STUDY ON TRAFFIC MANAGEMENT SYSTEM AT PERAWANG-MINAS INTERSECTION DISTRICT OF SIAK, RIAU PROVINCE

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INTRODUCTION

- This study was about Traffic Management at Perawang Minas Intersection in Siak Regency and conducted based on Siak Regency Department of Transportation proposal

- Perawang Minas Intersection is intersection with three section without singnal on each to regulate traffic

- Transport activity around Perawang-minas intersection is dominated by containers (heavy conveyance). Without Traffic Controller Devices the traffics at this intersection is crowded and vulverable to crash or accident due to vehichle's high velocity.

BASIC THEORY

- Undang-Undang No 22 Tahun 2009 Tentang Lalu Lintas dan Angkutan Jalan;
- Manual Kapasitas Jalan Indonesia (MKJI) 1997;
- Peraturan Pemerintah No 32 Tahun 2011 Tentang Manajemen Dan Rekayasa, Analisis Dampak, Serta Manajemen Kebutuhan Lalu Lintas;
- Peraturan Pemerintah No 79 Tahun 2013 Tentang Jaringan Lalu Lintas dan Angkutan Jalan;
- Peraturan Menteri Perhubungan No 96 Tahun 2015 Tentang Pedoman Pelaksanaan Kegiatan Manajemen Dan Rekayasa Lalu Lintas;

PROBLEM FORMULATION

- How the traffic patern at Perawang Minas Intersection is
- How much the traffic volume at the peak hours in the morning and in the afternoon.
- What traffic management can be applied in the intersection for reducing accident

LOCATION

The location of the research is Perawang-Minas Intersection, Siak Regency, Riau Province

RESEARCH METHOD

Qualitative and Qualitative Approchment through Manual Kapasitas Jalan Indonesia (MKJI) Method which issued by Direktorat Jenderal Bina Marga Departemen Pekerjaan Umum Tahun 1997.

RESEARCH METHOD

- Data collected were highway network, citizen quantity, and existing traffic situation.
- Quantitative Approachment was conducted through Observation in the location for three days at peak hours at 08.00-09.00 and 17.00-18.00

Observation Result

- Traffic Counting (TC) Survey was implemented into two session
  a) At 08.00-09.00 AM
  b) At 17.00-18.00 PM

Time selection was based on peak hours recommendation from Siak Regency Departement of Transportation.


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Observation Result

- In two hours observation, the highest traffic happened at the north intersection (Jalan Pekanbaru-Minas) with 1.055 vehicles consist of 393 motorcycles, 429 cars, and 233 containers.
- On the other hand, the lowest traffic was at East Intersection (Jalan Lintas Perawang)

Tabel Persentase Arus Lalu Lintas Di Simpang Perawang Minas

Kaki Simpang	Jenis Kendaraan		
	Spd Motor	Mobil	Truck
	(%)	(%)	(%)
Jl. Pekanbaru-Minas (Utara)	393 (37%)	429 (41%)	233 (22%)
Jl. Pekanbaru-Minas (Selatan)	303 (35%)	390 (45%)	177 (20%)
Jl. Lintas Perawang (Timur)	390 (49%)	228 (29%)	170 (22%)
Total	1.086 (40%)	1.047 (38,6 %)	580 (21,4 %)

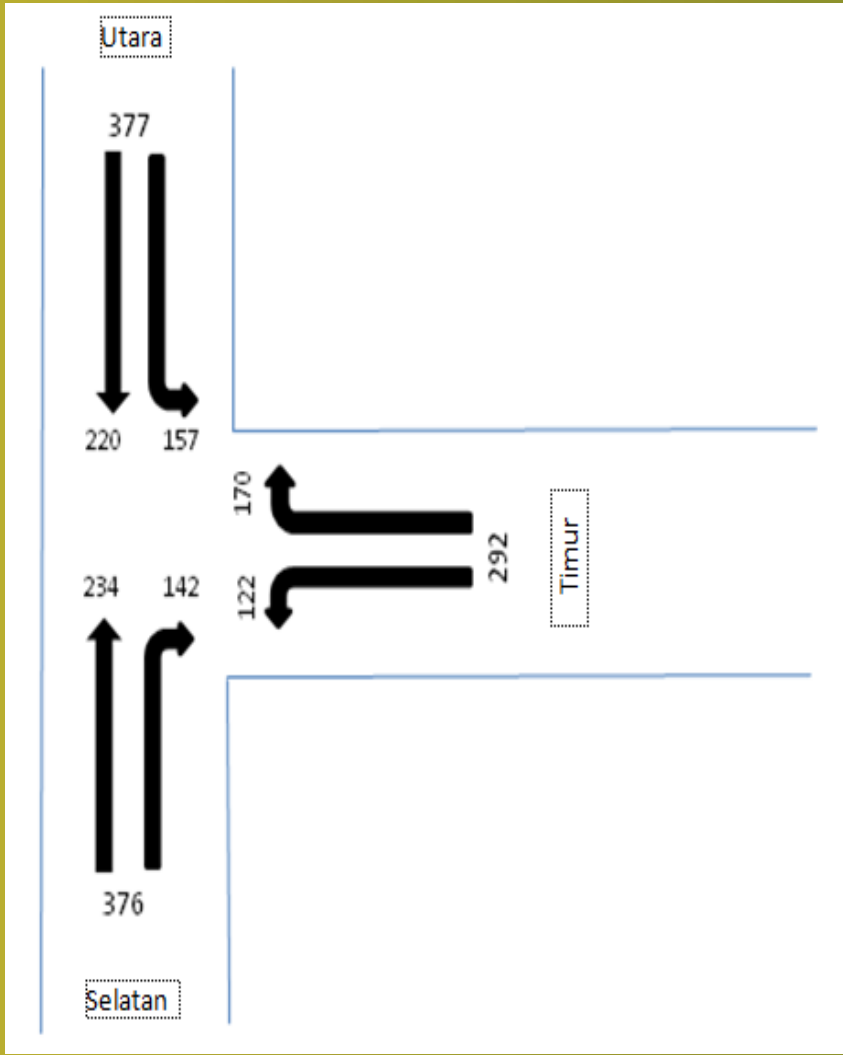
Motorbike presentation on each intersection made almost similar amount, about 40%.
Car presentage was approximately 29-45%
While container presentation was about 20-22%.

Observation Result...

- Highest Traffic on east, north, and south sections happened at time interval 17.00-18.00 wib
- Traffic Directions of vehicles on each section were displayed on the table below.

Tabel Arus Pergerakan Saat Jam Puncak

Lengan Simpang	Jam Puncak	Belok Kanan	Belok Kiri	Lurus	Total
Jl. Pekanbaru-Minas (Utara)	17.00-18.00		157	220	377
Jl. Pekanbaru-Minas (Selatan)	17.00-18.00	142		234	376
Jl. Lintas Perawang (Timur)	17.00-18.00	170	122		292

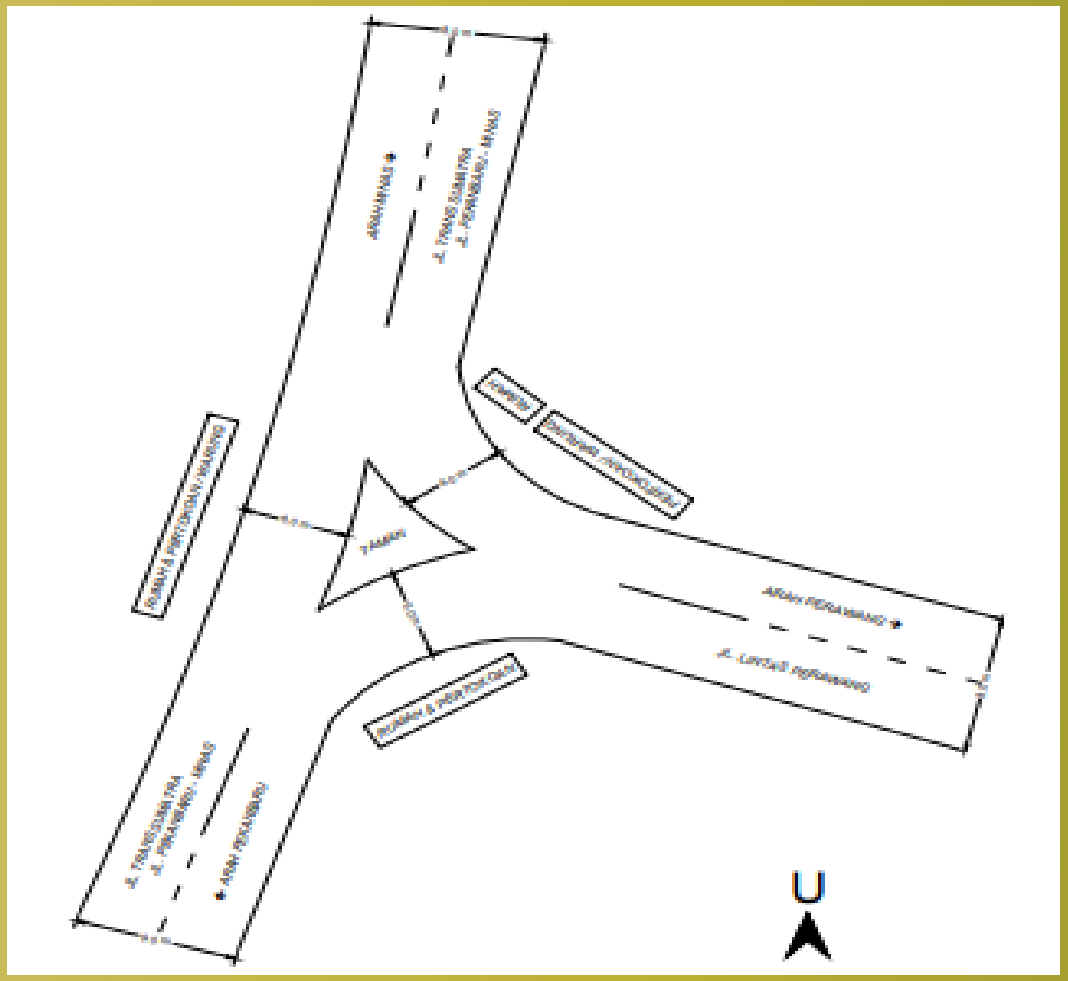


Accident Data

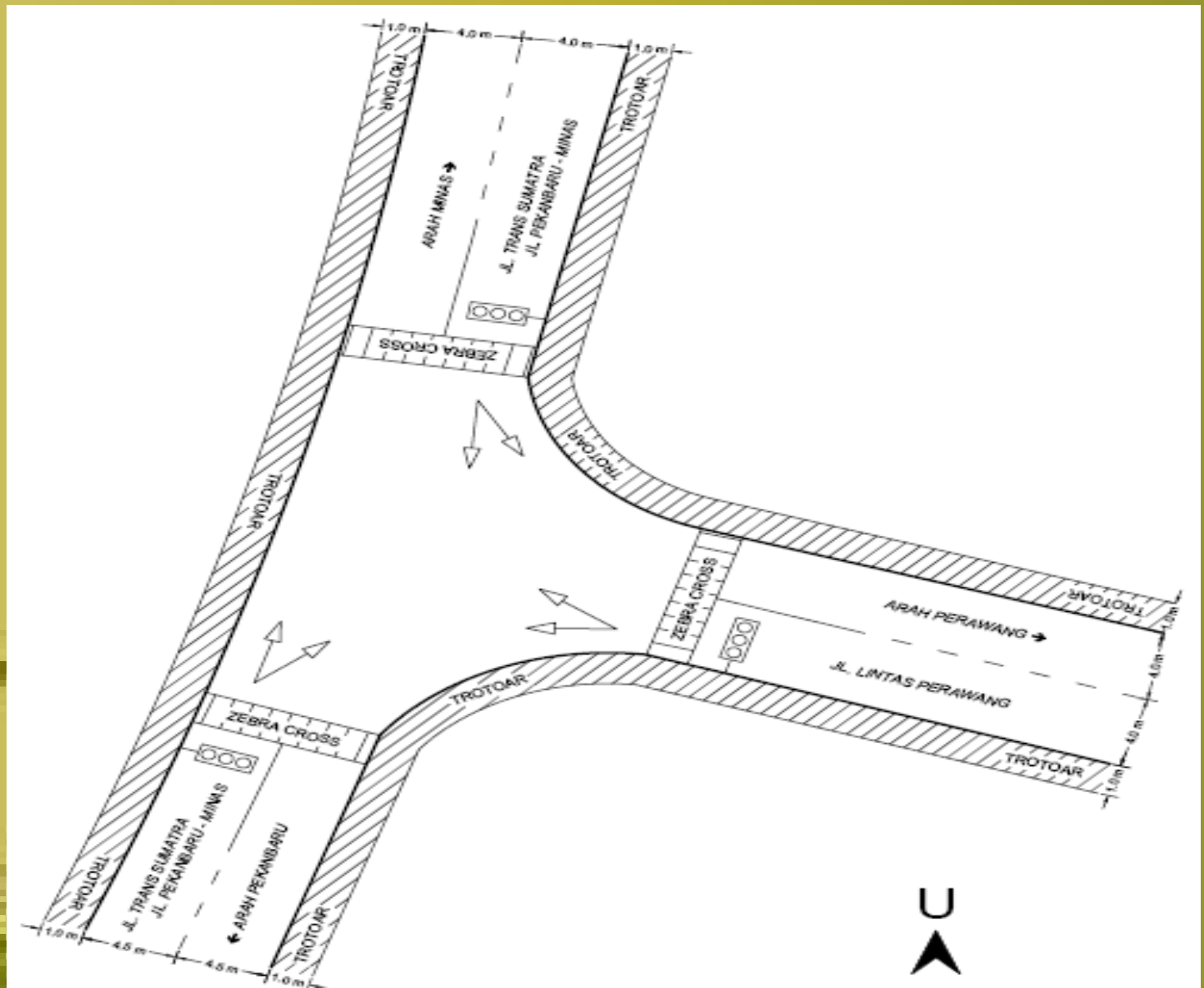
No	Unit Kerja	Jumlah Laka					Total 2011-2015
		2011	2012	2013	2014	2015	
1	Polres Siak	14	9	19	11	13	66
2	Polsek Siak	9	14	11	22	22	78
3	Polsek Tualang	47	43	43	31	41	205
4	Polsek Minas	94	112	76	53	46	381
5	Polsek Kandis	75	49	58	58	47	287
6	Polsek Sei Apit	16	26	6	2	5	55
7	Polsek L. Dalam / Gasib	22	15	26	26	16	105
8	Polsek Bungaraya	0	0	6	6	7	19
9	Polsek Sabak Auh	0	0	6	3	3	12
							1208

Sumber: Dishub Kab.Siak

Design Eksisting Intersection



Design Recommendation for Intersection Lay Out



SUMMARY

A. Highest Peak Hours in Perawang-Minas Intersection is at time interval 17.00-18.00 with total volume of vehicles 1.045 smp, which came from 377 sm at the north section, 376 at the south section and 292 smp at the east section.

B. The Vehicle composition consist of motorbike, car, and containers. Motorcycle proportion and car almost equal, while containers were half of motorbike presentage.

   Presentation of each vehicles at Perawang Minas Intersection is

   - Motorbike(40 %); 1.086 unit;
   - Cars (38,6 %); 1.047 unit;
   - Containers (21,4%); 580 unit.

C. Based on APILL term of conditions which require traffic volume at more than 750 vehicles/hour and accidents more than 5/year, it can be concluded that at Perawang-Minas Intersection is considered to APILL construction and sidewalk management for traffic safety

SUGESSTION

- Green Time Counting is sugessted to be implemented before installation device of APILL at Perawang Minas Intersection

- APILL Connstruction's Funding could be proposed to Directorate General of Land Transporation


Thank you