

International Conference on Engineering and Technology Development



3rd ICETD 2014

28, 29 October 2014, Bandar Lampung, Indonesia

Hosted By :
Faculty of Engineering and Faculty of Computer Science
Bandar Lampung University, Indonesia



In cooperation
with :



THE UNIVERSITY OF KITAKYUSHU



الجامعة الإسلامية العالمية
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA
بوترا برني

3rd ICETD 2014

THE THIRD INTERNATIONAL CONFERENCE
ON ENGINEERING AND TECHNOLOGY DEVELOPMENT

28 -29 October 2014
Bandar Lampung University (UBL)
Lampung, Indonesia

PROCEEDINGS

Organized by:



Faculty of Computer Science and Faculty of Engineering
Bandar Lampung University (UBL)
Jl. Zainal Abidin Pagar Alam No.26 Labuhan Ratu, Bandar Lampung, Indonesia
Phone: +62 721 36 666 25, Fax: +62 721 701 467
website : www.ubl.ac.id

PREFACE

The Activities of the International Conference is in line and very appropriate with the vision and mission of Bandar Lampung University (UBL) to promote training and education as well as research in these areas.

On behalf of the Second International Conference on Engineering and Technology Development (3rd ICETD 2014) organizing committee, we are very pleased with the very good response especially from the keynote speaker and from the participants. It is noteworthy to point out that about 80 technical papers were received for this conference.

The participants of the conference come from many well known universities, among others : University Kebangsaan Malaysia – Malaysia, IEEE – Indonesia, Institut Teknologi sepuluh November – Indonesia, Surya Institute – Indonesia, International Islamic University – Malaysia, STMIK Mitra Lampung – Lampung, Bandung Institut of Technology – Bandung, Lecture of The Malahayati University, B2TP – BPPT Researcher – Lampung, University of Kitakyushu – Japan, Gadjah Mada University – Indonesia, Universitas Malahayati – Lampung, Lampung University – Lampung,

I would like to express my deepest gratitude to the International Advisory Board members, sponsor and also to all keynote speakers and all participants. I am also grateful to all organizing committee and all of the reviewers who contribute to the high standard of the conference. Also I would like to express my deepest gratitude to the Rector of Bandar Lampung University (UBL) who give us endless support to these activities, so that the conference can be administrated on time

Bandar Lampung, 22 October 2014

Mustofa Usman, Ph.D
3rd ICETD Chairman

PROCEEDINGS

3rd ICETD 2014

The Third International Conference
On Engineering And Technology Development

28 -29 October2014

INTERNATIONAL ADVISORY BOARD

Y. M Barusman, Indonesia

Ahmad F. Ismail, Malaysia

Mustofa Usman, Indonesia

Moses L. Singgih, Indonesia

Andreas Dress, Germany

Faiz A.M Elfaki, Malaysia

Warsono, Indonesia

Raihan Othman, Malaysia

Zeng Bing Zen, China

Tjin Swee Chuan, Singapore

Khomsahrial R, Indonesia

Rony Purba, Indonesia

Hon Wei Leong, Singapore

Imad Khamis, USA

Rozlan Alias, Malaysia

Rudi Irawan, Indonesia

Gusri Ibrahim, Indonesia

Jamal I Daoud, Malaysia

Riza Muhida, Indonesia

Heri Riyanto, Indonesia

Agus Wahyudi, Indonesia

PROCEEDINGS

3rd ICETD 2014

The Third International Conference
On Engineering And Technology Development

28 -29 October 2014

STEERING COMMITTEE

Executive Advisors

Dr. M. Yusuf S. Barusman
Andala R. P. Barusman, MA.Ec

Chairman

Mustofa Usman, Ph.D

Co-Chairman

Dr. Ir. Hery Riyanto, MT
Ahmad Cucus, S.Kom., M.Kom

Secretary

Yuthsi Aprilinda S.Kom., M.Kom
Marzuki, S.Kom., M.Kom
Maria Shusanti Febrianti, S.Kom., M.Kom

Technical Committee

Robby Yuli Endra, S.Kom., M.Kom
Sofiah Islamiah, ST, MT
Fenty Ariani, S.Kom., M.Kom
Taqwan Thamrin, ST., MSc
Dina Ika Wahyuningsih, S.Kom
Agus Sukoco, M.Kom
Hj. Susilowati, ST, MT
Haris Murwadi, ST, MT

Treasure

Samsul Bahri, SE
Dian Agustina, SE

PROCEEDINGS

3rd ICETD 2014

The Third International Conference
On Engineering And Technology Development

28 -29 October 2014

ORGANIZING COMMITTEE

Chair Person

Dr. Ir. Hery Riyanto, MT

Vice Chair Person

Ahmad Cucus, S.Kom., M.Kom

Treasure

Dian Agustina, S.E

Secretary

Robby Yuli Endra, S.Kom., M.Kom

Sofia Islamiah Izhar, S.T., M.T.

Taqwan Thamrin, ST., MSc

Erlangga, S.Kom., M.Kom

Iwan Purwanto S.Kom., MTI

Special Events

Agus Sukoco, M.Kom

Dra. Yulfriwini, M.T.

Ir. Juniardi, MT

Ir. Indra Surya, MT

Ir. Najamudin, MT

Kunarto, ST. MT

IB. Ilham Malik, ST. MT

Ir.A Ikhsan Karim, MT

Usman Rizal, ST., M.MSi

Ir. Sugito, MT

Berry Salatar, S.Pd

Ayu Kartika Puspa S.Kom., MTI.

Helta Anggia S.Pd., MA

Yanuaris Yanu Darmawan SS. M.Hum

Receptionist

Indyah Kumoro K.W., S.T., IAI.

Haris Murwadi, S.T., M.T.

Transportation and Acomodation

Irawati, SE
Desi Puspita Sari, S.E
Ifa Ditta, S.E., S.T.P
Riffandi Ritonga, S.H.

Publication and Documentation

Ir. Indriati Agustina Gultom, M.M
Noning Verawati, S.Sos
Hesti, S.H
Masitoh S.Sos

Cosumption

Susilowati, S.T., M.T
Yuthsi Aprilinda S.Kom., M.Kom
Maria Shusanti Febrianti, S.Kom., M.Kom
Fenty Ariani, S.Kom., M.Kom
Reni Nursyanti, S.Kom., M.Kom
Sundari, S.Kom

Facility and Decoration

Siti Rahma Wati, S.E.
Dina Ika Wahyuningsih, S.Kom.
Arnes Yuli Vandika, S.Kom, M.Kom.
Zainal Abidin, S.E.
Ahyar Saleh, S.E.
Eko Suhardiyanto
Wagino
Sugimin

Table Of Content

No	Title	Author	Page
1	The Influence Of Implementing Information Technology On Knowledge Management Toward Performance Evaluation Using Balanced Scorecard	Sarjito Surya	1-3
2	Implementation Of Customer Relationship Management (Crm) To Automate Logging Track Record Students And Alumni	Robby Yuli Endra ^{#1} Fenti Aryani ^{*2} Septiany Dian Puspita ^{#3} Ade Kurniawan ^{*4}	4-10
3	Prototype Model Classification System Level Internal Audit Findings Based On Case-Based Reasoning In Education Quality Management	Marzuki ^{#1} Maria Shusanti Febrianti ^{*2}	11-13
4	Implementation Case Based Reasoning In Determining The Rational Prescription Of Tb Drugs	Ahmad Cucus	14-19
5	Implementation Of Workflow Management System On E-Learning Platform For The Effectiveness Of Distance Learning	Yuthsi Aprilinda ^{#1} Agus Sukoco ^{*2} Ahmad Cucus ^{#3}	20-25
6	Thermal Bioclimate For Tourism: Case Study Of Kuta, Bali Province, Indonesia	Nyoman Sugiarta ^{#1} Andreas Matzarakis ^{#2}	26-32
7	Minimum System Design Of Android Based Pstn Phone	Deo Kiatama ^{#1} Fransiscus Ati Halim ^{*2} Arnold Aribowo ^{#3}	33-38
8	The Design Of Pressing Equipment For Banana Fruit	M.C. Tri Atmodjo	39-44
9	Modelling Supply Chain Management In B2b E-Commerce Systems	Idris Asmuni	45-51
10	Extreme Programming Study Method Case Study On Designing Of Accounting Term Dictionary	Usman Ependi ^{#1} Qoriani Widayati ^{*2}	52-55
11	Review On Economic Valuation Of Solid Waste Management In Bandar Lampung, Lampung	ling Lukman ^{#1} , Diah Ayu Wulandari Sulistyaningrum ^{*2} , Taqwan Thamrin ^{#3}	56-57

No	Title	Author	Page
12	Prototype Topology Sdn For Simple Network Campus	Arnesyulivandika	58-61
13	Tsunami Force On A Building With Sea Wall	Any Nurhasanah ^{#1} Nizam ^{*2} Radianta Triatmadja ^{#3}	62-64
14	Analysis The Quality Of Website Service Information System Academic Integrated (Siater) Bandar Lampung University Using Pieces Methods	Yusinta Ria Disanda	65-71
15	Organize Bad Manual Financial Database Of Educational Organization By Bank To Decrease Financial Criminalize	Ruri Koesliandana ^{#1} Eka Imama Novita Sari ^{*2} Arnes Yuli Vandika ^{#3}	72-74
16	Design Of Lampung Bay Waterfront Using Poetic Architecture Approach	Shofia Islamia Ishar, S.T.,M.T. Muhammad Syahroni, S.T.	75-83
17	Analysis Limiting Internet Sites With The Method Using Squid Proxy Server At Smkn 1 South Rawajitu	Reni Tri Astuti	83-88
18	Effect Of Grading On Differences Using Mixed Concrete Aggregate Rough And Fine Aggregate Concrete Compressive Strength Of Natural	Yulfriwini	89-97
19	Analysis Quality Dino Tour Travel Management Website Using Webqual 4.0	Rola Hengki	98-105
20	Holonic Manufacturing System: Current Development And Future Applications	Moses Laksono Singgih	106-113
21	An Analysis Perspective Implemented Text Mining Analytics Information Extraction For Impact Of Indonesian Social Media	Agus Suryana.Mti ^{#1} Sri Ipnuwati.M.Kom ^{*2}	114-123
22	Study Of Gold Mine Tailings Utilization As Fine Aggregate Material For Producing Shotcrete Based On Concept Of Green Technology	Lilies Widojoko ¹⁾ Harianto Hardjasaputra ²⁾ Susilowati ³⁾	124-133

No	Title	Author	Page
23	Decision Support System For Determined Recommendations Lecturer Teaching Handbook Using Fuzzy	Usman Rizal ^{#1} Fenti Aryani ^{*2}	134-140
24	The Expert System Software Application On Lecture Scheduling Based On Rule Based Reasoning	Taqwan Thamrin ^{#1} Ahmad Cucus ^{*2} Adi Wijaya ^{#3}	141-144
25	Portal Website Analysis Using Iso / lec 9126-4 Metric Effectiveness (Case Study Indonesia Wi-Fi Portal Website)	Refky Jumrotuhuda	145-149
26	Student Satisfaction Analysis Of Siater Using End User Computing Satisfaction (Eucs)	Erlangga, Jefri Krisna Putra	150-155
27	Urban Tourism Development Through Low Impact Development (Lid) Towards Green-Tourism	*Iir. Wiwik Setyaningsih, Mt *Ztri Yuni Iswati, St., Mt, *Zsri Yuliani, St., M.App.Sc.	156-161
28	Hawkers Empowerment Strategy To Promote Sustainable Economy In Surakarta	Murtantjanirahayu Rufiaandisetyanaputri	162-172
29	New Urbanism: A Comparative Analysis Between Traditional Village And Housing Estate	Bhakti Alamsyah	173-179
30	Traditional Market Revitalization As An Urban Catalyst In The City Of Surakarta	Istijabatul Aliyah #1, Bambang Setioko #2, Wisnu Pradoto #3	180-188
31	The Robinson Mall Impact On Fv And Ds In Zapa Street, Bandar Lampung City	Ida Bagus Ilham Malik Ilyas Sadad	189-195
32	Decision Support System For Mall Nutrition Using Simple Additive Weighting (Saw) Method	Reni Nursyanti Mujasih	196-200
33	Effect Of Cement Composition In Lampung On Concrete Strength	Heri Riyanto	201 – 204

No	Title	Author	Page
34	E-Archive digital storage media	Arnes yuli vandika, ade kurniawan, ari kurniawan	205 -207
35	Virtualization Technology for Optimizing Server Resource Usage	Edwar Ali, Didik Sudyana	208 – 212
36	Decision Support System (DSS) For The Determination Of Percentage Of Scholarship Quantity Based Fuzzy Tahani	Robby Yuli Endra #1, Agus Sukoco #2	213 -223
37	Evaluation of Pedestrian Way's Comfort Case Study: Jl. Z. A. Pagar Alam, Bandar Lampung	Haris Murwadi 1*, Fritz Akhmad Nuzir 2	224 - 228
38	Modification Effect Of Volume Cylinder Four Stroke Engine To Effective Power	Ir. Najamudin, MT	229-239
39	Impact Of Motor Vehicle Emissions On Air Quality In Urban And Sub Urban Area (Case Study: Bandarlampung City)	Ir. A. Ikhsan Karim, MT., Ir. Sugito, MT	240-249

THE ROBINSON MALL IMPACT ON FV AND DS IN ZAPA STREET, BANDAR LAMPUNG CITY

Ida Bagus Ilham Malik, Ilyas Sadad

Lecturer in Civil Engineering University of Bandar Lampung

Email: malik80212@gmail.com

INTRODUCE

1.1. Background

Robinson Mall Development has led to distribution of commercial activities and services in the city of Bandar Lampung. During this time, trading activities and services focused in the downtown area, is in The Tanjung Karang Pusat (TKP). So, centralization of commercial activity in TKP, led of many vehicles heading downtown and that have an impact on traffic congestion in the area of city centerⁱ.

Centralization of economic activity, such as mall, supermarket, traditional and modern market, etc, has caused problem in traffic in the TKP. Problem solving such as widening of roads and arrangements of parking, is not able to resolve the issue. So, it needed others solution to decrease traffic problem in TKP, one of solution is spread of commercial activity (IB Ilham Malik, 2013)ⁱⁱ. That is mean, if there is a new application of permit to build shopping center or mall or modern market, city government will be give the permit if location of project outside of TKP area. For example; at Kemiling area, Way Halim area, Rajabasa area, Teluk Betung area, etc.

Spread of commercial activity in Bandar Lampung relevan with regulation (regional regulation or Perda) on Spatial Planning, that is Perda No. 04 Year of 2004 on Spatial Planning of Bandar Lampung, and updated by Perda No. 10 Year of 2011 on the same thingⁱⁱⁱ. So, in line with the regulation, in some of areas in Bandar Lampung have commercial center too, such as Robinson Mall in the Rajabasa area, Boemi Kedaton Mall in Kedaton Area, Giant Supermarket and Giant Mall in Kemiling area and Antasari area, etc. And that situation, encourage of area growth and in the future will be the commercial activity area.

Table 1. Spread of Comercial Activity in Bandar Lampung City

NO	Object	Area
1	Mall Robinson Lampung	Rajabasa
2	Giant Mall	Antasari
3	Giant Departemen Store	Kemiling
4	Chandra Superstore	Kemiling
5	Mall Bumi Kedaton	Kedaton

Source: survey 2013

Although the spread of shopping centers and malls has do, but the problem of traffic congestion in TKP is not reduced. Thing that happens is congestion also spread (Bandar Lampung Transportation Agency, 2011). This happens because Bandar Lampung economic growth so high, and small of commercial activity increase so fast. And the result of government delay to build a mass transit system, the citizen use private vehicle to facilitate their mobility. Traffic congestion happens in many street on Bandar Lampung.

Tabel 3. Street and DS

NO	Name of street	DS*
1	ZA Pagar Alam	0,76
2	Teuku Umar	0,79
3	Sultan Agung	0,69
4	Raden Intan	0,83
5	RA Kartini	0,85
6	Gatot Subroto	0,68
7	Soedirman	0,73

Source: Transportation Agency, Bandar Lampung (*from some of Andalalin documents to get development permit of building)

At the location where the new shopping center is located, allegedly an increase in the degree of saturation and changes in flow speed of vehicles along with the emergence of new buildings and large (for the size of the local shopping center). And how big is the improvement? For that study was conducted.

1.2. Identify the problem

The problem that arose alongside the shopping center should be completed properly by the owners of shopping centers and government (as the giver of building and operating permits). And one of the main issues to be examined in this study is the problem of interference with the free flow speed and the increase in the degree of saturation (DS) on the road ZA Pagar Alam due to the operation of the shopping center Mall Robinson Lampung.

1.3. formulation of the problem

Research to be done on this activity is to examine how much actual influence of the presence of the FV Robinson Mall and DS. Therefore, the decline in FV and increased DS will be the factors that influence the level of traffic service. Control of FV and DS to do to be able to provide guarantees smoothness of traffic on road traffic users ZA Pagar Alam.

1.4. Purpose

Knowing the influence of the construction of the Mall of Robinson against the free flow velocity (FV) and the degree of saturation (DS) at Jalan ZA Pagar Alam, Rajabasa, Bandar Lampung.

1.5. The boundary of problem

Limitations of this research are:

- Survey on the study conducted in mid-2014 only.
- Not take into account the presence / influence Unila intersection.
- The survey data as comparison material obtained from the Traffic Impact Analysis Document (Andalalin) Robinson Mall.

LITERATURE

2.1. Theory Overview

a. Free flow velocity (FV)

Free flow speed is the speed of the vehicle without any major obstacles. The formula used to calculate the free stream velocity is:

$$FV = (FV_0 + FV_w) \times FFV_{sf} \times FFV_{cs}$$

where:

FV = excl. free flow of veh. light (km / h)

FV₀ = excl. Free flow of basic veh. Lightweight (km / h)

FV_w width = adjusting traffic (km / h)

FFV_{sf} = side friction factor penyesuan

FFV_{cs} = adjustment factor size city

The free flow speed will be compared with the real kecepatan obtained from the survey. By knowing the ratio between the two, between the free flow speed and the real speed, then the situation will be known flow rates of vehicles on the road, whether impaired or not.

Normality of vehicle speed on a certain road segments monitored by:

1) If the free FV < FV real then the traffic flow smoothly without interruption

2) If the free FV > FV rill the traffic flow have problems / disorders that require treatment to overcome the existing traffic on these roads.

b. Degrees of saturation (DS)

The degree of saturation is the ratio between the volume of traffic (pcu / h) with the capacity (pcu / h).

The formula is:

$$DS = V / C$$

Where V is the volume (pcu / h). Traffic volumes are known from direct surveys in the field.

While the value of C can be determined through a calculation using the formula:

$$C = C_0 \times FCW \times FC_{sp} \times FC_{sf} \times FCCS$$

where:

C = capacity (pcu / h)

C₀ = the basic capacity (pcu / h)

FCW = adjustment factor width of traffic lanes

FC_{sp} = adjustment factor dividing direction

FC_{sf} = faktor side friction adjustment

FCCS = adjustment factor the size of the city

*) For the calculation of FV and C, will use an adjustment factor table as stated in the attached Table MKJI 1997.

Knowing DS (degree of saturation) is important as knowing the DS then the service level of a road can be known. The level of service has become a barometer of handling a road so that people will not complain of traffic conditions on the road. Service standards can be seen in Table 2.1.

Table 2.1. Level of Service (MKJI 1997)

LEVEL OF SERVICE	CHARACTERISTICS	SCOPE LIMITS V/C
A	Traffic flow conditions at high speeds and low traffic volumes. The driver can choose the speed of unimpeded	0,00 – 0,19
B	In the zone traffic flow steady. The driver has enough freedom to select speed	0,20 – 0,44
C	In the zone traffic flow steady. Motorists are restricted in choosing speed	0,45 – 0,74
D	Approaching unstable flow in which nearly every driver will be limited. The volume of services related to the capacity that can be tolerated	0,75 – 0,84
E	The volume of traffic approaching or are at capacity. Flow is unstable with frequent stop conditions	0,85 – 1,00
F	Forced or jammed flow at low velocity. The queues were long and there were great obstacles.	Greater than 1,00

Resource: Manual Kapasitas Jalan Indonesia/MKJI 1997

2.2. The framework

The framework of this research can be seen in Figure 3.1.

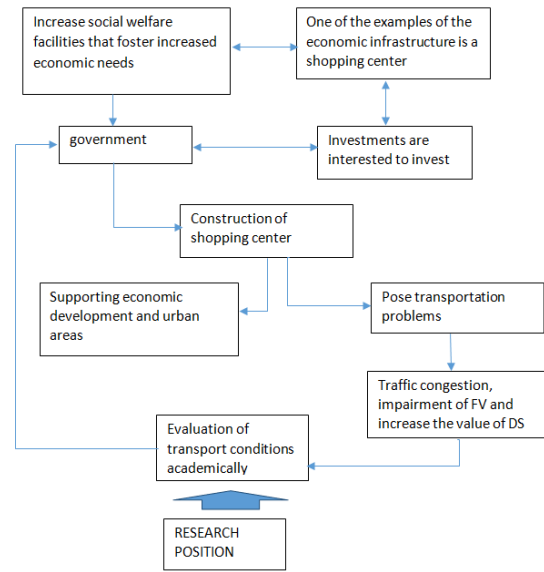


Diagram 3.1. Research framework

Diagram 3.1. Research framework

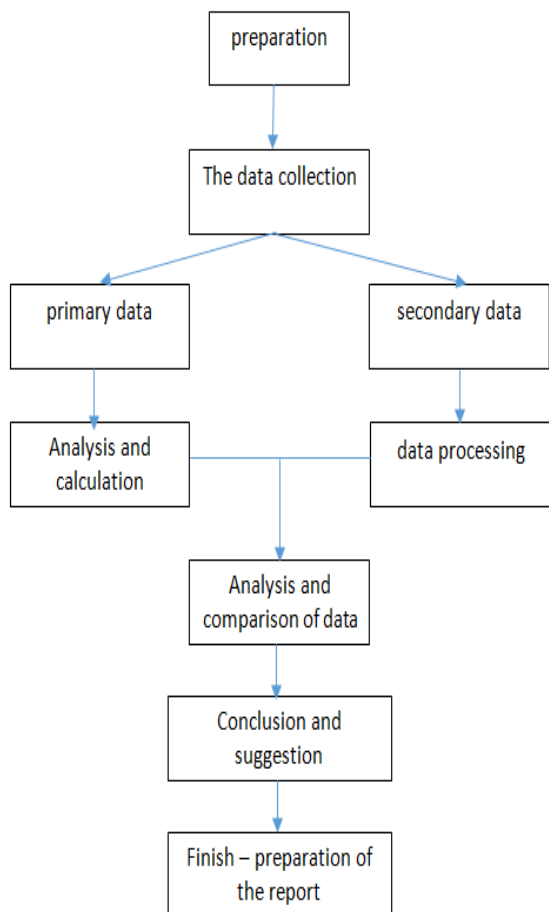
METHODOLOGY

Stages of analysis to be performed are:

- a. Traffic survey data. These data are presented in a format which is then converted vehicles into passenger car unit (pcu) per hour. The unit, volume (V) is pcu / hour.
- b. Checks and classification of survey data related to the way the object of study. The data includes:
 - 1) The width of the lane
 - 2) Width Krib
 - 3) The width of the median
 - 4) The total width of the road
- c. Calculating the free flow speed with a formula which is then compared to the real speed obtained in the field. Then if faster than the real speed or vice versa. If faster speed means no real problems and vice versa.

d. Calculating the degree of saturation. But before calculating the capacity of the road in advance with the previous formula. If the capacity is already known, we then compare the capacity of the existing traffic volumes. The results of the comparison will generate numbers from 0.0 to 1.0.

e. Then the number of DS diploting to an explanation of the level of traffic service (A - F).



Picture 3.1.

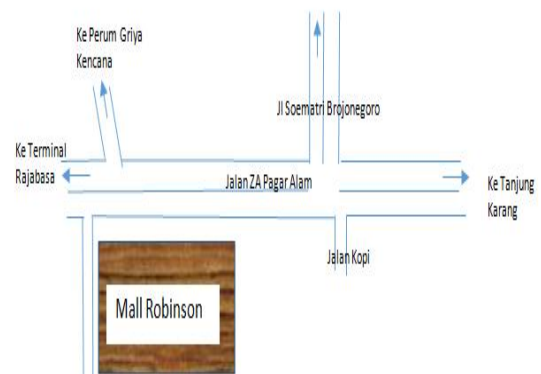
Flowchart of the study

SECTION 4 RESULTS AND DISCUSSION

4.1. Location and Time Survey

Survey conducted in ZA Pagar Alam Road, Rajabasa, Bandar Lampung. The location is in front of the Robinson Mall. The survey was conducted in the two-way movement of the vehicle, the direction and the direction Rajabasa-Tandjungkarang Tandjungkarang-Rajabasa.

Picture 4.1. Location surveys conducted in ZA Pagar Alam



Road, right in front of Robinson's Mall Bandar Lampung

As for the time of the survey, conducted for 7 (seven) days, from 06.00 until 18.00 (12 hours). Today survey is Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday on April 21, 2014 through 27 April 2014.

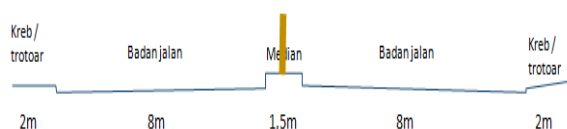
Tabel 4.1. Time of Survey

Day	date	time
Monday	21 april 2014	06.00 – 18.00
Tuesday	22 april 2014	06.00 – 18.00
Wednesday	23 april 2014	06.00 – 18.00
Thursday	24 april 2014	06.00 – 18.00
Friday	25 april 2014	06.00 – 18.00
Saturday	26 april 2014	06.00 – 18.00
Sunday	27 april 2014	06.00 – 18.00

4.2. Survey results

a. Data Path

Through the measurement, it is known that the type of road 4 / 2D with a median width of 1.2 meters, a width of 8 meters per lane road and Kurb 2 meters. As outlined in Figure 4.2.



Picture 4.2. The cross section ZA Pagar Alam Road, Robinson Mall Lampung, Rajabasa, Bandar Lampung

b. volume Vehicle

The volume of vehicles occurred in the week. The number of motorcycles is the biggest contributor to the volume. Details can be found in appendix. The daily volume of data is shown in Table 4.2. It is seen that the highest volume occurred on the day of the week is 35 446 pcu / day.

Table 4.2. Daily traffic volume during a 1-week survey

Day	DIRECTION S VOLUME TANJUNG KARANG – RAJABASA (smp)	DIRECTION S VOLUME RAJABASA – TANJUNG KARANG (smp)	TOTAL VOLUME TWO-WAY (smp)
Monday	13.559	13.923	27.482
Tuesday	14.107	14.484	28.591
Wednesday	14.651	15.065	29.716
Thursday	14.515	14.923	29.438
Friday	15.828	16.266	32.094
Saturday	16.609	17.058	33.667
Sunday	17.434	18.012	35.446

Data on the number of vehicles on the day of the week, showed that the traffic volume is very dominated by motorcycles and light vehicles. This suggests that the motor vehicle from year to year continue to contribute to

the increase in the number of vehicles used by the public. Meanwhile, for the transport being dominated by BRT buses Trans Belfast, relatively little.

Table 4.3. Daily traffic data direction Rajabasa-Tandjungkarang

Minggu					
Jam	MC	LV	MV	HV	Jumlah
06.00	2.388	530	84	2	3.004
07.00	3.559	930	139	4	4.633
08.00	4.024	925	226	3	5.178
09.00	4.012	898	198	5	5.114
10.00	3.809	696	126	8	4.639
11.00	3.033	672	102	12	3.818
12.00	2.828	533	75	15	3.451
13.00	2.245	627	71	5	2.948
14.00	2.400	462	82	9	2.953
15.00	2.463	538	100	2	3.103
16.00	3.213	686	184	11	4.094
17.00	3.570	659	175	4	4.407
	37.545	8.156	1.562	80	47.342
	7.509	8.156	2.187	160	18.012

Table 4.4. Data daily traffic direction Tanjungkarang – Rajabasa

Sunday					
hour	MC	LV	MV	HV	amount
06.00	2.317	514	81	4	2.916
07.00	3.452	902	135	5	4.495
08.00	3.903	897	220	5	5.025
09.00	3.892	871	192	2	4.957
10.00	3.695	675	122	3	4.495
11.00	2.942	652	99	5	3.697
12.00	2.744	517	72	6	3.339
13.00	2.178	608	69	9	2.864
14.00	2.328	448	80	9	2.865
15.00	2.389	522	97	5	3.013
16.00	3.117	665	178	4	3.964
17.00	3.462	639	170	2	4.273
	36.418	7.911	1.515	59	45.904
	7283,7	7911	2121,4	118	17.434

From the data in Table 4.3. and Table 4.4., data on the number of vehicles passing on the road ZA Pagar Alam (in units and smp) are:

a. Sunday, 08:00 = 5178 units for directionng Rajabasa - Tandjungkara

For his smp is 2,053 pcu / hour. Calculation is:

MC	LV	MV	HV	amount	
4.024	925	226	3	5.178	unit
0,20	1,00	1,40	2,00		
804,8	925,2	317,1	6,0	2.053	smp

a. Sunday, time 08.00 = 5025 units for direction Tandjungkarang-Rajabasa

For his is 1995.6 smp smp / h. The calculations are:

MC	LV	MV	HV	amount	
3.903	897	220	5	5.025	unit
0,20	1,00	1,40	2,00		
780,6	897,4	307,6	10,0	1.995,6	smp

So the total volume of vehicles in both directions are:

$$= 2053 + 1996.6 = 4049.6 \text{ pcu / hour}$$

4.3. vehicle speed

Speed of the vehicle is identified by a survey by measuring the speed of passing vehicles. At least 20 vehicles in the survey, with 10 vehicles from the division-Rajabasa Tandjungkarang and 10 vehicles from the direction Rajabasa-Tandjungkarang. For a survey point in front of Robinson's Mall, adjacent to the junction with signalized lights. This poses another problem due to vehicle-Tanjunkarang Rajabasa direction, depending on the vehicle speed by the presence of light signals, while the direction Tandjungkarang-Rajabasa depend on conditions in the crossover as well, which if the adverse dense then the vehicle speed becomes faster after the trap queue vehicle in traffic. Speed of the vehicle is usually driven by the rider, causing the vehicle drove quite fast.

Table 4.5. The average speed of passing vehicles

Type of vehicle	TOTAL	average speed (RB-TJK)	average speed (TJK-RB)	average
MC	12	30,67	34,67	32,67
LV	8	29,25	33	31,125
MV	4	22,5	35,25	28,875
HV	2	21	31,5	26,25

*) RB = Rajabasa, TJK: Tanjungkarang

4.4. calculation

a. the capacity of the road

Calculation formula:

$$C = C0 \times FCW \times FCsp \times FCsf \times FCCS$$

From Table MKJI 1997, noted that:

$$C0 = 1650 \times 4 \text{ rows} = 6600$$

$$FCW = 1.08$$

$$FCsp = 1$$

$$FCsf = 0.98$$

$$FCCS = 1$$

then:

$$C = (1650 \times 4) \times 1.08 \times 1 \times 0.98 \times 1$$

$$C = 6985.44$$

b. The volume of traffic

To the volume of traffic, according to the previous explanation, known number:

$$V = 4049.6 \text{ pcu / hour}$$

c. Degree of saturation (DS)

For the degree of saturation, the formula used is:

$$DS = V / C$$

$$V = 4049.6 \text{ pcu / hour}$$

$$C = 6985.44 \text{ pcu / hour}$$

so that:

$$DS = 4049.6 / 6985.44$$

$$DS = 0.58$$

d. Free flow speed

Calculation formula:

$$FV = (FV_0 + FV_w) \times FFV_{sf} \times FFV_{cs}$$

From Table MKJI 1997, noted that:

$$FV_0 = 55$$

$$FV_w = 4$$

$$FFV_{sf} = 0.99$$

$$FFV_{cs} = 1$$

then:

$$FV = (55 + 4) \times 0.99 \times 1$$

$$FV = 58.41 \text{ km / h}$$

4.5. analysis

From the calculations, it is known that the data obtained as set out in the table, which was later confirmed through the survey results. By looking at other data sourced from the traffic impact analysis document (andalalin) Robinson Mall development, it will be known whether an increase in DS and decreased FV. The data set associated with it, will be presented in the table

Table 4.6. Comparison of data before and after Robinson Mall Operations

COMPARISON OF DATA	MALL BUILT BEFORE * (Andalalin Oktober 2011)	AFTER CONSTRUCTED MALL (April 2014)	
V	3573,1 smp/h	4049,6 smp/h	
C		C = 6985,44	
DS	0,55	0,58	
FV	31,125 km/h		58,41 km/h

From these data, it can be concluded that there is an increase in DS and FV decrease significantly. This happens because it does widen the road and traffic engineering on the front of the Mall of Robinson, such as vehicle parking mall visitors.

conclusion

1. The degree of saturation as the ratio between the V and C (V / C) of 0.58 figures obtained after waking mall. While before the mall awakened (based on data Andalalin), DS number is 0.55. It could be argued that an increase in the DS but still in relatively safe conditions. Level of service C, in the zone traffic flow steady. Motorists are restricted in choosing speed.

2. To speed the flow of vehicles on average, which is used light vehicle, light vehicle (LV). From the survey conducted, the average speed of vehicles in both current is 31.125 km / h. While the count should FV = 58.41 km / h. Can be said that there is a decrease in the speed of the speed it should be.

3. From the data above shows that the improved DS has lowered FV. The existence of the intersection Unila, further strengthening FV downturn.

Bibliography

1. Radar Lampung
2. Book of Transportation Policy, IB Ilham Malik, 2013
3. Bappeda Bandar Lampung

PROCEEDINGS

3rd ICETD 2014



Hosted By :
Faculty of Engineering and Faculty of Computer Science
Bandar Lampung University, Indonesia