# THE INFLUENCE OF THE VOLUME OF MOTORCYCLE ON THE TRAFFIC SPEEDS ON THE OTTO ISKANDARDINATA ROAD IN SAMARINDA CITY

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# ABSTRACT

Samarinda City currently has a population of around 872,768 people (BPS East Borneo 2019) which is included in the most populous city in East Kalimantan. With the increase in population in Samarinda City will increase the movement and need for access to transportation facilities and infrastructure.

The number of vehicles in East Kalimantan, especially motorcycles, increased by 2,228,292 (BPS East Borneo 2015). With the high growth in the number of vehicles, this makes several lanes in the city of Samarinda very risky to experience a decrease in traffic speeds such as on the Otto Iskandardinata Road section.

Otto Iskandardinata Road is a road that belongs to the UD 2/2 Collector category with a length of 0.960 km and a width of 8.6 m, data was taken for 2 weeks, from 11 February 2019 - 24 February 2019 with a time of research of 8 hours. The observation points were carried out at 2 observation points. In this study, using a conventional calculation method, namely by calculating the volume of vehicles using MKJI 1997.

Based on the results of calculations it can be seen that when the volume of the vehicle is small ie in the morning the vehicle speed when passing is relatively high and when the traffic volume has increased during the afternoon the traffic speed decreases. The solution that can be done to overcome the problems in Jalan Otto Iskandardinata City in Samarinda is to change the type of road that was originally from 2/2UD to 4/2UD. It can be seen that the degree of saturation has improved, which was originally 0.65 (2/2UD) to 0.40 (4/2 UD). So the road with type 4/2 UD shows better ability to accommodate the traffic flow on the Otto Iskandardinata road in Samarinda City.

Keywords: volume of motorcycle vehicles, vehicle speed

#### PRELIMINARY Background

Road is a land transportation infrastructure that has a very important role in the land transportation sector, which supports the continuous distribution of goods and services to encourage economic growth in a region. Development in urban areas is a reflection of economic growth supported by adequate road infrastructure, so that development can be carried out safely, efficiently and on time. Road conditions that are traversed by high and repetitive traffic volume can cause a decrease in traffic speed, making it uncomfortable and unsafe to pass.

Samarinda City is the Capital City of East Kalimantan Province which is currently the center of the city with a variety of activities that continue to increase. The development of a region is marked by increased economic growth in society, as well as what happened in Samarinda City. Samarinda City currently has a population of around 872,768 people (BPS Kaltim 2019), which is included in the most populous city in East Kalimantan, which is experiencing an increase in population every year. With the increase in population, the problems that occur in Samarinda City are even more numerous, because increasing population in Samarinda City will increase movement and the need for access to transportation facilities and infrastructure.

The number of vehicles in East Kalimantan, especially motorcycles, increased by 2,228,292 (BPS East Kalimantan 2015). With the high growth in the number of vehicles, this makes a number of lanes in the city of Samarinda very risky to experience a decrease in traffic speeds such as the Otto Iskandardinata Road section.

Otto Iskandardinata Road is a road that belongs to the UD 2/2 Collector category with a length of 0.960 km and a width of 8.6 m. There are many factors that cause a decrease in traffic speed, not only the side obstacles that affect the speed of the traffic but the number of vehicles that exceed the road section also affects the speed of traffic, especially motorcycle vehicles which are the vehicle with the highest number compared to other vehicles.

## **Research Problem Formulation**

The research problem formulation is as follows:

- 1. What is the current volume of motorcycle vehicles on the Jalan Otto Iskandardinata City in Samarinda?
- 2. What is the effect of the volume of motorcycle vehicles on the traffic speed on Jalan Otto Iskandardinata Samarinda?
- 3. What is the solution that can be done to overcome the problems that occur at the observation site?

#### Limitation of Research Problems

As for the limitations of the research problem are as follows:

- 1. The research location is on the Otto Iskandar Dinata Street in Samarinda City
- 2. Calculations using the 1997 Indonesian Road Capacity Manual (MKJI'97)
- 3. The performance of road traffic based on:
  - a. Traffic flow
  - b. Capacity
  - c. Degree of Saturation
  - d. Speed
  - e. Traveling time
- 4. Data is taken for 2 weeks, from 11 February 2019 24 February 2019 from Monday to Sunday with 8 hours of research time, and for 2 weeks observation is always carried out. The observation points were carried out at 2 points, namely:
  - Dama Sungai Market Intersection starting on 11 February 2019 -17 February 2019
  - Mount Manggah from 18 February 2019 24 February 2019
  - And research time at each point of observation as follows:
  - at 07.00-10.00 wita
  - at 11.00-14.00 wita
  - at 16.00-18.00 wita

#### **Purpose and Research Objectives**

#### I mean

The purpose of this study was to analyze the effect of motorcycle volumes on traffic speed on the Otto Iskandardinata Samarinda road.

#### Aim

The purpose of this study was to determine the effect of motorcycle volumes on traffic velocity on the Otto Iskandardinata road in Samarinda City.

## Benefits of Research

The research benefits are as follows:

- 1. Can be a source of information or knowledge about transportation, especially about the influence of motorcycle volumes on traffic speed on the Otto Iskandardinata Samarinda city.
- 2. Can be taken into consideration in future policy making.
- 3. As a reference material for other research.
- 4. Can be used as material to increase understanding in the field of transportation, especially regarding the influence of motorcycle volumes on traffic speed on the Otto Iskandar Dinata road in Samarinda City.

#### **BASIC THEORY**

#### Urban Roads

According to the Indonesian Road Capacity Manual (MKJI, Bina Marga, 1997) defines urban roads as roads that have permanent and continuous development along all or almost all roads, minimum on one side of the road, whether in the form of land development or not. These include roads near urban centers with a population of more than 100,000 people, as well as roads in urban areas with populations of less than 100,000 people with permanent and continuous road side developments.

The types of roads on urban roads are as follows:

- 1. Divided two-way two-lane road (2/2 UD)
- 2. Four-way lane
- a. Undivided (without median) (4/2 UD)
- b. Divided (by median) (4/2 D)
- 3. The six-lane two-lane road is divided (6/2 D)
- 4. One-way street (1/1) (Alamsyah, A.A, 2008)

## Traffic Volume

Traffic volume is the number of vehicles that pass a certain point on a united road segment expressed in vehicles per hour or passenger car units per hour. (PM number 96 of 2015). Average Daily Traffic Volume (LHR) is the total volume that crosses a point or section of road facilities for both majors, for one year divided by the number of days in a year and the Daily Traffic Volume Plan (VLHR) is an estimate or volume estimate daily traffic for the future in certain sections of the road. (Ministry of Public Works 1997).

## Side Barriers

Side barriers are impacts on traffic performance from side activities of road segments. This is indicated by the factor of the number of weighted events, namely the actual occurrence frequency multiplied by the weighted factor.

The weighting factors of the saddles according to the 1997 Indonesian Road Capacity Manual (MKJI) are as follows:

a. Pedestrians (weight = 0.5)

b. Stop vehicle (weight = 1.0)

c. Vehicles coming in and out of the side of the road (weight = 0.7)

## Travel Time Speed

The speed at which a vehicle travels is defined as the average speed for light vehicles in hours for the observed road conditions (MKJI, 1997). The average travel time equation is:

*V: The average speed of space* (km / h)

L: Road segment length (km)

TT: Average LV travel time along road segments (Hours)

# **RESEARCH METHODOLOGY**

## Research sites

The location used as a place of research is Jalan Otto Iskandardinata Samarinda City. Administratively, this road is located in Samarinda Ilir Sub-District, Sungai Dama Sub-District, Samarinda City.



Picture 1 Research Location

#### Data Analysis Techniques

Data analysis techniques are an important step in a study. In this study, using a conventional calculation method, namely by calculating the volume of the vehicle.

# Traffic Volume Analysis

There are several factors used in analyzing vehicle volumes as follows:

a. Traffic Volume

Traffic volume data obtained from surveys conducted in the field in the form of traffic volume in units of vehicle / hour. To get the traffic volume in units of junior high school / hour, it is necessary to do a multiplication of each type of vehicle with the equivalent factor of each vehicle. The data is obtained at 15 minute intervals into 1 hour intervals in a row. To determine the peak hour traffic volume by selecting the largest value on internal time 1 hour.

## b. Capacity

From the geometric data that can be found in the field, it can be obtained the capacity of the road segment by entering certain variables based on the geometric data in the formula according to the Indonesian Road Capacity Manual (MKJI 1997).

c. Degree of Saturation

The degree of saturation is used to determine whether a road segment has a capacity problem or not. Factors that influence the degree of saturation are traffic capacity and volume.

d. Speed

The speed used in this study is the average speed of the space so it takes the travel time obtained from the survey results. The travel time data is searched for an average of each desired time interval and entered into the formula.

## ANALYSIS AND DISCUSSION

#### **Population Data**

Population data is used as a reference to determine the capacity adjustment factor for city size (FCcs). This data is based on BPS (Statistics Indonesia) of Samarinda City which can be seen in table 1.1.

Table 1.1 Projection Data on the City of Samarinda Population by Gender in 2010-2019

Ma	Tahun	Jenis F	Kelamin	Total
No	Tanun	Laki-Laki	Perempuan	Total
1	2010	379400	352761	732161
2	2011	387288	360814	748102
3	2012	395467	369441	764908
4	2013	404073	376942	781015
5	2014	411996	385010	797006
6	2015	420141	392456	812597
7	2016	428155	400148	828303
8	2017	435949	407497	843446
9	2018	443379	414701	858080
10	2019	451099	421669	872768

Source: Central Statistics Agency (BPS) of Samarinda City

## Geometric Conditions and Road Environment

Geometric conditions and road environment include: road names, road functions and so on can be seen in table 1.2. The movement of traffic vehicles in both directions of the Otto Iskandardinata road in Samarinda City is generally quite smooth with types of vehicles ranging from non-motorized, motorized, light vehicles, motorized vehicles with varying speeds for each type of vehicle.

 No
 Karakteristik
 Keterangan

 1
 Nama Jalan
 Otto Iskandardinata

 2
 Fungsi
 Kolektor

 3
 Tipe Jalan
 2/2UD

 4
 Jenis Perkerasan
 Rigid Pavement

8.6 m

960 m

Permukiman dan Toko

5 Lebar Jalan

7

8

6 Panjang Jalan

Median Jalan Situasi Sisi Jalan

 Table 1.2 Road Geometric Data

The total width of the road is 8.6 meters in 2 directions where each direction has a width of 4.3 meters, this road has no road markings and the median of the road as a lane separator, making it difficult for road users when driving on it.



Picture 1.2 Existing Condition of Jalan Otto Iskandardinata Samarinda City

Traffic Volume

Table 1.3 Traffic volume recapitulation on Thursday 14 February 2019 direction 1 (city	
direction to Anggana direction) and direction 2 (Anggana direction to city direction)	

	A	RAH 1					ARAH 2		
Waktu	мс	LV	HV	UM	Waktu	MC	LV	HV	UM
07.00 - 08.00	864	194	10	25	07.00 - 08.00	506	127	3	19
08.00 - 09.00	877	171	14	22	08.00 - 09.00	612	216	13	25
09.00 - 10.00	940	267	15	33	09.00 - 10.00	728	379	9	8
11.00 - 12.00	1029	286	13	10	11.00 - 12.00	928	269	12	41
12.00 - 13.00	1154	318	42	14	12.00 - 13.00	1028	213	49	19
13.00 - 14.00	1261	381	31	0	13.00 - 14.00	1221	207	15	22
16.00 - 17.00	2580	707	33	23	16.00 - 17.00	1086	161	29	7
17.00 - 18.00	2330	575	20	10	17.00 - 18.00	1387	274	80	30
Total	11035	2899	178	137	Total	7496	1846	210	171

Source: Central Statistics Agency (BPS) of Samarinda City

To make it easier to see the results of calculations, the authors will enter the calculation results into the forms UR 1, UR 2, and UR 3 as follows:

Table 1.4 Form UR 1

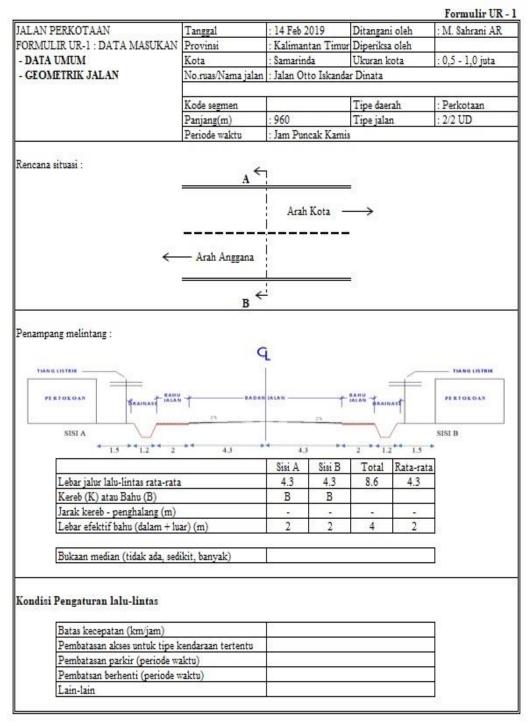


Table 1.5 Form UR 2

FORMULIR UR - 2 : DATA MASUKAN         No.ruas/Nama jalar         : Jalan Otto Iskandar Dinata           - ARUS LALU LINTAS         No.ruas/Nama jalar         : Jalan Otto Iskandar Dinata           - HAMBATAN SAMPING         Periode waktu:         Jam puncak Kamis           Lalu lintas harian rata-rata tahunan         Periode waktu:         Jam puncak Kamis           Lalu lintas harian rata-rata tahunan         Faktor-k         0.09         pemisah arah 1/arah 2 = 50           Lalu lintas harian rata-rata tahunan         Faktor-k         0.09         pemisah arah 1/arah 2 = 50           Data arus kendaraan/jam         Faktor-k         0.025         Arus total Q           1.1         emp arah 1         LV:         1.0         HV:         1.2         MC:         0.25           2         Arah         kend/jam smp/jam kend/jam smp/jam kend/jam smp/jam kend/jam smp/jam kend/jam smp/jam Arah %         kend/jam smp/jam smp/jam kend/jam smp/jam Arah %         kend/jam smp/jam smp/jam kend/jam smp/jam Arah %         kend/jam smp/jam smp/jam Arah S = 0,/(0,+2)         66%         7         1.1         10         5061         2108.35         6         981         113         135.6         3967         991.75         100         5061         2108.35         6           7         Faktor-smp F <sub>smp</sub> =         0.42         0.42         1.2 <th colspan="3">JALAN PERKOTAAN FORMULIR UR - 2 ' DATA MASUKAN</th> <th></th> <th>Tanggal:</th> <th></th> <th>: 14 Feb 2</th> <th>2019</th> <th>Ditangani</th> <th>oleh:</th> <th>M. Sahran</th>	JALAN PERKOTAAN FORMULIR UR - 2 ' DATA MASUKAN				Tanggal:		: 14 Feb 2	2019	Ditangani	oleh:	M. Sahran
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bobot kejadian per 200 m dari segmen jalan yang diamati, pada kedua sisi jalansampingbobotberbobotPejalan kakiPED0.5478/jam,200m239Parkir, kendaraan berhentiPSV1.0119/jam,200m119Kendaraan masuk + keluarEEV0.7201/jam,200m141	7 Kelas ha Bila data selanjutn	rinci tersedia iya gunakan	a, gunaka tabel kedu	ua. Bila tida			ikan frekw	ensi berbi	obot kejad	ian, dan	0.92
200 m dari segmen jalan         [20]         [21]         [22]         [23]         [24]           yang diamati, pada kedua         Pejalan kaki         PED         0.5         478         /jam,200m         239           sisi jalan         Parkir, kendaraan berhenti         PSV         1.0         119         /jam,200m         119           Kendaraan masuk + keluar         EEV         0.7         201         /jam,200m         141	7 Kelas hi Bila data selanjutn 1. Penen	rinci tersedia iya gunakan ituan frekwei	a, gunaka tabel kedu nsi kejaida	ua. Bila tida an	ak, gunaka		ikan frekw abel kedua	ensi berbi			179
yang diamati, pada kedua Pejalan kaki PED 0.5 478 /jam,200m 239 sisi jalan Parkir, kendaraan berhenti PSV 1.0 119 /jam,200m 119 Kendaraan masuk + keluar EEV 0.7 201 /jam,200m 141	7 Kelas hi Bila data selanjutn 1. Penen Perhitung	rinci tersedia iya gunakan ituan frekwei gan frekwen:	a, gunaka tabel kedu nsi kejaida	ua. Bila tida an Tipe ham	ak, gunaka		ikan frekw abel kedua	ensi berbo Faktor			Frekwensi
sisi jalan Parkir, kendaraan berhenti PSV 1.0 119 /jam,200m 119 Kendaraan masuk + keluar EEV 0.7 201 /jam,200m 141	7 Kelas ha Bila data selanjutn 1. Penen Perhitung bobot ke	rinci tersedik nya gunakan Ituan frekwen gan frekwen jadian per	a, gunakai tabel kedu nsi kejaida si ber-	ua. Bila tida an Tipe ham	ak, gunaka batan		ikan frekw abel kedua Simbol	ensi berbo Faktor bobot	Frekwen	si kejadian	rekwensi berbobot
	7 Kelas ha Bila data selanjutn 1. Penen Perhitung bobot ke 200 m da	rinci tersedia iya gunakan ituan frekwen gan frekwen jadian per ari segmen ja	a, gunakai tabel kedu nsi kejaida si ber- lan	ua. Bila tida an Tipe ham samping	ak, gunaka batan [20]		kan frekw abel kedua Simbol [21]	Faktor [22]	Frekwen	si kejadian 23]	Frekwensi berbobot [24]
Kendaraan lambat SMV 0.4 151 /jam,200m 60	7 Kelas ha Bila data selanjutn 1. Penen Perhitung bobot ke 200 m da yang dia	rinci tersedik iya gunakan ituan frekwen gan frekwen jadian per ari segmen ja mati, pada ke	a, gunakai tabel kedu nsi kejaida si ber- lan	an Tipe ham samping Pejalan ka	ak, gunaka batan [20] aki	n hanya t	ikan frekw abel kedua Simbol [21] PED	Faktor [22] 0.5	Frekwen [ 478	si kejadian 23] /jam,200m	Frekwensi berbobot [24] 239
	7 Kelas ha Bila data selanjutn 1. Penen Perhitung bobot ke 200 m da yang dia	rinci tersedik iya gunakan ituan frekwen gan frekwen jadian per ari segmen ja mati, pada ke	a, gunakai tabel kedu nsi kejaida si ber- lan	an Tipe ham samping Pejalan ka Parkir, ke	ak, gunaka batan [20] aki ndaraan b	n hanya ti erhenti	ikan frekw abel kedua Simbol [21] PED PSV	Faktor bobot [22] 0.5 1.0	Frekwen [ 478 119	si kejadian 23] /jam,200m /jam,200m	Frekwensi berbobot [24] 239 119
Total: 559	7 Kelas ha Bila data selanjutn 1. Penen Perhitung bobot ke 200 m da yang dia	rinci tersedik iya gunakan ituan frekwen gan frekwen jadian per ari segmen ja mati, pada ke	a, gunakai tabel kedu nsi kejaida si ber- lan	an Tipe ham samping Pejalan ka Kendaraa	ak, gunaka batan [20] aki ndaraan b an masuk +	n hanya ti erhenti	kan frekw abel kedua Simbol [21] PED PSV EEV	Faktor bobot [22] 0.5 1.0 0.7	Frekwen [ 478 119 201	si kejadian 23] /jam,200m /jam,200m /jam,200m	Frekwensi berbobot [24] 239 119 141
200 m dari segmen jalan         [20]         [21]         [22]         [23]         [24]           yang diamati, pada kedua         Pejalan kaki         PED         0.5         478         /jam,200m         239           sisi jalan         Parkir, kendaraan berhenti         PSV         1.0         119         /jam,200m         119           Kendaraan masuk + keluar         EEV         0.7         201         /jam,200m         141	7						raktor-sn	ip r <sub>smp</sub> =			0.42
200 m dari segmen jalan         [20]         [21]         [22]         [23]         [24]           yang diamati, pada kedua         Pejalan kaki         PED         0.5         478         /jam,200m         239           sisi jalan         Parkir, kendaraan berhenti         PSV         1.0         119         /jam,200m         119           Kendaraan masuk + keluar         EEV         0.7         201         /jam,200m         141	7 Kelas hi Bila data selanjutn 1. Penen	rinci tersedia iya gunakan ituan frekwei	a, gunaka tabel kedu nsi kejaida	ua. Bila tida an	ak, gunaka		ikan frekw abel kedua	ensi berbi			179
yang diamati, pada kedua Pejalan kaki PED 0.5 478 /jam,200m 239 sisi jalan Parkir, kendaraan berhenti PSV 1.0 119 /jam,200m 119 Kendaraan masuk + keluar EEV 0.7 201 /jam,200m 141	7 Kelas hi Bila data selanjutn 1. Penen Perhitung	rinci tersedia iya gunakan ituan frekwei gan frekwen:	a, gunaka tabel kedu nsi kejaida	ua. Bila tida an Tipe ham	ak, gunaka		ikan frekw abel kedua	ensi berbo Faktor			Frekwensi
sisi jalan Parkir, kendaraan berhenti PSV 1.0 119 /jam,200m 119 Kendaraan masuk + keluar EEV 0.7 201 /jam,200m 141	7 Kelas ha Bila data selanjutn 1. Penen Perhitung bobot ke	rinci tersedik nya gunakan Ituan frekwen gan frekwen jadian per	a, gunakai tabel kedu nsi kejaida si ber-	ua. Bila tida an Tipe ham	ak, gunaka batan		ikan frekw abel kedua Simbol	ensi berbo Faktor bobot	Frekwen	si kejadian	rekwensi berbobot
Kendaraan masuk + keluar EEV 0.7 201 /jam,200m 141	7 Kelas ha Bila data selanjutn 1. Penen Perhitung bobot ke 200 m da	rinci tersedia iya gunakan ituan frekwen gan frekwen jadian per ari segmen ja	a, gunakai tabel kedu nsi kejaida si ber- lan	ua. Bila tida an Tipe ham samping	ak, gunaka batan [20]		kan frekw abel kedua Simbol [21]	Faktor [22]	Frekwen	si kejadian 23]	Frekwensi berbobot [24]
	7 Kelas ha Bila data selanjutn 1. Penen Perhitung pobot ke 200 m da yang dia	rinci tersedik iya gunakan ituan frekwen gan frekwen jadian per ari segmen ja mati, pada ke	a, gunakai tabel kedu nsi kejaida si ber- lan	an Tipe ham samping Pejalan ka	ak, gunaka batan [20] aki	n hanya t	ikan frekw abel kedua Simbol [21] PED	Faktor [22] 0.5	Frekwen [ 478	si kejadian 23] /jam,200m	Frekwensi berbobot [24] 239
Kendaraan lambat SMV 0.4 151 /jam,200m) 60	7 Kelas ha Bila data selanjutn 1. Penen Perhitung bobot ke 200 m da yang dia	rinci tersedik iya gunakan ituan frekwen gan frekwen jadian per ari segmen ja mati, pada ke	a, gunakai tabel kedu nsi kejaida si ber- lan	an Tipe ham samping Pejalan ka Parkir, ke	ak, gunaka batan [20] aki ndaraan b	n hanya ti erhenti	ikan frekw abel kedua Simbol [21] PED PSV	Faktor bobot [22] 0.5 1.0	Frekwen [ 478 119	si kejadian 23] /jam,200m /jam,200m	Frekwensi berbobot [24] 239 119
	7 Kelas ha Bila data selanjutn 1. Penen Perhitung bobot ke 200 m da yang dia	rinci tersedik iya gunakan ituan frekwen gan frekwen jadian per ari segmen ja mati, pada ke	a, gunakai tabel kedu nsi kejaida si ber- lan	an Tipe ham samping Pejalan ka Parkir, ke	ak, gunaka batan [20] aki ndaraan b	n hanya ti erhenti	ikan frekw abel kedua Simbol [21] PED PSV	Faktor bobot [22] 0.5 1.0	Frekwen [ 478 119	si kejadian 23] /jam,200m /jam,200m	Frekwensi berbobot [24] 239 119
	7 Kelas ha Bila data selanjutn 1. Penen Perhitung pobot ke 200 m da yang dia	rinci tersedik iya gunakan ituan frekwen gan frekwen jadian per ari segmen ja mati, pada ke	a, gunakai tabel kedu nsi kejaida si ber- lan	an Tipe ham samping Pejalan ka Parkir, ke	ak, gunaka batan [20] aki ndaraan b	n hanya ti erhenti	ikan frekw abel kedua Simbol [21] PED PSV	Faktor bobot [22] 0.5 1.0	Frekwen [ 478 119	si kejadian 23] /jam,200m /jam,200m	Frekwensi berbobot [24] 239 119
	7 Kelas ha Bila data selanjutn 1. Penen Perhitung bobot ke 200 m da yang dia	rinci tersedik iya gunakan ituan frekwen gan frekwen jadian per ari segmen ja mati, pada ke	a, gunakai tabel kedu nsi kejaida si ber- lan	an Tipe ham samping Pejalan ka Kendaraa	ak, gunaka batan [20] aki ndaraan b an masuk +	n hanya ti erhenti	kan frekw abel kedua Simbol [21] PED PSV EEV	Faktor bobot [22] 0.5 1.0 0.7	Frekwen [ 478 119 201	si kejadian 23] /jam,200m /jam,200m /jam,200m	Frekwensi berbobot [24] 239 119 141
	7 Kelas ha Bila data selanjutn 1. Penen Perhitung bobot ke 200 m da yang dia	rinci tersedik iya gunakan ituan frekwen gan frekwen jadian per ari segmen ja mati, pada ke	a, gunakai tabel kedu nsi kejaida si ber- lan	a. Bila tida Tipe ham samping Pejalan ka Parkir, ke Kendaraa	ak, gunaka batan [20] aki ndaraan b an masuk +	n hanya ti erhenti	kan frekw abel kedua Simbol [21] PED PSV EEV	Faktor bobot [22] 0.5 1.0 0.7	Frekwen [ 478 119 201	si kejadian 23] /jam,200m /jam,200m /jam,200m	Frekwensi berbobot [24] 239 119 141 60
2. Penentuan kelas hambatan samping	7 Kelas ha Bila data selanjutn 1. Penen Perhitung bobot ke 200 m da yang dia sisi jalan	rinci tersedik iya gunakan ituan frekwen jadian per ari segmen ja mati, pada ke	a, gunaka tabel kedu nsi kejaida si ber- lan edua	a. Bila tida Tipe ham samping Pejalan ka Parkir, ke Kendaraa Kendaraa Total :	ak, gunaka batan [20] aki ndaraan b an masuk +	n hanya ti erhenti	kan frekw abel kedua Simbol [21] PED PSV EEV	Faktor bobot [22] 0.5 1.0 0.7	Frekwen [ 478 119 201	si kejadian 23] /jam,200m /jam,200m /jam,200m	Frekwensi berbobot [24] 239 119 141 60
	7 Kelas ha Bila data selanjutn Perhitung bobot ke 200 m da yang dia sisi jalan 2. Penen	rinci tersedik iya gunakan gan frekwen: jadian per ari segmen ja mati, pada ke	a, gunaka tabel kedu nsi kejaida si ber- lan edua ambatan s	a. Bila tida Tipe ham samping Pejalan ka Parkir, ke Kendaraa Kendaraa Total :	ak, gunaka batan [20] aki ndaraan b an masuk + an lambat	n hanya ti erhenti ⊦ keluar	ikan frekw abel kedua Simbol [21] PED PSV EEV SMV	Faktor bobot [22] 0.5 1.0 0.7	Frekwen [ 478 119 201 151	si kejadian 23] /jam,200m /jam,200m /jam,200m /jam,200m	Frekwensi berbobot [24] 239 119 141 60 559
Frekwensi berbobot kejadian Kondis khusus Kelas hambatan samping	7 Kelas ha Bila data selanjutn Perhitung bobot ke 200 m da yang dia sisi jalan 2. Penen	rinci tersedik iya gunakan ituan frekwen gan frekwen ari segmen ja mati, pada ke ituan kelas ha	a, gunaka tabel kedu nsi kejaida si ber- lan edua ambatan s	a. Bila tida Tipe ham samping Pejalan ka Parkir, ke Kendaraa Kendaraa Total :	ak, gunaka batan [20] aki ndaraan b an masuk + an lambat	n hanya ti erhenti + keluar	ikan frekw abel kedua Simbol [21] PED PSV EEV SMV	Faktor bobot [22] 0.5 1.0 0.7	Frekwen [ 478 119 201 151 Kelas	si kejadian 23] /jam,200m /jam,200m /jam,200m /jam,200m	Frekwensi berbobot [24] 239 119 141 60 559 amping
Frekwensi berbobot kejadian     Kondis khusus     Kelas hambatan samping       [30]     [31]     [32]     [33]	7 Kelas ha Bila data selanjutn Perhitung bobot ke 200 m da yang dia sisi jalan 2. Penen	rinci tersedik iya gunakan ituan frekwen jadian per ari segmen ja mati, pada ke ituan kelas ha insi berbobot [30]	a, gunaka tabel kedu nsi kejaida si ber- lan edua ambatan s	a. Bila tida Tipe ham samping Pejalan ka Parkir, ke Kendaraa Kendaraa Total :	ak, gunaka batan [20] aki ndaraan b an masuk - an lambat Ko	n hanya t erhenti + keluar ondis khus [31]	kan frekw abel kedua Simbol [21] PED PSV EEV SMV	Faktor bobot [22] 0.5 1.0 0.7	Frekwen [ 478 119 201 151 [ Kelas	si kejadian 23] /jam,200m /jam,200m /jam,200m hambatan s 32]	Frekwensi berbobot [24] 239 119 141 60 559 amping [33]
Frekwensi berbobot kejadian       Kondis khusus       Kelas hambatan samping         [30]       [31]       [32]       [33]         < 100	7 Kelas ha Bila data selanjutn Perhitung bobot ke 200 m da yang dia sisi jalan 2. Penen	rinci tersedia iya gunakan ituan frekwen jadian per ari segmen ja mati, pada ke ituan kelas ha insi berbobot [30] < 100	a, gunaka tabel kedu nsi kejaida si ber- lan edua ambatan s	a. Bila tida Tipe ham samping Pejalan ka Parkir, ke Kendaraa Total : amping Permukim	ak, gunaka batan [20] aki ndaraan b an masuk - an lambat Ko man, hampii	n hanya t erhenti + keluar (31) t tidak ada	ikan frekw abel kedua Simbol [21] PED PSV EEV SMV	Faktor bobot [22] 0.5 1.0 0.7 0.4	Frekwen [ 478 119 201 151 [ Kelas [ Sanga	si kejadian /jam,200m /jam,200m /jam,200m /jam,200m /jam,200m hambatan s 32] t rendah	Frekwensi berbobot [24] 239 119 141 60 559 amping [33]
Frekwensi berbobot kejadian       Kondis khusus       Kelas hambatan samping         [30]       [31]       [32]       [33]         < 100	7 Kelas ha Bila data selanjutn Perhitung bobot ke 200 m da yang dia sisi jalan 2. Penen	rinci tersedia iya gunakan ituan frekwen jadian per ari segmen ja mati, pada ke sinsi berbobot [30] < 100 100 - 299	a, gunaka tabel kedu nsi kejaida si ber- lan edua ambatan s	a. Bila tida Tipe ham samping Pejalan ka Parkir, ke Kendaraa Kendaraa Total : samping Permukim Permukim	ak, gunaka batan [20] aki ndaraan b an masuk + an lambat Ko man, hampin an, bebera	n hanya ti erhenti ⊦ keluar [31] r tidak ada apa angku	ikan frekw abel kedua Simbol [21] PED PSV EEV SMV	Faktor bobot [22] 0.5 1.0 0.7 0.4	Frekwen [ 478 119 201 151 Kelas [ Sanga Re	si kejadian /jam,200m /jam,200m /jam,200m /jam,200m /jam,200m hambatan s 32] t rendah ndah	Frekwensi berbobot [24] 239 119 141 60 559 amping [33] VL L
Frekwensi berbobot kejadian       Kondis khusus       Kelas hambatan samping         [30]       [31]       [32]       [33]         < 100	7 Kelas ha Bila data selanjutn Perhitung bobot ke 200 m da yang dia sisi jalan 2. Penen	rinci tersedia iya gunakan ituan frekwen jadian per ari segmen ja mati, pada ke sinsi berbobot [30] < 100 100 - 299	a, gunaka tabel kedu nsi kejaida si ber- lan edua ambatan s	a. Bila tida Tipe ham samping Pejalan ka Parkir, ke Kendaraa Kendaraa Total : samping Permukim Permukim	ak, gunaka batan [20] aki ndaraan b an masuk + an lambat Ko man, hampin an, bebera	n hanya ti erhenti ⊦ keluar [31] r tidak ada apa angku	ikan frekw abel kedua Simbol [21] PED PSV EEV SMV	Faktor bobot [22] 0.5 1.0 0.7 0.4	Frekwen [ 478 119 201 151 Kelas [ Sanga Re	si kejadian /jam,200m /jam,200m /jam,200m /jam,200m /jam,200m hambatan s 32] t rendah ndah	Frekwensi berbobot [24] 239 119 141 60 559 amping [33] VL L
Frekwensi berbobot kejadian       Kondis khusus       Kelas hambatan samping         [30]       [31]       [32]       [33]         < 100	7 Kelas ha Bila data selanjutn Perhitung bobot ke 200 m da yang dia sisi jalan 2. Penen	rinci tersedik iya gunakan ituan frekwen gan frekwen ari segmen ja mati, pada ke insi berbobot [30] < 100 100 - 299 300 - 499	a, gunaka tabel kedu nsi kejaida si ber- lan edua ambatan s	a. Bila tida Tipe ham samping Pejalan ka Parkir, ke Kendaraa Kendaraa Total : amping Permukim Permukim Daerah in	ak, gunaka batan [20] aki ndaraan b an masuk - an lambat Ko nan, hampii nan, bebera ndustri den	n hanya t erhenti ⊦ keluar [31] r tidak ada apa angku gan toko-	ikan frekw abel kedua Simbol [21] PED PSV EEV SMV sus	Faktor bobot [22] 0.5 1.0 0.7 0.4 dll. jalan	Frekwen [ 478 119 201 151 51 Kelas [ Sanga Re Se	si kejadian /jam,200m	Frekwensi berbobot [24] 239 119 141 60 559 amping [33] VL L M

# Table 1.6 Form UR 3

M. Sahrani AR	oleh:	) Ditangani	14 Febuari 2019		Tanggal:	N	PERKOTAA
in, gan an Ait	vivit.		Jalan Otto Iskandi		No.ruas/Nar		ILIR UR - 3 :
	oleh:	Diperiksa	Jaian Ollo Iskanu		Kode segme		ATAN, KAP
2	olen.		Jam puncak Kam		Periode wal	451145	ATAN, NAPA
		mis	Jam puncak Kam	KIU.	Periode wai		
K FFV <sub>C8</sub>	V <sub>w</sub> ) x FFV <sub>sF</sub> )	FV = (FV <sub>0</sub> + F	F		ingan	ebas kendaaan ri	atan arus b
Kecepatan arus beba	suaian	Faktor penye	F	/esuaian	Faktor peny	Kecepatan arus	Soal/
		atan samping		1000	untuk leba	bebas dasar	Arah
			Vo+FV				
FV				25	FV.	FV <sub>0</sub>	
(4) x (5) x (6)	<b>FFV</b> <sub>cs</sub>	FFVse	(2) + (3) F	2	Tabel	Tabel 2.2	
(km/jam)	Tabel 2.5	Tabel 2.4	0/0 0.000		(km/ja	(km/jam)	
[7]	[6]	[5]	[4]		[3]	[2]	[1]
1	1-3			2 9			1 - S.W.
41.52	0.95	0.95	46		4	42	
FX FC <sub>CS</sub>	x FC <sub>ap</sub> x FC <sub>a</sub>	C = C <sub>0</sub> x FC <sub>w</sub>	c			(	tas
Kapasitas		tuk kapasitas	penyesuaian untu	Faktor	-	Kapasitas dasar	Soal/
С	Ukuran kota			Pemisa	Lebar jalur		Arah
						Co	
(smp/jam)	FC <sub>CS</sub>	FCSF	P	FC	FCw	Tabel 2.6	
ets an entration of the shipher and	the second second second	Tabel 2.9	a succession of the second	Tabe	Tabel 2.7	(smp/jam)	
11)x(12)x(13)x(14)x(							

#### .

# Kecepatan kendaran ringan

2900

1.25

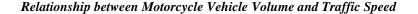
Soal	Arus lalu lintas	Derajat	Kecepatan	Panjang Segmen	Waktu tempuh
Arah	Q	Kejenuhan	VLV	jalan	Π
	Formulir UR-2	DS	Gambar 2.1	L	(24/23)
	smp/jam	(21)/(16)	Km/jam	Km	jam
[20]	[21]	[22]	[23]	[24]	[25]
	2108.35	0.65	32	0.96	0.0300

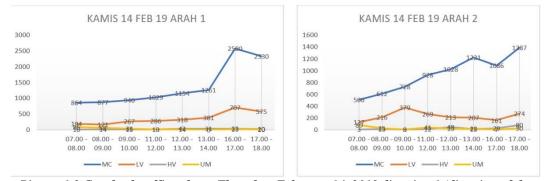
1.00

0.95

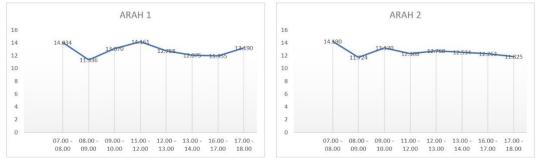
0.94

3237.125





Picture 1.3 Graph of traffic volume Thursday, February 14, 2019 direction 1 (direction of the city heading towards Anggana) and direction 2 (direction of Anggana toward the direction of the city)



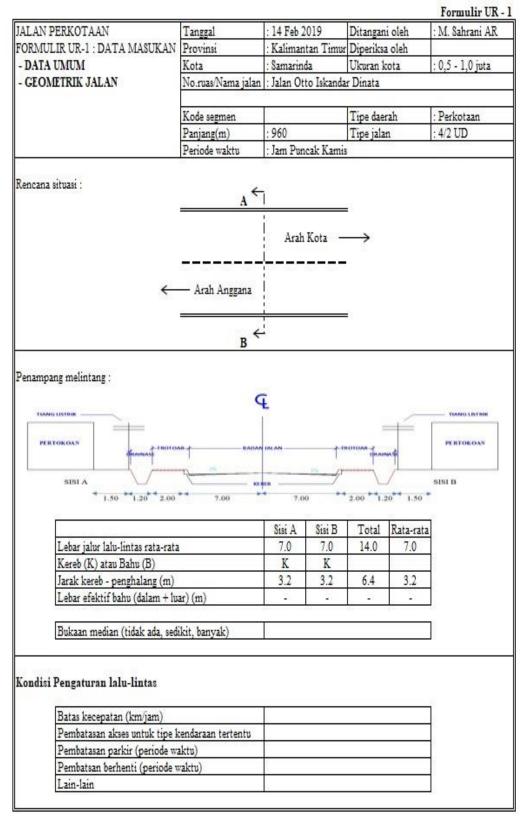
Picture 1.4 Motor vehicle speed chart Thursday Thursday February 14 2019 direction 1 (city direction to Anggana direction) and direction 2 (Anggana direction to city direction)

Based on the above results, it can be seen that when the volume of the vehicle is small ie in the morning the vehicle speed when passing is relatively high and when the traffic volume has increased during the evening the traffic speed decreases.

# Change the road type to 4 / 2UD as an alternative solution

In this calculation, the data used as a reference for Thursday, February 14, 2019 are due to the densest day during observations in the field. Then the calculation results are obtained as follows:

Table 4.12 Form UR 1



JALAN P	ERKOTAAN			Tanggal:			2019	Ditangani	i oleh:	M. Sahrani AR	
FORMUL	IR UR - 2 : D/	ATA MAS	UKAN		Vama jalan	: Jalan Ot	to Iskanda	r Dinata		x	
- ARUS	LALU LINTA	AS		Kode seg	men:		Sector of the	Diperiksa	oleh:		
- HAMB	ATAN SAM	PING		Periode v	vaktu:	Jam pund	cak Kamis			Â	
LHRT (ke komposis	and the second second		ahunan LV %	53	HV %	Faktor-k = 9	0.09 MC %	per 38	nisah arah '	1/arah 2 = [	
Baris	Tipe kend.	-	Ringan	Kend	Berat	Sepeda	a Motor	-		20	
1.1	emp arah 1	LV:	1.0	HV:	1.2	MC:	0.25		Arus total (	2	
1.2	emp arah 2		1.0	HV:	1.2	MC:	0.25				
2	Arah (1)	Barrenner	smp/jam (3)	kend/jam (4)	smp/jam (5)	kend/jam (6)	smp/jam (7)	Arah % (8)	kend/jam (9)	smp/jam (10)	
3	1	707	707	33	39.6	2580	645	50	3320	1391.6	
4	2	274	274	80	96	1387	346.75	50	1741	716.75	
5	1+2	981	981	113	135.6	3967	991.75	100	5061	2108.35	
6		50.	20	10.	1/1	Pemisah a	arah, SP =	Q1/(Q1+2)	66%		
1											
Bila data	ambatan sa rinci tersedi ya gunakan	a, gunakai	STOLEN STOLEN				ensi berbo	obot ke <mark>j</mark> ad	ian, dan	0.42	
Kelas ha Bila data selanjutn	rinci tersedia ya gunakan	a, gunaka tabel kedu	ua. Bila tida			kan frekw	ensi berbo	obot kejad	ian, dan	0.42	
<b>Kelas h</b> a Bila data selanjutn 1. Peneni	rinci tersedia ya gunakan tuan frekwe	a, gunakai tabel kedu nsi kejaida	ua. Bila tida an	ak, gunaka		kan frekw abel kedua	ensi berbo				
Kelas ha Bila data selanjutn 1. Penen Perhitung	rinci tersedii ya gunakan tuan frekwe gan frekwen	a, gunakai tabel kedu nsi kejaida	ua. Bila tida an Tipe ham	ak, gunaka		kan frekw	ensi berbo		ian, dan Isi kejadian	Frekwensi	
Kelas ha Bila data selanjutn 1. Peneni Perhitun <u>c</u> bobot kej	rinci tersedii ya gunakan tuan frekwei gan frekwen: jadian per	a, gunakaı tabel kedu nsi kejaida si ber-	ua. Bila tida an	ak, gunaka		kan frekw abel kedua	ensi berbo Faktor	Frekwen			
Kelas ha Bila data selanjutn 1. Peneni Perhitun <u>o</u> bobot kej 200 m da	rinci tersedii ya gunakan tuan frekwe gan frekwen	a, gunakaı tabel kedu nsi kejaida si ber- lan	ua. Bila tida an Tipe ham	ak, gunaka batan [20]		kan frekw abel kedua Simbol	ensi berbo Faktor bobot	Frekwen	isi kejadian	Frekwensi berbobot [24]	
Kelas ha Bila data selanjutn 1. Peneni Perhitun <u>o</u> bobot kej 200 m da	rinci tersedii ya gunakan tuan frekwen gan frekwen jadian per iri segmen ja mati, pada ke	a, gunakaı tabel kedu nsi kejaida si ber- lan	an Tipe ham samping Pejalan ka	ak, gunaka batan [20]	n hanya ta	kan frekw abel kedua Simbol [21]	ensi berbo Faktor bobot [22]	Frekwer	isi kejadian 23]	Frekwensi berbobot [24] 239	
Kelas ha Bila data selanjutn 1. Peneni Perhitun <u>g</u> bobot kej 200 m da yang diai	rinci tersedii ya gunakan tuan frekwen gan frekwen jadian per iri segmen ja mati, pada ke	a, gunakaı tabel kedu nsi kejaida si ber- lan	an Tipe ham samping Pejalan ki Parkir, ke	ak, gunaka batan [20] aki	n hanya ta	kan frekw abel kedua Simbol [21] PED	Faktor [22] 0.5	Frekwen [ 478	isi kejadian 23] /jam,200m	Frekwensi berbobot [24] 239 119	
Kelas ha Bila data selanjutn 1. Peneni Perhitun <u>g</u> bobot kej 200 m da yang diai	rinci tersedii ya gunakan tuan frekwen gan frekwen jadian per iri segmen ja mati, pada ke	a, gunakaı tabel kedu nsi kejaida si ber- lan	an Tipe ham samping Pejalan ka Kendaraa	ak, gunaka batan [20] aki ndaraan b	n hanya ta	kan frekw abel kedua Simbol [21] PED PSV	Faktor bobot [22] 0.5 1.0	Frekwer [ 478 119	si kejadian 23] /jam,200m /jam,200m	Frekwensi berbobot [24] 239 119 141	
Celas ha Bila data Selanjutn Perhitung Dobot kej 200 m da vang diar	rinci tersedii ya gunakan tuan frekwen gan frekwen jadian per iri segmen ja mati, pada ke	a, gunakaı tabel kedu nsi kejaida si ber- lan	an Tipe ham samping Pejalan ka	ak, gunaka batan [20] aki	n hanya ta	kan frekw abel kedua Simbol [21] PED	Faktor [22] 0.5	Frekwen [ 478	isi kejadian 23] /jam,200m	Frekwensi berbobot [24] 239	
Kelas ha Bila data selanjutn 1. Peneni Perhitun <u>g</u> bobot kej 200 m da yang diai	rinci tersedii ya gunakan tuan frekwen gan frekwen jadian per iri segmen ja mati, pada ke	a, gunakaı tabel kedu nsi kejaida si ber- lan	an Tipe ham samping Pejalan ka Kendaraa	ak, gunaka batan [20] aki ndaraan b an masuk -	n hanya ta	kan frekw abel kedua Simbol [21] PED PSV EEV	Faktor bobot [22] 0.5 1.0 0.7	Frekwer [ 478 119 201	23] /jam,200m /jam,200m /jam,200m	Frekwensi berbobot [24] 239 119 141	
Kelas ha Bila data selanjutn 1. Peneni Perhitun <u>o</u> bobot kej 200 m da yang dian sisi jalan	rinci tersedii ya gunakan tuan frekwen gan frekwen jadian per iri segmen ja mati, pada ke	a, gunakai tabel kedu nsi kejaida si ber- lan edua	an Tipe ham samping Pejalan k Parkir, ke Kendaraa Kendaraa Total :	ak, gunaka batan [20] aki ndaraan b an masuk -	n hanya ta	kan frekw abel kedua Simbol [21] PED PSV EEV	Faktor bobot [22] 0.5 1.0 0.7	Frekwer [ 478 119 201	23] /jam,200m /jam,200m /jam,200m	Frekwensi berbobot [24] 239 119 141	
Kelas ha Bila data selanjutn 1. Peneni Perhitung bobot kej 200 m da yang dial sisi jalan 2. Peneni	rinci tersedi ya gunakan tuan frekwen jadian per iri segmen ja mati, pada ke	a, gunakai tabel kedu nsi kejaida si ber- lan edua ambatan s	an Tipe ham samping Pejalan k Parkir, ke Kendaraa Kendaraa Total :	ak, gunaka batan [20] aki ndaraan b an masuk · an lambat	n hanya ta	kan frekw abel kedua Simbol [21] PED PSV EEV SMV	Faktor bobot [22] 0.5 1.0 0.7	Frekwer [ 478 119 201 151	23] /jam,200m /jam,200m /jam,200m	Frekwensi berbobot [24] 239 119 141 60 559	
Kelas ha Bila data selanjutn 1. Peneni Perhitung bobot kej 200 m da yang dial sisi jalan 2. Peneni	rinci tersedi ya gunakan jan frekwen jadian per iri segmen ja mati, pada ke tuan kelas ha	a, gunakai tabel kedu nsi kejaida si ber- lan edua ambatan s	an Tipe ham samping Pejalan k Parkir, ke Kendaraa Kendaraa Total :	ak, gunaka batan [20] aki ndaraan b an masuk · an lambat	erhenti + keluar	kan frekw abel kedua Simbol [21] PED PSV EEV SMV	Faktor bobot [22] 0.5 1.0 0.7	Frekwer [ 478 119 201 151 Kelas	23] /jam,200m /jam,200m /jam,200m /jam,200m	Frekwensi berbobot [24] 239 119 141 60 559	
Kelas ha Bila data selanjutn 1. Peneni Perhitung bobot kej 200 m da yang dial sisi jalan 2. Peneni	rinci tersedi ya gunakan tuan frekwen jadian per iri segmen ja mati, pada ke tuan kelas ha	a, gunakai tabel kedu nsi kejaida si ber- lan edua ambatan s	an Tipe ham samping Pejalan k Parkir, ke Kendaraa Kendaraa Total :	ak, gunaka batan [20] aki ndaraan b an masuk - an lambat Ko	n hanya ta erhenti + keluar ondis khus	kan frekw abel kedua Simbol [21] PED PSV EEV SMV	Faktor bobot [22] 0.5 1.0 0.7	Frekwer 478 119 201 151 Kelas	si kejadian 23] /jam,200m /jam,200m /jam,200m /jam,200m	Frekwensi berbobot [24] 239 119 141 60 559	
Kelas ha Bila data selanjutn 1. Peneni Perhitung bobot kej 200 m da yang dial sisi jalan 2. Peneni	rinci tersedi ya gunakan tuan frekwen jadian per iri segmen ja mati, pada ke tuan kelas ha nsi berbobot [30]	a, gunakai tabel kedu nsi kejaida si ber- lan edua ambatan s	an Tipe ham samping Pejalan k Parkir, ke Kendaraa Total : samping Permukim	ak, gunaka batan [20] aki ndaraan b an masuk - an lambat Ko man, hampi	erhenti + keluar 0ndis khus [31]	kan frekw abel kedua Simbol [21] PED PSV EEV SMV us	Faktor bobot [22] 0.5 1.0 0.7 0.4	Frekwer 478 119 201 151 Kelas [ Sanga	isi kejadian /jam,200m /jam,200m /jam,200m /jam,200m hambatan s 32]	Frekwensi berbobot [24] 239 119 141 60 559 amping [33]	
Kelas ha Bila data selanjutn 1. Peneni Perhitung bobot kej 200 m da yang dial sisi jalan 2. Peneni	rinci tersedii ya gunakan tuan frekwen jadian per iri segmen ja mati, pada ke tuan kelas ha nsi berbobot [30] < 100	a, gunakai tabel kedu nsi kejaida si ber- lan edua ambatan s	an Tipe ham samping Pejalan ki Parkir, ke Kendaraa Kendaraa Kendaraa Total : samping Permukim Permukim	ak, gunaka batan [20] aki ndaraan b an masuk - an lambat Ko nan, hampi nan, beber	erhenti + keluar [31] r tidak ada	kan frekw abel kedua Simbol [21] PED PSV EEV SMV us kegiatan tan umum,	ensi berbo Faktor bobot [22] 0.5 1.0 0.7 0.4 dll.	Frekwer [ 478 119 201 151 Kelas Kelas Re	isi kejadian 23] /jam,200m /jam,200m /jam,200m /jam,200m hambatan s 32] t rendah	Frekwensi berbobot [24] 239 119 141 60 559 amping [33] VL	
Kelas ha Bila data selanjutn 1. Peneni Perhitung bobot kej 200 m da yang dial sisi jalan 2. Peneni	rinci tersedii ya gunakan tuan frekwen jadian per iri segmen ja mati, pada ke tuan kelas ha nsi berbobot [30] < 100 100 - 299	a, gunakai tabel kedu nsi kejaida si ber- lan edua ambatan s	a. Bila tida Tipe ham samping Pejalan ki Parkir, ke Kendaraa Kendaraa Kendaraa Total : amping Permukim Permukim Daerah in	ak, gunaka batan [20] aki ndaraan b an masuk - an lambat Ko man, hampi nan, beber ndustri den	erhenti + keluar [31] r tidak ada apa angku	kan frekw abel kedua Simbol [21] PED PSV EEV SMV us kegiatan tan umum, toko di sisi	Faktor bobot [22] 0.5 1.0 0.7 0.4 dll. jalan	Frekwer [ 478 119 201 151 151 Kelas [ Sanga Re Se Ti	isi kejadian /jam,200m /jam,200m /jam,200m /jam,200m /jam,200m /jam,200m t rendah ndah	Frekwensi berbobot [24] 239 119 141 60 559 :amping [33] VL L	

# Table 4.11 Form UR 3

JALAN PERKOTAAN Tanggal: 14 Febuari 2019 Ditangani oleh: M. Sahrani AR FORMULIR UR - 3 : ANALISA No.ruas/Nama jalan Jalan Otto Iskandardinata KECEPATAN, KAPASITAS Diperiksa oleh: Kode segmen: Periode waktu: Jam puncak Kamis FV = (FV. + FV.) x FFV.F x FFV. Kecepatan arus bebas kendaaan ringan Soal/ Kecepatan arus Faktor penyesuaian Faktor penyesuaian Kecepatan arus bebas bebas dasar untuk lebar jalur Hambatan samping Ukuran kota Arah FV<sub>0</sub> + FV<sub>0</sub>  $FV_0$ FV. FV Tabel 2.2 FFVSF **FFV**<sub>CS</sub> Tabel 2.3 (4) x (5) x (6) (2) + (3)Tabel 2.4 Tabel 2.5 (km/jam) (km/jam) (km/jam) (km/jam) [1] [4] [2] [3] [5] [6] [7] 0 0.94 0.95 45.54 51 51 C = Co x FCw x FC sp x FCsF x FCcs Kapasitas Soal/ Kapasitas dasar Faktor penyesuaian untuk kapasitas Kapasitas Pemisah arah Hambatan samping kuran kot C Arah \_ebar jalui

	Co Tabel 2.6 (smp/jam)	FC <sub>w</sub> abel C-2.	FC <sub>SP</sub> Tabel 2.8	FC <sub>SF</sub> Tabel 2.9	FC <sub>CS</sub> Tabel 2.10	(smp/jam) (11)x(12)x(13)x(14)x(15)
[10]	[11]	[12]	[13]	[14]	[15]	[16]
	6000	1.00	1.00	0.93	0.94	5245.2

## Kecepatan kendaran ringan

Soal/	Arus lalu lintas	Derajat	Kecepatan	Panjang Segmen	Waktu tempuh
Arah	Q	Kejenuhar	VLV	jalan	Π
	Formulir UR-2	DS	Gambar 2.3	L	(24/23)
	smp/jam	(21)/(16)	Km/jam	Km	jam
[20]	[21]	[22]	[23]	[24]	[25]
	2108.35	0.40	43	0.96	0.0223

Formulir UR - 3

Based on the calculation above, the results show that after the road type is changed from 2/2 UD to 4/2 UD, it can be seen that the degree of saturation has improved from 0.65 (2/2UD) to 0.40 (4/2 UD). So the road with type 4/2 UD shows better ability to accommodate the traffic flow on the Otto Iskandardinata road in Samarinda City.

#### Conclusion

Based on the results of calculations and analysis in chapter IV, it can be concluded that:

- 1. The current volume of motorcycle vehicles passing through the Otto Iskandardinata road in Samarinda is as follows:
  - a. At observation point 1 (Sungai Dama Market Intersection) the largest volume of motorcycle vehicles occurred on Thursday, February 14 2019 direction 1 namely: MC = 11035 vehicles / hour, and direction 2 MC = 7496 vehicles / hour, and the volume of motorcycle vehicles the smallest occurred on Sunday 17 February 2019 direction 1 namely: MC = 7210 vehicles / hour, and direction 2 MC = 6717 vehicles / hour.
  - b. At observation point 2 (Gunung Manggah) the largest volume of motorcycle vehicles occurred on Friday 22 February 2019 direction 1 namely: MC = 8352 vehicles / hour, and direction 2 MC = 8998 vehicles / hour, and the smallest volume of motorcycle vehicles occurred on Sunday February 24 2019 direction 1 namely: MC = 7973 vehicles / hour, and direction 2 MC = 8232 vehicles / hour.
- 2. The influence of the volume of motorcycle vehicles on traffic speeds on the current Otto Iskandardinata road in Samarinda is as follows:
  - a. Can be seen at observation point 1 (Simpang Empat Sungai Dama Market) the largest volume of motorcycle vehicles occurred on Thursday, February 14 2019 direction 1 namely: MC = 11035 vehicles / hour with a speed of 12.8223 km / hour, and direction of 2 MC = 7496 vehicles / hour with a speed of 12.5979 km / hour, and the smallest volume of motorcycle vehicles occurred on Sunday February 17 2019 direction 1 namely: MC = 7210 vehicles / hour with a speed of 13.2537 km / hour, and direction 2 MC = 6717 vehicles / hour with a speed of 13.4747 km / hour.
  - b. At observation point 2 (Gunung Manggah) the largest volume of motorcycle vehicles occurred on Friday 22 February 2019 direction 1 namely: MC = 8352 vehicles / hour at a speed of 12.6707 km / hour, and direction 2 MC = 8998 vehicles / hour with a speed of 13,3283 km / hour, and the smallest volume of motorcycle vehicles occurred on Sunday February 24 2019 direction 1 namely: MC = 7973 vehicles / hour with a speed of 13.3199 km / hour, and direction 2 MC = 8232 vehicles / hour with a speed of 13.4747 km / hour.
- 3. The solution that can be done to overcome the problems in the Otto Iskandardinata Road in Samarinda City is to change the type of the road that was originally from 2 / 2UD to 4 / 2UD. It can be seen that the change in the degree of saturation has improved from 0.65 (2/2UD) to 0.40 (4/2 UD). So the road with type 4/2 UD shows better ability to accommodate the traffic flow on the Otto Iskandardinata road in Samarinda City.

## Suggestion

Further research should be conducted on the Otto Iskandardinata road section in order to get more references on the road.

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