important. These principles are important to enable greater use of public transport, in order to improve walking condition which aimed at encouraging walkability.

3. Land and property values

Land and property values are important factor to influence the walking condition, in order to increase the walkability. This factor becomes important to improve walking conditions, because of the relationship between land use and walkability, as explained in the previous section. In order to adjust this factor, the principle such as diversity, stakeholder involvement and regulation are suitable to be conceptualized. Hence, these principles are important to increase the land and property values, in order to encourage walkability.

Although the explanation about improving walkability of this research by using principles from both of the categories has been provided above, to make it more clear the conceptual framework of this research will be illustrated in the following figure:

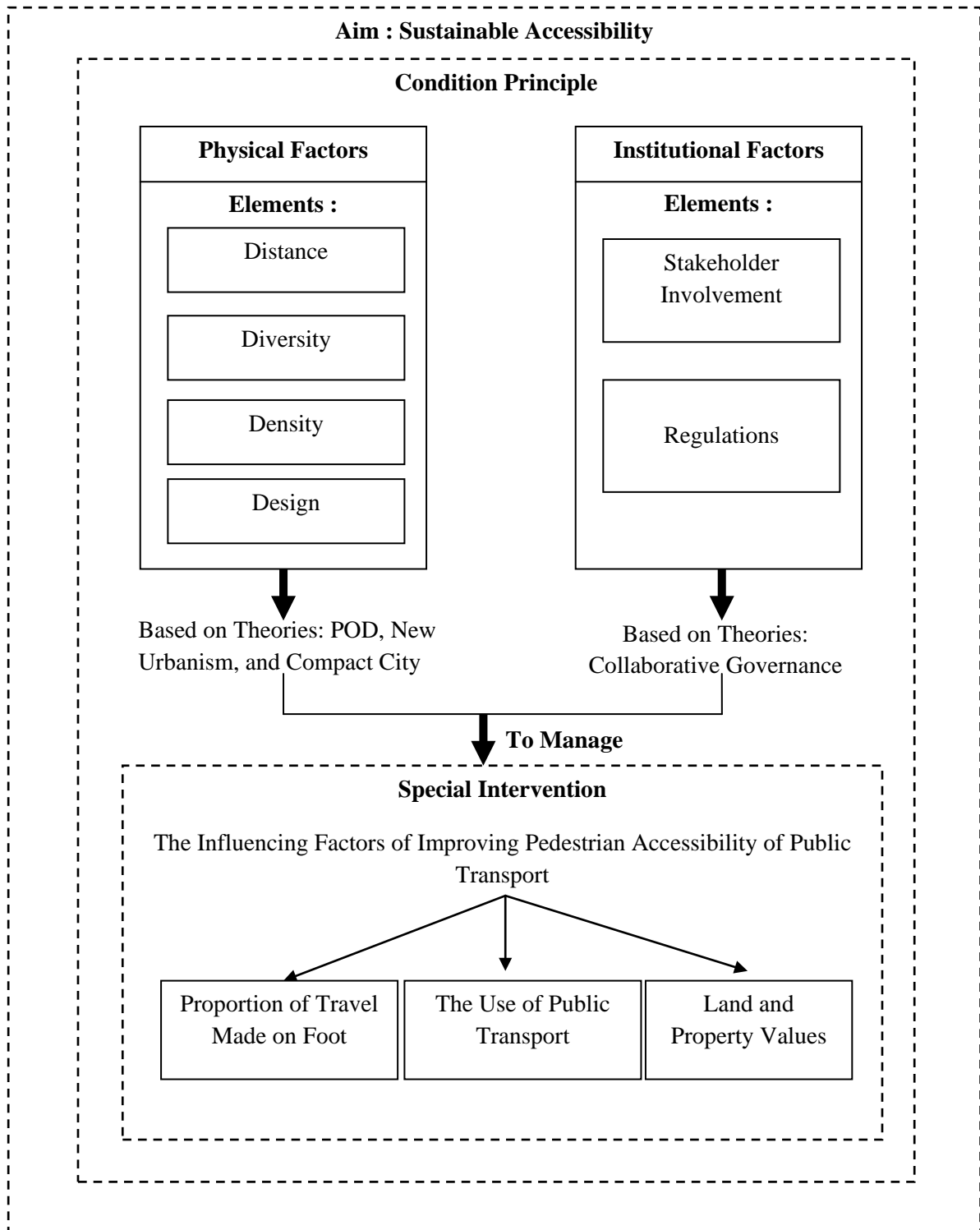


Figure II.3. Conceptual Framework of the Research

CHAPTER III

RESEARCH METHODOLOGY

III.1. Introduction

This chapter will present the research method and data collection methods that are used in this research thesis. The aim of this chapter is to present the way of how to answer the research question in chapter I, and how to conduct this research in order to answer the questions specifically. This research is aimed to explore how to improve pedestrian accessibility of public transport to encourage the walkability of people in urban areas.

III.2. Methodology of Research

The basic idea of this research is to seek lessons learned from another country to encourage the walkability in Bekasi. The focus of this research is to improve the pedestrian accessibility of public transport in Bekasi. Since the lack of pedestrian accessibility of public transport in Bekasi, people in Bekasi do not put so much interest to use the public transport. Subsequently, the research will be conducted by using these methods as follows:

a. Literature Review

The literature review is needed to develop theoretical framework about the concept of walkability, accessibility for pedestrian, identification policy strategies which consist of physical factor and institutional factor. It is conducted through collecting literatures from some sources such as journal, research reports, government reports, relevant publications and books. The literature review answers the sub questions no 1 (one) and 2 (two) in the research question as follow:

- ✓ What is the definition of walkability and accessibility for pedestrian?
- ✓ How to stimulate walkability by land use planning?

b. Learning from appropriate examples

According to Evan (2009), policy transfer is distinguished into five approaches. The first is “process-centered approach”. This approach is focused on the process of policy transfer in order to explain whether it is voluntary or coercive. The second approach is “practice-based approaches”. This second approach is much related to organizational learning: an evidence based policy making and comparative public policy.

The third is “ideational approaches” which emphasize on the social learning approach, the epistemic community approach and also to discursive approaches. The fourth is named as “comparative approaches”, which in this approach requires widely qualitative descriptions in explaining the factors enabling policy transfer occurs. The fifth is named as “multi-level approaches”. In this last approach, the outcomes of policy transfer through macro, meso, and micro levels are deliberately considered.

In this research, the mechanism of analysis of learning from the other country which is successful in improving the pedestrian access to transportation facilities is used. Certainly, this study is not directly implementing indicators of success from London to Bekasi. It is because according to Van Dijk (2006), we need to notice that there are four characteristics that make the policy transfer is failed to be well implemented.

The first failure relates to terminology that is misinterpreted viewed by different localities. The second characteristic of failed policy transfer is jumping directly to a conclusion, while the core problem and target instrument have not matched yet. The third relates to tailoring the procedure, where it must be concerned that an instrument is not one size fits all. The fourth as the last one is because the assumption that views something new means better than the old ones frequently leads to pitfall.

Based on the explanation from Van Dijk (2006), it can be summarized that learning from other country as a guideline, as this research does, does not mean that the success factors in London can be implemented directly in Bekasi. Hence, it needs more adjustment to implement the appropriate approach with study area such as adjusting the adopt policies with real condition in case study research. This step will explore the strategies, policies and also implementation of the pedestrian access to improve walkability in London. This step is needed for this research to answer the research question in no 3 (three) as follows:

- ✓ What lessons could be learned from the experience of London in improving walkability?

c. Explorative and Comparative Analysis

Comparative case study research can include both quantitative and qualitative comparison of social entities based on many lines of cross national and regional comparison (Mills et al, 2006). Comparative research helps to separate these universal and general patterns to be more specific in each context of case studies and reveal the unique aspects of particular entities. In this step, data and information about implementation of pedestrian accessibilities of public transport will be collected in those case studies in selected countries including physical factors (relates to density, diversity, distance and also design) and institutional factors (stakeholder involvement). Subsequently, this research will try to explore and compare the current implementation of pedestrian accessibility of public transport in the case in selected countries.

In analyzing the pedestrian accessibility of public transport, the strategies policies from London will be used as a guideline. After identifying strategies and policies from London, it will then be compared with the current conditions in Bekasi City. The strategies and policies that would be implemented are the one which is suitable to the conditions in Bekasi City. The comparative data and information is obtained from the availability of

secondary data and qualitative review. The expected final result is the list of recommendations of possible and adaptable policy transfer that could be suitable to the character and condition in Bekasi, thus the walkability of people in Bekasi can be encouraged. This step answers the sub question of research questions in number 4 (four) and 5 (five) as follows:

- ✓ How is the current condition of pedestrian accessibility of public transport in Bekasi city?
- ✓ What is a possible and adaptable approach to improve pedestrian accessibility of public transport in Bekasi?

III.3. Data Collection

III.3.1. Type of Data Required

This research collects data from secondary data sources. The data collection is used for gathering information for theoretical review and for the empirical case study. This section is becoming important to get a deep understanding about the definition, guideline and concept of pedestrian accessibility and walkability in urban areas. This section is important also to gather data about the current existing condition of pedestrian accessibility of public transport from a study case in London and Bekasi. The data will be collected by using significant sources such as books, journals, articles, related publications, other researches, internet sources, government official documents, government database, and also archives for developing theoretical reviews and case study. The data used in this research is related to physical factors such as data of density, diversity, distance and also the design of pedestrian accessibility of public transport and also institutional factor such as data of the stakeholder involvement, policies and regulations.

III.3.2. Operationalization of Data Collection Methods

This section explains how to operate the methods used in this research to collect the data required. The operationalization of data collection methods is depending on the context of the case, which means depending on London

case and Bekasi case. To be more clear, the detail about the explanation of the operationalization of the methods is described in the following table:

Table III.1. Data Required and Operationalization of Data Collection Methods

Research Objectives	Case Studies	Method for Collecting Data	Source of Data	Operationalization	
Identifying the accessibility improvement of public transport refers to the physical factors and institutional factors	London, UK	Literature Review	1. International journal articles	The source of data is reviewed to collect information according to the conceptual framework of the research as follows: 1. To what extent of strategy of improving walkability in London relates to principles of Physical factor and Institutional factor 2. How the principles from both of category are used to manage walkability in London	
			2. Documents and reports		
			3. Publications in internet		
	Bekasi, Indonesia	Literature Review	1. Governmental documents and reports of Bekasi Government relates to pedestrian accessibility of public transport		The source of data is reviewed to gain information relate conceptual framework of the research as follows: 1. Consideration in walking plan of Bekasi city whether it is integrated with the policy or not 2. How the current conditions of pedestrian accessibility of public transport related to principles from both categories
			2. Publications on Internet		
			3. Statistic data		
Developing a guideline for improving pedestrian accessibility of public transport in order to encourage walkability	London, UK	Literature Review	1. International journal articles	The source of data is reviewed to collect information as follows: 1. How the policy and improving walkability are integrated from the perspective of both categories	
			2. Documents and reports		
			3. Publications in internet		
	Bekasi, Indonesia	Literature Review	1. Government's documents and reports of Bekasi related to pedestrian accessibility of public transport		The source of data is reviewed to gain information as follows: 1. How to plan making process of walkability is currently conducted in Bekasi 2. Whether Walkability planning in Bekasi is integrated to policy in the perspective of both categories
			2. Publications on Internet		

III.4. Steps of Research

This section describes the step of this research. These steps are conducted to obtain the objectives of the research. The steps of this research are explained below:

1. Literature Review as Basic of Theoretical Background

This step explores the theories related to the concept of walkability, concept of accessibility for pedestrians, the concept about how to stimulate walkability by land use planning by how to integrate land-use and walkability, concept from physical categorize which influence of three theories: Pedestrian Oriented Development (POD), New Urbanism, Compact City, and also the concept from institutional category which influences collaborative approach. Furthermore, these theoretical perspectives help to build a conceptual framework in order to choose the appropriate methods to analyze issues in this research.

2. Comparing the Case Studies

This step explains the reason of selecting particular areas to be compared. This research chooses London-UK as country of comparison to Bekasi case. The reason for choosing London is because London is a city which represents the best practices of improving walkability in urban areas. While, Bekasi is chosen as the study area because the lack of pedestrian accessibility of public transport thus making many problems in the transportation sector. Adding to that, Bekasi is “buffer” city of Jakarta (the Capital City of Indonesia) and because of that every day a lot of people travel from Bekasi to Jakarta and vice versa. Thus, the detailed of information about a London case and Bekasi case will be explained in the chapter of analysis.

3. Data Collection

The secondary data is collected by conducting a literature review and compiling the data from many sources such as reports, published and

unpublished document, statistic data, and government reports. Collecting the data from secondary data is useful to fulfill the required data for analyzing this research problem.

4. Analyzing the Data

This research is using the comparative analysis method. As explained above, comparative analysis method can include both quantitative and qualitative comparison of social entities based on many lines of cross national and regional comparison (Mills et al, 2006). However, this research uses a comparative analysis method based on qualitative analysis in order to compare the improving pedestrian accessibility pedestrian of public transport to encourage walkability between different countries. The methods focus to find the similarity and differences between two study cases and also try to find the gap between the two cases. Then it can recognize the lessons that could be learned from other countries (London-UK) to improve walkability in Bekasi case.

5. Conclusions and Recommendations

This step concludes the result of the analysis. Thus, this step proposes a guideline to improve pedestrian accessibility of public transport in order to encourage walkability of people in the study case.

CHAPTER IV

POLICY STRATEGIES FOR IMPROVING WALKABILITY

IV.1. Introduction

This chapter aims to discuss the implementation of policy strategies to improve accessibility of walkability-public transit facilities in London. The implementation in London case is influenced by two factors: physical factor and institutional factor, and also little bit explain relates to external factor. It is expected that there are lesson learned from this case in form of policy strategies to improve walkability. This chapter consists of three main parts: the current condition, policy strategies and also the impact of policy strategies in London case.

IV.2. London Case

IV.2.1. Current Condition

London is the capital city of England. It has unique characteristics as a growing city. The picture below shows the map of London city.

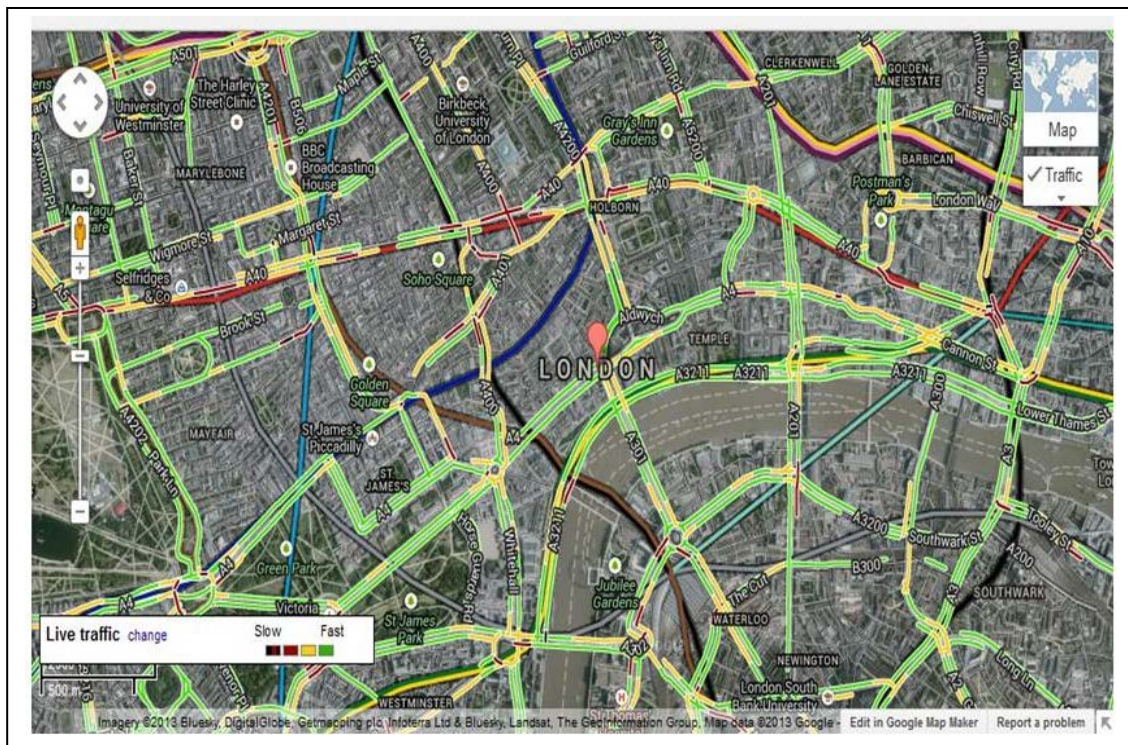


Figure IV.1. Maps of London City
Source: Google Maps

Officially, London has population of 8,174,100. This makes London as the most populous municipality in the European Union. It is counted of 12.5 percent of the UK population (Wikipedia, 2013). Its region covers an area of 1,579 square kilometers (610 sq mi) and has population density of 5,177 inhabitants per square kilometer (13,410/sq mi). London is the 19th largest city and the 18th largest metropolitan region in the world (Wikipedia, 2013).

In London, Settled Local Government and Central Government. In the local level, the administration of London is formed of two tiers: Citywide Administration and Local Tier. The Citywide Administration is coordinated by the GLA (Greater London Authority) which consists of two elected components: the Mayor of London, and London Assembly (Wikipedia, 2013). Many governmental departments of the Central Government are located close to The Parliament. The local government has contributed in the policy document making of London, especially related to the policy strategies of walkability.

IV.2.2.London Position in International Perspective

This research focuses on London as an internationally well known example of successful implementation of policy strategies to improve walkability. London is not only invested in walkability facilities to improve the walkability, but it also supported this by providing appropriate policy strategies.

According to the research from Torres et al (2010) that tries to measure pedestrian accessibility by comparing three different cities: Beijing, London and New York, pedestrian in London could travel approximately 0,8 miles or 1,28 km in every direction in 20 minutes from the city centre. It is 16 percent farther than from New York City within the same amount of time. The next table provides the detail comparison:

Table IV.1. The Comparison between London and Other Cities

Approx miles traveled in North-South and East-West directions	20-minute	
	N-S	E-W
NYC Average, by Direction	0.63	0.72
London Average, by Direction	0.81	0.76
Beijing Average, by Direction	0.65	0.88

Source: Torres et al (2010)

London is the most walkable cities. Based on this 2008 investigative study, Torres et al (2010) explains that London has an urban compactness such as high density of land use, and also has a pedestrian friendly environment, despite the fact at New York City has a better pedestrian access than London City or Beijing City. However, New York has bad stakeholder involvement (Sanyal, 2005). The American planning do not clearly defines the involvement of institution in policy decision making. American Planning has a good idea emphasizing on suburban development of the urban sprawl concept, in which, one of the principles of smart growth in the US is increasing walkable neighborhoods. It is the idea from planners to manage land use, and to emphasize on the importance of zoning. However, the involvement of stakeholder is not clearly defined. Therefore, as the focus of this research is not only considering the physical factors but also institutional factors, then this research uses London as the case study instead of New York.

In addition, according to Brown (2006), there is no place like London anywhere in Europe or the rest of the world in planning walkability. In term of safety factor, the GB's (Great Britain) pedestrian fatality rate is around 2.0 per 100,000 populations. In 1994, the GB's (and the UK) rate was the eighth lowest when compared to other European Union member countries, and almost the same as the United States rate (2.2) who have a good implementation pedestrian plan in term of physical factors (US. Department of Transportation, 1999). According to DETR (1997a), the GB's fatality rate (all modes include non motorized) is 6.4 per 100,000 populations. This is the lowest in overall

Europe (Sweden: 6.7; Netherlands: 8.5; Finland: 9.5) and considerably lower than any other countries (US: 15.6; Greece: 20.3; Portugal: 28.7).

Based on those reasons mentioned above, this research only uses London as a guide to improve walkability in Bekasi. In addition, this research is using London as a guideline because London is the best practice of implementation of walkability especially relates to both factors: physical and institutional factors. The walking plan of London set out in the present policies will be explained in the next section. The figure below shows the map of pedestrian areas in London:



Figure IV.2. The Pedestrian Areas in London

Source: Pedestrian for London, 2005

The picture clearly explains that the local government has tried to build a policy for supporting the implementation of pedestrian plan and has made the

area connected each other. Pedestrian for London (2005) states, “Many of the smallest pedestrian lanes and alleys shown as thin yellow lines, though it is vital to pedestrian life. And also it should be noted that some pedestrian precincts, recently built, are well intended.”

IV.3.The Policy Strategies

The aim of improving walkability in London is to develop the sustainable accessibility. The policy document (Improving Walkability in London Document) emphasizes on non-motorized transport by supporting walking and cycling activities. Therefore, this chapter will focus on the discussion of improving walkability in London case.

According to Telford (2007), the propensity to walk in London is influenced not only by distance, but also by the quality of the walking experience. This means the quality of the walking experience is influenced by pedestrian route. The pedestrian routes need to be directed and matched with the desire lines as closely as possible, and permeable networks help minimizing walking distance (Telford, 2007).

Walking is an important key element of travelling around London. The London Area Travel Survey (LATS) 2001 describes that walking accounts for the second highest proportion of all trips made in London at 49 percent (TFL, 2004). Nevertheless, the past decade has seen a marked decline in the number of walking trips (TFL, 2004).

The walking plan for London has been developed to assist all organizations involved in achieving walkability visions for London (TFL, 2004). The policy strategy is needed for realization of walking plan. It would need involvement of many stakeholders. However, it is influenced not only by institutional factor, but also by physical factors. The overview both factors will be explained below:

IV.3.1. Physical factors

In London City, the improvement of pedestrian accessibility of public transport is related to residential density and mixed use development. According DFT (2004) the medium and high residential density and mixed use development is more efficiently serviced by public transport. Access to bus stops influences the walkability of an area. Based on previous theories explained, physical factors consist of four elements: density, diversity, distance and also design. The explanation relates to them will be explained below:

a. Distance

The local government may also have planning requirements applicable to the design of attractive pedestrian networks in the London area. According to policy document of "improving walkability in London", the walking distance near major center and residential area for public transport services are limited to 400 meters or 5 minutes. Which means, new developments are often assessed by the proportion of residential properties with access to a bus stop within 400-800 meters or walk (5-10 minutes). This distance is often used as a catchment area for development around public transport.



Figure IV.3. Neighborhood Unit Based on 400 m Radius
Source: Planning and Designing for Pedestrian, 2012

In the document of planning of walkability in London (2005), new or upgraded activity centers are required to be located on public transport routes, either bus routes or the other public transportation. This policy is used to regulate the effort to improve walkability in London, and also to support Transit Oriented Development by pushing Pedestrian Oriented

Development policy. The first picture below describes the facility of bus stop which is near to residential areas and integrated with pedestrian network. While, the second picture below describes the facility of bus stops in city center of London which is integrated with mixed-use development so it can encourage more people to walk:



Figure IV.4. Bus Stop Facilities in London Which is Near to Residential Area
Source: Document Report, 2003



Figure IV.5. Bus Stop Facilities in Major Centre of London
Source: Document Report, 2003

From both pictures above, it can be inferred that the easier to reach the destination from the residential area to the center of London by public transport, the more people will do walking. In the implementation of policy strategies to improve walkability plan, the local government creates bus stops near with residential area and makes standard in the walking distance

from the residential area to the facility of bus stop within 400-800 meters or walk (5-10 minutes).

b. Density

The strategic policy to improve walkability planning in London relates to density criteria is by providing the principle which indicates the high residential in which the residents occupy proximate areas of public transit services. According to the policy document of “The Walking Plan for London”, the government of London tries to improve the access between public transport services and the level of density by providing transit facilities to area with minimum 80 residents (TFL, 2005).

Density can increase the opportunities for transit. Hence, this principle is presented in dwelling units per acre, which indicates the high residential in which the residents occupy proximate areas of public transport services. In the UK planning practice, density is generally measured in dwellings per net hectare (dph), where the area includes developable residential land (Rogers, 1997).

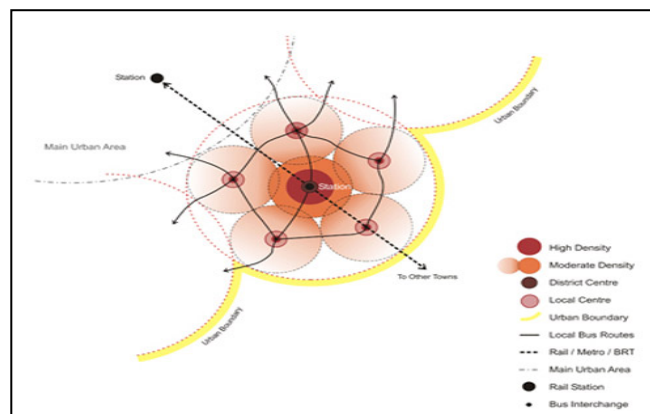


Figure IV.6. Density Pattern

Source: Rogers (1997)

According to TFL (2004), the population and the average density is shown in the table below:

Table IV.2. Data's of London

No	Indicator	London
1	Population	8.173.194
2	Area	1,570 km ² (607 sq mi)
3	Density	5.206/km ² (13,466/sq mi)
4	Urban Zone	11.905.500

Source : TFL (2004)

This research emphasizes on improving pedestrian accessibility of public transport, then as mentioned earlier, it is usually accepted that people are willing to walk up to 400-800 meters to access public transport. In Addition, Rudlin and Falk (2000) give a range of density gradients and indicative minimum densities for a bus service at 25 units/ha.

Nowadays, London is emphasizing on walking as a choice of activity to do. London is using public transport for supporting that policy. The picture below illustrates the bus stops density in London.

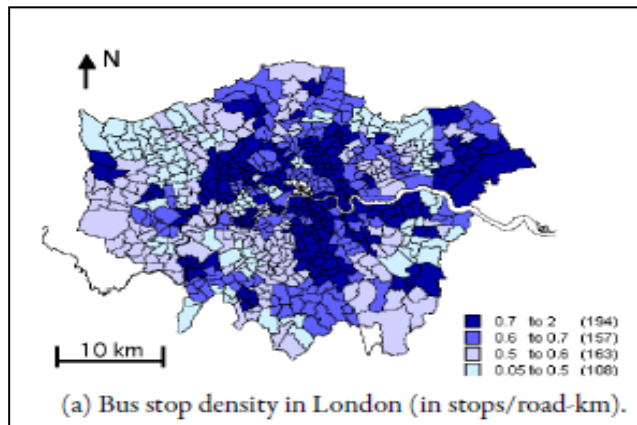


Figure IV.7. Bus Stop Density in London (in stops/road-km)

Source: Fengming su et al (2009)

The picture above shows the bus stop density in London. The term “in stops/road-km” tells about the bus stop position. The bus stop is relevant to density principles because this principle indicates the integration of bus stops with areas served, such as residential area which then can encourage walking activity.

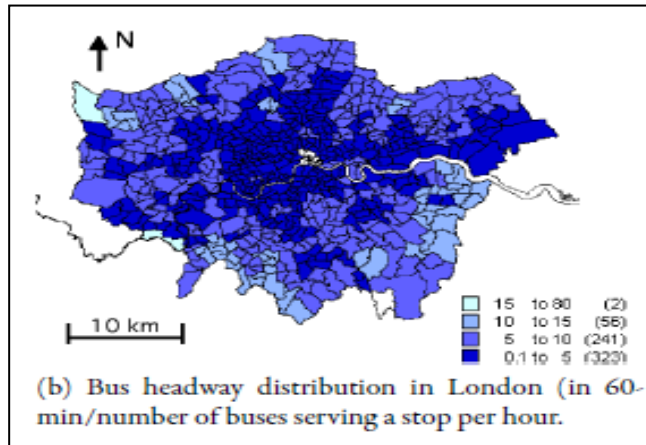


Figure IV.8. Bus Headway Distribution in London (in stops/road-km)
Source: Fengming su et al (2009)

The second picture above shows the bus headway distribution in London, which means the number of buses serving a stop per hour. It gives information that London has a high headway of buses. This means many people are using public transport because it has a good integration with pedestrian areas. Thus people tend to walk to reach their destination.

c. Diversity

Diversity represents the mixed use development around public transport services (Bus Stops). The aim is to encourage walking activity. The picture below presents the condition around public transport service. It emphasizes more on pedestrian access, as well as in the area surrounding "mixed-use building" which are built to encourage walking activity.



Figure IV.9. Mixed Use around Bus Stop Facilities in London
Source: Master plan Document



Figure IV.10. Mixed Use in London Areas to Encourage Walkability

Source: Master plan Document

Both pictures explain that developing “mixed-uses” can encourage the willingness of walking. This is important especially the mixed-use development in surrounding public transport facilities such as bus stop (Figure IV.10). The integrated network of pedestrian has to be supported by an urban structure. In London case, the transportation system has efficient public transit.

According to the Master Plan document, London’s population is increasing every year. That means the new housing units need to be constructed. The development of residential areas has to be integrated with public transport facilities. Hence, the strategic policy relates to diversity criteria is by proposing the term of “mixed-use” which refers to the degree of different activities but integrated with public transit facilities.

The integration between residential areas with public transport facilities was done to encourage the walking activity. According to the London Master Plan document, “if working, living, retail and educational places are located close together or easy to reach, and then many trips can be taken on foot”. Hence, diversity elements emphasize on mixed use of land use, especially surrounding bus stops. Thus, it can encourage walking activity. The next picture shows how the bus stop in London is built by using mixed-used concept:



Figure IV.11. Bus Stop in London with Mixed-Use Area
Source: Document Report, 2012

d. Design

Improving the walkability in London area depends on the quality of pedestrian access to the bus stop, thus in a policy document, the effective implementation of broad principles for pedestrian access to public transport need to be established. The guidelines to improve pedestrian access to public transport relates to element design consist of several important things below (Document Improving Pedestrian in UK, 2003):

1. “The location of public transport stops/stations and on footpath network should be developed in relation to each other at both strategic and local levels. Preferably this should be through the medium of a local transport plan”.
2. “The location of the stop/station should be carefully chosen, preferably at a focal point in the area. This requires assessment at a local level, work best carried out on a detailed local map with site visits. The aim should be to make the walk elements as short and convenient as possible, an outside maximum of 400 meters, preferably within 300 meters is indicated. There may be a particular value in locating stops on main pedestrian routes, where these exist. Where they are not obvious,

this may point to the need for reviewing them as part of a pedestrian strategy”.

3. “The location and form of road crossing points should be matched to maximize convenience of catching the bus. They should be sited in relation to bus stops and station entrances, designed to ensure that the vehicle/pedestrian conflict in such areas is minimized. Traffic safety needs suggest that the passenger should always cross behind the vehicle and therefore stops should in principle be located just beyond crossing points”.
4. “For local public transport especially it is important to have the adequate comfortable waiting space and facilities, as the waiting area is linked in the passenger’s perception to the walk access. This is particularly so for the local bus stop. In all cases stops should be sited to take advantage of local street lights”.
5. “Safety must form a key consideration from start to finish. In terms of passenger confidence the maxim ‘see and be seen’ is important. This must be addressed by incorporating good urban design principles throughout. The layout, lighting, use of open space and careful design of structures and planting must be designed in detail in an integrated fashion to ensure that pathways and stops offer a safe and secure environment”.
6. “New residential estates, shopping and business centers should be designed for the most convenient pedestrian movement and also for effective service by public transport”.
7. “In town centers and other commercial locations buses should be able to set down and pick up passengers as close as possible to the main destination. These elements need to be planned together and may show

a good return if properly integrated into an area-wide pedestrian network itself part of an overall walking strategy”.

Besides guidelines for designing pedestrian access to public transport facilities above, planning walkability in London also depends on the engineering standards in pedestrian access design to be more effective. Planning in the UK uses the ‘5 Cs’ that was mentioned in the previous chapter as a checklist to assess the overall quality of the existing environment for walking (DETR, 2000). It is used to encourage walkability in the London area. The ‘5 Cs’ consists of connected, convivial, conspicuous, comfortable, and convenient.

The pictures below present the “old trends and new vision of neighborhood design” which is linking pedestrian access to public transport facilities (bus stop):



Figure IV.12. Old Trends in Neighborhood Design

Source: Master Plan Document

That picture above describes the ‘old trends in neighborhood design’, which provides: disconnected street network, large blocks discourage walking and frustrate ability to provide efficient transit, very low density, no destinations within walking distance, no public spaces close, and also single use and uniform density (Master Plan Document). While, in the pictures below present the ‘new vision of transit supportive neighborhood

design' which is trying to integrate public transport facilities with pedestrian network:

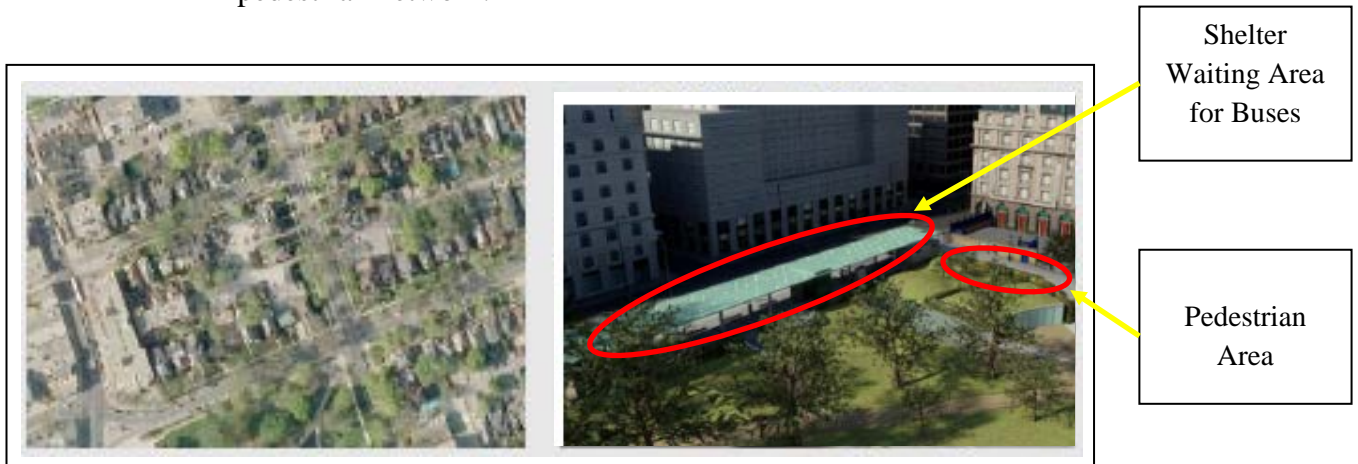


Figure IV.13. New Vision of Transit Supportive Neighborhood Design

Source: Master Plan Document

The pictures above present the 'new vision of transit supportive neighborhood design'. The design consists of the explanation relates to: integrated street network in order to integrate pedestrian access, smaller blocks encourage walking and support the provision of efficient transit, more compact development, main street within walking distance-many daily trips can be made on foot, large community park close by, and also mixed use and mixed density can encourage pedestrian activity (Master Plan Document).

IV.3.2. Institutional Factors

Institutional factors are influencing the policy strategies of improving pedestrian accessibility, since implementing the planning of walkability in London consists of many actors or stakeholders, and then collaborative approach is needed. Sranko (2011) argues, "Collaborative governance is the availability of institutions that promote interaction among governmental and non-governmental actors, without state actors monopolizing problem definition, goal setting or methods of implementation". Hence, this section will provide stakeholder involvement and also the regulation relates to pedestrian in London.

a. Regulation

In recent years, the UK government is giving comparatively greater importance to non-car modes of travel in its transport policies (Ishaque, 2006). According to Ishaque (2006), “Beginning with the integrated transport policy published in 1998 (DETR, 1998) there has been some effort to improve local planning by giving greater consideration to modes other than the private car. Walking is a key feature of these policies and has recently been re-emphasized in the publication of ‘Walking and Cycling: An Action Plan’ (DfT, 2004a). These policies are being implemented via the promulgation of local transport plans such as the ‘London Walking Plan’ (TFL, 2004)”.

The level of policy on pedestrian issues is formulated at the local government level, where local government and local transport authorities such as TFL (Transport for London); devise their strategies and goals within the limits set by the guideline issued by the central government (Ishaque, 2006). There is a clear hierarchical process of level policy in London. Hence, the legislation of pedestrian is clearer in London. The legislation relates to pedestrian can be seen in the table below:

Table IV.3.Legislation of Pedestrian

No	Legislation	The Content
1	Highways Act of 1980 (sections 66-70)	These sections cover sidewalk, guardrails, refuge, subways and footbridges for the safety and convenience of pedestrians
2	Statutory Instrument 1997 No.2400	The mid-block pedestrian crossings such as Zebra, Pelican, and puffin
3	Traffic Advisory Leaflet 5/05	The current guidelines for pedestrian facilities at signal controlled crossings

Source: Ishaque (2006)

London has a clear hierarchy of planning and design phase of pedestrian planning. Figure below describes the design of a scheme that should be

followed, which is pedestrians is the “consider first” to be the priority in planning transport system in London:

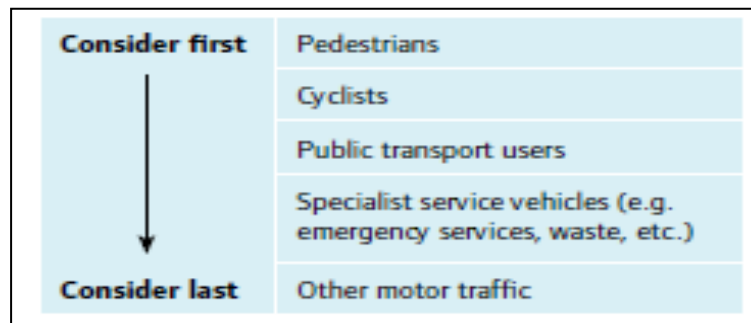


Figure IV.14. User hierarchy in London

Source: Document Providing for Pedestrians, 2003

The Figure above has a meaning. The hierarchy is not meant to be rigidly applied and does not necessarily mean that it is always more important to consider pedestrians than the other modes (Dft, 2007). However, the pedestrian becomes the main concern and consideration, when the planning policy in London emphasized on non-motorized modes. According to DFT (2007), the policy and regulation in London are sufficiently provided, and the development of pedestrian access has followed the regulations set out by local government.

b. Stakeholders Involvements

According to TFL (2005), in improving walkability in London the actors that are involved consist of TFL, local authorities, private sector, living streets organizations (NGO), and adjacent authorities. The collaboration between actors is needed to create a planning guide for improving walkability, and it is in the form of a framework. Hence, to build a framework of walking strategy and to revise the walking strategy, the collaboration between stakeholders are needed. The role of each stakeholder who is mentioned above will be described below:

1. TFL

TFL has responsibility to initiate and lead on many aspects of the plan such as produce a walking plan document, in order to support the vision

of London city to become one of the world's most walking friendly (TFL, 2004). TFL will work with the London boroughs, the private sector to produce a walking plan for London which will provide a framework for implementing and monitoring transport strategy's proposals for walking, and also TFL has a role in walking audits (TFL, 2004). Hence, the collaborative approach is needed to produce a good guideline for walking plan in London city.

2. Local authorities

Local authorities are London authorities that have a central role to the successful delivery of the walking plan for London. Local authorities will work in partnership with a broad range of public, business or private and voluntary sector partners (TFL, 2004). From the collaboration between them, they can provide the necessary strategic leadership to turn policy into action and for the success of the plan local authority should develop its own walking strategy, setting local targets, to encourage more people to work (TFL, 2004). The local authorities should first conduct a review of walking routes and facilities within their area and the review should consider the current network and identify where there are missing links and where linkages or standard could be improved (TFL, 2004)

3. Private sector

The private sector has a role to produce a walking plan for London by doing collaboration with London borough and TFL. The collaboration will present a framework to implement and monitor the transport strategy proposal for walking (TFL, 2004). The private sector also involved in the planning of integration pedestrian accessibility to public transport, which private sector provides the capital improvements for infrastructure and the operating funding to encourage walking activity by emphasis the elements of pedestrian accessibility (TFL, 2004).

4. Living streets

Living Streets is an organization which advocates for the rights and interest of pedestrians, and as formerly the pedestrian association which aims to create safe, comfortable, attractiveness, where people do walking activity (Wikipedia, 2010). This organization is part of society, as NGO (Non Governmental Organization) this organization is doing walking audit framework to assess the quality of the pedestrian and the level of service offered to those on foot (TRL, 2004). The organizations “living streets” use the “5Cs’ as principal to do the audit framework, the aims to make London be walkable cities.

5. Adjacent authorities

An adjacent authority is one of the actors that have influences to build policy strategies, and role to produce and revise a walking strategy. It has a function to make a strategy or guidance for area “connected” each other, the aims to make people feel enjoy in walking (TFL, 2004).

All stakeholders or actors collaborate in creating the strategy that can indicate how walking conditions and priorities can be balanced with other competing demands in the planning and management of the Borough street network (TFL, 2005). By doing collaboration the relevant issues will be identified and also local authorities should enable developers to engage effectively with individual departments, the benefits of collaboration and integrated approach applies to all stages in the process (Dft, 2007).



Figure IV.15. Illustration of Collaborative Planning
Source: Document Providing for Pedestrians, 2003

The collaboration and integration is the key to the development of a successful walking strategy. The walking strategies must include (TFL, 2004):

1. “Be part of an integrated local transport strategy, which successfully uses various modes”
2. “Ensure support and participation of all local organizations with an interest in walking”
3. “Have cross-departmental support within the local authority administration”
4. “Bring together the achievement of targets across the spectrum of local authority responsibility”
5. “Consider walking for both functional and leisure purposes”
6. “Plan on-road and outside-road routes to link”

As mentioned above, the collaboration between actors is needed to create a planning guide for improving walkability. Picture below will show the framework as a step of improving walking conditions in London.

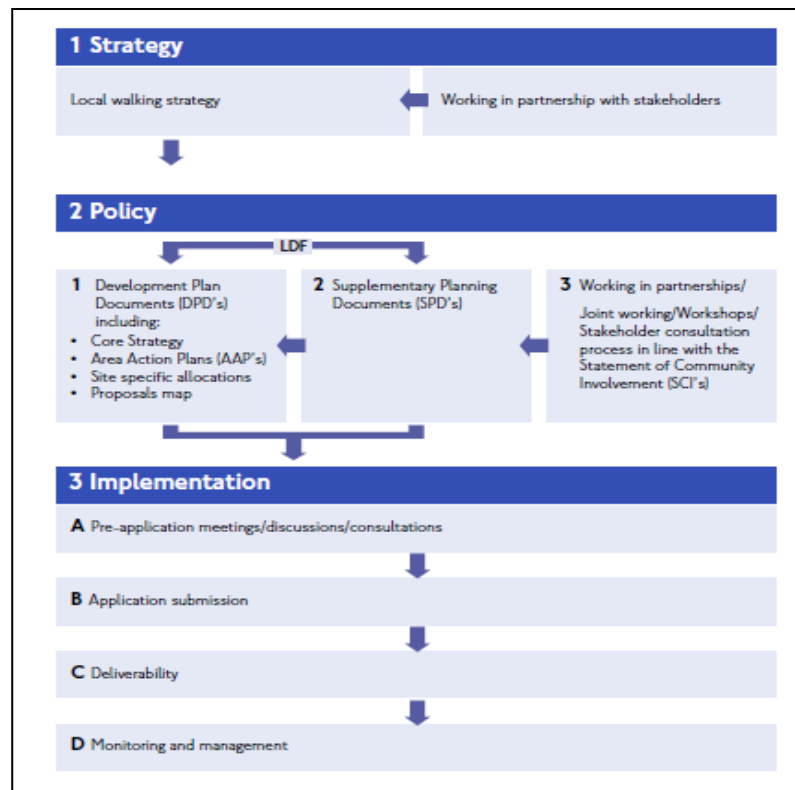


Figure IV.16. Step of Improve Walking Condition
 Source: Document Improving Walkability (TFL, 2005)

As shown above, the steps in policy framework consist of three elements. The DPD (development plan document) includes some criteria. This element is necessary to explain the initial step before making the document planning, or the stage preparation. This relates to research that highlights and emphasizes on improving pedestrian access to public transport facilities, then the document author will adopt the action point of strategy and development plans in order to improve walkability in London area. The strategy and development plans to improve walkability based on the TFL (2005) document consist of:

1. Help deliver the TFL London walking strategy at the region level, highlighting local characteristics and requirements.
2. Define or refine the objectives for walking and the public realm.
3. Identify improvement required; footway improvements, network enhancements (including linkages to other modes, such as linked to public transport facilities (bus stop)).
4. Consider separate strategies for key areas or routes. The example is strategies for connecting public buildings and public transport.
5. Work in partnership with stakeholder to develop the walking strategy.
6. Ensure the walking strategy informs the Local Development Framework, including associated planning documents.
7. Set out ways in which walking conditions are to be improved through the planning system.
8. Make walking strategy available on the internet.

The policy is needed to support the implementation of walkability plan. The good practical outcomes in order to improve walkability consist of (TFL, 2005):

1. Less confrontation with developers with an agreement between the local authority and developers/applicants prior to the submission of applications.
2. With more certainty for developers as policies guide and inform the preparation of development proposals.

3. More proactive and less reactive planning with greater emphasis on deliverability, that negotiation and reaction after receipt of the application.
4. More stakeholder and community involvement and partnership, rather than consultation.

IV.4.Impact of Policy Strategies

The policy strategies that were explained above is used to manage or do special intervention, especially as relates to the influencing factors of improving pedestrian accessibility of public transport. The impact of policy strategies relates to improvement of pedestrian accessibility of public transport will provide three main impacts. The policy intervention of strategic policy in London case has some proofs that were explained in the previous section. The strategic policy to improve walkability has been successfully encouraging people in London to walk. Some proofs of the impact of this strategic policy in London case are:

- 1) Increasing the proportion of travel made on foot

Increased walking or increased the proportion of travel made on foot can mean less use of cars and congested public transport services (TFL, 2005). This impact arises as a result of a policy strategy of physical factors. As was explained before, London has good standards especially in terms of density, distance and design of improved pedestrian accessibility to public transport facilities. However, the increasing of travel made on foot also supported by the application of appropriate regulation. Hence, it gives evidence that London is one of the cities which is successful in the implementation of walkability. It also successfully increases the willingness of people to walk.

- 2) The use of public transport

The availability of good integration between pedestrian access and public transit facilities affects peoples' interest to use public transport and decreases their dependency to private transportation. A documents

report “Legible London” (2006), provides evidence relates to the effectiveness the walking distance which is integrated to public transit facilities. The effectiveness walking distance has pushed the interest of people to use public transport services and do walking activity. This impact arises from both of factors, physical factor and institutional factor. As was explained in the previous section, the policy strategy of London to make good integration public transport facilities with pedestrian access relates to density, distance, diversity and design. It is also realized by providing an interesting guideline. It is supported by policy from local government and other stakeholders, and also by the regulation.

3) Land and property values

As was explained in the previous section, there is good integration between land use and walkability in London. “Walking plan” (2004), provides information about the implementation of better integration between public transport facilities and pedestrian access in London City. The planning system in London uses mixed-used development and has “compact urban structure”. The diversity principle in this is illustrated by the mixed-used development that well implemented (document report, 2012), and is supported by government regulation (TFL, 2005). Hence, it gives impact to land and property values.

CHAPTER V

PEDESTRIAN ACCESSIBILITY OF PUBLIC TRANSPORT IN BEKASI

V.1.Introduction

This chapter aims to discuss the current condition of Bekasi case in relation to pedestrian accessibility of public transport. This chapter also discusses local policies related to pedestrian access. Hence, the explanation about the current condition of pedestrian accessibility of public transport in Bekasi will be described below.

V.2.The Current Condition

The City of Bekasi is popular with “clutter” and congestion every day. Bekasi City has very high density, and it is the nearest region from Jakarta. Hence, Bekasi becomes a “busy” city, because it is not only serves the inhabitant of Bekasi itself, but also serves the inhabitant of other regions around Bekasi such as Jakarta, Bogor, Depok and etc (Bekasi Dalam Angka, 2011). Bekasi City consists of twelve districts and they are: Pondok Gede, Jati Sampurna, Jati Asih, Pondok Melati, Bantar Gebang, Mustika Jaya, Bekasi Timur, Rawa Lumbu, Bekasi Selatan, Bekasi Barat, Medan Satria, and Bekasi Utara.

Since the early 2000’s the population growth of Bekasi has slightly decreased compared to 1990’s. In the early 1990’s the rate of population growth of Bekasi was still around 6.29 percent, while at the beginning of 2000’s it has become 5.19 percent. In year of 2003, it amounted to 4.79 percent (Data Statistical Bekasi, 2003). Its population in 2010 has reached 2.084.420 people. However, the population in Bekasi still not evenly distributed.

The governmental system of Bekasi City consists of Provincial Government and City Government (BDA, 2011). The Supreme Head of the Provincial Government was known as Governor. While, the Supreme Head of the City Government was known as Mayor. The election system both for Governor and Mayor is direct election, which the society can choose the Governor and Mayor based on their preference

(Wikipedia, 2012). The Governor and the Mayor of Bekasi has an important role in the decision making of planning activity in Bekasi City. This research will focus on pedestrian accessibility of public transport especially in Bekasi Timur District. The reason why this research focuses on Bekasi Timur District is because the high number of people who travel to Jakarta or other big cities in Indonesia from this district. They are concentrated in Bekasi Timur District. Many public transports (Buses) are departing from Bekasi Timur District, and the intercity bus terminal is located in Bekasi Timur District (Transportation Agency, 2010).

Moreover, Bekasi Timur District has many residential areas. That means Bekasi Timur has real potential in developing pedestrian accessibility, especially the pedestrian accessibility of public transport. This is important in order to increase public transport users and to decrease the people's dependency to private transport. Thus, it can overcome congestion problems in Bekasi. Actually, Local Government has developed pedestrian access for people to public transport facilities such as bus shelter. However, the implementation of pedestrian access in Bekasi is quite bad. The explanation about that will be described in the next section. The picture below will show the map of Bekasi Timur District:



Figure V.1. Map of Bekasi Timur District
Source: Google Maps

V.3.The Policy Strategies

As mentioned in the previous chapter, there are two factors to improve pedestrian accessibility: physical factors and institutional factors. Hence, this section will present the current condition of the implementation of pedestrian access of public transport relates to both of factors and how the pedestrian access policy related in Bekasi Municipality. The explanation relates to both of factors can be seen below:

V.3.1. Physical Factors

Physical factor is influenced by distance, density, diversity and design. The implementation of pedestrian access in Bekasi Municipality is really “bad”. The Local Government of Bekasi did not give enough attention to this problem. Hence, this section will provide the current condition of pedestrian access in Bekasi relates to the physical factors.

a. Distance

Actually, planner and Local Government of Bekasi Municipality knows the international standardization of “distance” for people to walk which is limited to 400-800 meters or 5-10 minutes, especially in term of the ability of people to walk to public transport facilities (bus stops). However, the strategy implementation of the walking distance to go to public transit facilities of the Local Government did not recognize the standard given by the Ministry of Transportation of Indonesia.

The Ministry of Transportation has set out the policy of walking distance for people to go to public transport facilities by 300 meters in central cities and 400 meters in rural cities (BSTP, 2011). However, the guideline of improving pedestrian access of Bekasi did not recognize the standard from Ministry of Transportation concerning the maximum walking distance for people to walk to public transport facilities. Bekasi Municipality did not make the regulation to cover a walking distance to public transit facilities. Thus, local regulation relates to spatial plans did not recognize the standard of planning of walkability. There are no clauses from those regulations which provide

the maximum standard of walking distance of Bekasi Municipality. It is evidenced by the determination of the bus stops in Bekasi, which is not integrated with residential areas. This in the end makes difficulties in term of longer distance for people in Bekasi to reach bus stop facilities from the potential area such as residential area, shopping area, and other activity area.

The long walking distance and the lack both of pedestrian facility and public transport facilities have discouraged people of Bekasi to use public transportation and to take the public transport not at bus shelter. The next pictures illustrate that condition.



Figure V.2. Shelter or Bus Stops did not Integrate with Residential Area
Source: Transportation Agency, 2013



Figure V.3. People in Bekasi City do not Use Shelter
Source: Transportation Agency, 2013

b. Density

Bekasi did not have a standard or policy relates to density in public transit facilities. The pattern of land use planning in the Bekasi Municipality, especially the pattern of residential area is not integrated to public transit facilities. Hence, in the spatial plans of Bekasi Municipality, it is difficult to find how much the minimum of residential density around public transport facilities.

Moreover, the Ministry of Transportation of Indonesia as a policy holder in pedestrian standardization also did not provide that standard. The standard of minimum residential around public transport facilities is important in order to increase the integration of pedestrian access.

As was mentioned in the previous section, the total population of Bekasi is 2.084.420, and it occupies the area of 210.49 km² or 20,049 Ha. This means the average of population density in Bekasi is 9,903 people/km². According to the Statistical Data (2010), Bekasi Timur District has the highest population density compare to another district. The population density in Bekasi Timur is 16.499 people/km².

The high amount of population density in Bekasi Municipality causes the existence of many residential areas. This actually also makes easier for people to get public transport facilities. The meaning of easiness to get public transport services is the availability of terminal bus intercity which is located in this district. Moreover, this district also has facilities on toll road which make people easier to go to Jakarta, Bogor, and other cities in Indonesia (Statistical Data, 2010). The picture below will show the density pattern in Bekasi:

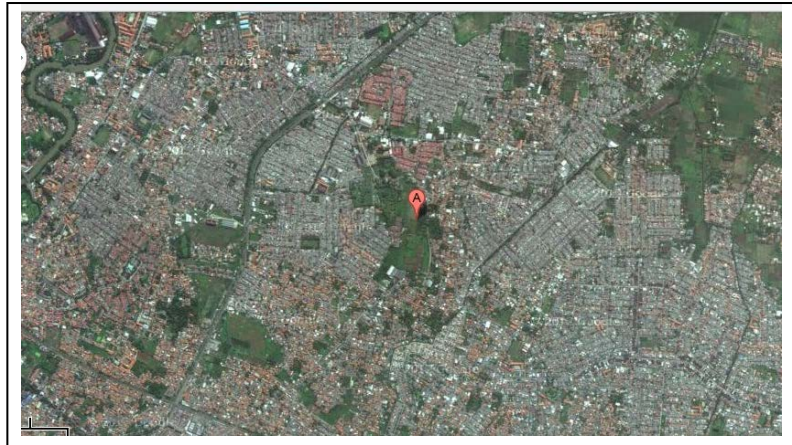


Figure V.4. Density Pattern in Bekasi

Source: Google Maps

As was explained above, Bekasi Municipality does not have “standard” relates to the amount of number of residents around public transport facilities. Bekasi Municipality determined the location of public transport facilities only based on a guideline from Ministry of Transportation that requires on each one kilometers to provide three shelters or public transport facilities (BSTP, 2011). Hence, in the document report of Transportation Agency and Master Plan of Bekasi Municipality, there was no data or maps related to bus density.

c. Diversity

This principle presents the mixed use development in surrounding public transport facilities (Bus Stop) such as residential, mall or shopping area, office and etc. Then, the diversity of development uses can encourage people to walk. However, in Bekasi Timur District, the mixed use development is not served by the integration of pedestrian facilities with public transport facilities such as bus shelter.

Actually, the urban structure of Bekasi Timur District has been already compacted. It is evidenced by the availability of shopping area, offices, residential and etc in this area. However, these places are not served by the integration of public transport services and also not served by the integration of pedestrian facilities with public transport facilities

(shelter). Therefore, people do not interest to walk. The picture below, will illustrate that Bekasi Timur District has been already compacted in term of urban structure.



Office Company



Shopping Area



Mall



Office of Transportation Agency



“Margahayu” Residential



“Bulak Kapal” Residential



“TNI AU” Residential



“Bekasi Timur” Residential

Figure V.5. Mixed Use Development in Bekasi Timur District
Source: Transportation Agency, 2013

From the pictures above, it can be seen that in reality the urban structure of Bekasi Timur District has been already compacted. However, the weaknesses are the non integration with public transport facilities (bus stops) and pedestrian access. Therefore, it is very important to improve pedestrian access in this case. This principle becomes important in order to improve walkability, since Bekasi Timur is the district which many people do travel to Jakarta and vice versa (BDA, 2011). The picture below shows the map that describes the location of the places mentioned before.

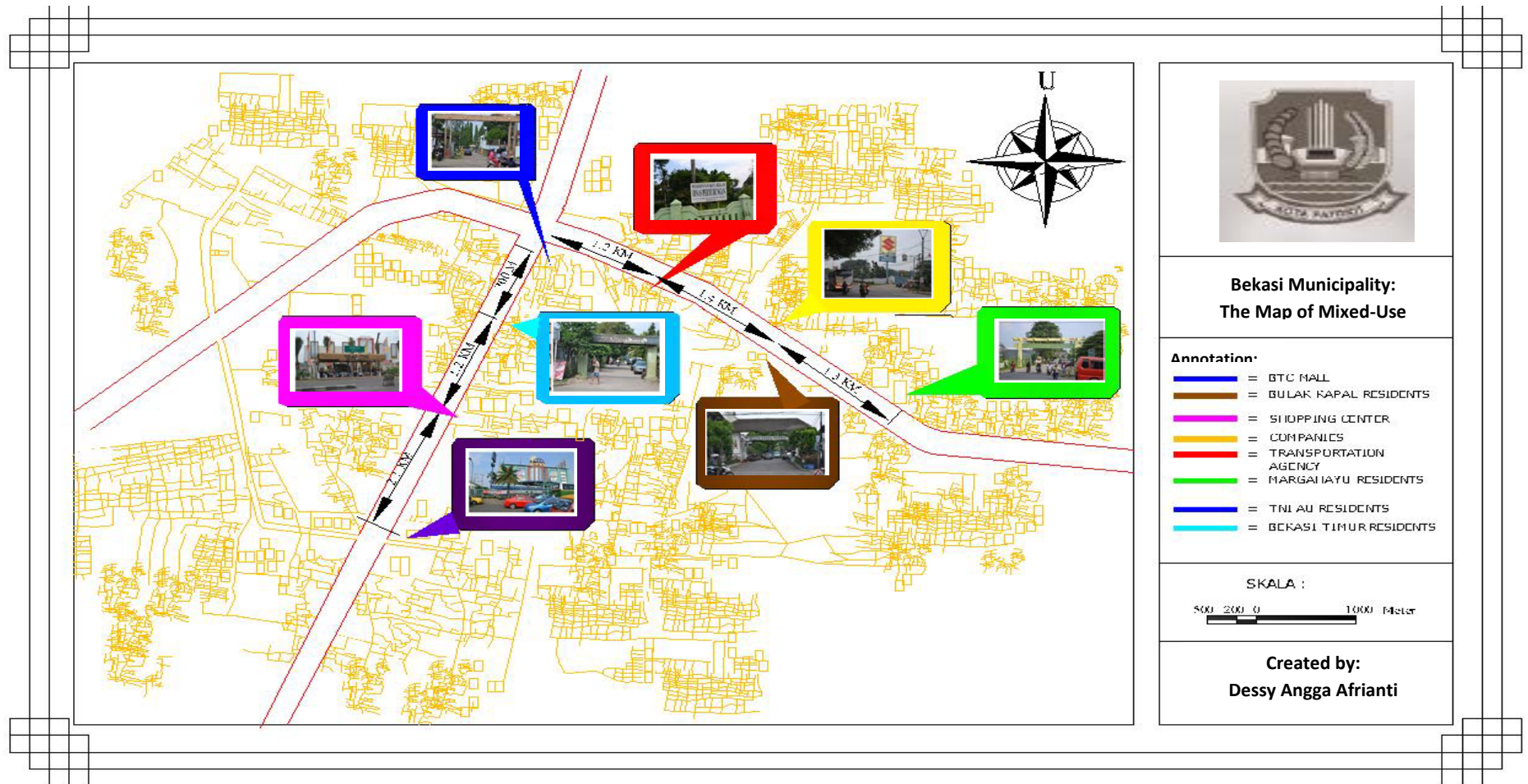


Figure V.6. The Map of Mixed-Use in Bekasi Municipality
Source: Author, 2013

d. Design

The principle of pedestrian access design in Bekasi and other cities in Indonesia is regulated by a guideline. The structure of writing the guideline is followed by the guideline from BSN (National Standardization of Agency) No.8/2009. The guideline is regulated all aspects relates to pedestrian access, especially relates to the technical standard of pedestrian access and the element providing of infrastructure in pedestrian accessibility. The policy principle of pedestrian is also based on the guideline from Ministry of Transportation which proposes some elements such as safety, integrated, directness, secure and comfort, aesthetic, and high quality (BSTP, 2011).

However, the implementation of the guideline is not working properly. It is because the guideline just provides technical standard before conducting the planning of pedestrian accessibility, and not provides the revision of the implementation the guideline. Hence, the implementation of pedestrian facilities planning in Bekasi is bad. Pictures below, illustrate the current condition of pedestrian facilities in Bekasi.



Figure V.7. The Bad Condition of Pavement in Bekasi

Source: Transportation Agency, 2013

From the picture above, it can be seen that Bekasi Timur District has many pavements which is in “bad” condition. It forces people walking

outside the pavement, either in road or outside road. The condition also makes people do not interested to walk. Unfortunately, the Local Government did not give her attention to this problem.

There is also function change of pavement in Bekasi Timur District. The picture below shows the “changing of function” of pavement in Bekasi Timur District.



Figure V.8. The Changing of Function of Pavement in Bekasi

Source: Transportation Agency, 2013

The pavement in Bekasi Timur District is changing to become a retailer shop and “ojek stop” (illegal public transportation in Bekasi). This changing of function of shelter in Bekasi Municipality makes the public transport not stopping at its shelter:



Figure V.9. The Changing Function of Shelter

Source: Transportation Agency, 2013

The pictures above illustrate the bad condition of shelter in Bekasi. This condition makes many of the people in Bekasi do not interested in using public transport and even in walking. The shelter is filled with retailers without any space available for people to wait the public transport (bus). Hence, it is evidenced that the implementation of pedestrian facilities is really different from the standardization of the design of pedestrian facilities planning.

V.3.2. Institutional Factor

In the past, the planning system in Indonesia was very centralized. Planning and development comes from the Central Government. It was an impact of the uneven development of Indonesia. Jakarta as the capital city of Indonesia becomes a developed city different from other cities in Indonesia. It is because all of planning for development was conducted centrally from and in Jakarta. However, through the implementation of Law No.32/2004, the planning system of Indonesia has been changed to be more decentralized or known as regional autonomy. According to Law No.32/2004 in article 1 of clause 5, “The sense of regional autonomy is the right, the authority, the duty to regulate autonomous regions and governments in their own affairs and interest of local communities in accordance with the legislation”.

However, it is not meant that by the presence of regional autonomy the local government has the absolute right in planning and developing of the region. Hence, the Central Government still creates legislation as a guideline for local government to develop and to build the region by itself. There are several regulations set by the Central Government that relate to planning of pedestrian access, such as law No.22/2009 (clause 25 (7)) about facility for pedestrian, Ministerial Regulation (KM) No.65/1993 (clause 1,2, and 3) about the definition and standardization of pedestrian facility, Government Regulation (PP) No.43/1993 about infrastructure and road traffic which relates to facility for pedestrians, and etc.

Furthermore, the way local government sets local policy and local regulation relate to pedestrian access is depending on the regulation from the Central Government. The specification and the explanation about it will be presented in this section. Although, local government tries to set a good planning relates to urban planning, in reality the Local Government of Bekasi did not give enough attention to the non-motorized mode of transport such as pedestrian.

Related to that, the current condition of institutional factors in Bekasi will be provided in this section. This principle discusses both factors, stakeholder involvement and regulation relates to pedestrian. In addition, although walking is not popular habit popular in Bekasi, still this section will explore about that also.

a. Regulations

Pedestrian in Indonesia is regulated by some legislation such as Ministerial Regulations and Governmental Regulations. The guideline that relates to "technical standard" and "pedestrian rights" is regulated by the Central Government. Further, the local government by agencies will implement the guideline from that.

The regulation of pedestrian is provided in the Law No.22/2009 about road and traffic, which in article 25 clause (1) states that "Every road which is used for general traffic shall be equipped with road equipment such as:.... Infrastructure for bicycle, pedestrian, and disable people....". Moreover, in article 45 clause (1) states that "Infrastructure supporting the implementation of traffic and transportation includes sidewalks, bike lanes, pedestrian crossings, shelter, and special facilities for the disabled and the elderly".

Further, the pedestrian rights also regulated in the Law No.22/2009, which in article 131 clause (1, 2) states that "Pedestrian has right to get the available supporting facilities such as pavement, crossing and other facilities. Clause (2) states that pedestrian people has right to be given priority when they are crossing the roads". That means, the safety of

pedestrian is very important in the law, but the reality is the pedestrian rights are often ignored.

While, in the Law No.38/2004 about road, the Law states “Based on its role, the network of road is divided onto the primary system and secondary system.” The role of divided network relates to hierarchy of network system have to be appropriate with the hierarchy of activity in the city, either primary system or secondary system. It is very clear that the compositions and characteristics of traffic movement have to get the same attention including pedestrian and other non-motorized modes (Saman, 2011).

Government Regulation No.34/2006 in article 34 clause (4) states “The role of pavement is reserved only for pedestrian”, it means that the presence of retailers on Bekasi pavement has violated the rules. Unfortunately, until now the Local Government does not take decisive action to resolve the issue. While, in the same regulation on article 86 clause (5), it states that “In every technical planning of road, it is compulsory to consider the needs of infrastructure for pedestrian and disabilities people”. It means, pedestrian is an important part of traffic mode. The regulation is emphasizing on the compulsory consideration to the needs of infrastructure for pedestrian.

The Law No.26/2007 about spatial plan is related to the planning of walkability. In this law, the planning for pedestrian is related to green open space, which this law gives a minimum ratio of green open space of 20 percent. This law pushes local government to provide infrastructure for pedestrian. The availability of infrastructure for pedestrian has to be provided in the planning of the city as “the blueprint” of the city. Hence, pedestrian access to public transport facilities is much related to the availability of land. While in the current condition the pedestrian access in Bekasi has problems, especially related to retailers and the scarcity of land in Bekasi. It makes people to use pavement for doing trade activity. Therefore, there is a need for

regulation from government to deal this issue, even more this issue is much related to social factors.

Besides those regulations, there are some rules to regulate pedestrian in Bekasi. The table will show the regulation that can be used to improve walkability in Bekasi:

Table V.1.Regulation of Pedestrian in Bekasi

No	Legislation	Content
1	Law No.22/2009	About Road and Traffic (the clause of pedestrian is regulated in clause 25,26,106, 131, 132, 310)
2	Law No.4/1997	About disabilities people
3	Law No.26/2007	About Spatial Planning
4	Law No.38/2004	About Road
5	Government Regulation No.43/1993	About Infrastructure and Road Traffic
6	Government Regulations No.34/2006	About Road (the clause relates to pedestrian is regulated in clause 22)
7	Ministerial Regulations of Public Works No.29/PRT/M/2006	About Technical Guideline of Building relates to pedestrian
8	Ministerial Regulations of Public Works No.30/PRT/M/2006	About Technical Facility and Accessibility of Building relates to pedestrian
9	Ministerial Regulations of Transportation No.65.1993	About Facility of Supporting Traffic Activity relates to pedestrian
10	Local Regulations No.13/2011	About Spatial Plan of Bekasi Municipality

Source: Document Report, 2010

Through that regulations above, the Local Government (Government of the City) can build pedestrian path such as pavement or sidewalk in Bekasi Municipality, but of course local government have to provide their own regulation to support the policies. The guideline to build pedestrian access in Bekasi Municipality is following the standardization of technical guideline which is defined by the Public Works Department (PWD). Nevertheless, the Local Government has not yet established special rules to regulate the right of the pedestrian in Bekasi. Although, the development planning of pedestrian access made this possible, if it is not supported by policy from government then the result will be worse. As in Bekasi case, pedestrian facilities which are neglected by the Local Government, make the pedestrian accessibility becomes worse.

Actually, Bekasi Municipality has a hierarchy of road users. This is very clear where the pedestrian must be taken as the primary precedence. Unfortunately, there is low awareness of people of Bekasi to take precedence for pedestrian or other non-motorized user. The figure below will illustrate the policy from the Ministry of Transportation. This describes the hierarchy of road users in Indonesia, and especially in Bekasi Municipality.


Hierarchy of Road Users	
<p>Consider First</p>  <p>Consider Last</p>	Pedestrians
	Cyclists
	Public Transport Users
	Specialist Service Vehicle (e.g.emergency services, waste, etc)
	Other motor traffic

Figure.V.10. The Hierarchy of Road Users in Bekasi

Source: BSTP, 2011

b. Stakeholder involvement

The planning system of walkability in Indonesia has a technical standard to improve pedestrian access. The technical standard was made by the Central Government. However, in Bekasi Municipality,

the Local Government is not making a strategic policy to improve walkability. Hence, the condition of pedestrian accessibility becomes worse than before. Whereas, before the Public Works Agency builds a pedestrian facility, then they should build a policy to regulate the implementation of pavement area. Of course, it should be taken in the planning stage, which will involved many stakeholders. Paragraph below will explain the role of actors in walkability planning in Bekasi area.

1. Public works Agency

The role of Public Works Agency in walkability planning is to provide a guideline of provision and utilization of infrastructure for pedestrian relates to technical standards. Refers to the technical guideline of planning pedestrian access No.032/T/BM/1999, Public Works Agency has a role in planning pedestrian access by technical standard, such as arrangement of the width of pavement, arrangement of the length of pavement, the standard design of pavement and other arrangement relates to technical aspects. Furthermore, the Public Works Agency has a role to build pedestrian access in Bekasi City. The construction project of pedestrian access in Bekasi City is the responsibility of the Public Works Agency.

2. Ministry of Transportation

The Urban Infrastructure and Transportation Planning division (BSTP) of Ministry of Transportation sets out the policy such as the integrated transport plan (ITP) to push the Local Government in Bekasi Municipality to emphasize on Non-Motorized Transport (e.g. pedestrian). Besides that, BSTP also provides the technical guideline to make the implementation of planning pedestrian accessibility easier, and standard design of pedestrian infrastructure (BSTP, 2011).

3. Transportation Agency

Transportation Agency has a role as an “extension” of the Ministry of Transportation of Indonesia in regulating the hierarchy of pedestrian in Bekasi Municipality. The Transportation Agency also has a role to protect the “rights of pedestrian” and to “regulate the obligations of pedestrians” on the highway based on Law No.22/2009. Although, not working properly.

4. Local Government (Government of the City)

Local Government has a role in the walkability planning. The Local Government is responsible in urban development planning. The Head of Local Government (Government of the City) is the Mayor, which is elected by the people. His responsibility is emphasized on funding, such as the allocation of funds related to the construction of pavement or pedestrian facilities. Therefore, the role of Local Government is very important in the development plan, because they also have responsibility to build the Master Plan of urban area which emphasized on pedestrian network as a “backbone” of urban accessibility and to make the city becomes livable (BSTP, 2011).

5. Regional Parliaments of the City of Bekasi

The Regional Parliaments is the local people’s representative institutions (parliaments) in Indonesia, which serves as an element of the regional administration along with the local government (Wikipedia, 2013). Parliament is set by Law No.27/2009. The role of the Regional Parliaments of the City in planning of walkability is discussing and approving the draft of local regulations regarding the budget revenue and expenditure (budget) which is being proposed by the Mayor of Bekasi. The Regional Parliaments of the City is the partner of the Mayor in planning the development of the city, including improving the pedestrian accessibility.

Although, every actor has their own roles as explained before, especially in the implementation or the construction of pedestrian facilities, there is no formal organized institution or governmental agency that is available to monitor and maintain the implementation, and also the society is not involved to monitor the implementation of planning walkability.

In the planning of walkability, the actors in Bekasi did not do collaborative planning. Thus, each actor has conducted their own responsibility without holding a discussion to make a guideline for improving pedestrian access. There is lack of coordination among stakeholders in Bekasi. It is evidenced by the unavailability a good guideline to improve pedestrian accessibility in Bekasi case. Hence, the condition of pedestrian access implementation is very bad.

V.4. Impact of Policy Strategies

After explaining the current condition of pedestrian accessibility to public transit facilities and policy that relates to pedestrian, then this thesis provide what the real impacts of the policy are. It is important thing in order to make a barrier in implementing the policies in Bekasi Municipality:

1. Proportion of travel made on foot

As was explained above, the policy to improve pedestrian accessibility in Bekasi Municipality is depending on the standard or guideline by the Central Government (BSTP, 2011). All of standards or guidelines tend to be regulated by the Central Government. The Government of Bekasi Municipality did not provide their own regulation relates to pedestrian. Meanwhile, the regulation and standardization of pedestrian accessibility are only referring to the standard or guideline made by the Central Government. As the impact of that, the Local Government was careless in term of the right of pedestrian. This, has discouraged people to walk, thus it is influencing the proportion of travel made on foot.

2. The use of public transport

As was explained above, even though Bekasi Municipality has a good hierarchy of road users (BSTP, 2011), there is low awareness among its people to take precedence of the non-motorized (e.g. Pedestrian) on the road. It is because the planning of road in urban area gave too much emphasizes on motorized transportation (e.g. Private transportation) (BSTP, 2011). Hence, this makes people in Bekasi Municipality are more interested to use private transport than public transport. Consequently, the amount of the use of public transport is less than the use of private transportation. It has brought terrible condition, because this has led to the congestion increase and other negative impacts.

3. Land and property values

Ministry of Transportation by the guideline from BSTP has provided the minimum standard for walking distance in the Central City by 300 meters and in the rural city by 400 meters. If the Local Government of Bekasi has been following this guideline in the local planning policy, it will give influences to the land and property values. It is because the buildings which were built in the area with high connectedness with public transit facilities and pedestrian access will have an increase in their land and property values. Unfortunately, local government did not recognize it.

CHAPTER VI

ANALYSIS OF POTENTIAL POLICY STRATEGIES

VI.1. Introduction

This chapter aims to analysis the potential policy strategies to improve pedestrian accessibility of public transport. This chapter will compare the pedestrian accessibility in London and Bekasi case. After doing the comparison, this chapter will elaborate the possibility of adapting policy transfer from London to Bekasi problem, and also identify the challenges of its implementation in Bekasi.

VI.2. Comparison of Pedestrian Accessibility of Public Transport In London and Bekasi

This section is analyzing the comparison between London and Bekasi in pedestrian accessibility of public transport. Besides doing the comparison between both factors namely the institutional and the physical factor, this section identifies the differences of general characteristics between London and Bekasi case.

As was explained in the previous chapter, London is a big city with a good planning policy to improve walkability. London City also has a good hierarchy of road users which followed by the high awareness of people to prioritize the right of the pedestrian. While in term of its weather, London has more “friendly” weather or climate for people to do walking activity.

Actually, BSTP division provides the good hierarchy of road users to Bekasi Municipality which emphasizes on the right of pedestrian (BSTP, 2011). However, its society still has low awareness to respect the right of the pedestrian. And Bekasi Municipality has a quite “hot” weather compare to London which then makes people do not interested in walking activity.

The criteria to assess the implementation of policy strategies to both of cities depend on the physical factor and institutional factor. The physical factor consists of four elements: distance, density, diversity and design. The institutional factor consists of

stakeholder involvement and regulation. This research will compare these criteria from London and Bekasi.

VI.2.1. Physical Factor

a. Distance

Distance becomes one of the important criteria to assess the physical factor for improving pedestrian accessibility to public transport. Commonly, people are not interested to do walking activity. A long distance to reach public transport facilities by foot is a big reason that can be obstacle to improve walkability in one region. It was evidenced in London case and Bekasi case as explained in the previous section. A good planning of walking distance will make people interested and enjoy doing the walking activity. The comparison between London and Bekasi can be seen in the table below:

**Table VI.1. The Comparison between London and Bekasi
In Distance Criteria**

No	Element	Case	
		London	Bekasi
1	Distance	a. The guideline of walking distance is conducted consistently in the implementation policy strategies (limited to 400 meters or walk 5 minutes)	a. The local planning guideline does not recognize the maximum standard of walking distance (300 m- 400 m), thus the implementation of strategy policy is unsuccessful
		b. The standard of maximum walking distance is often used as a catchment area for the development of public transport facilities	b. Due to the Local Government do not recognize the standard of walking distance, the bus stop is not set up in the location which is integrated to residential areas or other potential areas

Source: Author Analysis, 2013

b. Density

As was explained in the previous chapter, density is presented in dwelling units per acre, which indicates the high residential occupying proximate areas of public transport services. Density also becomes an important criteria to assess how to improve walkability in the city.

After described in the previous chapter on the detail information of density criteria in London and Bekasi, it can be inferred that Bekasi Municipality do not have the standard on the minimum residents around public transit facilities like what London City has. Hence, Bekasi Municipality does not have a minimum standard of how many bus should serves the people in residential area. It also does not have the data on bus density as detail as London City has. The comparison between London and Bekasi can be seen in table below:

**Table VI.2. The Comparison between London and Bekasi
In Density Criteria**

No	Element	Case	
		London	Bekasi
2	Density	a. Population density of London area is 1.570/km ²	a. The population density is 16.499 people/km ²
		b. Range of density gradients and indicative minimum densities for a bus service at 25 units/ha, and 80 residents around public transit facilities	b. The range of density gradient for a bus service is not available

Source: Author Analysis, 2013

c. Diversity

Diversity principle represents the mixed used development in the surrounding of public transport facilities. Using the combination of New Urbanism and Pedestrian Oriented Development approach, the planning of walkability in London is developed with mixed-used development concept.

While, Bekasi has a land use that serves as a “mixed use development”. Unfortunately, the diversity is not integrated to public transport facilities or pedestrian access. The table below will show the comparison between London and Bekasi case in term of diversity criteria:

**Table VI.3. The Comparison between London and Bekasi
In Diversity Criteria**

No	Element	Case	
		London	Bekasi
3	Diversity	There is Mixed Used Development around the Public Transport Facilities (Bus Stops), and it has a good integration to pedestrian access	Actually, it has a Mixed Used Development. However, it is not integrated with public transport facilities and pedestrian access

Source: Author Analysis, 2013

d. Design

Design is one of the important criteria to improve walkability. As explained in the previous chapter, both of London and Bekasi have the standard design to improve pedestrian accessibility. Although in Bekasi case it is not working properly as well as London case. The comparison between both of cities in the design criteria can be seen in the table below:

**Table VI.4. The Comparison between London and Bekasi
In Design Criteria**

No	Element	Case	
		London	Bekasi
4	Design	a. The implementation of design of pedestrian access is appropriate and consistent with the policy document. It also is using engineering standard (5Cs)	a. The implementation of design of pedestrian access is not appropriate and consistent with the guideline from BSN document and standard of safety, integrated, directness, secure & comfort, esthetique, and high quality.
		b. It recognizes and acknowledges the “behavior of people”, thus it has a good design that makes people feel safe, comfortable and convenience.	b. The design of pedestrian access just focuses on technical or engineering standard, and ignores the “behavior of people”

Source: Author Analysis, 2013

VI.2.2. Institutional Factor

a. Regulation

Regulation becomes one of the important criteria to assess. It is because, the regulation can support the planning policy to improve walkability. As explained and described in the previous chapter, London and Bekasi has different regulation system. London has a hierarchy of the planning system which is very well regulated, and it is evidenced in its planning policy document. While, the legislation of pedestrian in Bekasi Municipality is still weak and just refers to the legislation or regulation set out by Central Government. Hence, the comparison between London and Bekasi relates to regulation is shown in the table below:

**Table VI.5. The Comparison between London and Bekasi
In Regulation Criteria**

No	Element	Case	
		London	Bekasi
6	Regulation	a. It has a clear hierarchy of planning and design phase of pedestrian planning and there is high awareness among its people to respect the right of pedestrian	a. Its hierarchy is clear, but not in the implementation. It emphasizes more on “motorized” on its implementation. It happens because the low awareness of people to respect the right of the pedestrian.
		b. The Local Government has its own policy and regulation. the development of pedestrian access is also supported by the local regulations	b. The local regulation that regulates the “right of pedestrian” for pedestrian planning is not available, and the regulation of pedestrian is just following the regulation from the Central Government

Source: Author Analysis, 2013

b. Stakeholder Involvement

Stakeholder involvement has a very big role in the policy planning. It was evidenced by the explanation in the previous chapter. As explained before in London case, the guideline has an important role to build a better pedestrian access. The guideline or policy document was created

by many actors or stakeholders. Moreover, the actors or stakeholders are not only having responsibilities to create the planning policy document, but also have the responsibilities in doing revision of the walking strategy. All of actors do collaboration to develop the policy strategy. Bekasi Municipality has not been familiar of conducting collaborative planning. Hence, the planning system in Bekasi just gives the responsibilities to each actor to conduct their responsibilities based on the guideline from the Central Government. The comparison between London and Bekasi in stakeholder criteria can be seen in the table below:

**Table VI.6. The Comparison between London and Bekasi
In Stakeholder Involvement Criteria**

No	Element	Case	
		London	Bekasi
5	Stakeholder Involvement	a. The implementation of policy strategies involves many actors/stakeholders and emphasizes on the Local Government as the main director in every project or policy developments. Involve the society by NGO to monitor and revise walking strategy	a. The implementation of planning walkability is involving many actors or stakeholders, and the Local Government has right to manage the policy by itself. However, it still has responsibilities to the Central Government. The society is not involves to monitor or control the planning of walkability in Bekasi Municipality
		b. It emphasizes on collaborative planning in the effort to improve pedestrian access	b. The planning to improve pedestrian access does not use the collaborative planning approach, thus the implementation of policy strategies is unsuccessful

Source: Author Analysis, 2013

VI.3. Overview the Similarities and Differences

After doing the analysis of the comparison between the London case and Bekasi case, we can understand the similarities and differences in the policy of London and Bekasi. The similarities and differences can be seen in the table below:

Table VI.7. The Similarities and Differences between London and Bekasi

No	Criteria	Similarities	Differences
1	General Characteristics	Both cities are big cities in their respective country. They also have high population	a. Both of cities has different culture, which people of London are more familiar with walking activity, while people of Bekasi are not
			b. They have different weather. London has pedestrian weather friendly than Bekasi.
2	Physical Factors: 1. Distance	Both of the cities have a standard of walking distance for people to go to public transit facilities	a. Standard Walking distance in London : limited to 400 meters or 5 minutes b. Actually, Bekasi did not provide their own policy standard relates to walking distance, but it used the standard of Ministry of Transportation: 300-400 meters. Although it is not working properly.
	2. Density	Both of the cities have a high population density	a. London has a standard policy relates to how much the residents around public transit facilities (80 residents), and it has also standard related to bus density b. Bekasi did not have
	3. Diversity	Both cities have a mixed-used development concept	a. London has the integration of mixed-used development with public transit facilities, thus it increases the walkability b. Bekasi does not have a good integration between mixed-used development with public transit facilities
	4. Design	Both cities have standard of designs to improve walkability	a. The implementation of London's design is appropriate and consistent with the plan b. The implementation of Bekasi's design inappropriate and inconsistent with the plan
3	Institutional Factors: 1. Regulation	Both cities have regulation related to pedestrian, and they have clear hierarchy of planning	a. London has a high awareness of its people to respect the right of pedestrians which is described in hierarchy of road user b. Bekasi has a low awareness of its people, and the regulation relates to pedestrian is still using the regulation from the Central Government and it is not ready to provide its own regulation
	2. Stakeholder Involvement	Both of the cities involved many actors/stakeholders	a. London is using a collaborative approach to cover all of the actors and stakeholders' interest b. Bekasi does not use collaborative approach, thus there are many 'misunderstanding' among actors and stakeholders

Source: Author Analysis, 2013

VI.4. Identifying Barriers

This section will identify the barriers in adopting the policy strategies from other countries. According Dolowitz and Marsh (2000), policy transfer is “the process in which knowledge about policies, administrative arrangements, institutions and etc in one time and/or place is used in the development of policies, administrative arrangements and institutions in another time and or place”. Based on their paper, the ones that can be transferred are goals, content, instrument, institutions, ideology, ideas and concepts.

If we want to transfer a policy, Dolowitz and Marsh (2000) note some criteria of context matters that have to be fulfilled. Without these criteria, the transferability of policy can be unsuccessful. The context matters that have to be provided in doing this consist of institutional constraints, political ideological constraints, bureaucratic capacity, technological abilities, financial resources, and physical circumstances (Dolowitz and Marsh, 2000).

From these criteria, we know the possible barriers when we implement the policy strategy that is being adapted from other countries. In the previous section, this research has provided two (Physical and Institutional) from six criteria proposed by Dolowitz and Marsh (2000). All criteria should receive enough attention to make the policy transfer from London to Bekasi successful. However, I only add discussion on the three criteria to identify the barrier for the implementation in Bekasi Municipality. It is because the political ideological constraint is not major problem if want to adopt policy from London to Bekasi. Three criteria from Dollowitz and Marsh (2000) that should be recognized outside physical and institutional factors are:

1. Financial factors

Financial factors become the important criterion that has to be recognized in doing the policy transfer. It is because different country has different financial resources and financial systems. According to Dolowitz and Marsh (2000), many actions contained within the plan are not supported by clear funding systems. As the impact, the best plan remains as merely a plan and never be able to be realized. Hence, this criterion is important to

be recognized in achieving success of the policy transferability from one country to the other.

2. Bureaucratic capacity

Bureaucratic capacity is also the important criterion to have in the policy transferability. We have to know the characteristics of the bureaucratic system in each country. Dolowitz and Marsh (1996) mention that the bureaucratic systems may influence the transfers, because when we did not recognize the bureaucracy on each country then we will make inappropriate transfer especially when there is not enough attention paid to adapt the original policy. Hence, the bureaucrat becomes important criteria to be recognized before doing the policy transfer.

3. Technological abilities

Technological abilities are also the importance criterion that has to be considered in this matter. It is because, every countries has different technology system. For the example, this research shows that there are differences between the developed countries such as London and Indonesia as a developing country. Hence, we have to consider this criterion in order to prevent inappropriate transfer. According to Dolowitz and Marsh (1996) the high technological abilities can make the city or country easier to implement the transferability policy. Therefore, this criterion becomes important to be recognized.

Hence, the paragraph below identifies the barriers when the policy strategy of London is being transferred to Bekasi.

1. Financial Resources

Funding becomes the one of the major issues, especially relates to providing the budget in constructing the physical building of pedestrian accessibility to public transport. The constructing of pedestrian accessibility to public transport becomes important, because pedestrian planning not be a

priority in Indonesia planning system. Hence, it is important to build good pedestrian accessibility to public transport facilities.

2. Bureaucratic Capacity

Regionals autonomy system gives little barrier in Bekasi. London's bureaucracy is well established especially in providing linkage between the Central Government and the Local. Adding to that, the London Local Government has a reasonable authority to develop and manage their own region.

3. Technology Ability

Technology becomes the one of the important issues to transfer policy from London to Bekasi. The barriers relate to technology's ability is communication strategy, which the ability of technology to inform the people about the facility of pedestrian accessibility such as inform the distance of walking to reach public transport facilities.

4. Physical Factors

If we want to change the physical condition of pedestrian facility, we have to consider the interest of people who currently using the pavement area in Bekasi Municipality (e. g. retailers), then to move them to other places. We need to consider the social factors related.

5. Institutional Factors

The barrier of institutional factor comes from the collaborative approach. The collaborative approach is not a common approach in the planning system in Indonesia. It needs more adjustment and counseling of using this approach.

6. General Characteristics

Bekasi has hotter climate than London. They also have the different culture in term of the unpopularity of walking habit in Bekasi and also the low

awareness of people to appreciate the right of pedestrian. Hence, these factors can be the barriers in adopting the policy strategies.

VI.5. The Potential Policy Strategies to Improve Walkability in Bekasi

After doing the comparison of key points between London case and Bekasi case, and identifying the barriers, this section will propose the potential policy strategies to improve walkability in Bekasi Municipality. The potential policy strategies come from the policy strategies of London that are being adapted to the condition of Bekasi. The adaptation also considers the barriers that have been discussed before.

My proposal to the policy strategy that can be transferred and adapted to Bekasi Municipality consists of:

1. Making a local planning guidance to improve walkability

The first strategic policy that can be adopted from London case is making a local planning guidance to improve walkability. This policy document will be made by actors or stakeholders who are involved in planning walkability, such as transportation agency, public works agency, local government, regional parliaments, and also civil society (e.g. organization from society). This makes the planning walkability become more “open” to all elements of the society. Besides making local planning guidance, it is important also to build an organization as in London which consists of delegates of actors involved to assess and revise walking strategy after the policy strategy was implemented. This organization will revise and make necessary corrections to the problem faced concerning the implementation of policy strategy. It is expected that Bekasi Municipality will become more walkable in the future.

2. Adopting Collaborative Approach

As was explained before, the planning system in Bekasi Municipality needs the collaborative approach to cover all interests of every actors or stakeholders. By doing this, it can be expected that the best policy

document acts as guideline to improve walkability can be made. Thus, it can decrease the misunderstanding between actors which currently has been occurring in Bekasi Municipality. This is also important to build linkage between policy of the Central Government and the Local Government.

3. Conducting counseling to the society

This strategic policy becomes important, since Bekasi's society have low awareness to respect the right of the pedestrian. Local Government can deliver counseling such as seminar or advertisement to inform the importance this matter. Thus, the society can understand and realize that pedestrian activity is not only bringing benefit to themselves but also makes their city becomes more sustainable and able to reduce the negative effect of pollution, traffic accident and etc.

4. Adopting the policy related to physical factors

a. Distance

Making and implementing local strategic planning relates to walking distance. Applying the standard (300-400 meters to walking distance) could make Bekasi Municipality becomes "accessible" as well as London who put shelters in catchment area such as in residential area, shopping area, and etc.

b. Density

It is important to adopt the policy relates standard of minimum number of residents living in area surrounding public transit facilities. Of course, it is impossible to change the land use instantly, but the Local Government has to improve the structure of the land use.

c. Diversity

It is important to integrate the potential area (e.g. residents, shopping area, etc) with public transit facilities. This is to encourage people to do walking activity as happening in London.

d. Design

Bekasi Municipality has hotter climate than London. It is important for Bekasi Municipality to adopt the strategic policy from London which makes the design not only emphasizing on connecting, integrating, directing the pavement, but also a design which makes the pedestrian facilities becomes more 'livable'. It can be in form of City Park around the pedestrian facilities, trees in the surrounding of pavement area, or anything that can make people enjoy their walking activity.

5. Improving the technology system

Technological ability becomes one of the barriers to the policy transferability (Dollowitz and Marshal, 2000). Hence, to prevent the inappropriate transfer of policy, it becomes important to improve the technology system of Bekasi Municipality by communication strategy. This helps people to get information of the nearest bus stop available in walking distance as well as in London case.

6. Involving private sectors in this policy

Funding resources become one of the barriers in implementing the transferable concepts. Hence, in order to prevent the possible risk of funding problems, it becomes important to involve private sectors who can support financial resources.

CHAPTER VII

CONCLUSION AND RECOMMENDATION

VII.1. Introduction

This chapter aims to provide the conclusion of the analysis, gives recommendations to the Local Government of Bekasi Municipality to improve walkability in order to achieve the sustainable accessibility, and also provide the reflection of this research.

VII.2. Conclusion

VII.2.1. Introduction

After doing the comparative analysis to find key points to be adapted, trying to find the barriers to strategic policy that would be adapted, and providing the potential policy strategies that I propose to be adopted from strategic policy in London, this section will provide the conclusion.

As described in the first chapter of this thesis, the objective of this thesis is to contribute to the future development of the Bekasi Municipality by identifying the possible approaches to improve the pedestrian accessibility of public transport in Bekasi City. This thesis aims to give recommendation in reaching the sustainable accessibility by improving pedestrian accessibility to public transport in Bekasi through making a comparison with another city from different country.

In the theoretical framework, I focus on two factors of the condition principle to assess how to improve walkability. The specific focus of condition principle consists of physical factors and institutional factors. The physical factors are determined based on theories of POD (Pedestrian Oriented Development), New Urbanism, and also Compact City. These theories are used to build a knowledge relates to distance, diversity, density and design. The institutional factors are determined based on the theory of Collaborative Approach. This theory is used to build a knowledge relates to the role of stakeholder involvement and regulation.

The theoretical framework serves as the basic frame of this thesis to define the steps of my research. Based on the theories above, this thesis has defined the meaning of walkability as the ability and willingness of people to move or to go to somewhere by foot, the ability and the willingness of people are influenced by the quality of connections between one place to other places. While, accessibility is generally used to refer to the effort, means, connections, or modes with which a destination can be reached. Furthermore, to improve pedestrian accessibility of public transport in order to improve walkability, the connection between land use and walkability is very important. Hence, the concept of integration of land use and walkability will encourage the people in urban areas to interest do walking activity.

Using the method of comparison, this thesis compares two different cities (London and Bekasi) from two different countries to find the strategic policy to improve walkability in Bekasi Municipality. This thesis uses the secondary data to be basic of analysis. After getting the lesson learned of the successful implementation of strategic policy in London, this thesis takes a possible and an adaptable strategic policy from London to be transferred to Bekasi Municipality. In finding the possible strategic policy transfer in Bekasi Municipality, this thesis also defines the barriers of this policy transfer. Therefore, the strategic policy that I propose in this thesis is to answer the research question and also to answer the possible barriers of conducting policy transfer.

VII.2.2. Physical and Institutional Factors

Understanding these two factors (physical & institutional) is very helpful in managing the special intervention of the influencing factors of improving pedestrian accessibility to public transport facilities. From all theories that have been explained in theoretical review, this thesis remarks the instrument or criteria to analyze the implementation of strategic policy to improve pedestrian accessibility to public transport in London and Bekasi case. The criteria consist of distance, density, diversity, design, stakeholder involvement and regulation. Each of the criterion has a strategic policy given by planning document and guideline document. From each of criterion the data's are collected by a planning document, international journal,

guideline document, government documentation, government database and reports, statistics data's and other publication and information on the internet. Using these criteria, this thesis defines the impact of strategic policy in each country relates to proportion of travel made on foot, the use of public transport, and also land and property values.

VII.2.3. Policy Making

After doing the analysis and comparison of the strategic policy of improving pedestrian accessibility to public transport in London and Bekasi case, this thesis finds the difference of policy making in these cities. As explained clearly in the previous chapter, the main factor of successful implementation strategic policy in London case is the support of the Local Government. All of planning policies were supported by regulation that set out by the Local Government. Using the collaborative approach, the Local Government successfully coordinated all stakeholders to build strategic policy and to revise walking strategy.

It was totally different with policy making process in Bekasi Municipality which is not familiar with collaborative approach. As the impact the process of policy making in Bekasi Municipality was unsuccessful. Although, the governmental system in Bekasi Municipality is decentralized and Bekasi has a quite big authority to develop and manage their own region, the implementation of pedestrian accessibility was very bad. The Local Government was careless and not giving enough attention to the non-motorized user such as pedestrian. Hence, the different pattern of policy making between these cities helps this thesis in defining the possibility of adaptable strategic policy to be transferred from London to Bekasi Municipality. Chapter VI is dedicated to explain this including the barrier of adapting the policy strategy.

VII.3. Recommendation

The previous chapter provides the potential policy strategies that can be adapted to improve walkability in Bekasi. This section is dedicated to summarize the recommendation which was provided in chapter VI. Based on the examinations in this thesis, there are some recommendations can be made for improving pedestrian

accessibility of public transport facilities. The first recommendation is to make local planning guidance to improve walkability in Bekasi case. The Local Government needs to have local planning guidance which is set up through coordination among actors by emphasizing the importance of walkability.

Secondly, Bekasi adopt a collaborative approach to reduce many misunderstandings among actors in term of their roles, to increase the coordination between actors, and to integrate the policy from the Central Government to the Local Government.

Thirdly, Bekasi should provide counseling to increase the awareness of people about the importance pedestrian activity. They will understand the benefits both for themselves and for the sustainability of the City.

Fourthly, it should make the local standard of walking distance which can be adapted to the local characteristics of the City, which is currently only referring to a policy from the Ministry of Transportation (300-400 meters).

Fifthly, Bekasi should make the standard of minimum residents around public transit facilities as London has. Thus, in the future any urban planning in Bekasi will have to refer to this standard.

Sixthly, Bekasi should make guidance which refers to mixed-use concepts and integrates those to the public transit facilities. This will increase strategy to improve walkability. Seventhly, it should implement the appropriate design and use strategy such as planting more trees to make people feel more comfortable when walking.

Eighthly, it should conduct the communication strategy to help people to get information of the nearest bus stop available in walking distance easily.

The last one is Bekasi should involve the private sector to decrease the risk relates to the insufficiency of the budget.

VII.4. Reflection

It has not been an easy task to adopt the strategic policy from one country and transfer that strategic policy to another country. This thesis has to consider the external factor, the different government system and also characteristics of planning

in each country. Although, the strategic policy has been conducted with a good plan, it needs to identify the barriers to make that working properly in the implementation.

This thesis is built on a conceptual framework based on theoretical review. The literatures in theoretical review chapter consists of many insights relates to walkability, land use, accessibility for pedestrian, and the integration between land use and walkability. These literatures are used to build the main frame of the analysis. These literatures also serve as the basis to understand the criteria that are needed in doing the analysis.

The theoretical framework used to reach the sustainable accessibility in Bekasi Municipality through improving pedestrian accessibility to public transport facilities is involving two factors (physical and institutional factors). Both of the factors are providing the criteria to assess the implementation of strategic policy in London and Bekasi. As described and explained there are significant differences of strategic policy between London and Bekasi in the implementation strategic policy to improve walkability. It is clearly described in the policy making process.

The analysis of this research is based on the research question, and collecting the data based on the secondary data such as a planning document, international journal, guideline document, government documentation, government database and reports, statistics data's and other publication and information on the internet. The difficulty of collecting these data was to find one single document which provides all of criteria relates to this research. Fortunately, London provides many planning documents that can be accessed easily. This brought plenty information relates to pedestrian accessibility to public transport. Indeed, the difficulty of collecting data is to collect the data of Bekasi Municipality. The Local Government of Bekasi does not provide local planning guideline especially relates to pedestrian access as good as London case.

To answer the research questions, this thesis using several theories such as Pedestrian Oriented Development, New Urbanism, Compact City, Collaborative approach to build and develop main idea in order to find the insight of walkability

and what can be learned from London case to improve pedestrian accessibility in Bekasi Municipality.

The conclusion of the examination in this thesis has resulted in recommendations for improving pedestrian accessibility to public transport in Bekasi Municipality. The strategic policy proposed in this thesis provides possible and adaptable approach to do the transferability and identifies any possible barriers in doing that.

Concluding this reflection, it is important to become more aware about the problems of implementation strategy policy that will be adopted by Bekasi Municipality in the future research. Furthermore, an interesting research objective would be to find out the relationship between the planning of pedestrian accessibility and the availability of funds provided by the Local Government. This thesis focuses on problems of physical factors and institutional factors and gives small attention in the general characteristics problems. However, the discussion relates to funding problems and planning will be interesting to be discussed in further research. The financial resources issue is always an interesting issue.

REFERENCES

- Akbar, N. (2001). *Pemodelan Sistem Informasi Geografis Untuk Penentuan Nilai Lahan*. Skripsi. Teknik Geodesi ITB. Bandung
- Alba, C., A. (2003). *Transportation Accessibility*. University of Wisconsin. Milwaukee
- Alexander, C., Sasagawa, B., Michael, M, Hanson, B. (2005). *Document : Pedestrian for London, Enhancing the Beauty and Livability of London*. Center for Environmental Structure Europe and Martin Centre, Cambridge University
- American Planning Association. (2002). *Policy Guide on Smart Growth*. Ratified April 15. <http://www.planning.org/policyguides/pdf/smartgrowth.pdf>
- Bekasi Dalam Angka. (2011). Data Primer Kota Bekasi. Badan Perencanaan Pembangunan Daerah Kota Bekasi
- Black, J.A. (1981). *Urban Transport Planning : Theory and Practice*. London, Cromn Helm
- Bohl, Charles, C. (2000). *New Urbanism and the City: Potential Applications and Implications for Distressed Inner-City Neighborhoods*. Housing Policy Debate 11:761-801
- Booher, D.E., Innes, J.E. (2001). *Network Power in Collaborative Planning: Institute of Urban and Regional Development*. University of California at Berkeley
- Brown, P. (2006). *Legible London: A Way Finding Study*. Central London Partnership
- Breheny, M. J. (1974). *Towards Measures of Spatial Opportunity*. Progress in Planning Vol.2. Pp. 86-142
- BSTP. (2011). Dokumen Panduan Perencanaan Jalan Kaki. Direktorat Bina Sistem Transportasi Perkotaan. Kementerian Perhubungan Republik Indonesia
- Burns, L.D., Golob, T.F., and Nicolaidis, G.C. (1975). "A Theory of Urban Households Automobile Ownership Decisions". Transportation research record, in press
- Burns, L., D. & Golob, T., F. (1976). *The Role of Accessibility in Basic Transportation Choice Behavior*. Transportation 5. Pp.175-198

Burton, E. (2000). *The Compact City: Just or Just Compact? A Preliminary Analysis*. *Urban Studies* 37 (11): 1996-2001

Cambridge Advanced Learner's Dictionary. (2003). Cambridge University Press, Cambridge

Cervero, R. (1996). *Urban Design Issues Related to Transportation Modes, Designs and Services for Neo-Traditional Developments*. Presented at Urban Design, Telecommuting and Travel Forecasting Conference. Federal Highway Administration, Federal Transit Administration, Environmental Protection Agency. Texas Transportation Institute. Williamsburg

Cervero, R. (1996). *Mixed Land Uses and Commuting: Evidence From the American Housing Survey*. *Transpn Res-A*, Vol.30. No.5. Pp. 361-377

Cervero, R. (2001). *Transportation Planning*. In Smelser N J & Baltes P.B. (2001) *International Encyclopedia of the Social & Behavioral Science Ltd*, Oxford

Cervero, R., and M. Duncan. (2003). *Walking, Bicycling, and Urban Landscapes: Evidence from the San Fransisco Bay Area*. *American Journal of Public Health*, 93 (9), 1478-1483

Cervero, R., and R. Gorham. (1995). *Commuting in Transit Versus Automobile Neighborhoods*. *Journal of the American Planning Association*, 61 (2), 210-225

Culpepper, P.D. (2002). *The Political Rerils of Collaborative Governance in France and Italy*. Paper to Annual Meeting of the American Political Science Association. Boston, MA

Daly, H.E. (2002). *Sustainable Development: Definitions, Principles, Policies. Invited Address*. World Bank, Washington, DC, April 30

Daniel, S.E., Walker, G.B. (2001). *Working through Environmental Conflict: the Collaborative Learning Approach*. Westport, Conn: Praeger

Deichman, U. (1997). *Accessibility Indicators in GIS. Department for Economic and Social Information and Policy Analysis*. United Nation Statistic Division. Pp.24

DETR. (1998a). *A New Deal for Transport: Better for Everyone: Transport White Paper*. The Stationery Office, London

Dft. (2004). *Accessibility Planning Guidance: Full Guidance*. Departement for Transport, London.

DfT. (2004a). *Guidance on Accessibility Planning in Local Transport Plans – Draft Guidance for Consultation*. Department for Transport, London. Published: 4th August 2004. <http://www.accessibilityplanning.gov.uk>

DfT. (2006a). *Guidance on Accessibility Planning in Local Transport Plans*. Department for Transport, Modified: 31 January 2006, London

Document Providing for Pedestrians: Principles and Guidelines for Improving Pedestrian Access to Destination and Urban Space. (2003). Chapter 4.6. Access to Public Transport : Evidence in London-UK

Dolowitz, D., and Marsh, D. (1996). *Who Learns What From Whom: A Review of the policy Transfer Literature*. *Political Studies*, 343-357

Dolowitz, D., and Marsh, D. (2000). *Learning from Abroad: The Role of Policy Transfer in Contemporary Policy-Making*. Pp 5-23

Duany, A., E. Plater-Zyberk, and J. Speck. (2001). *Suburban Nation* New York: North Point Press

Ecotec Research & Consulting Ltd. (1993). *Reducing Transport Emissions Through Planning*. Department of Environment & Department of Transport. HMSO, London

Evans, M. (2009). *Policy Transfer in critical Perspective*. *Policy Studies*, Vol.30 (3). Pp. 243-268

Envall, P. (2007). *Accessibility Planning: a chimera?*. The University of Leeds. Institute for Transport Studies

Fengming Su., Bell, M.G.H., Schmorker, J.D. (2009). *Mode Choice of Older People Before and After Shopping : A Study with London Data*. *Journal of Transport and Land Use* 2 (1)

Frank, L.D., and G. Pipo. (1994). *Impact of Mixed Use and Density on Utilization of Three Modes of Travel: Single-Occupant Vehicle, Transit, Walking*. Transportation Research Record, No.1466, Transportation Research Board, National Research Councils, Washington DC, PP.44-52

Frank, L.D., T. L. Schmid., J. F. Sallis., J. Chapman., and B. E. Saelens. (2005). *Linking Objectively Measured Physical Activity with Objectively Measured Urban Form: Findings from SMARTAQ*. *American Journal of Preventative Medicine*, 28(2S2). 117-125

Galster, G., R.Hanson, M.Ratcliffe, H. Wolman, S. Coleman, and J. Freihage. (2001). *Wrestling Sprawl to the Ground: Defining and Measuring an Elusive Concept*. Housing Policy Debate 12 (4): 681-717

Geurs, K.T., Bert van Wee. (2004). *Accessibility Evaluation of Land-Use and Transport Strategies: Review and Research Directions*. Journal of Transport Geography 12, pp: 127-140

Greater London Authority. (2005). Transport Facts and Figures, Greater London Authority, December 2005, available at <http://www.london.gov.uk/mayor/transport/facts-and-figures>

Greater London Authority. (2001). The Mayor's Transport Strategy, Greater London Authority, July 2001

Hall, P. (2001). *Sustainable Cities or Town Cramming? In Planning for a Sustainable Future*. Edited by A. Layard, S. Davoudi, and S. Batty. London: Spon

Handy, S. (2005). *Smart Growth and the Transportation-Land Use Connection: What Does the Research Tell Us?*. International Regional Science Review 28,2:146-167

Handy, S. (2002). *Accessibility vs Mobility Enhancing Strategies for Addressing Automobile Dependence in the U.S. Paper Prepared for the European Conference of Ministers of Transports*. May 2002.

Available at http://www.des.ucdavis.edu/faculty/handy/ECMT_report.pdf

Hansen, W.G. (1959). *How Accessibility Shapes Land Use*. Journal of the American Institute of Planners. Vol. 25, pp. 73-76

Hill, C. (2007). *Risk Assessment of A Pedestrian-Oriented Environment*. University of North Carolina, Audrey de Nazelle

Howlett, M. (2001). *Complex Network Management and the Governance of the Environment: Prospects for policy Change and policy Stability Over the Long Term*. In *Governing the Environment: Persistent Challenges, Uncertain Innovations*. Toronto

IHT. (1997). *Transport in the Urban Environment. The Institution of Highways & Transportation*. London

Innovative Land Use Planning Techniques : *A Handbook for Sustainable Development. Pedestrian Oriented Development*. Available at : www.des.nh.gov/organization/divisions/water/wmb/repp

Ishaque, M., M. (2006). *Policies for Pedestrian Access: Multimodal Trade-Off Analysis Using Micro-Simulation Techniques*. Center for Transport Studies. Imperial College London

ITE. (2010). Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, Recommended Practice, Institute of Transportation Engineers www.ite.org/emodules/scriptcontent/Orders/ProductDetail.cfm?pc=RP-036A-E.
Also see www.ite.org/css

Knaap, G., Talen, E. (2005). *New Urbanism and Smart Growth: A Few Words From the Academy*. International Regional Science Review 28,2:107-118

Litman, T. (2010). *Accessibility, Mobility, and Automobile dependency*. <http://www.planetizen.com/node/42731>

Litman, T. (2012). *Well Measured : Developing Indicators for Sustainable and Livable Transport Planning*. Victoria Transport Policy Institute

May, A. (2001). Transport Policy. In: O'Flaherty C. A. Ed (2001) Transport Planning and Traffic Engineering. Pp. 42-79. Butterworth Heinemann, Oxford

Mills, M., van de Bunt G., de Bruijn, J. (2006). *Comparative Research Persistent Problems and Promising Solutions*. International Sociology, September 2006. Vol.21 (5): 619-631

Neuman, M. (2005). *The Compact City Fallacy*. Journal of Planning Education and Research 25:11-26

Oxford Advanced Learner's Dictionary. (2000). Sixth Edition. Oxford University Press, Oxford. Available at : <http://www.oup.com>

Paulley, N. Balcombe, R. Mackett, R, Titheridge, H. Preston, J., M. Wardman, M., R. Shire, J., D. White, P. (2006). *The Demand for Public Transport : The Effects of Fares, Quality of Service, Income and Car Ownership*. Transport Policy, 13 (4), pp. 295-306

Planning and Designing for Pedestrian : Guideline. (2012). Department for Transport, London-UK

Rogers, R. (1997). *Cities for a Small Planet*. London. Available at: http://www.plan4sustainabletravel.org/key_themes/density/. Access on 2 may 2013

Rudlin, D and Falk, N.(1999). Building the 21st Century Home Architectural Press. Available at: http://www.plan4sustainabletravel.org/key_themes/density/. Access on 2 may 2013

Sanyal, B. (2005). *Comparative Planning Cultures*. Routledge, New York/London

Schaffer, F. (1972). *The New Town Story: Second Edition*. Paladin, London

Sen, A. (2002). What Can Johannesburg Achieve? Distributed by New Perspectives Quarterly, Global Editorial Services, Nobel Laureates

SEU. (2003). *Making the Connections : Final Report on Transport and Social Exclusion*. The Social Exclusion Unit, Office of the Deputy Prime Minister, London

Shay, E., Spoon, S.C., Khattak, A.J. (2003). *Walkable Environments and Walking Activity*. Final Report for Seed Grant Submitted to: Southeastern Transportation Center. University of Tennessee, Knoxville, Tennessee.

Southworth, M. (2005). *Designing the Walkable City*. Journal of Urban Planning and Development. Pp 246-257

Song, Y., and G. Y. Knap. (2004). *Measuring Urban Form: Is Portland Winning the War on Sprawl?*. Journal of the American Planning Association 63 (1): 28-44

Spreiregen, P., D. (1965). *Urban Design : The Architecture of Town and Cities*. New York: Mc Graw Hill Book Company

Sranko, G.R. (2011). *Collaborative Governance and a Strategic Approach to Facilitating Change: Lesson Learned from Forest Agreements in South East Queensland and the Great Bear Rainforest*. Journal for and about Social Movements. Vol 3 (1): 210-239

Telford, T. (2007). Department for Transport: Manual for Streets. London-UK

TfL (Transport for London). (2004). *Making London a Walkable City: The Walking Plan for London*. Mayor of London

Torres, M., Yanan, Li., Dublin, E., Mehndiratta, S. (2010). *Measuring Pedestrian Accessibility: Comparing Central Business and Commercial Districts in Beijing, London and New York City*. World Bank Working Paper, World Bank, Washington, DC

Transport for London (TfL). (2005). Improving Walkability. Mayor of London

Transport for London (TFL). (2011). Draft Report Mayor of London : Taking Forward the Mayor's Transport Strategy Accessibility Implementation Plan, London

Transportation Master Plan in London 2030. Document Report : Discussion Paper Transit-Oriented Development, City of London

UNDIP. (2012). *Perencanaan wilayah Kota*. Semarang, Indonesia. <http://www.pwk.ft.undip.ac.id>

US.Department Transportation. (1999). Research, Development and Implementation of Pedestrian Safety Facilities in the United Kingdom. Publication No.FHWA-RD-99-089

UTTIPEC. (2009). Pedestrian Design Guidelines: Don't Drive, Walk, Delhi Development Authority, New Delhi (www.uttipeec.nic.in); at www.uttipeec.nic.in/PedestrianGuidelines-30Nov09-UTTPEEC-DDA.pdf.

Van Dijk, T. (2006). *Transplanting Instruments that Work: Four Practical Lesson on Eliminating Assumptions, Planning Theory and Practice*. Vol.7 (4). Pp. 421-442

VTPI (Victoria Transport Policy Institute). (2012). Walkability Improvements: Stategies to Make Walking Convenient, Safe, and Pleasant

Wytconsult. (1977a). West Yorkshire Transportation Studies: Summary of Technical Procedures. Final Report Vol.4.Wytconsult, London