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Optimisation of the Middle East Ring Road Model in Overcoming Traffic Congestion

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This article was written on the basis of research on the existence and construction of roads, namely the Middle East Ring Road (MERR). The construction of this road was initially controversial, both during planning and at the start of construction. The MERR was built to solve a very clichéd traffic problem – which almost always happens in any big city – namely that of traffic jams. The cause of congestion is the same as for other cities in Indonesia, namely the imbalance of the number of motorised vehicles with the number of roads, both in length and width. With the construction of the Middle East Ring Road, it is hoped that there will be a solution to the traffic problems in the city of Surabaya, because with the MERR it is expected that there will be a particular vehicle division that will traverse the road in the city of Surabaya, which has up to now had to cross through the centre of Surabaya and its near surroundings. Motorists whose homes and offices (work) are around Surabaya East and North can then use the peripheral route of the MERR when they travel to and return from work. This study uses a qualitative descriptive method to obtain data; primary data collection uses supervisory staff and interviews. While for secondary data it uses documentation. The purpose of the construction of the Middle East Ring Road is that the government of the city of Surabaya wishes to resolve the congestion that is occurring on Ahmad Yani Street and around Wonokromo. The construction of the MERR also affects the the surrounding community: economically for the social population living around the MERR it improves their lives, as they can can then open businesses around the MERR. In addition to being a traffic solver

for the Municipality of Surabaya, the MERR also becomes part of the road network of Surabaya and its surroundings, such as the regency of Sidoarjo. So, if it is related to the optimisation of the existence of the MERR, it must also be connected to other alternative road networks, such as the external ring road and toll roads, for instance the road to the regency of Sidoarjo.

Key words: *Optimisation Of Public Policy, Metropolitan, Middle East Ring Road (MERR).*

Introduction

The general state of traffic in the city of Surabaya is almost the same as in the other big cities of Indonesia. The growth in the number of motor vehicles, especially motorcycles, is very high, causing the congestion that often impacts on certain roads in the city of Surabaya. According to data from the transport department of the city of Surabaya in 2015, the growth rate of motorcycle users is 10-13% per year. In addition to traffic jams, another monitored effect that occurs is air pollution. The problem of congestion in the city of Surabaya is not only caused by the high rate of growth of vehicles, but several other factors which play a role are 1) the low level of public transport services – making users of private vehicles hesitant to change to using public transport; 2) lack of integration between modes of transport due to lack of optimal facilities to transfer to existing modes and nodes of transport; 3) accessibility within the region is not optimal because there remains a road network that has not yet been fully formed; 4) there is no policy for the limitation of private vehicle use in the primary and secondary activity centres in some areas, causing large traffic jams; 5) and the use of roads outside the intended function and the not yet significant increase in road capacity. (Medium-term regional development plan of the Municipality of Surabaya 2016-2021).

Apart from the above reality, what is clear is that Surabaya, from the 1980s, endeavoured to become a metropolis. The development of a city into a metropolis is not easy, moreover the city is not a city with a popular historic city, like the capital, the city of fashion, the city of technology, the city of celebrities , the city of music, etc. If we look at a kind of, Jakarta, New York, Paris, Los Angeles, Rome, these cities are emblematic cities for economy-business, fashion, cinema and music. In addition to the statute and the predicate, certain cities also have other titles in addition to being a large city, namely metropolitan or metropolitan. For a city called metropolis or metropolis, it is not easy, because there are certain criteria. As Rose Mary mentioned, an area to become a city (town) is:

“Places which satisfy the following criteria are called census towns: A minimum population of 5,000; At least 75 per cent of the male main working population engaged in non-agricultural

pursuits; and A density of population of at least 400 persons per sq. km. (i.e. 1000 per sq. Mile)" (rosemary.a@nic.in)

In addition, Rose Mary gave an explanation of the metropolitan city:

"Metropolitan area" as an area having a population of ten lakhs or more, comprised in one or more districts and consisting of two or more Municipalities or Panchayats or other contiguous areas, specified by the Governor by public notification to be a Metropolitan area" (rosemary.a@nic.in)

According to Encyclopædia Britannica, Inc. (2019) cities are relatively permanent and highly organised population centers, with a size or importance greater than villages. The names of the cities are given to certain urban communities according to several legal or conventional differences which may vary according to regions or countries. However, in many cases, the concept of city refers to a particular type of community, urban community and culture, known as "town planning". So there are educational cities, tourist cities, industrial cities, batik cities, etc.

Cities are said to be metropolitan if the level of mobility of their citizens is also proportional to various aspects of their lives, which means that the citizens of the city must also be supported by several systems linked to their mobility, namely: activity, network systems and motion systems. Because the three systems make a modern, metropolitan city. According to Panday et al (2014: 1), one reality of the three systems in the form of vehicles is: "Automobiles have provided a great freedom to the society in terms of mobility and convenience. The growth of modern society relies on efficient modes of transportation and, transportation has satisfied many needs of the everyday life".

With such complexity, the metropolis of Surabaya needs the right infrastructure so that the level of pluralism does not become an urban problem. By the 1980s, the city of Surabaya had started building traffic infrastructure such as toll roads and several overflights, toll roads were national class roads while provincial class overflights although in the area from the city were Wonokromo flyovers and the addition of Gubeng flyby.

Among the infrastructures of Surabaya which are often problematic, there are roads, both national class, provincial class and urban class roads. For roads with status categories also often have problems, namely the status of primary arterial roads and primary and secondary collector roads. The problem mentioned in the road infrastructure is the problem of traffic congestion due to the imbalance of many and the length of the road in relation to the number of two and four wheel motor vehicles.

To overcome these infrastructure problems, several mayors have attempted to start building extreme and spectacular infrastructure for the size of the city of Surabaya, deemed extreme and spectacular because in its construction, various controversies have taken place, ranging from policies, technical execution, areas crossed and time to work and of course with budgetary funds. In the 1980s, the city government of Surabaya began developing infrastructure. As Kota Kita reported: "Road infrastructure has not escaped the attention of the city government of Surabaya either. At present, several road infrastructure projects are under development in Surabaya: The projects include the Middle East Peripheral Road (MERR), the west and east façades of the Frontage Road (FR), the West Peripheral Road (JLLB) and the East Peripheral Road (JLLT). courses are West Side Frontage Road and MERR. Both roads are expected to be completed in 2017. The new roads are expected to reduce congestion in the city of Surabaya which is getting worse and worse. "(Blogkotakita.blogspot.com)

Basically, Surabaya needs a ring road such as the Middle East ring road - hereinafter abbreviated MERR - rather than the middle of the city's toll road, due to several considerations such that the ring road is cheaper than the middle of the city's toll road. In addition, almost all the cities in the world that have become metropolitan areas have built ring roads. As The Web's Largest Resource (2019) writes: A ring road, orbital motorway, beltway, circumferential highway, or loop highway is a road that encircles a town or city. The name "ring road" is used for the majority of metropolitan circumferential routes in the European Union, such as the Berliner Ring, the Brussels Ring, the Amsterdam Ring, the Boulevard Périphérique around Paris and the Leeds Inner and Outer ring roads. Australia and India also use the term ring road, as in Melbourne's Western Ring Road and Hyderabad's Outer Ring Road. In Europe, some ring roads, particularly those of motorway standard which are longer in length, are often known as "orbital motorways". Examples include the London Orbital, Rome Orbital, Manchester Orbital and the Madrid Orbital. In the United States, many ring roads are called beltways or loops, such as the Capital Beltway around Washington, D.C.

The purpose of this study is to determine the development of transport infrastructure in the city of Surabaya, namely the ring road of the Middle East. This article will specifically address one of the infrastructure developments in the city of Surabaya, namely the construction of MERR. Because the problem of traffic congestion is not only due to the number of motor vehicles and the lack of roads, but also to several problems of policy implementation. As we know that the construction of the MERR and the front road is the result of the cancellation of the construction of the downtown toll road which was suggested by the central government. However, building MERR is not just about overcoming traffic congestion, as MERR is also based on other factors. Like town planning, economic growth and economic equality, this is why the mayor rejects the toll of the city center.

Literature Review

Metropolitan City Concept

Countries wherever they are with the status of developed or developing countries, always have the desire to create one or more cities to become a metropolis. But there is a desire that can come true or vice versa, an increasingly chaotic city. From various reports and academic writings (research) and simply written in the media, always explain that the city has only been developed modestly. Because the city was not developed on the basis of the concepts and theories of urban planning, each city that wants to be a good metropolis will always have institutions and several regulations that support the development of the city. The institution may belong to the government or to an independent institution, or to international institutions under the auspices of international organisations such as the United Nations and several institutions under its authority.

In India, for a region to be a metropolis, it must be based on a concept that refers to a government institution such as an organisation that takes care of population censuses, "In India, the words "cities" and "towns" are defined in the Census of India – which provides statistical information on different characteristics of the people of India. The responsibility of conducting the decennial Census rests with the Office of the Registrar General and Census Commissioner, India under Ministry of Home Affairs, Government of India. (rosemary.a@nic.in).

Another concept for a city to be a metropolis and has a role if the city is linked to various aspects of life that are so complex and affect each other and even interdependence, various aspects of life can come from aspects of economic, technological, cultural and other development. As the United Nations reports on the development of cities today, "Cities provide large efficiency benefits, which result in unprecedented gains in productivity and competitiveness. Cities are the centres of knowledge, innovation and specialisation of production and services. Cities facilitate creative thinking and innovation. High concentration of people in cities generates more opportunities for interaction and communication, promotes creative thinking, creates knowledge spillovers and develops new ideas and technologies. Cities provide more opportunities for learning and sharing. Cities facilitate trade and commerce by providing super market places. Cities serve as production and services centres because the production of many goods and services is more efficient in a high-density urban environment. Cities provide consumers with more choices of goods and services. Cities are the agents of social, cultural, economic, technologic and political changes and advancement. (UN-HABITAT, 2011:3)

While Saskia Sassen (2005: 27-30) explains the criteria of a metropolitan city based on the development of the international economic system which will be clarified with 7 (seven) hypotheses, as follows:

a. The geographic distribution of economic activity that marks globalisation, as well as the simultaneous integration of various geographically distributed activities.
b. There is the complexity of several central functions of multinational corporations such as the management, coordination, service and financing of the corporate operations network.
c. Specialised service companies engaged in the most complex and globalised areas of the market are subject to agglomeration economies.
d. Regarding the city as headquarters, that more and more central offices are outsourcing the more complex and non-standard central functions.
e. Businesses need to have special services in global networks in the form of partnerships, in order to form transnational economic activities that will further affect the development of cities between countries.
f. The international economy will also create increasingly high professionalism, so that ownership will also be favorable.
g. Professionalism will create effective demand in metropolitan cities.

The development of metropolitan cities is also influenced by urbanisation, as the concepts of urbanisation in the mid-1990s were marked by the introduction of two concepts, namely the concept of new metropolitan and new urban planning. This was said by Janet Rothenberg Pack (2005: 2): “The literature on urban development of the past decade (since about themid-1990s) has been characterised by the introduction of two concepts: the new metropolitanism and the New Urbanism. A recent essay rfers to the new metropolitanism as a paradigm shift. Although the term takes on many different meanings, its principal components are urban sprawl as the problem and smart growth as the solution”.

The development of MERR in the context of the development of Surabaya as a metropolitan city is in fact part of the economic aspects and of various types of concepts. This also happened in Ukraine, when a protracted political crisis in Ukraine occurred in 2013, when the then president, Viktor Yanukovych, suspended preparations for the implementation of the association with the European Union. The move sparked massive protests from supporters known as "Euromaidan". (Ummu Ro’iyatu Nahdliyati Millati Hanifah, 2017: 169).

The political crisis has in turn become an economic crisis, as Tetiana Paientko (2016: 49-50) writes in her research report which emphasised and focused on the role of government-funded public services. According to Tetiana during the economic crisis, the investment budget must play a role in stabilising and contributing to the development of the country's economy. Therefore, the research report also recommends that the main objective of public investment be infrastructure development in general will have a positive impact on the social and economic development of a country.

What happened in Ukraine also happened in Indonesia, even worse. MERR was also built on the basis of two economic concepts to create a city to become a metropolis, the two concepts are economic development and economic development. According. Kooros and Badeaux (2007: 120), the difference between economic development and economic growth is: "Economic development, distinguished from economic growth, results from an assessment of the economic development objectives with the available resources, core competencies, and the infusion of greater productivity, technology and innovation, as well as improvement in human capital, resources, and access to large markets. Economic development transforms a traditional dual-system society into a productive framework in which every one contributes and from which receive benefits accordingly. Economic development occurs when all segments of the society benefit from the fruits of economic growth through economic efficiency and equity. Economic efficiency will be present with minimum negative externalities to society, including agency, transaction, secondary, and opportunity costs". This is why these two concepts must be harmonised and harmonised in a dynamic and harmonious way, if only economic development alone without economic growth accompanied by obvious economic stagnation.

Ring Road Concepts and Government Policy

The development of cities in metropolitan areas is influenced by the existence of ring roads, because the construction of ring roads has social advantages. Based on research by Hannes Lindkvist et al (2018: 3) in Sweden, concerning projects in an efficient and connected transport system. The study also examines the logistical relationship with the ring road and the efficient use of infrastructure - the report follows: "The project concludes that more efficient use of existing infrastructure can be managed by dynamically prioritising transport vehicles on the Swedish ring road in the metropolitan region of Stockholm and Gothenburg where congestion is high. Dynamic priority transport vehicles can be used as an incentive for more sustainable transport of goods when the transport of goods with high social value takes priority under conditions of heavy traffic . Thus, the construction of bypasses in all countries is still necessary, both in developed and developing countries".

The understanding of the road as a ring road is based on the shape and location of the road, depending on its shape is indeed a kind of ring that encircles the city, so it is certain that there are names north ring road, south ring road, west ring road and east ring road. So that each city that builds a ring road can go to the end, there is a ring road or two ring roads or a single ring road. Today, every city that is trying to become a metropolis certainly wants to build a ring road with a variety of reasons, some aim at the development of transport infrastructure, for the well-being of its citisens, but the most is a reason for wanting to create smooth traffic and to avoid road congestion. Besides various reasons, " the main objective of the bypass development in general is to reduce traffic congestion in the city, as well as to increase regional, interurban

and local traffic so that the distribution of regional and local goods takes place smoothly". (Sumaryoto, 2011: 9).

In fact, the needs of the city for the development of road infrastructure are not only in the form of ring road, because by adjusting the final needs of various forms and designations. National and provincial needs are often called toll roads, but for cities or districts, they are often called ring roads and bypasses. However, for several large cities such as Jakarta, Surabaya, Medan, Bandung, there are also toll roads because these cities have national roads. In Surabaya, for the construction of roads to reduce congestion from 2010, there are two designations, namely the ring road and the front road. For the ring road, there are two namely MERR (Middle East Ring Road) and Outer East Ring Road (OERR) Risiq Syihab (2018). While the facade designation is only for adding sections on Ahmad Yani on the east and west sides from the Wonokromo region to the regency of Sidoarjo.

The needs of the ring road in Indonesia were studied and based on the research of transport experts in the 1990s, that in Indonesia to overcome traffic problems, road networks are necessary, this is based on the movement of people , vehicles and goods. In turn, these movements bring complex interactions due to humans, vehicles and goods which have a very complex nature. For this reason, good transport planning is necessary so that the movement does not cause more problems. According to Tamin (2000: 28-31), "the general objective of transport planning is to make these interactions as simple and efficient as possible. How to plan transportation to achieve these general goals, among other things, by establishing policies on: business systems, network systems and motion systems ". Of the three systems, only the network system should be prioritised to overcome transport planning problems. Because the network system can increase the service capacity of existing infrastructure, which widens roads and adds new road networks.

With regard to the needs of both national or regional and regional roads, the government has in fact officially established regulations, according to the Spatial Dictionary (Soefaat et al, 1997: 35). outside; its function is to allow city vehicles to reach certain parts of the city without having to cross the city center or other parts of the city or to speed up travel from one side of the city to the other . Then by Sumaryoto, (2011: 11), clarified with the following description: There are three forms of ring road, namely: (1) internal ring road, (2) external ring road and (3) intermediate ring road.

Urban or metropolitan areas with large populations generally have one or two additional bypasses, in principle the need and the need for a resident bypass in its ability to serve the surrounding city center. However, the ring road is generally longer and wider than the city center road, so the ring road should be free of congestion problems in the central region. To

build infrastructure such as a ring road in all its forms and types, various policies are necessary to facilitate its realisation.

According to Bappenas (2019: 301), one of the directions of development policies and strategies is "infrastructure development must pay attention to regional spatial plans (RTRW) and the region's vulnerability to disaster risks". Next, the direction of these urban development policies and strategies in Indonesia focuses on sustainable smart cities. In developing cities, as recommended by the UN in a book on the International Guidelines on Cities and Spatial Planning or the International Guidelines on Planning and Spatial Planning, one of the objectives of this guide is: “To raise the urban and territorial dimensions of the development agendas of national, regional and local governments”. (UN-Habitat, 2015:1).

The direction of development policies and strategies in Indonesia in all areas is an effort to achieve good governance and this is a reflection of the political reform in 1998. From the aspect of good governance should lead to dynamic governance, to know governance that is sensitive to people's aspirations, to changes in the strategic development environment that is sensitive and capable of managing change. Bappenas. good and authoritative on the basis of a law and a professional and neutral bureaucracy. In addition, in accordance with the RPJMN 2020-2024, the integration of good governance aims to support national development.

In addition, the agile institutional structure, which is able to identify problems and / or opportunities, and to immediately anticipate quickly and continuously, is in phase with development and is able to respond to problems according to the orientation. development policy. In terms of human resources (HR), it is necessary to develop an HR apparatus of learners, by inculcating the concept of mentality capable of thinking strategically, open to collaborating with various development actors and the community, based on management systems merit and talent. In terms of public services, it is hoped that quality, responsible and responsive public services will be built, capable of bringing about social change. This is marked by compliance with service standards, the establishment of integrated electronic and non-electronic service portals, effective service complaint channels and periodic improvements in services with stakeholders (the public and commercial players).

For this reason, governance requires a prerequisite for the establishment of effective operational processes, open to collaboration between government and non-governmental organisations. This means that there is a kind of collaboration here, namely the economic, political and administrative aspects, “According to the 1997 policy paper, governance is the exercise of economic, political and administrative authorities to manage a country’s affairs at all levels. It comprises mechanisms, processes and institutions, through which citisens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences. Governance has “three legs”: economic, political and administrative.

Economic governance includes decision-making processes that affect a country's economic activities and its relationships with other economies. Political governance is the process of decision making to formulate policy. Administrative governance is the system of policy implementation" (Khandakar Qudrat-I Elahi, 2009:1169).

Governance will also continue to be improved and evaluated regularly, supported by optimal information and communication technologies. In addition to the interconnection between institutions at central level, the connection between central and regional governments is important, since the implementation of operational processes at technical level will have a direct and indirect positive impact on the implementation of development and delivery of public services. In terms of good governance, also based on the concept of dynamic governance with an understanding of the collaboration model of the People's Republic of China, that is to say: "To address the issues and challenges in public service procurement, collaborative governance mechanisms should be used by Chinese Governments as the possible solution. Collaborative governance is such a systematical theoretical framework under which the deep-rooted reasons for issues and challenges of service procurement and the relevant possible solutions can be explore". (Bing Ran, 2016:341).

Governance is also linked to public services, so the development of MERR is also a government effort to provide services to citisens or the public. This public service according to Denhardt and Denhardt (2007: 63) is a New Public Service (NPS) concept, said more clearly: "..…government must be responsive to the needs and interests of citisens. In any case, the New Public Service seeks to encourage more and more people to fulfill their responsibilities as citisens, and in turn, for public administrators to be especially sensitive to their voices".

Based on Denhardt's ideas, the development of MERR is also a manifestation of the NPS, in line with the objective of the NPS paradigm, namely the importance of a public service. Denhardt's aim is for the NPS to place more emphasis on the point of view of democratic theory based on the idea of active citisenship and of all those involved. For the development of MERR to be in accordance with the wishes of citisens and in line with the government program, development must be supported by clear laws and regulations regarding urban regulation, this regulation must also comply with the laws and regulations in force in Indonesia, from central government (constitution) to local government.

The development of MERR is therefore a manifestation and implementation of various public policies and other policies intended for the citisens of Surabaya. There is therefore a link between the concept - between the NPS paradigm and the implementation of public policies - with some of the existing by-laws in the municipality of Surabaya, such as the municipal master plan of Surabaya 2017, the municipal by-law of Surabaya number 12 of 2014 concerning the spatial planning of the municipality of Surabaya in 2014-2034.

Research Methods

The study was carried out in 2018-2019, the study location was the municipality of Surabaya with sublet along the Miiddle East Ring Road (MERR) or Jalan Ir. Sukarno, both on the east sides and Where is. This type of research is descriptive qualitative, because it only wants to obtain MERR situations and conditions in the morning, in the afternoon and in the evening. The MERR situation and condition are influenced by the pass between people and vehicles, whether they are two-wheeled vehicles or four-wheeled vehicles. Also other vehicles such as bicycles, rickshaws and carts and public transport. This study uses descriptive qualitative methods, for the purpose of descriptive research and tending to use analysis. The process and the meaning (perspective of the subject) are more highlighted in the research with a qualitative approach. In addition, qualitative research emphasises the depth of data obtained by the researchers. The more detailed and detailed the data obtained, the better the quality of this qualitative research. In research, the data used are primary data and secondary data. In the primary data, the researcher and the team took him directly to the field that had been previously investigated and observed.

Primary data are collected to obtain information directly in the field, namely around the MERR on Saturdays, Sundays and Mondays. Data collection was carried out in the morning from 6 a.m. to 8 a.m., in the afternoon from 11 a.m. to 1 p.m. and in the afternoon from 5 p.m. to 7 p.m. The primary data were also obtained on the basis of the interview method, this method was carried out because it wanted to obtain data directly on the MERR users who passed every day, in addition to the MERR users also interviewed people who had houses along MERR to the west and east. In order to make the data more valid, interviews were also conducted with experts in transport infrastructure, such as professors of civil engineering, town and country planning from the Institute of Engineering 10 November Surabaya (ITS), staff from BAPPEKO, staff from the transport department and staff from the Surabaya Municipality public works office.

While in the secondary data, the researchers and the team collected data from the relevant agencies, both in the library and on the Internet and in other documents. Documents are collected in the form of books, reports and data in the form of files on a computer. Once primary and secondary data has been collected, the next step is to analyze the data. Data analysis techniques used by researchers with data reduction, presentation and conclusions of the data, techniques of withdrawal or verification and validity of data in this study using triangulation.

Search Results

Geographical and Demographic Conditions of the Municipality of Surabaya

Towards the metropolitan city of Surabaya is also growing, as well as the population, according to the Ministry of Population and Civil Status is increasing. To be more clear on the development and population growth of the city of Surabaya, the following table will provide an overview of the projected population of the city of Surabaya over ten years, from 2011 to 2020, results of the population census of 2010.

Table 1: Projection of Population Based on Population Cencuss of 2010 2011- 2020 (in thousands of lives)

Year	Male	Female	Amount
2011	1.390,2	1.425,0	2.815,2
2012	1.397,8	1.432,2	2.830,0
2013	1.405,2	1.439,4	2.844,6
2014	1.410,2	1.446,0	2.856,2
2015	1.417,7	1.452,5	2.870,2
2016	1.425,5	1.459,3	2.883,8
2017	1.431,3	1.465,3	2.896,6
2018	1,437,3	1.471,1	2.908,4
2019	1.442,9	1.476,6	2.919,5
2020	1.447,5	1.481,6	2.929,1

Source: BPS – Statistics of Surabaya

Number of Vehicles in the Municipality of Surabaya

The growth of motor vehicles in Indonesia is growing very quickly, much faster than the improvement of long road infrastructure which causes traffic congestion problems, especially in the big cities of Indonesia - like Surabaya - including roads arteries that continue to grow densely. In turn, congestion will cause problems with the efficiency and effectiveness of the transportation system.

Motor vehicles are the most widely used form of transportation in the community in almost all daily activities and can even improve people's social status. The number of motor vehicles most widely used in Surabaya are vehicles for personal use, in particular motorcycles which have a large share. Motorised vehicles are grouped by type, as in table 2 below:

Table 2: Motor vehicles by type 2016 – 2018

Transportation type	2016	2017	2018
Sedan	50.164	50.024	56.046
SUV	31.324	33.110	34.997
MPV	230.094	243.209	257.072
The bus	2.628	2.777	2.936
Truck	106.555	112.629	119.049
Motorcycle	1.482.115	1.566.595	1.655.891
Heavy equipment	159	168	177
amount	1.903.039	2.011.512	2.126.168

Source: BPS – Statistics of Surabaya 2018

According to the government of the city of Surabaya, the Middle East ring road or MERR road is the eastern gate of Surabaya. The MERR development project is contained in by-law number 12 of 2014 of the city of Surabaya concerning regional spatial planning (RTRW) of the city of Surabaya from 2014-2034. In addition, MERR is one of the development priorities of the Medium-Term Development Plan of the City of Surabaya (RPJPM) for 2016-2021. With this road there should be a solution to overcome traffic problems, namely congestion in the north-south corridor in the central area of the city of Surabaya.

MERR Road, also known as Jalan Doktor Engineer Haji Soekarno, is a 10.98 km ring road that connects Kenjeran, Surabaya to Tambak Sumur, Waru, Sidoarjo, East Java. This road crosses the northern, eastern and southern parts of the city of Surabaya and the north-eastern part of the regency of Sidoarjo. This ring road serves as a connecting route between the Suramadu National Bridge and Juanda International Airport via the Waru-Juanda toll road.
Construction of this road started in 1996 and was halted for several years. The project resumed in 2007. MERR section II-A (Kenjeran-Mulyorejo); Section MER-II-B (Mulyorejo-Arif Rahman Hakim); and part of the MERR II-C section (Arif Rahman Hakim-Gunung Anyar) with a length of 9.18 kilometers was connected in 2012, and part of the MERR II-C section (mount Anyar-Tambak Sumur) the 1.8 kilometer long was connected in 2019. The road was officially inaugurated by the mayor of Surabaya, Tri Rismaharini, on May 30, 2019. (http://dpm-ptsp.surabaya.go.id) MERR a two lanes and three lanes, with a road width up to 40 meters. However, the width of the road is 30 meters and the remaining 10 meters are used for pedestrians and the central water channel. (GESURI.id)

Middle East Ring Road Traffic Data Flow

Based on research conducted around July 2019, primary data was obtained, then this data is processed and analyzed. In addition, the results of the analysis are presented in the following tables:

Table 3: West side MERR traffic flow data Saturday

No	Transportation type	06.00-07.00	10.00-11.00	18.00-19.00	Amount
1	Public transport	42	23	10	75
2	Trucks and Goods Cars	182	165	28	375
3	Private car	1440	1215	1202	3857
4	Motorcycle	2320	2273	1650	6243
5	Other (bicycles, tricycles, carts)	6	6	12	24

Table 4: West side MERR traffic flow data Sunday

No	Transportation type	06.00-07.00	10.00-11.00	18.00-19.00	Amount
1	Public transport	20	15	16	51
2	Trucks and Goods Cars	59	53	14	126
3	Private car	835	1028	1084	2947
4	Motorcycle	1582	1128	1635	4345
5	Other (bicycles, tricycles, carts)	11	4	5	20

Table 5: West side MERR traffic flow data Monday

No	Transportation type	06.00-07.00	10.00-11.00	18.00-19.00	Amount
1	Public transport	11	24	16	51
2	Trucks and Goods Cars	199	209	54	462
3	Private car	1199	1152	1112	3463
4	Motorcycle	3137	2080	2192	7409
5	Other (bicycles, tricycles, carts)	15	5	10	30

Table 6: MERR East Side traffic flow data on Saturday

No	Transportation type	06.00-07.00	10.00-11.00	18.00-19.00	Amount
1	Public transport	44	24	42	110
2	Trucks and Goods Cars	84	188	34	306
3	Private car	1100	851	1359	3310
4	Motorcycle	1630	2220	1506	5356
5	Other (bicycles, tricycles, carts)	6	14	5	25

Table 7: Traffic data MERR East Side Sunday

No	Transportation type	06.00-07.00	10.00-11.00	18.00-19.00	Amount
1	Public transport	15	20	36	71
2	Trucks and Goods Cars	72	66	48	186
3	Private car	525	790	1300	2615
4	Motorcycle	1460	1356	1506	4322
5	Other (bicycles, tricycles, carts)	14	8	4	26

Table 8: MERR East Side traffic flow data on Monday

No	Transportation type	06.00-07.00	10.00-11.00	18.00-19.00	Amount
1	Public transport	18	20	18	56
2	Trucks and Goods Cars	124	230	18	372
3	Private car	912	880	1024	2816
4	Motorcycle	2650	2308	2442	7400
5	Other (bicycles, tricycles, carts)	22	18	5	35

By examining the traffic conditions on the Middle East ring road (MERR) on the basis of data obtained for 3 (three) days, namely Saturday, Sunday and Monday and in the morning, afternoon and evening / night , both on the west and east sides, it turns out Private vehicles occupy the most positions, especially motorcycles. While the average traffic density is in the morning.

In the meantime, although the effect is small on the number of additional road lengths in Surabaya, the MERR is indeed necessary, as well as in relation to data on traffic density and the number of vehicles in the city of Surabaya. So the existence of MERR is very useful to relieve traffic congestion in the central and eastern region of Surabaya, especially when leaving for work and returning from work on Monday (morning and evening). It would be temporary because the presence of MERR in solving congestion problems in Surabaya is not yet optimal. Indeed, MERR has not yet formed a complete network of other alternative routes. In the future, MERR will also be linked to the construction of other alternative routes, namely the Outer East Ring Road (OERR). The existence or position of the JLLT (OERR) is located in the eastern most area of the Municipality of Surabaya, near the coast.

On the data based on the results of interviews with MERR users and local residents along the MERR, all responded and were satisfied with various considerations, such as easy access from the small road to the main road, the circulation which became more fluid and more organised. Likewise, local residents affected by MERR said they were positive and improved economically. While road construction experts like the Surabaya Sepuluh November Institute

of Technology have stated that the existence of MERR is indeed very necessary in Surabaya to overcome traffic problems.

Results of the Middle East Ring Road

The MERR route, which has just been formalised, is 100% complete on May 30, 2019, it may be too early to speak of results. But on the basis of the researchers' observations and interviews, will summarise the results obtained for ± 6 months as follows:

1. Reduce congestion in the city center

The traffic density which is always visible on Jalan A Yani and Diponegoro when the rush hour has decreased with the construction of the MERR. . Access to the airport from the center of Surabaya should not be by A Yani but may be by MERR. Likewise, access from inside and outside the city becomes more fluid. For example from Surabaya to Madura or vice versa, from Sidoarjo to Surabaya or vice versa. This is in line with the statement by Mr. Tunjung, Department of Transportation of the City of Surabaya, regarding the reduction of congestion in the city center with the creation of MERR:

"... the results of MERR are able to reduce the density of traffic in the city center is quite large. Yach ... as I said in the previous interview ± 40% per day ... I think it's a breakthrough to reduce congestion in the right downtown. If it's not blocked at all, yes, that's impossible… MERR was built as an artery rather than eliminating congestion but to reduce congestion ... which means MERR has worked. Another result is easy access from inside and outside the city of Surabaya…. " (interview, November 4, 2019)

Mr. Agus Yudi Wibawa, Department of Public Works Bina Marga and Pematusan Surabaya Munacipality in the following interview extract:

"... With MERR ... it breaks congestion ± 30-40%. This can be seen with the previously empty MERR, which is becoming increasingly crowded. This means that MERR has become an alternative choice for users to means of activities ... work, school and other mobility. Although MERR Sundays around 10:00 am and above are also busy ... " (Interview, November 5, 2019) Supporting the above opinion expressed by Nurul, BAPPEKO (City Development Planning Agency) as follows:

"... facilitate access to the airport, Madura as well as an alternative to the city center. On top of that, it's also important to reduce congestion, sir ... if it's presented from about 40% like I said in the previous interview ... " (Interview, November 6, 2018)

Statements which do not differ greatly from the above contacts are from Mr. Ahmad Suyanto, ST, MT, member of Commission C of the Munacipality of Surabaya DPRD (Regional People's Representative Assembly) as follows:

"... you can see and feel for yourself right now thanks to A. Yani ... first of all, it started at the Waru roundabout until Dolog was completely stuck. Now c is smooth ... yes in addition to the facade ... there is also another alternative way for MERR for people who work in Rungkut, Gunung Anyar or Galaxy ... "(Interview, November 6, 2019)

Based on the above interview, it can be concluded that the results felt by users of the MERR road and based on observations indicate that with MERR capable of reducing congestion in the city center by 30 to 40% and to facilitate road access from inside and outside the Munacipality of Surabaya.

2. Increase in distribution / economic distribution in the outskirts of the municipality of Surabaya

Before then, MERR was stretching the community economy into the city centers. From retail stores, offices, banks, apartments, restaurants and even food stalls / food courts, many thrive in the city center. While the periphery is less attractive, the road is calm and the access is uncomfortable. Besides, the environment also seems dirty and disorganised. At most, there are only small businesses such as laundry, pre-service, rice milling and photocopying. The stretching of the economy has been a very real development in the MERR East and West. The following table shows the businesses, offices and buildings on the east and west sides.

Table 9: Commercial sites, offices and buildings on MERR road

No	Business, Office and Building Name	West Side	East Side
	Banks and Financial Institutions	18	12
	Apartment	1	3
	Café	7	6
	Mini Market	2	4
	Food stalls	13	18
	Coffee shop	12	11
	Clothing store	2	2
	Package agent	1	2
	Motorcycle dealer	-	1
	Car dealer		1
	Shop house building	6	5
	Restaurants (Pisza, KFC, Burger King, Restaurants and so on)	6	6

No	Business, Office and Building Name	West Side	East Side
	Store stationery, electrical and building equipment	12	8
	Medical services, hospital	4	6
	Real estate	1	4
	Educational institutions	1	5
	Small office	6	10
	Beauty salon	12	1
	Workshop	10	4
	The mosque	3	2
	Inn	1	
	Gas station	1	
	Mall, Super Market		1

Source: previous data processed

Based on the above data shows that the development of business units and very important after development. Not all business units are new, but most business units develop as MERR is built.

Conclusions and Recommendations

Conclusion

The construction of the MERR or the engineer Jalan Doktor Haji Soekarno, both on the west side and on the east side, helped to solve the traffic problem which is to reduce congestion by ± 30 to 40%. in the area around central and eastern Surabaya, because based on the number of vehicles in the city of Surabaya which is not balanced with the length of the available road. Monday is the first day and is a busy day, especially when you leave for work and when you return from work. In the presence of MERR, the density can be broken down. While the existence of MERR is indeed necessary, because it is very useful in solving traffic problems in the city of Surabaya.

Recommendation

The construction of MERR is very useful to solve some of the traffic problems in the city of Surabaya, the problem is traffic congestion, especially during the week. For the city of Surabaya until 2019, it is already finished because the southernmost city of Surabaya is the region of Mount Anyar. However, so that the existence of MERR can be used optimally for the development of transport infrastructure in the future, MERR should be able to connect to the regency of Sidoarjo. The road that links MERR Gunung Anyar towards Sidoarjo will later become an alternative route for the community. Because MERR is also directly towards the

regency of Sidoarjo to the east, this region will later become a business center which was isolated due to the Lapindo mudslide.

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